Collier County

Multi-Jurisdictional Local Mitigation Strategy

2025



Collier County

Multi-Jurisdictional Local Mitigation Strategy

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Collier County

Multi-Jurisdictional Local Mitigation Strategy

EXECUTIVE SUMMARY

Collier County faces a variety of natural, technological, and human-made hazards that pose risks to public health and safety, threaten economic stability, and impact the quality of the natural environment. To mitigate these risks, a comprehensive planning process has been undertaken through a collaborative partnership between public and private sector entities within Collier County. This effort has resulted in the “Collier County Multi-Jurisdictional Local Mitigation Strategy” (LMS), a strategic plan for long-term risk reduction and resilience building.

The Collier County Multi-Jurisdictional Local Mitigation Strategy Working Group (LMSWG) is responsible for this planning process. The LMSWG has conducted in-depth studies to identify specific hazards affecting Collier County and assessed the risk levels posed by these hazards to the community. Using this data, the LMSWG evaluated the vulnerability of public facilities, neighborhoods, and other key assets across Collier County to these hazards. This analysis informed the development of targeted projects and programs—referred to as “mitigation initiatives”—designed to reduce the county’s vulnerability and enhance its resilience against future disasters.

Mitigation initiatives outlined in this plan are intended to minimize disaster impacts and promote a safer, more disaster-resilient community. The LMSWG will continue to develop and implement these initiatives as resources become available, prioritizing projects based on risk assessments and community needs. By executing these strategies, Collier County is working to become a safer and more resilient community.

This LMS document outlines the efforts of the LMSWG over recent years, including the establishment of the working group, the technical analyses conducted, and the coordination of mitigation projects proposed by participating jurisdictions and organizations. Additionally, this strategy incorporates jurisdictional Floodplain Management Plans where applicable. Through the continued publication and periodic update of this Local Mitigation Strategy, the LMSWG invites community-wide involvement to protect the people, neighborhoods, businesses, and institutions of Collier County from the impacts of future hazards.

SUMMARY OF CHANGES

This page provides a comprehensive overview of all changes made to the Local Mitigation Strategy since its inception. Some annexes are updated frequently, as they serve as repositories of information reflecting actions taken by the Local Mitigation Strategy Working Group during properly noticed public meetings. For the most current information, readers are encouraged to consult the relevant annexes directly. This table is organized chronologically to reflect the most recent changes made to the plan at the top.

Section/Annex	Location of Change	Change	Purpose	Date
Entire Plan	Entire Plan	Enhanced the overall clarity and readability of the plan. Standardized formatting, including font styles and headings, to ensure consistency. Introduced dedicated cover pages for each section and annex.	2024 Plan Update: Improved clarity, consistency, and organization.	12/20/2024
Cover Page	Cover Page	Incorporated the new county logo and updated color branding throughout the plan. Refreshed existing photos and added new ones where appropriate.	Enhanced visual presentation and updated branding.	12/20/2024
Executive Summary	Executive Summary	Made minor formatting and language adjustments to enhance readability and conciseness.	Improved accessibility and understanding.	12/20/2024
Section 1	Section 1	Added and updated details specific to the 2025 planning cycle.	Incorporated new cycle-specific information.	12/20/2024
Section 2	Section 2	The HIRA was completed by WSP Environmental LLC, incorporating recent hazard impacts and an updated hazard profile for the 2020–2024 planning cycle.	Updated risk analysis and hazard profile.	12/20/2024

Section/Annex	Location of Change	Change	Purpose	Date
Section 3	Section 3	The Mitigation Goals and Objectives remain unchanged for this cycle. Plans for future updates to this section are currently in development.	Ensured consistency with existing goals while planning for future improvements.	12/20/2024
Section 4	Section 4	Refined content for improved clarity and readability. Enhanced the Prioritization Matrix by streamlining and standardizing the formatting.	Improved prioritization framework and readability.	12/20/2024
Section 5	Section 5	Refined content for improved clarity and readability.	Enhanced clarity and usability.	12/20/2024
Section 6	Section 6	Improved content for clarity and readability, added consistent formatting, and incorporated bullet points for better organization. Revised the "Other Plan References" section by categorizing references by plan and updating links to external plans and resources.	Enhanced organization and accessibility of referenced information.	12/20/2024
Annex A	Annex A	Updated Future Land Use Map.	Reflected the latest land use planning.	12/20/2024
Annex B	Annex B	No changes until State/FEMA review is completed.	Awaiting external review.	12/20/2024
Annex C	Annex C	Improved clarity and readability, added press release template, added current plan cycle, and added press releases from 2020–2024.	Enhanced public engagement tools and historical documentation.	12/20/2024
Annex D	Annex D	Removed link to funding source spreadsheet, added	Improved detail and usability for funding resource	12/20/2024

Section/Annex	Location of Change	Change	Purpose	Date
		more detailed descriptions of all funding sources.	identification.	
Annex E	Annex E	Improved formatting and readability.	Enhanced clarity and organization.	12/20/2024
Annex F	Annex F	Added agenda, minutes, and sign-in sheets for all LMS meetings in this planning cycle (2020–2024).	Provided comprehensive documentation for meeting records.	12/20/2024
Annex G	Annex G	Updated jurisdictions and Working Group membership table. Added Naples Airport Authority as a Voting Member as they provided documentation of LMS adoption by resolution. Sorted the membership list by Jurisdiction, then by Agency, then by Representation Role. Also corrected agency names.	Improved organization and representation accuracy in membership records.	12/20/2024
Annex H	Annex H	Added cover page.	Enhanced presentation and organization.	12/20/2024
Annex I	Annex I	Added cover page.	Improved presentation and organization.	12/20/2024
Annex E	Prioritize Proj. List	Removed HMGP Project 4337-225-R (Freedom Park Drainage).	Marked as ineligible based on FDEM review	7/12/2021
Annex G	Membership	Added the following members, per unanimous vote: Taylor Sawatzky (PUD, BCC).	Membership updates.	4/16/2021
Annex B	Resolutions	Added jurisdiction resolution	Added Collier County Public School Resolution. Previously expired. Re-adopted per date indicated.	4/13/2021

Section/Annex	Location of Change	Change	Purpose	Date
Annex E	Prioritize Proj. List	Added multiple projects including SHWMD Hazardous Materials Generator Install & N. County Water Reclamation Facility upgrades.	Enhanced infrastructure and response capability	1/15/2021
Annex G	Membership	Removed Mike Lalbachan (moved to Monroe County Government) and Lisa Loren (left TSA to start her own consulting). Added John McCormick and Timothy Rygiel as Primary and Alternate to represent the Facilities Management Division with the Public Utilities Department.	Membership updates.	1/15/2021
Annex E	Prioritize Proj. List	Added Immokalee Fire Control District's Station 30 renovation and Everglades City's Allen Avenue Drainage Improvement.	Updated priority listing	10/16/2020
Annex G	Membership	Added Lisa Loren as an alternate for Ashley Jones (The Salvation Army). Unanimous approval for William Lang as new Chair and Christopher Mason as Vice-Chair, with Rick Zyvoloski as staff liaison.	Leadership and membership updates.	10/16/2020
Annex I	Annex I	Neatened the annex per GMD administrative action.	To improve clarity and organization within the annex.	9/1/2020
Annex G	Membership	Added Mike Lalbachan to replace Lisa Oien.	Membership updates.	7/17/2020
Annex G	Membership	Removed Nicole Jensen and added Stephanie Rochow & Phil Snyderburn.	Membership updates.	7/11/2020

Section/Annex	Location of Change	Change	Purpose	Date
Annex E	Prioritize Proj. List	Completed yearly project validation and moved completed projects to appropriate section.	Maintained list relevance	6/11/2020
2	Total Revision	Total Revision Added	Rewrite	2/20/2020
Annex E	Prioritize Proj. List	Added GNFD Stas. 23 & 90 hardening, Collier County Stormwater Projects for Eden Garden & N. 3rd St.	Updated list based on annual project review	1/31/2020
2	Corrected an admin error	A duplication of Civil Infrastructure Disruption on page 208 was corrected.	Civil Infrastructure Disruption on page 208 was corrected	1/19/2020
Annex E	Prioritize Proj. List	Added Marco Island/Collier County watermain interconnect project.	Addressed critical water infrastructure	1/17/2020
Annex G	Membership	Lisa Oien resigned due to a job transfer.	Membership updates.	1/17/2020
Annex B	Resolutions	Added Community Development Dist Resolution	Added Heritage Bay CDD's Resolution	10/19/2019
Annex G	Membership	Added two members from the Heritage Bay Community Development District: Dennis Gagne & Jack Arcurie.	Reflect new representation.	10/19/2019
Annex C	Public Involvement	Added Attachments	Added Public Notice Sample and Social Media Sample to include updated ways we try to involve the public	7/22/2019
Annex G	Membership	Removed the following due to job changes or lack of attendance: Samantha Quinn, C. Cilek, H. Critchfield, J. Johnson. Added new members: A. Jones, R. Greenberg, S. D'Angelo, W. Martin, & A. McLaughlin.	Membership updates.	7/18/2019

Section/Annex	Location of Change	Change	Purpose	Date
Annex B	Resolutions	Added Jurisdiction Resolution	Added Immokalee Fire Control District's Resolution	4/22/2019
Annex B	Resolutions	Added Jurisdiction Resolution	Added North Collier Fire & Rescue District's Resolution	4/17/2019
Annex B	Resolutions	Added Jurisdiction Resolution	Added Greater Naples Fire Rescue District Resolution	4/16/2019
Annex B	Resolutions	Added Jurisdiction Resolution	Added Collier County Mosquito Control District Resolution	3/28/2019
Annex E	Prioritize Proj. List	Added/updated projects to meet organizational requests, removed completed/obsolete ones.	Annual Project Validation	2/8/2019
Annex E	Prioritize Proj. List	Added upgrades to make the Field House of the Sports & Entertainment Complex a Cat 5+ PSN shelter.	Enhanced public shelter capabilities	1/18/2019
Annex G	Membership	Removed the following as voting members due to lack of attendance: Chris Niforatos, Roosevelt Leonard, Everildo Ybaceta, James Price. Added new member Mark Grajewski.	Maintain active membership.	1/18/2019
Annex E	Prioritize Proj. List	Added Collier IT's 800MHz optic cable redundancy project and adjusted the cost of Naples roof project.	Addressed technology and critical infrastructure upgrades	10/19/2018
Annex E	Prioritize Proj. List	Added projects reviewed during LMSWG meetings (e.g., 22/26 Jan. 2018, 5/7 Mar. 2018).	Captured project updates	Various 2018
Annex G	Membership	Added FFS mitigation specialist Melinda	Reflect changes in representation.	9/12/2018

Section/Annex	Location of Change	Change	Purpose	Date
		Avni.		
Annex G	Membership	Added LCEC's Bob Atkins and removed Peggy Boldissar.	Reflect changes in representation.	6/8/2018
Annex G	Membership	Added/removed members.	Membership updates.	5/18/2018
Annex G	Membership	Members changed/added from Everglades City, Collier County Public Schools, and an Interested Citizen.	Reflect changes in representation.	2/2/2018
Annex E	Prioritize Proj. List	Revalidated project priority listing, added projects, and deleted obsolete ones.	Maintained list relevance	10/20/2017
Annex E	Prioritize Proj. List	Collier school district withdrew project #16 and deferred another wind protection project.	Adjusted priorities to reflect project changes	1/20/2017
Annex I	Annex I	Marco Island Annual Progress Report added.	To include progress updates specific to Marco Island.	4/15/2016
Annex B	Resolutions	Added Jurisdiction Resolution	Added Everglades City's Resolution	7/14/2015
Annex B	Resolutions	Added Jurisdiction Resolution	Added School District Resolution	4/17/2015
Annex B	Resolutions	Added Jurisdiction Resolution	Added Marco Island's Resolution	4/8/2015
Annex B	Resolutions	Added Jurisdiction Resolution	Added Naples Resolution	4/1/2015
Annex B	Resolutions	Added Jurisdiction Resolution	Added Board of County Commissioners Resolution	3/16/2015
Annex E	Prioritize Proj. List	LCEC's two projects (concrete poles and relay station) moved to the "Delete Section."	Removed projects no longer relevant	10/18/2014
Annex G	Membership	Robert Wiley and J. von Rinteln resigned. Chris Sparacino elected Vice Chair. Alternates to primary members	Membership updates.	10/18/2014

Section/Annex	Location of Change	Change	Purpose	Date
		listed (Liz Gosselin, William Lang & Caroline Celik).		
Annex D	Grant Funding Sources	Updated spreadsheet	Added FEMA one-stop grant search site to make searching for a grant easier	7/18/2014
Annex E	Prioritize Proj. List	Updated cost estimates for project #'s 22 and 23.	To reflect updated financial data	1/17/2014
Annex G	Membership	Reformatted annex based on LMSWG meeting in Oct 2013. Updated member status and added members.	To maintain updated records.	1/17/2014
Annex G	Membership	Updated membership information.	Membership updates.	12/4/2013
Annex B	Resolutions	Added Jurisdiction Resolution	Added School District Resolution	10/22/2013
1	para 1.2.1 & para 1.3.1	see yellow highlights	necessary change for school district adoption	7/19/2013
2	para 2.5, 2.7, & 2.8.4	see yellow highlights	necessary change for school district adoption	7/19/2013
2	Risk Summary Table	see yellow highlights	necessary change for school district adoption	7/19/2013
Annex B	Resolutions	Added Fire Dept. Resolution	Added NN Fire Control & Rescue District Resolution	7/19/2013
Annex E	Prioritize Proj. List	Necessary change for school district adoption (see Yellow highlights). Added/updated school and public projects.	School district requirements	7/19/2013

Section/Annex	Location of Change	Change	Purpose	Date
4	para 4.1.2.1	Replaced a sentence	Formalized the process and date to establish a specific timeline for agencies to notify the LMSWG of HMGP applications	11/30/2012
5	para 5.2.2	Eliminated a sentence	Eliminated an inconsistency with Annex I	11/30/2012
Annex E	Prioritize Proj. List	Updated project dates and organizational assignments due to restructuring. Added/updated projects to the Project Priority Listing (e.g., Public Utilities Ops Center Hurricane Door Hardening).	Improved prioritization and accuracy	11/30/2012
Annex H	Project Scoring Criteria	Added "NA" to the bottom of the score section in "Cost" #5.	To allow for a "no score" option for projects that don't have flood insurance.	11/30/2012
Annex G	Membership	Updated the section to add/remove voting members & changed Bill Jones's affiliation to "Interested Resident."	Membership updates.	7/27/2012
Annex E	Prioritize Proj. List	Transferred additional approved projects to "Completed" section (e.g., Immokalee High School generator install, E. Naples Community Center Wind Retrofit).	Projects marked as complete	1/20/2012
Annex G	Membership	A statement was added in the preamble clarifying that this annex represents current voting membership and not just the membership invited to participate in	To reflect current membership.	10/21/2011

Section/Annex	Location of Change	Change	Purpose	Date
		2003.		
Annex E	Prioritize Proj. List	Transferred approved projects to "Completed" section & renumbered priorities (e.g., Marco Island's WWTP Wind Protection, CAT Facility Wind Retrofit).	Projects marked as complete	4/15/2011
Annex E	Prioritize Proj. List	Added/removed approved projects and renumbered priorities. Added Proj #10 (Wind Protection for N. Collier WTP). Removed completed projects to "Completed" section (Shadowlawn Dr. Drainage Improvements).	To maintain accuracy in project prioritization	4/4/2011
Annex E	Prioritize Proj. List	Added approved projects and renumbered priorities. Added Proj #22 (Wind Retrofit NNFire Station) & #23 (CC Leachate Storage Tank and Lift Sta. upgrade). Renumbered project order to accommodate additions.	To address additional hazards	8/12/2010
Annex E	Prioritize Proj. List	Added preamble comments highlighting that some projects adopted for certain hazards also mitigate effects of other threats	Updated per BCC Jan. 2010 adoption	7/16/2010
Annex H	Project Scoring Criteria	In the COST section #5, clarified/defined "Repetitive Loss."	There was confusion from the applicants regarding the term; this change provided clarity.	7/16/2010

Section/Annex	Location of Change	Change	Purpose	Date
Annex B	Resolutions	Added City Resolution	Added Marco Island's Resolution to adopt the LMS	7/13/2010
2	Attachment 1 added	Added Attachment 1	per FEMA request, added information regarding the "extent" of the hazards addressed.	4/9/2010
Annex A	Maps	Renumbered maps and inserted Maps 4 and 4a	Added Everglades City Current and Future Land Use Maps	11-Feb-10
1	para 1.3.1	added "NOTE"	directed reader to Annex J for Floodplain Management info.	1/26/2010
6	page 3, para. 6.1.5	Added note explaining the current LMS approval process & added date for Annex A's approval	Clarified the approval process and added the omitted date where indicated.	1/20/2010
Annex H	Mitigation Strategy	The LMSWG voted to amend the mitigation strategy (para. B) to address how initiatives can get on the priority listing between quarterly meetings to allow submission of applications for "short-noticed" grant opportunities.	To streamline the process for including initiatives in the priority listing for grant opportunities.	11/1/2009

Section/Annex	Location of Change	Change	Purpose	Date
3	Goals & Objectives	The LMS working group voted to add two paragraphs (4.1.4 & 4.1.5) in order to account for good mitigation initiatives which could not be quantified on the score sheet but should be accepted as projects that achieve our mitigation goals (para 4.1.1). Para 4.1.5 was added to address a mechanism to reprioritize initiatives based on disaster-specific HMGP allocations.	To provide flexibility for the LMSWG to prioritize initiatives, particularly in response to specific disaster events (e.g., focusing on wind-related initiatives for a wind event disaster).	2007
Annex F	Meeting Minutes	This annex changes FREQUENTLY as it contains both the prior year's and current year's meeting minutes and directs users to the location of past meeting minutes. Minutes are purged yearly.	To maintain an accurate and updated record of meeting minutes	Not Applicable
Annex I	Jurisdictional Floodplain Plans	This annex contains Jurisdictional Floodplain Plans and will either contain or direct users to the most current plan. NFIP participation requirements added for the convenience of the reader.	To provide updated and accessible floodplain plan information.	Not Applicable

1

Purpose, Organization, & Outreach

1.0 PURPOSE, ORGANIZATION & OUTREACH

1.1 PURPOSE

The Collier County Multi-Jurisdictional Local Mitigation Strategy (LMS) was initially developed with support from the Florida Division of Emergency Management (formerly the Department of Community Affairs) and funding from the Federal Emergency Management Agency (FEMA) to create a comprehensive mitigation plan for the county. The LMS aims to unify efforts among county and municipal governments, private sector partners, and community organizations to address hazard vulnerabilities and improve hazard management across Collier County.

This strategy serves as a guide for county and municipal agencies to:

- Reduce vulnerability to both natural and man-made hazards,
- Establish funding priorities for proposed mitigation projects, and
- Coordinate efforts for disaster response and recovery through designated disaster assistance funds.

By working collaboratively, the LMS supports long-term resilience in the county by planning and prioritizing mitigation actions that reduce risks to life, property, and critical infrastructure.

1.2 PROGRAM ORGANIZATION & MITIGATION STRATEGY PREPARATION PROCESS

The success of the Local Mitigation Strategy (LMS) depends on a well-organized structure and active community participation, facilitated through regular LMS meetings and dedicated ad hoc committees. The LMS was initially developed in 2004 by the Collier County Emergency Management Division staff, with input from the public collected throughout the planning process. During its creation, staff reviewed existing resources, including the County's Comprehensive Plan and post-disaster after-action reports, to build a foundation for hazard mitigation. Public meetings were held to gain input and to establish the Local Mitigation Strategy Working Group (LMSWG), which continues to lead the LMS's development and implementation. Following its formation, the LMSWG completed the drafting of the LMS, which was subsequently adopted by Collier County, its municipalities, and Collier County Public Schools.

Over time, LMSWG membership has expanded to reflect broader community representation and expertise. In 2019, three independent fire districts (Immokalee, North Collier, and Greater Naples) and two special taxing districts (Collier County Mosquito Control and Heritage Bay Community Development District) joined the LMSWG. Since the plan's initial adoption, the LMSWG has periodically updated the LMS as needed, with changes largely focused on project scoring, project prioritization, and membership updates. Each quarterly meeting of the LMSWG includes a dedicated time for reviewing, monitoring, and updating the LMS to ensure it remains current and effective. These updates are summarized in the "Summary of Changes" section of the LMS. The LMSWG also maintains a public-facing homepage at https://bit.ly/3OJHZ6F

where comments, grant opportunities, and LMS updates are posted as they become available.

Five-Year Plan Update Cycles

The LMS is reviewed and updated every five years to ensure alignment with community needs, regulatory requirements, and best practices. Each update cycle includes a comprehensive review and revision of the LMS, often involving external analyses and extensive public engagement:

- **2010 Cycle:** The Southwest Florida Regional Planning Council was contracted to assist in the development of the county's Risk Assessment and Vulnerability Analyses. LMSWG members collaborated with the Chair throughout 2009 to complete necessary updates, with meeting minutes documenting the discussions and decisions available on the LMSWG homepage.

- **2015 Cycle:** Public engagement remained a priority, with an online draft version made available for public review and feedback. This cycle included contracted analyses of flood hazards, including storm surge impacts, led by the county floodplain manager. Additionally, the Florida Forest Service provided an updated wildfire hazard assessment.

- **2020 Cycle:** Updates during this cycle focused on refining the project scoring sheet, reassessing mitigation goals, and engaging the public extensively. Quarterly meeting announcements were distributed through public notices and social media, actively inviting community comments on the LMS. A "note seeking public comment" was prominently displayed on the LMS homepage throughout the review period, and each LMS meeting agenda included an item for public input on the strategy.

- **2025 Cycle:** This cycle emphasizes enhancing the LMS's readability while maintaining consistency with FEMA and State requirements. Updates for this cycle include revisions to reflect current names, agencies, and jurisdictions to ensure the LMS remains relevant and user-friendly. The Hazard Identification and Risk Assessment (HIRA) has been comprehensively updated by WSP USA Environment & Infrastructure, Inc., providing an accurate and current assessment of Collier County's hazard risks and vulnerabilities.

By implementing these updates, the LMSWG aims to strengthen the LMS's effectiveness and maintain community engagement, ensuring that the LMS remains a valuable tool for mitigation planning and resilience-building throughout Collier County.

1.2.1 Local Mitigation Strategy Working Group Membership & Quorum for Business

The Local Mitigation Strategy Working Group (LMSWG), organized under the Collier County Citizens Corps, is the primary policy-making body for the Local Mitigation

Strategy (LMS) program. The LMSWG's role is to guide the formulation, implementation, and ongoing refinement of the Collier County Multi-Jurisdictional Local Mitigation Strategy, ensuring broad participation and effective hazard mitigation planning across the county.

Membership Structure and Requirements

Membership in the LMSWG is open, encouraging participation from public agencies, private sector organizations, and community stakeholders. However, FEMA requires specific jurisdictions to adopt the LMS and actively participate in the LMSWG to be eligible for hazard mitigation project grants. These required jurisdictions include:

- Collier County Government (Board of County Commissioners)
- City of Marco Island
- City of Naples
- City of Naples Airport Authority
- Everglades City
- Collier County Public Schools
- Collier Mosquito Control District
- North Collier Fire Control and Rescue District
- Immokalee Fire Control District
- Greater Naples Fire Rescue District
- Naples Airport Authority
- Lee County Electric Cooperative
- Port of the Islands Community Improvement District

Voting Members

Voting privileges are granted to residents of Collier County or those with a significant business or professional interest in the county, such as employees or local business owners. Private nonprofit organizations, while not required to formally adopt the LMS, are invited to participate actively and contribute to the planning process.

To obtain voting membership, individuals or entities must request to be "participating members" at an LMSWG meeting, where the group will vote to approve the request. Each approved voting entity is entitled to one vote on LMS matters, including project prioritization and plan updates. Voting representatives can appoint designated alternates to attend and vote in their absence, ensuring continuity in participation. When setting project priorities for mitigation grant applications, each jurisdiction holds one vote to maintain balanced representation.

Non-Voting Participants

All LMSWG meetings, whether quarterly or special sessions, are open to the public. Non-voting participants, including local and regional agencies involved in hazard mitigation, regulatory development authorities, and other interested community members, are encouraged to attend. Meeting announcements are made publicly through press releases and posted on the LMSWG's webpage, which also includes agendas and past meeting minutes at https://bit.ly/3OJHZ6F.

Leadership and Roles

The LMSWG elects a Chair and Vice-Chair annually from within its membership. Both positions may be re-elected if the membership agrees. The Chair leads meetings and may only vote to break a tie. The Vice-Chair holds voting rights unless they are acting as Chair in the Chair's absence. These leaders guide discussions, ensure that meetings adhere to protocols, and facilitate the administrative and strategic activities of the LMSWG.

Responsibilities of Voting Members

Voting members, also known as "participating members," are required to:

1. Attend all scheduled LMSWG meetings, sending a qualified alternate if the primary member is unavailable. An alternate's attendance prevents the absence from being counted against the member's participation record.
2. Provide requested information within designated timeframes, supporting the LMSWG's goals and objectives.
3. Update and maintain jurisdiction-specific information in the LMS, ensuring data accuracy and completeness.

Quorum for Conducting Business

To conduct official business, the LMSWG requires a quorum of at least five voting members. Once a quorum is present, a simple majority vote decides on LMS actions and priorities.

Revocation of Voting Status

Consistent attendance is critical for maintaining voting privileges within the LMSWG. A designated jurisdiction that fails to attend two properly noticed meetings within a calendar year, without a designated alternate attending, may lose its voting status. In such cases, the LMS Chair will notify the jurisdiction of the potential loss of voting privileges and, if not corrected, inform the highest authority within the jurisdiction (such as the City Manager, Public Schools Superintendent, or District Director) that the jurisdiction is no longer eligible for FEMA mitigation grants until "participating membership" is re-established.

Non-jurisdictional voting members (such as private citizens or nonprofit representatives) who miss three consecutive properly noticed meetings without a valid excuse will be reviewed for potential voting revocation. Reinstatement of voting privileges requires a majority vote by the LMSWG to maintain active and informed membership.

Public and Member Comments

Comments submitted by members unable to attend meetings or from the public are welcomed. All comments received in advance are reviewed, discussed, and entered

into the meeting record to ensure all perspectives are considered in the decision-making process.

1.2.2 Local Mitigation Strategy Working Group's Committees

The Chair of the Local Mitigation Strategy Working Group (LMSWG) is authorized to establish committees as needed to support the objectives of the Local Mitigation Strategy (LMS). Committee members are not limited to LMSWG members; they may include individuals with specialized expertise relevant to specific mitigation goals.

Initially, three core committees were established to assist with program and plan development:

- **Vulnerability Analysis Committee**
- **Finance & Outreach Committee**
- **Community Rating System (CRS) Committee**

Over time, these committees evolved into two ad hoc sub-committees—the Community Rating System (CRS) Committee and the Wildfire Mitigation Committee. At the most recent LMSWG meeting, a new **Vulnerability Analysis Steering Committee** was added to provide focused guidance on risk and vulnerability assessments within the LMS.

The LMSWG Chair may also convene Special Meetings as necessary to address specific issues. When a Special Meeting is called, a public notice will be issued at least 10 days before the meeting to ensure transparency and community participation.

1.2.3 Conflict Resolution

If less than 50% of the Local Mitigation Strategy Working Group (LMSWG) opposes a particular issue, the following steps will be taken to resolve the disagreement:

1. **Initial Meeting with Opposing Parties:** A separate meeting will be arranged with those who oppose the issue, focusing on identifying the root causes of their concerns and exploring possible compromises. While other interested parties may attend, their attendance is not mandatory.

2. **Further Discussion with Key Representatives:** If a compromise seems achievable but requires additional discussion, a follow-up meeting may be held. This meeting would include a representative from the Board of County Commissioners (BCC) and a mayor or representative from the city councils of the opposing municipalities. A state representative may be invited if their input is considered beneficial.

3. **Final Informal Resolution Attempt:** Should opposition persist among a small minority of LMSWG members, a final informal meeting will be convened with the entire BCC and the relevant city councils or commissions.

4. **Handling Opposition from Non-Governmental Entities:** Disputes raised by non-governmental participants will be addressed following the same steps outlined above.

5. **Formal Mediation Process:** If no resolution is reached through informal efforts, the matter will be referred to the full Collier County Citizen Corps for further consideration. If 75% of the Citizen Corps recommends additional resolution efforts, the formal Conflict Resolution Process of the Southwest Florida Regional Planning Council will be initiated. Conversely, if 75% of the Citizen Corps advises against further mediation, the issue will be tabled.

All meetings of the LMSWG, its subcommittees, and the Citizen Corps are conducted in accordance with Florida's Government in the Sunshine Law. This ensures that all meetings are open to the public and properly advertised to promote transparency and community involvement.

1.3 LOCAL MITIGATION STRATEGY OUTREACH, PARTICIPATION & MEETING REQUIREMENTS

Currently, the only participation requirements apply to "Participating Jurisdictions" and designated voting members. If a voting member is unable to attend, an alternate may attend in their place to ensure continuity. However, alternates may only vote if specifically permitted by the LMSWG membership.

The LMSWG holds quarterly meetings at a minimum, with additional meetings scheduled as needed. All meetings are announced with reasonable notice through the Collier County Communications & Customer Relations Division and posted on the LMS website (https://bit.ly/3OJHZ6F) to encourage public involvement. Subcommittees, if formed, will establish their own schedules, provide proper notice of meeting times and locations, and report their findings to the LMSWG.

Meeting minutes are publicly accessible on the LMS website, providing a record of all discussions and decisions. For those who need hard copies of the minutes, the Emergency Management Division staff can provide them upon request.

1.3.1 PARTICIPATING JURISDICTIONS

To qualify for funding under several federal mitigation programs, jurisdictions must formally adopt the Local Mitigation Strategy (LMS) and actively participate in the Local Mitigation Strategy Working Group (LMSWG). Programs requiring LMS participation include the **Hazard Mitigation Grant Program (HMGP), Building Resilient Infrastructure and Communities (BRIC), Flood Mitigation Assistance (FMA), Community Development Block Grant - Mitigation (CDBG-MIT), and the Pre-Disaster Mitigation (PDM) program.** Additionally, participation in the LMS is necessary to access funding opportunities through the **National Flood Insurance Program (NFIP) Community Rating System (CRS), U.S. Department of Transportation (DOT)**

Resilience Grants, and the U.S. Army Corps of Engineers (USACE) Flood Risk Management Program.

Jurisdictions must adopt the LMS through a formal resolution or interlocal agreement to remain eligible for these funding opportunities. Copies of these resolutions and agreements, along with the Board of County Commissioners' agenda item summary, are included in **Annex B.** The current LMS Working Group membership roster can be found in **Annex H.**

The original "Participating Jurisdictions" (those that adopted the plan) remain involved, with all but Everglades City also participating in the National Flood Insurance Program (NFIP) Community Rating System (CRS). For further details on how Collier County and its jurisdictions comply with NFIP, see Annex I. The following are the current Participating Jurisdictions:

- Collier County Government (Board of County Commissioners)
- City of Marco Island
- City of Naples
- City of Naples Airport Authority
- Everglades City
- Collier County Public Schools
- Collier Mosquito Control District
- North Collier Fire Control and Rescue District
- Immokalee Fire Control District
- Greater Naples Fire Rescue District
- Naples Airport Authority
- Lee County Electric Cooperative
- Port of the Islands Community Improvement District

Responsibilities of Participating Jurisdictions

Each participating jurisdiction is expected to:

1. **Nominate a Primary and Alternate Representative:** Representatives must attend and actively participate in all scheduled LMSWG meetings. To ensure informed participation, nominees should have the support of their jurisdiction’s chief executive.

2. **Provide Required Information:** Furnish all information requested by the LMSWG within established timeframes.

3. **Maintain Accurate LMS Data:** Update and manage jurisdiction-specific information in the LMS to keep it current.

4. **Ratify the Final LMS:** Formally adopt the LMS as ratified by the Board of County Commissioners, either by resolution or another legal method, to confirm participation and commitment to the mitigation strategy.

1.3.2 Non-Governmental Organizations (NGO’s) and other Governmental Entities

Non-Governmental Organizations (NGOs) and other governmental entities are encouraged to participate in the LMS Working Group (LMSWG) and may qualify for

Local Mitigation Strategy (LMS) grant sponsorship by following the meeting participation standards outlined for Participating Jurisdictions.

Adjacent counties and the Seminole Tribe, represented by their emergency management offices, are also invited to participate. These external jurisdictions, along with the general public, receive LMSWG meeting invitations via email and public notices distributed through the Collier County Communications and Customer Relations Division.

1.3.3 The Public and Private Sector

Participation by private organizations and the public in the Local Mitigation Strategy Working Group (LMSWG) is voluntary. However, attendance, comments, and contributions from these groups are actively encouraged, monitored, and documented to ensure broad community engagement. When the LMS was first established in 2004, a comprehensive public invitation to participate was disseminated through multiple channels, including newspaper announcements, broadcast faxes (to over 900 businesses, condominiums, mobile home parks, and private schools), email lists (reaching over 1,000 addresses), and online postings on the LMS website (https://bit.ly/3OJHZ6F).

A targeted invitation is also extended to key organizations, including:

- Municipal Governments: Cities of Naples, Marco Island, and Everglades City
- Collier County Sheriff's Office
- Collier County Clerk of Courts
- Collier County Property Appraiser
- American Red Cross
- Florida Gulf Coast University
- Collier County Public Schools
- Hodges University
- Florida Power & Light
- Lee County Electric Cooperative
- Southwest Florida Regional Planning Council
- Naples Chamber of Commerce
- Immokalee Friendship House
- South Florida Water Management District
- Naples Community Hospital
- Florida Department of Health
- Florida Division of Law Enforcement
- Florida Forest Service
- Immokalee Independent Fire District
- North Collier Fire Control and Rescue District
- Greater Naples Fire Rescue District

- Florida Department of Agriculture
- Florida Division of Emergency Management

Since then, meeting invitations have been sent out regularly via an updated email distribution list, posted on the LMS website, and announced through the County's public notice process. Draft minutes and agendas are included in each meeting invitation to keep stakeholders informed. Procedures to ensure public involvement can be found in Annex D, and Annex G contains records of community participation.

The current email distribution list includes contacts from various agencies, departments, and emergency management organizations in Collier County and neighboring areas. Representatives are notified of upcoming meetings and encouraged to contribute to discussions on hazard mitigation. Each meeting's summary, attendance, public invitations, comments, and related documentation are available on the LMS webpage to ensure transparency and community involvement.

1.4 JURISDICTIONAL ADOPTION OF THE LOCAL MITIGATION STRATEGY

To participate in and benefit from the Local Mitigation Strategy (LMS) program at the local, state, and federal levels, each jurisdiction must formally adopt the LMS. This is done by completing and filing a fully executed resolution or interlocal agreement, as outlined in **Annex B**. These documents must meet adoption standards jointly established and periodically updated by the Collier County Board of County Commissioners and the LMS Working Group (LMSWG).

1.5 NEW JURISDICTIONS/ENTITIES

If county restructuring results in the addition, deletion, or merging of jurisdictions, the Local Mitigation Strategy (LMS) will adjust its voting member rolls accordingly. Any newly defined jurisdiction will be required to submit all necessary documentation to participate in the LMS program.

2

Summary of Countywide Hazards and Vulnerabilities

2 HAZARD IDENTIFICATION & RISK ASSESSMENT

EXECUTIVE SUMMARY

The purpose of this Hazard Identification and Risk Assessment (HIRA) is to understand the hazards and associated risks that threaten the Collier County planning area in order to enable the development of effective mitigation actions. This HIRA profiles 23 natural and technological hazards identified by the Collier County LMS Working Group and covers all of Collier County, including the unincorporated County and all incorporated jurisdictions* participating in this plan.

***Note on Seminole Tribe Participation:** While the Seminole Tribe of Florida is included in the hazard analysis to provide a comprehensive understanding of risks across Collier County, the Tribe is not a formal participant in the Local Mitigation Strategy Working Group (LMSWG). Due to their sovereign status, the Seminole Tribe operates independently and is a direct grantee with the federal government for hazard mitigation funding and planning initiatives. However, coordination efforts with the Tribe are encouraged to ensure regional resilience and alignment of mitigation efforts where applicable.

Plan Revisions and Changes in Priorities

The Collier County Local Mitigation Strategy (LMS) undergoes periodic revisions to reflect changes in priorities influenced by several factors, including new leadership, recent hazard events, evolving risk assessments, public input, and updates to federal and state guidelines. Key sections of the LMS that have been revised include goals and objectives, risk assessment, mitigation strategy, and project prioritization methods.

- **New Leadership:** Changes in key personnel within Collier County and other stakeholder agencies have brought fresh perspectives and priorities to the LMS, influencing the focus of mitigation efforts.
- **Recent Hazard Events:** The LMS has been updated in response to recent events such as hurricanes, flooding, and wildfire incidents, which highlighted vulnerabilities and informed new mitigation strategies.
- **Public Input:** Ongoing engagement with the community through public meetings, surveys, and outreach initiatives has identified emerging concerns and informed plan adjustments.
- **Risk Assessment Updates:** The latest Hazard Identification and Risk Assessment (HIRA), conducted by WSP USA Environment & Infrastructure, Inc., has provided updated data, leading to revisions in mitigation strategies and prioritization.
- **Regulatory and Policy Changes:** Compliance with updated FEMA and Florida Division of Emergency Management requirements has necessitated modifications to ensure alignment with best practices and funding eligibility criteria.

These revisions ensure that the LMS remains a dynamic and responsive document, continuously adapting to the county's changing needs and priorities.

As defined by FEMA, risk is a combination of hazard, vulnerability, and exposure. The risk assessment process identifies and profiles relevant hazards and assesses the exposure of lives, property, and infrastructure to these hazards. As a foundation of this

risk assessment, an asset inventory was compiled summarizing the buildings and infrastructure at risk within each jurisdiction according to current available parcel data and input from the LMS Working Group. This asset inventory details the total exposure of the planning area to hazard events and was used to evaluate vulnerability specific to each hazard.

This risk assessment followed the methodology described in the FEMA publication Understanding Your Risks—Identifying Hazards and Estimating Losses (FEMA 386-2, 2002). Each hazard profile in this HIRA describes the type, location, and extent of the hazard; includes information on previous occurrences of the hazard event; discusses the probability of future hazard events; describes the hazard's impact on the community; and summarizes overall vulnerability. Where quantitative and/or spatial data on hazard risk was available, overall vulnerability includes an evaluation of potential impacts based on each community's exposure according to the asset inventory. Additionally, a discussion of the potential impacts of climate change on future hazard events can be found in each hazard profile.

To summarize each hazard's overall risk to the planning area and prioritize hazards relative to each other, each hazard was also evaluated using the Priority Risk Index (PRI). The PRI methodology enabled the LMS Working Group to rate the hazards according to their probability, impact, spatial extent, warning time, and duration to produce an overall PRI score for each hazard. The process allows for a better understanding of the potential risk to natural hazards in the planning area and provides a framework for developing and prioritizing mitigation actions to reduce risk from future hazard events.

The natural and technological hazards profiled in this risk assessment and their associated PRI ratings are summarized below.

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Natural Hazards						
Flood	Highly Likely	Critical	Large	6 to 12 hours	Less than 1 week	3.5
Tropical Cyclones	Likely	Catastrophic	Large	More than 24 hrs	Less than 1 week	3.3
Severe Storms[1, 2] (Thunderstorm)	Highly Likely	Limited	Large	Less than 6 hrs	Less than 6 hrs	3.1
Severe Storms[1] (Lightning)	Highly Likely	Minor	Negligible	Less than 6 hrs	Less than 6 hrs	2.2
Severe Storms[1] (Hail)	Highly Likely	Minor	Small	Less than 6 hrs	Less than 6 hrs	2.4
Severe Storms[1, 2] (Tornado)	Highly Likely	Critical	Small	Less than 6 hrs	Less than 6 hrs	3.0
Wildfire[2]	Likely	Critical	Moderate	Less than 6 hrs	Less than 1 week	3.1
Coastal Erosion[2]	Likely	Limited	Small	More than 24 hrs	Less than 1 week	2.3
Drought	Likely	Minor	Large	More than 24 hrs	More than 1 week	2.5
Extreme Heat	Highly Likely	Limited	Large	More than 24 hrs	Less than 1 week	3.0
Sea Level Rise and other Climate Change Characteristics[2]	Likely	Critical	Large	More than 24 hrs	More than 1 week	3.1
Sinkholes	Unlikely	Limited	Negligible	Less than 6 hrs	More than 1 week	1.9

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Winter Storms and Freeze	Likely	Limited	Large	More than 24 hrs	Less than 1 week	2.7
Earthquake	Unlikely	Minor	Moderate	Less than 6 hrs	Less than 6 hrs	1.7
Tsunami[2]	Unlikely	Limited	Moderate	6 to 12 hrs	Less than 24 hrs	2.0
Technological and Human-Caused Hazards & Threats						
Major Transportation Incidents	Possible	Critical	Negligible	Less than 6 hrs	More than 1 week	2.5
Pandemic Outbreak	Possible	Critical	Moderate	More than 24 hrs	More than 1 week	2.6
Hazardous Materials	Likely	Limited	Negligible	Less than 6 hrs	Less than 24 hrs	2.3
Coastal Oil Spills[2]	Possible	Limited	Small	6 to 12 hrs	More than 1 week	2.3
Nuclear Power Plant[2]	Unlikely	Catastrophic	Small	Less than 6 hours	More than 1 week	2.7
Terrorism	Unlikely	Catastrophic	Negligible	Less than 6 hrs	Less than 6 hrs	2.2
Mass Migration Incident	Possible	Critical	Moderate	6 to 12 hrs	More than 1 week	2.8
Civil Disturbance	Possible	Limited	Small	Less than 6 hrs	Less than 1 week	2.3
Critical Infrastructure Disruption	Possible	Critical	Large	Less than 6 hrs	Less than 1 week	3.0
Special Events	Likely	Minor	Negligible	Less than 6 hrs	Less than 24 hrs	2.0
Red Tide/Algae Bloom[2]	Likely	Limited	Small	More than 24 hrs	More than 1 week	2.4

[1]Severe Storms and Tornadoes hazards average to a score of 2.76 and are therefore considered together as a moderate-risk hazard.

[2]Note: These risks varied by jurisdiction, so the most severe score is shown.

The results from the PRI were classified into three categories based on the assigned risk value:

- High Risk (≥ 3.0) – Widespread potential impact. This ranking carries a high threat to the general population and/or built environment. The potential for damage is widespread.
- Medium Risk (2.0 – 2.9) – Moderate potential impact. This ranking carries a moderate threat level to the general population and/or built environment. Here the potential damage is more isolated and less costly than a more widespread disaster.
- Low Risk (< 2.0) – Minimal potential impact. The occurrence and potential cost of damage to life and property is minimal. This is not a priority hazard.

The high, moderate, and low risk hazards relevant to Collier County are listed below.

High Risk (≥ 3.0)	Flood Tropical Cyclones Wildfire Sea Level Rise Extreme Heat Civil Infrastructure Disruption
Moderate Risk (2.0 – 2.9)	Severe Storms (Thunderstorm, Lightning, Hail, Tornado) Drought Coastal Erosion Winter Storms and Freeze Tsunami Mass Migration Incident Nuclear Power Plant Pandemic Outbreak Major Transportation Incidents Red Tide/Algae Bloom Hazardous Materials Coastal Oil Spills Civil Disturbance Terrorism Special Events
Low Risk (< 2.0)	Sinkholes Earthquake

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Requirement §201.6(c)(2): [The plan shall include] A risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards. Requirement §201.6(c)(2)(i): [The risk assessment shall include a] description of the type…of all natural hazards that can affect the jurisdiction.

Requirement §201.6(c)(2)(i): [The risk assessment shall include a] description of the…location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.

44 CFR Subsection D §201.6(c)(2)(ii): [The risk assessment shall include a] description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community. Plans approved after October 1, 2008 must also address NFIP insured structures that have been repetitively damaged by floods. The plan should describe vulnerability in terms of:
A) The types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas;

(B): An estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(ii)(A) of this section and a description of the methodology used to prepare the estimate; and

(C): Providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

2.1 OVERVIEW

This section describes the Hazard Identification and Risk Assessment process for the development of the Collier County Local Mitigation Strategy. It describes how the County met the above requirements from 44 CFR 201.6 and the following Community Rating System Activity 510 planning steps:

- Planning Step 4: Assess the Hazard
- Planning Step 5: Assess the Problem

As defined by FEMA, risk is a combination of hazard, vulnerability, and exposure. "It is the impact that a hazard would have on people, services, facilities, and structures in a community and refers to the likelihood of a hazard event resulting in an adverse condition that causes injury or damage."

This hazard risk assessment covers all of Collier County, including the unincorporated County and all incorporated jurisdictions participating in this plan.

The risk assessment process identifies and profiles relevant hazards and assesses the exposure of lives, property, and infrastructure to these hazards. The process allows for a better understanding of the potential risk to natural hazards in the county and provides a framework for developing and prioritizing mitigation actions to reduce risk from future hazard events. This risk assessment followed the methodology described in the FEMA publication Understanding Your Risks—Identifying Hazards and Estimating Losses (FEMA 386-2, 2002), which breaks the assessment down to a four-step process:



Data collected through this process has been incorporated into the following sections of this plan:

- Section 2.2: Hazard Identification identifies the natural and human-caused hazards that occur in the planning area.
- Section 2.3: Risk Assessment Methodology and Assumptions summarizes the approach used to develop this risk assessment.
- Section 2.4: Asset Inventory details buildings and critical facilities at risk within the planning area.
- Section 2.5: Hazard Profiles, Analysis, and Vulnerability discusses each hazard, describes past occurrences and the likelihood of future occurrences, and assesses the planning area's exposure to each hazard profiled; considering assets at risk, critical facilities, and future development trends.
- Section 2.6: Conclusions on Hazard Risk summarizes the results of the Priority Risk Index and defines each hazard as a Low, Medium, or High-Risk hazard.

2.2 HAZARD IDENTIFICATION

To identify hazards relevant to the planning area, the LMS working group began with a review of the list of hazards identified in the 2023 State Hazard Mitigation Plan and the 2020 Collier County Local Mitigation Strategy (LMS) as summarized in Table 2.1. The LMS working group used these lists to identify a full range of hazards for potential inclusion in this plan update and to ensure consistency across these planning efforts. All hazards listed below were evaluated for inclusion in this plan update.

Table 2.1 – Full Range of Hazards Evaluated

Hazard	Included in 2023 State HMP?	Included in 2020 Collier County LMS?
Flood	Yes	Yes
Tropical Cyclones	Yes	Yes (Storm Surge)
Severe Storms and Tornadoes	Yes	Yes
Wildfire	Yes	Yes
Coastal Erosion	Yes	Yes
Drought	Yes	Yes
Extreme Heat	Yes	Yes
Sea Level Rise and other Climate Change Characteristics	Yes (Flooding)	Yes
Sink holes	Yes	Yes
Winter Storms and Freeze	Yes	Yes
Earthquake	Yes	Yes
Tsunami	Yes	Yes
Major Transportation Incidents	Yes	Yes
Dam Failure	Yes	No
Pandemic Outbreak	Yes	Yes
Hazardous Materials	Yes	Yes
Coastal Oil Spills	Yes (Hazardous Materials)	Yes
Nuclear Power Plant	Yes	Yes
Terrorism	Yes	Yes
Mass Migration Incident	Yes	Yes
Civil Disturbance	Yes	Yes
Critical Infrastructure Disruption (Cyber)	Yes	Yes
Special Events (Dignitary visits or events of national significance)	No	Yes
Red Tide/Algae Bloom	Yes	Yes
Agricultural Disruption	Yes	No
Space Weather	Yes	No

The LMS working group evaluated the above list of hazards using existing hazard data, past disaster declarations, local knowledge, and information from the 2023 State Plan and the 2020 Collier County Plan to determine the significance of these hazards to the planning area. Significance was measured in general terms and focused on key criteria such as frequency and resulting damage, which includes deaths and injuries, as well as property and economic damage.

One key resource in this effort was the National Oceanic and Atmospheric Administration's National Center for Environmental Information (NCEI), which has been tracking various types of severe weather since 1950. Their Storm Events Database contains an archive by county of destructive storm or weather data and information which includes local, intense and damaging events. NCEI receives storm data from the National Weather Service (NWS), which compiles their information from a variety of

sources, including but not limited to: county, state and federal emergency management officials; local law enforcement officials; SkyWarn spotters; NWS damage surveys; newspaper clipping services; the insurance industry and the general public, among others. The NCEI database contains 413 records of severe weather events that occurred in Collier County in the 24-year period from 2000 through 2023. Table 2.2 summarizes these events.

Table 2.2 – NCEI Severe Weather Reports for Collier County, 2000 – 2023

Type	# of Events	Property Damage	Crop Damage	Deaths	Injuries
Coastal Flood	9	$71,000	$0	0	0
Dense Fog	4	$0	$0	0	0
Drought	78	$0	$0	0	0
Extreme Cold/Wind Chill	7	$0	$34,030,000	0	0
Flash Flood	9	$340,000	$0	0	0
Flood	18	$43,500	$0	0	0
Frost/Freeze	22	$0	$301,030,000	0	0
Funnel Cloud	28	$0	$0	0	0
Hail	45	$500	$0	0	0
Heavy Rain	4	$60,000	$0	0	0
High Wind	2	$5,000	$0	0	0
Hurricane (Typhoon)	9	$2,425,000,000	$0	1	0
Lightning	32	$4,826,600	$0	4	13
Rip Current	1	$0	$0	0	6
Storm Surge/Tide	8	$6,060,000	$0	3	0
Thunderstorm Wind	62	$207,500	$0	0	0
Tornado	27	$906,590	$0	0	2
Tropical Depression	7	$0	$0	0	0
Tropical Storm	7	$70,000	$0	0	0
Waterspout	6	$0	$0	0	0
Wildfire	24	$5,428,000	$0	0	1
Total:	413	$2,443,018,690	$335,063,000	8	22

Source: National Center for Environmental Information Storm Events Database, September 2024

Note: Losses reflect totals for all impacted areas for each event.

The LMS working group also researched past events that resulted in a federal and/or state emergency or disaster declaration for Collier County in order to identify significant hazards. Two types of disaster declarations are provided in the Stafford Disaster Relief and Emergency Assistance Act of 1988: emergency declarations and major disaster declarations. If a disaster is so severe that both the local and state government capacities are exceeded, a federal emergency or disaster declaration allows for the provision of federal assistance.

- Emergency declarations: When federal assistance is needed, the President of the United States can declare an emergency for any occasion or disaster. Emergency declarations aide State and local efforts in providing emergency services that help protect human lives.
- Major disaster declarations: When a local government's capacity has been surpassed, a state disaster declaration may be issued, allowing for the provision of state assistance. Federal and/or state disaster declarations may be granted

when the Governor certifies that the combined local, county, and state resources are insufficient, and the situation is beyond their recovery capabilities.

Records of designated counties for FEMA major disaster declarations start in 1964. Since then, Florida has been designated in 83 major disaster declarations, and Collier County, including the Immokalee Indian Reservation, has been designated in 31 major disaster declarations, as detailed in Table 2.3, and 17 emergency declarations, as detailed in Table 2.4. A few designations including Hurricane Ian, COVID-19 Pandemic, Hurricane Irma and Hurricane Dorian are repeated as one disaster declaration was issued for Collier County and one for the Seminole Tribe Immokalee Reservation.

Table 2.3 – FEMA Major Disaster Declarations, Collier County

Disaster #	Declaration Date	Incident Type	Event Title
4734	8/31/2023	Hurricane	Hurricane Idalia
4680	12/13/2022	Hurricane	Hurricane Nicole
4675	9/30/2022	Hurricane	Hurricane Ian – Seminole Tribe
4673	9/29/2022	Hurricane	Hurricane Ian
4545	5/8/2020	Biological	COVID-19 Pandemic – Seminole Tribe
4486	3/25/2020	Biological	COVID-19 Pandemic
4341	9/27/2017	Hurricane	Hurricane Irma -Seminole Tribe
4337	9/10/2017	Hurricane	Hurricane Irma
4084	10/18/2012	Hurricane	Hurricane Isaac
4068	7/3/2012	Tropical Storm	Tropical Storm Debby
1785	8/24/2008	Tropical Storm	Tropical Storm Fay
1609	10/24/2005	Hurricane	Hurricane Wilma
1602	8/28/2005	Hurricane	Hurricane Katrina
1561	9/26/2004	Hurricane	Hurricane Jeanne
1551	9/16/2004	Hurricane	Hurricane Ivan
1545	9/4/2004	Hurricane	Hurricane Frances
1539	8/13/2004	Severe Storm(s)	Hurricane Charley and Tropical Storm Bonnie
1393	9/28/2001	Tropical Storm	Tropical Storm Gabrielle
1359	2/5/2001	Freeze	Severe freeze
1345	10/4/2000	Severe Storm(s)	Heavy rains and flooding
1306	10/20/1999	Hurricane	Hurricane Irene
1223	6/18/1998	Fire	Extreme Fire Hazard
1195	1/6/1998	Tornado	Tornadoes
1069	10/4/1995	Hurricane	Hurricane Opal
982	3/13/1993	Severe Storm(s)	Tornadoes, flooding, high winds, tides, freezing
955	8/24/1992	Hurricane	Hurricane Andrew
851	1/15/1990	Freeze	Severe freeze
732	3/18/1985	Freeze	Severe freeze
526	1/31/1977	Severe Storm(s)	Severe winter weather
304	3/15/1971	Freeze	Freeze
209	9/14/1965	Hurricane	Hurricane Betsy

Source: FEMA Disaster Declarations Summary, September 2024

Table 2.4 – FEMA Emergency Declarations, Collier County

Disaster #	Dec. Date	Incident Type	Event Title/Description
3622	10/07/2024	Tropical Storm	Tropical Storm Milton
3615	9/24/2024	Tropical Storm	Tropical Storm Helene
3605	8/3/2024	Tropical Storm	Tropical Storm Debby
3596	8/28/2023	Tropical Storm	Tropical Storm Idalia
3588	11/9/2022	Tropical Storm	Tropical Storm Nicole – Seminole Tribe
3587	11/8/2022	Tropical Storm	Tropical Storm Nicole
3584	9/24/2022	Hurricane	Tropical Storm Ian
3561	7/4/2021	Severe Storm	Tropical Storm Elsa
3468	3/13/2020	Biological	COVID-19 Pandemic
3432	3/13/2020	Biological	COVID-19 Pandemic
3420	8/31/2019	Hurricane	Hurricane Dorian – Seminole Tribe
3419	8/30/2019	Hurricane	Hurricane Dorian
3385	9/5/2017	Hurricane	Hurricane Irma
3288	8/21/2008	Severe Storm	Tropical Storm Fay
3259	9/20/2005	Tropical Storm	Tropical Storm Rita
3220	9/5/2005	Hurricane	Hurricane Katrina Evacuation
3150	10/15/1999	Hurricane	Tropical Storm Irene
3139	4/27/1999	Fire	Fire Hazard
3131	9/25/1998	Hurricane	Hurricane Georges

Source: FEMA Disaster Declarations Summary, September 2024

Using the above information and additional discussion, the LMS working group evaluated each hazard's significance to the planning area in order to decide which hazards to include in this plan update. Some hazard titles have been updated either to better encompass the full scope of a hazard or to assess closely related hazards together. Table 2.5 summaries the determination made for each hazard.

Table 2.5 – Hazard Evaluation Results

Hazard	Included in this plan update?	Explanation for Decision
Natural Hazards		
Flood	Yes	The 2020 Collier County plan and 2023 State plan addressed this hazard. As a coastal county, 95 percent of the county is within the 100-year-floodplain, and the county is also vulnerable to localized and stormwater flooding.
Tropical Cyclones	Yes	Both the 2020 Collier County plan and the 2023 State plan addressed Tropical Cyclones. Since 1965, the county has received 22 Major Disaster declarations from FEMA for Hurricanes/Tropical storms.
Severe Storms and Tornadoes	Yes	The 2020 Collier County plan profiled these hazards together. The County experienced 89 thunderstorm wind and tornado events causing over $1.1m in damages.
Wildfire	Yes	The 2020 Collier County plan as well as the 2023 State plan addressed this hazard. According to NCEI, in the past 24 years Collier County has had 24 wildfire events.
Coastal Erosion	Yes	The 2015 Collier County Floodplain Management Plan classified erosion as a priority hazard with a high likelihood of future occurrence.

Hazard	Included in this plan update?	Explanation for Decision
Drought	Yes	Both the 2020 Collier County plan and the 2023 State plan addressed Drought. NCEI records 78 drought events between 2000-2023.
Extreme Heat	Yes	Both the 2020 Collier County plan and the 2023 State plan addressed Extreme Heat. Data shows that it is typical to have maximum temperature days over 90°F for the majority of the year (April-October) in Collier County.
Sea Level Rise and other Climate Change Characteristics	Yes	Sea Level Rise and Climate Change were addressed in the 2020 Collier County floodplain management plan as well as the 2023 State plan. NOAA's Sea Level Rise Viewer shows the County will experience impacts from even just one foot of sea level rise.
Sinkholes	Yes	Both the 2020 Collier County plan and the 2023 State plan addressed Sinkholes. There have been four recorded sinkholes in Collier County between 2000-2023.
Winter Storms and Freeze	Yes	Both the 2020 Collier County plan and the 2023 State plan addressed winter storms and freeze. NCEI records 7 extreme cold/wind chill events and 22 frost/freeze events between 2000-2023.
Earthquake	Yes	Earthquakes were addressed by both the 2020 Collier County plan and the 2023 State plan. Although no major earthquake events have occurred in Collier County since 1985, the LMS working group chose to include it in this update.
Tsunami	Yes	Tsunamis were addressed by both the 2020 Collier County plan and the 2023 State plan. Florida has experienced four recorded tsunami events, all of which occurred along its Atlantic Coast.
Technological and Human-Caused Hazards & Threats		
Major Transportation Incidents	Yes	Both the 2020 Collier County plan and the 2023 State plan addressed major transportation incidents. The plan area has many bridges and major transportation routes.
Pandemic Outbreak	Yes	Both the 2020 Collier County plan and the 2023 State plan addressed Pandemic Outbreak. The LMS working group chose to include it in this update.
Hazardous Materials	Yes	The 2020 Collier County plan as well as the 2023 State plan addressed this hazard. The County has 13 sites listed on the Toxic Release Inventory.
Coastal Oil Spills	Yes	The 2020 Collier County plan as well as the 2023 State plan addressed this hazard. The state plan addressed Coastal Oil Spills within the Hazardous Materials hazard profile.
Nuclear Power Plant	Yes	The 2020 Collier County plan as well as the 2023 State plan addressed this hazard. The southeastern corner of the County is in the Turkey Point Nuclear Power Facility Ingestion Exposure Pathway.
Terrorism	Yes	Both the 2020 Collier County plan and the 2023 State plan addressed Terrorism. There have not been any instances of terrorism in Collier County. However, the LMS working group felt this threat warrants inclusion in the plan.
Mass Migration Incident	Yes	The 2020 Collier County plan as well as the 2023 State plan addressed this hazard. There have been several migration waves over the years in Collier County.

Hazard	Included in this plan update?	Explanation for Decision
Civil Disturbance	Yes	Both the 2020 Collier County plan and the 2023 State plan addressed Civil Disturbance. There are documented events that indicate that the southern peninsula region of Florida is not immune to riots, protests, and social upheaval.
Critical Infrastructure Disruption (Cyber)	Yes	Both the 2020 Collier County plan and the 2023 State plan addressed Critical Infrastructure Disruption (Cyber). Privacy Rights Clearinghouse reports a total of 19.6 million record breaches in the State of Florida between 2005-2023.
Special Events (Dignitary visits or events of national significance)	Yes	The 2020 Collier County plan addressed Special Events, but the 2018 State plan did not. The LMS working group chose to include it in this update.
Red Tide/Algae Bloom	Yes	Both the 2020 Collier County plan and the 2023 State plan addressed Red Tide/ Algae Bloom. The most recent red tide to impact Collier County occurred in September 2022.
Dam Failure	No	The 2020 Collier County plan did not address Dam Failure, but the 2023 State plan did. The LMS working group chose not to include it in this update.
Agricultural Disruption	No	The 2020 Collier County plan did not address Agricultural Disruption, but the 2023 State plan did. The LMS working group chose not to include it in this update.
Space Weather	No	The 2020 Collier County plan did not address Space Weather, but the 2023 State plan did. The LMS working group chose not to include it in this update.

2.3 RISK ASSESSMENT METHODOLOGY AND ASSUMPTIONS

The Disaster Mitigation Act of 2000 requires that the LMS working group evaluate the risks associated with each of the hazards identified in the planning process. Each hazard was evaluated to determine its probability of future occurrence and potential impact. A vulnerability assessment was conducted for each hazard using either quantitative or qualitative methods depending on the available data, to determine its potential to cause significant human and/or monetary losses. A consequence analysis was also completed for each hazard.

Each hazard is profiled in the following format:

- **HAZARD DESCRIPTION**

  This section provides a description of the hazard, including discussion of its speed of onset and duration, as well as any secondary effects followed by details specific to the Collier County planning area.

- **LOCATION**

  This section includes information on the hazard's physical extent, with mapped boundaries where applicable.

- **EXTENT**

  This section includes information on the hazard extent in terms of magnitude, describe how the severity of the hazard can be measured. Where available, the most severe event on record used as a frame of reference.

- **HISTORICAL OCCURRENCES**

  This section contains information on historical events, including the location and consequences of all past events on record within or near the Collier County planning area.

- **PROBABILITY OF FUTURE OCCURRENCE**

  This section gauges the likelihood of future occurrences based on past events and existing data. The frequency is determined by dividing the number of events observed by the number of years on record and multiplying by 100. This provides the percent chance of the event happening in any given year according to historical occurrence (e.g. 10 winter storm events over a 30-year period equates to a 33 percent chance of experiencing a severe winter storm in any given year).

- **CLIMATE CHANGE**

  Where applicable, this section discusses how climate change may or may not influence the risk posed by the hazard on the planning area in the future.

- **VULNERABILITY ASSESSMENT**

This section quantifies, to the extent feasible using best available data, assets at risk to natural hazards and potential loss estimates. People, properties and critical facilities, and environmental assets that are vulnerable to the hazard are identified. Future development is also discussed in this section, including how exposure to the hazard may change in the future or how development may affect hazard risk.

The vulnerability assessments followed the methodology described in the FEMA publication Understanding Your Risks—Identifying Hazards and Estimating Losses (August 2001). The vulnerability assessment first describes the total vulnerability and values at risk and then discusses vulnerability by hazard. Data used to support this assessment included the following:

- Geographic Information System (GIS) datasets, including building footprints, topography, aerial photography, and transportation layers;
- Hazard layer GIS datasets from state and federal agencies;
- Written descriptions of inventory and risks provided by the 2023 Florida Enhanced State Hazard Mitigation Plan;
- Written descriptions of inventory and risks provided by the 2020 Collier County Local Mitigation Strategy and the 2015 Collier County Floodplain Management Plan;
- Exposure and vulnerability estimates derived using local parcel and building data; and

- Crop insurance claims by cause from USDA's Risk Management Agency.

Two distinct risk assessment methodologies were used in the formation of the vulnerability assessment. The first consists of a quantitative analysis that relies upon best available data and technology, while the second approach consists of a qualitative analysis that relies on local knowledge and rational decision making. The quantitative analysis involved the use of FEMA's Hazus-MH, a nationally applicable standardized set of models for estimating potential losses from earthquakes, floods, and hurricanes. Hazus uses a statistical approach and mathematical modeling of risk to predict a hazard's frequency of occurrence, and estimated impacts based on recorded or historic damage information. The Hazus risk assessment methodology is parametric, in that distinct hazard and inventory parameters—such as wind speed and building type—were modeled using the Hazus software to determine the impact on the built environment. Collier County's GIS-based risk assessment was completed using data collected from local, regional and national sources that included Collier County, Florida DEM, and FEMA.

Vulnerability can be quantified in those instances where there is a known, identified hazard area, such as a mapped floodplain. In these instances, the numbers and types of buildings subject to the identified hazard can be counted and their values tabulated. Other information can be collected regarding the hazard area, such as the location of critical facilities, historic structures, and valued natural resources (e.g., an identified wetland or endangered species habitat). Together, this information conveys the vulnerability of that area to that hazard.

- **PRIORITY RISK INDEX**

The conclusions drawn from the hazard profiling and vulnerability assessment process can be used to prioritize all potential hazards to the Collier County planning area. The Priority Risk Index (PRI) was applied for this purpose because it provides a standardized numerical value so that hazards can be compared against one another (the higher the PRI value, the greater the hazard risk). PRI values are obtained by assigning varying degrees of risk to five categories for each hazard (probability, impact, spatial extent, warning time, and duration). Each degree of risk was assigned a value (1 to 4) and a weighting factor as summarized in Table 2.6.

PRI ratings by category for the planning area as a whole are provided throughout each hazard profile. Ratings specific to each jurisdiction are provided at the end of each hazard profile. The results of the risk assessment and overall PRI scoring are provided in Section 0 Conclusions on Hazard Risk.

The purpose of the PRI is to categorize and prioritize all potential hazards for the Collier County planning area as high, moderate, or low risk. The summary hazard classifications generated using the PRI allows for the prioritization of those high and moderate hazard risks for mitigation planning purposes.

Table 2.6 – Priority Risk Index

RISK ASSESSMENT CATEGORY	LEVEL	DEGREE OF RISK CRITERIA	INDEX	WEIGHT
PROBABILITY What is the likelihood of a hazard event occurring in a given year?	UNLIKELY	LESS THAN 1% ANNUAL PROBABILITY	1	30%
	POSSIBLE	BETWEEN 1 & 10% ANNUAL PROBABILITY	2	
	LIKELY	BETWEEN 10 &100% ANNUAL PROBABILITY	3	
	HIGHLY LIKELY	100% ANNUAL PROBABILTY	4	
IMPACT In terms of injuries, damage, or death, would you anticipate impacts to be minor, limited, critical, or catastrophic when a significant hazard event occurs?	MINOR	VERY FEW INJURIES, IF ANY. ONLY MINOR PROPERTY DAMAGE & MINIMAL DISRUPTION ON QUALITY OF LIFE. TEMPORARY SHUTDOWN OF CRITICAL FACILITIES.	1	30%
	LIMITED	MINOR INJURIES ONLY. MORE THAN 10% OF PROPERTY IN AFFECTED AREA DAMAGED OR DESTROYED. COMPLETE SHUTDOWN OF CRITICAL FACILITIES FOR > 1 DAY	2	
	CRITICAL	MULTIPLE DEATHS/INJURIES POSSIBLE. MORE THAN 25% OF PROPERTY IN AFFECTED AREA DAMAGED OR DESTROYED. COMPLETE SHUTDOWN OF CRITICAL FACILITIES FOR > 1 WEEK.	3	
	CATASTROPHIC	HIGH NUMBER OF DEATHS/INJURIES POSSIBLE. MORE THAN 50% OF PROPERTY IN AFFECTED AREA DAMAGED OR DESTROYED. COMPLETE SHUTDOWN OF CRITICAL FACILITIES > 30 DAYS.	4	
SPATIAL EXTENT How large of an area could be impacted by a hazard event? Are impacts localized or regional?	NEGLIGIBLE	LESS THAN 1% OF AREA AFFECTED	1	20%
	SMALL	BETWEEN 1 & 10% OF AREA AFFECTED	2	
	MODERATE	BETWEEN 10 & 50% OF AREA AFFECTED	3	
	LARGE	BETWEEN 50 & 100% OF AREA AFFECTED	4	
WARNING TIME Is there usually some lead time associated with the hazard event? Have warning measures been implemented?	MORE THAN 24 HRS	SELF DEFINED	1	10%
	12 TO 24 HRS	SELF DEFINED	2	
	6 TO 12 HRS	SELF DEFINED	3	
	LESS THAN 6 HRS	SELF DEFINED	4	

RISK ASSESSMENT CATEGORY	LEVEL	DEGREE OF RISK CRITERIA	INDEX	WEIGHT
DURATION How long does the hazard event usually last?	LESS THAN 6 HRS	SELF DEFINED	1	10%
	LESS THAN 24 HRS	SELF DEFINED	2	
	LESS THAN 1 WEEK	SELF DEFINED	3	
	MORE THAN 1 WEEK	SELF DEFINED	4	

The sum of all five risk assessment categories equals the final PRI value, demonstrated in the equation below (the highest possible PRI value is 4.0).

PRI = [(PROBABILITY x .30) + (IMPACT x .30) + (SPATIAL EXTENT x .20) + (WARNING TIME x .10) + (DURATION x .10)]

2.4 ASSET INVENTORY

An inventory of assets was compiled to identify exposure to the identified hazards and to assess vulnerability. Assets primarily include buildings, critical facilities, and civil infrastructure. Building footprints, parcel data containing occupancy and building value data, and a critical facility inventory were provided by Collier County. By identifying the type and number of assets that exist in the County and their location relative to known hazard areas, the risk and vulnerability of these assets could be assessed.

Changes in Development and Land Use Trends

Collier County has experienced significant development and land use changes that have influenced the community's vulnerability to hazards. Over the years, growth has been concentrated in coastal and inland areas, with an increase in residential, commercial, and infrastructure development. Key trends include:

- **Coastal Development:** Expansion of residential and commercial properties along the coastline has increased exposure to flooding, storm surge, and sea level rise. Efforts to mitigate these risks have included stricter building codes and floodplain management practices.
- **Urban Expansion:** Growth in inland areas has led to increased impervious surfaces, contributing to stormwater runoff and localized flooding challenges. New developments have incorporated stormwater management improvements to address these concerns.
- **Critical Infrastructure Expansion:** New transportation networks, energy facilities, and public services have been introduced to support population growth. These expansions require additional mitigation measures to reduce exposure to hazards such as hurricanes and wildfires.
- **Land Conservation Efforts:** In response to rising vulnerabilities, Collier County has implemented land-use policies aimed at preserving natural buffers, such as wetlands and green spaces, which help absorb floodwaters and reduce wildfire spread.

- **Future Development Projections:** Anticipated growth areas include planned developments in high-risk zones, which will require adaptive strategies to minimize future hazard exposure, including elevation requirements and resilient infrastructure design.

2.4.1 BUILDING EXPOSURE

Property exposure includes all improved property in Collier County and its incorporated jurisdictions according to parcel and building footprint data provided by Collier County. The building inventory is provided in Table 2.7.

Table 2.7 – Collier County Building Exposure by Jurisdiction and Occupancy

Occupancy	Building Count	Structure Value	Estimated Content Value	Total Value
Everglades City	477	$71,841,315	$49,806,149	$121,647,464
Commercial	98	$27,710,062	$27,710,062	$55,420,124
Government	2	$40,338	$40,338	$80,676
Industrial	1	$1,704	$2,556	$4,260
Religious	1	$17,175	$17,175	$34,350
Residential	375	$44,072,036	$22,036,018	$66,108,054
Seminole Tribe Immokalee Reservation	127	$43,311,514	$29,744,052	$73,055,566
Commercial	35	$16,176,590	$16,176,590	$32,353,179
Residential	92	$27,134,924	$13,567,462	$40,702,387
Marco Island	8,502	$5,012,220,005	$2,805,539,141	$7,817,759,146
Commercial	658	$596,239,923	$596,239,923	$1,192,479,845
Government	4	$2,598,779	$2,598,779	$5,197,558
Religious	2	$19,575	$19,575	$39,150
Residential	7,838	$4,413,361,728	$2,206,680,864	$6,620,042,593
Naples	8,654	$10,692,482,638	$6,220,018,166	$16,912,500,804
Commercial	1,215	$1,746,938,672	$1,746,938,672	$3,493,877,344
Government	8	$387,031	$387,031	$774,062
Industrial	4	$92,836	$139,254	$232,090
Religious	5	$42,318	$42,318	$84,636
Residential	7,422	$8,945,021,781	$4,472,510,890	$13,417,532,671
Unincorporated Collier County	125,663	$48,718,674,351	$28,181,631,427	$76,900,305,778
Agriculture	101	$2,907,501	$2,907,501	$5,815,002
Commercial	7,639	$7,600,334,605	$7,600,334,605	$15,200,669,211
Education	5	$2,090,356	$2,090,356	$4,180,712
Government	143	$9,248,450	$9,248,450	$18,496,900
Industrial	48	$14,645,155	$21,967,733	$36,612,888
Religious	14	$717,280	$717,280	$1,434,560
Residential	117,713	$41,088,731,004	$20,544,365,502	$61,633,096,505
Countywide Total	143,423	$64,538,529,823	$37,286,738,934	$101,825,268,757
Agriculture	101	$2,907,501	$2,907,501	$5,815,002
Commercial	9,645	$9,987,399,852	$9,987,399,852	$19,974,799,704
Education	5	$2,090,356	$2,090,356	$4,180,712

Occupancy	Building Count	Structure Value	Estimated Content Value	Total Value
Government	157	$12,274,598	$12,274,598	$24,549,196
Industrial	53	$14,739,695	$22,109,543	$36,849,238
Religious	22	$796,348	$796,348	$1,592,696
Residential	133,440	$54,518,321,473	$27,259,160,736	$81,777,482,209

Source: Collier County parcel data, 2024

Note: Content value estimations are generally based on the FEMA Hazus methodology of estimating value as a percent of improved structure values by property type. The residential property type assumes a content replacement value equal to 50% of the building value. Agricultural and commercial property types assume a content replacement value equal to 100% of the building value. The industrial property type assumes a content replacement value equal to 150% of the building value.

2.4.2 CRITICAL FACILITIES AND INFRASTRUCTURE EXPOSURE

Of significant concern with respect to any disaster event is the location of critical facilities and infrastructure in the planning area. Critical facilities are often defined as those essential services and lifelines that, if damaged during an emergency event, would result in severe consequences to public health, safety, and welfare. Critical facility information is regularly updated by the County. These facilities were identified and verified by the LMS working group. Critical facilities and infrastructure in Collier County are listed by type in Table 2.8. Critical facility locations are shown in Figure 2.1 through Figure 2.5.

Table 2.8 – Critical Facilities and Infrastructure in Collier County

Jurisdiction	Communications	Energy	Food, Hydration, Shelter	Hazardous Materials	Health and Medical	Safety and Security	Transportation	Water Systems	Total
Unincorporated Collier County	24	111	36	74	43	54	19	41	402
Everglades City	1	3	2	2	0	2	1	1	12
Seminole Tribe Immokalee Reservation	0	0	0	0	0	0	0	5	5
Marco Island	0	8	4	2	2	5	0	1	22
Naples	5	8	8	5	9	13	2	4	54
Countywide Total	30	130	50	83	54	74	22	52	495

Source: Collier County

Figure 2.1 – Critical Facilities Overview

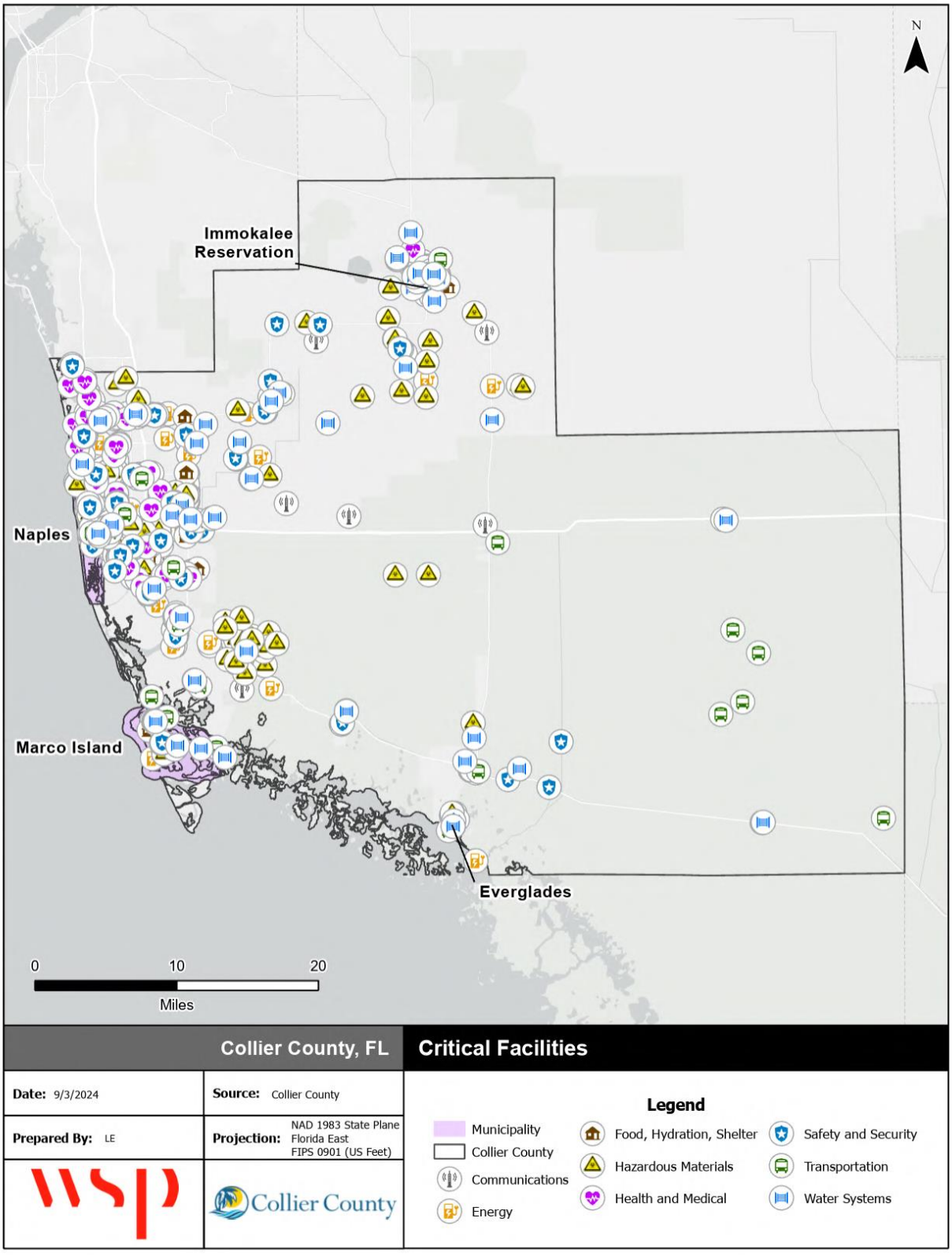


Figure 2.2 – Critical Facilities, Everglades City

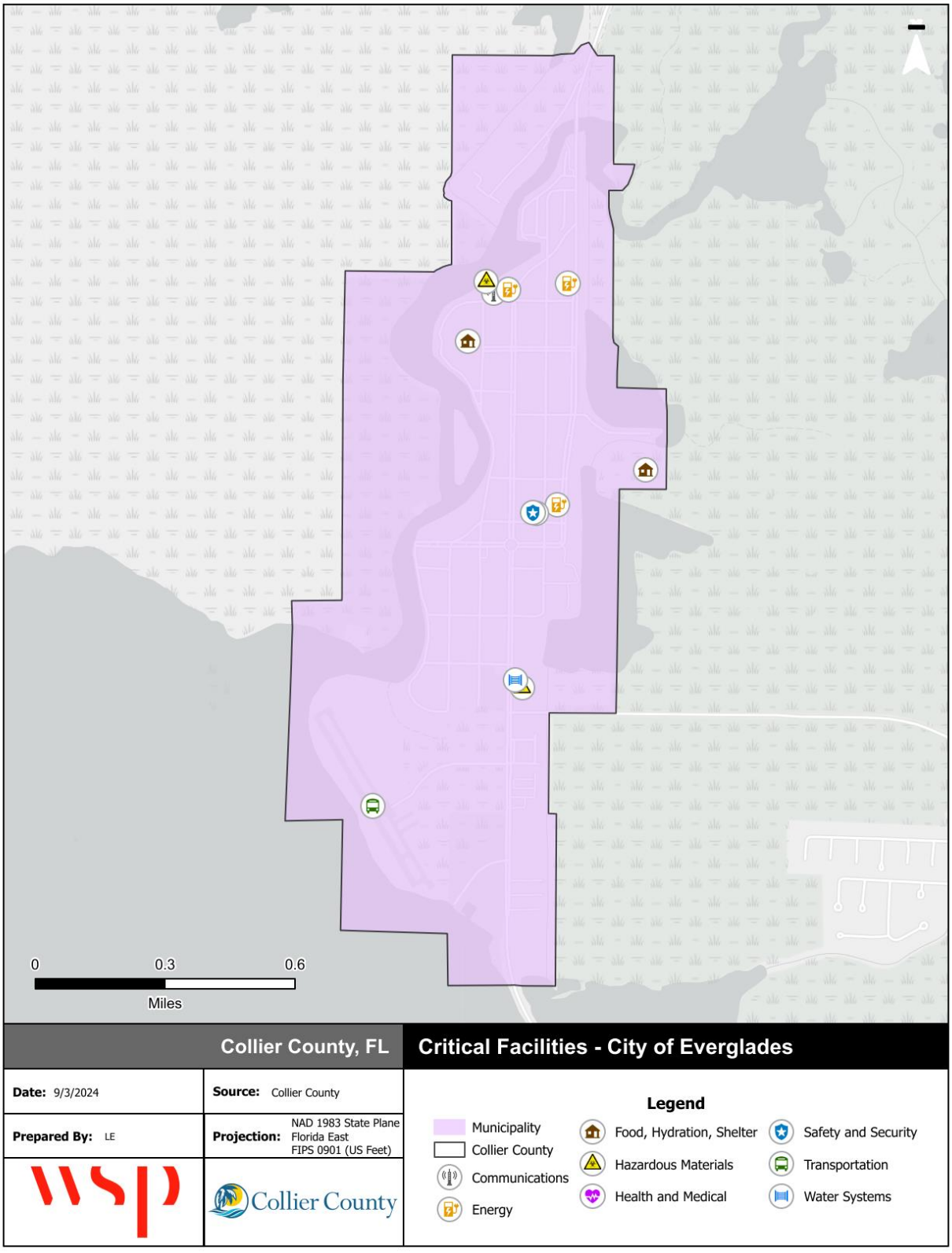


Figure 2.3 – Critical Facilities, Seminole Tribe Immokalee Reservation

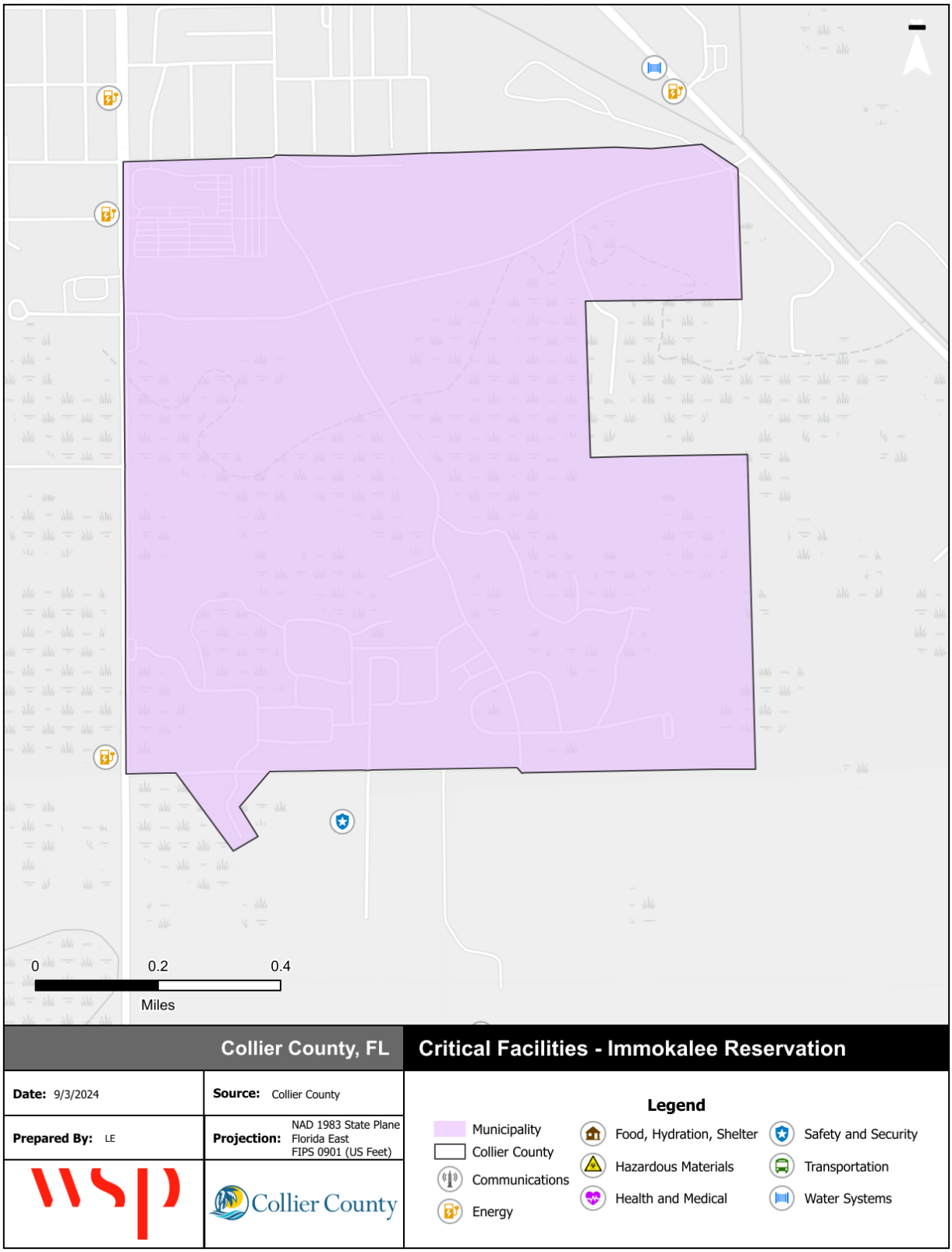


Figure 2.4 – Critical Facilities, Marco Island

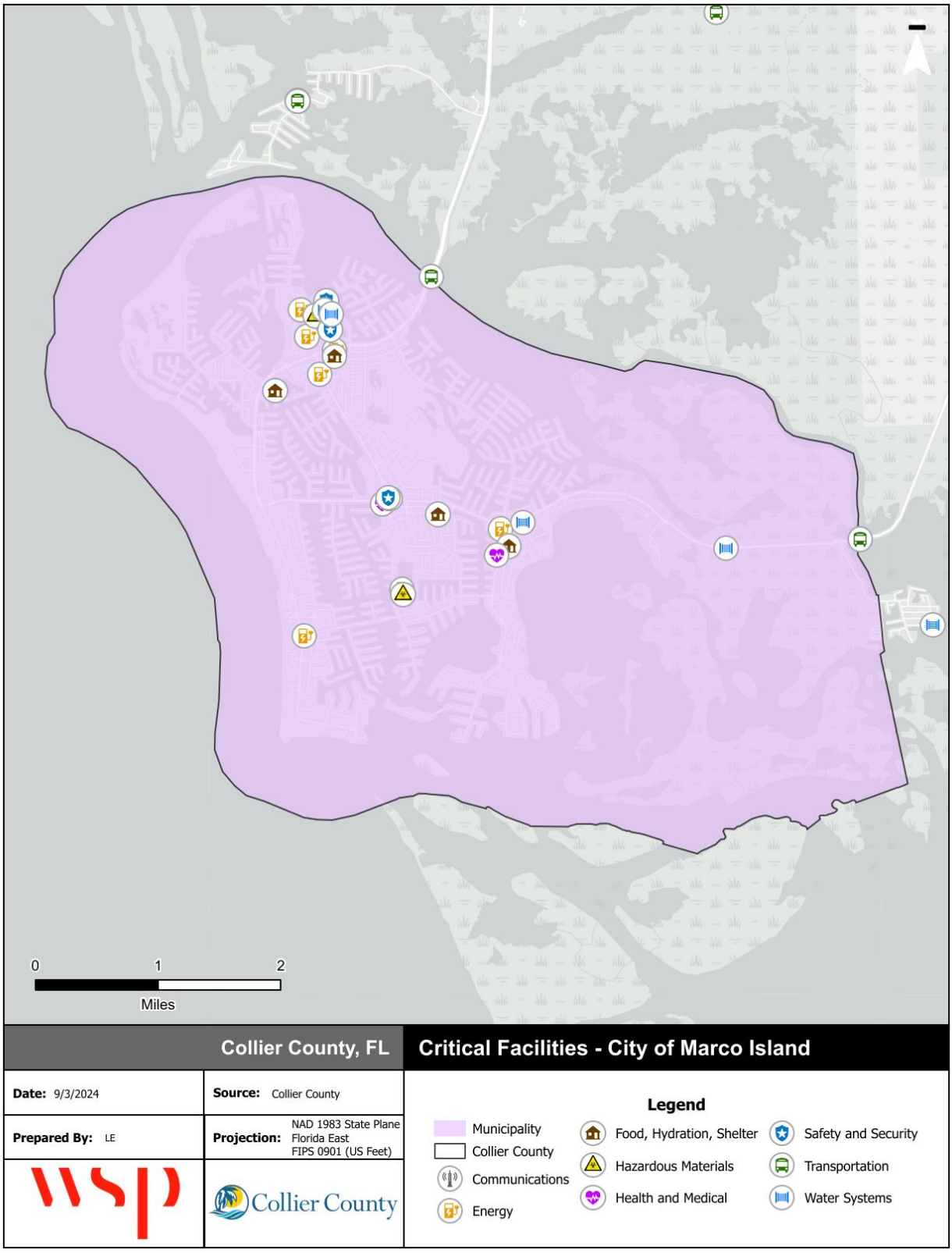
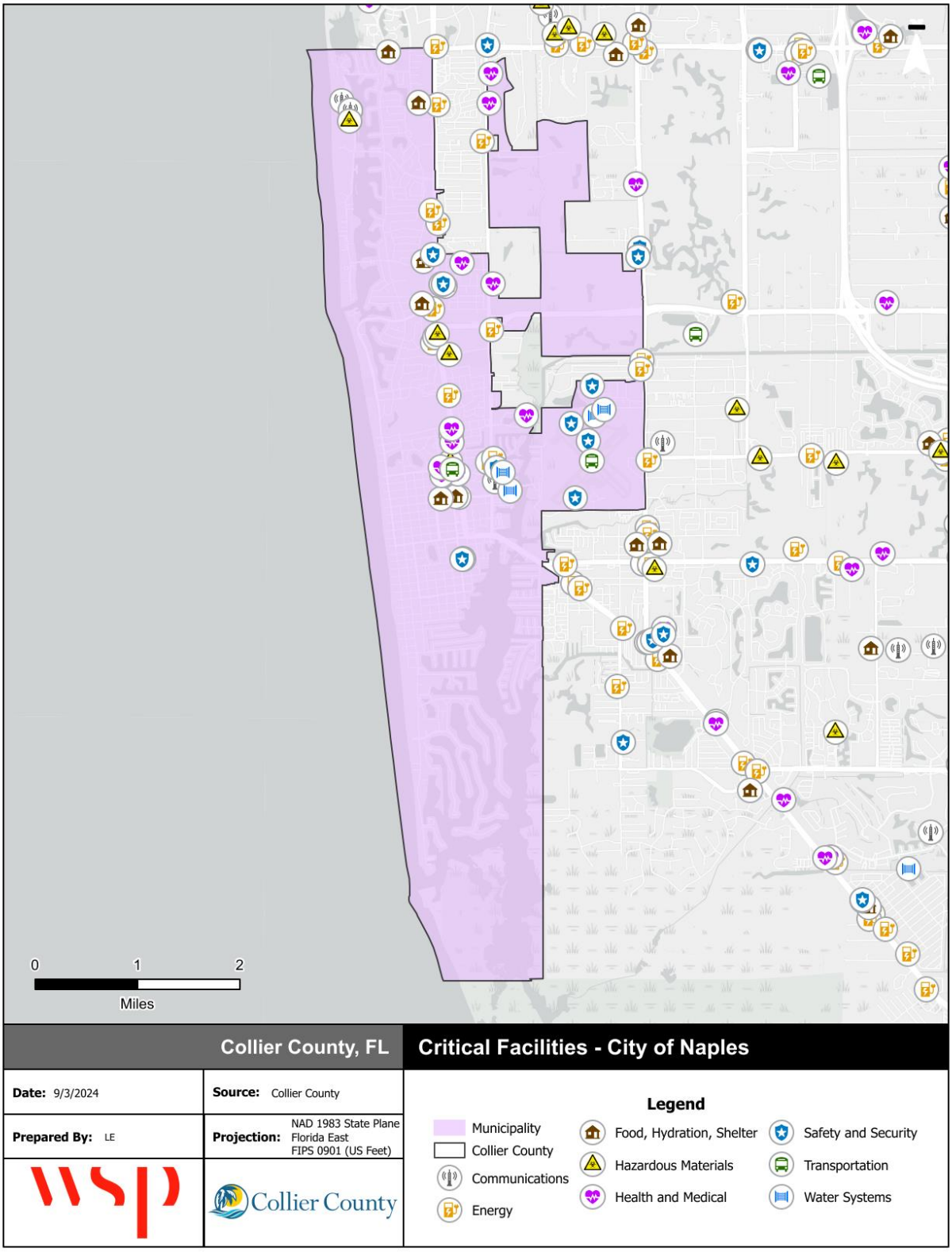


Figure 2.5 – Critical Facilities, Naples



2.5 HAZARD PROFILES, ANALYSIS, AND VULNERABILITY

2.5.1 FLOOD

HAZARD DESCRIPTION

Flooding is defined by the rising and overflowing of water onto normally dry land. As defined by FEMA, a flood is a general and temporary condition of partial or complete inundation of two or more acres of normally dry land area or of two or more properties. Flooding can result from an overflow of inland waters or an unusual accumulation or runoff of surface waters from any source.

Flooding causes more damage in the United States than any other severe weather related event, an average of $5 billion a year. Approximately 90 percent of presidentially declared disasters result from flood-related natural hazard events. Taken as a whole, more frequent, localized flooding problems that do not meet federal disaster declaration thresholds ultimately cause most damages across the United States.

SOURCES AND TYPES OF FLOODING

Per the effective Flood Insurance Study (FIS) for Collier County, revised February 8, 2024, flooding results from two major sources. Coastal areas are subject to inundation from ocean surges, and inland areas can become flooded when rainfall accumulates in low, flat areas. Rainfall primarily occurs during thunderstorms in the summer months, with additional rainfall resulting from the passage of hurricanes. A transition region near the coast is vulnerable to both rainfall and ocean surge flooding. Coastal lands typically lie below an elevation of 9 feet and are subject to flooding from hurricanes and tropical storms.

The general topography of Collier County is extremely flat, with land slopes on the order of 1 foot per mile to 0.5 foot per mile in the interior regions. There are no major natural streams, such as those found in areas of steeper topography. Rather, flow occurs over wide, flat areas, in sloughs, and through manmade canal systems. Natural, well-drained channels are apparent only close to the coast. The lack of steep slopes precludes rapid runoff; therefore, water accumulates in ponded areas and slowly infiltrates the groundwater system or sluggishly drains over the land.

Coastal Tidal Flooding: All lands bordering the Gulf Coast are susceptible to tidal effects and flooding. Coastal land such as sand bars, barrier islands and deltas provide a buffer zone to help protect human life and real property relative to the sea much as flood plains provide a buffer zone along rivers and other bodies of water. Coastal floods usually occur because of abnormally high tides or tidal waves, storm surge and heavy rains in combination with high tides, tropical storms and hurricanes.

Overland Sheet Flow: Due to the relative flatness of Collier County’s topography, historical water flow has always been shallow overland sheet flow during the wet season, when this flow enters sloughs and the man-made canal system.

Shallow Ponding: Because much of the County is flat, whatever rainfall doesn’t she flow from an area tends to pond and percolate into the ground, causing water tables to rise

during the wet season to within a foot or less of the ground in most of Collier County, so there is little soil storage.

Other forms of flooding in the county might include:

Flash or Rapid Flooding: A flash flood occurs when water levels rise at an extremely fast rate as a result of intense rainfall over a brief period, possibly from slow-moving intense thunderstorms and sometimes combined with saturated soil, or impermeable surfaces. Flash flooding can happen in Special Flood Hazard Areas (SFHAs) as delineated by the National Flood Insurance Program (NFIP) and can also happen in areas not associated with floodplains. Flash flood hazards caused by surface water runoff are most common in urbanized areas, where greater population density generally equates to more impervious surface (e.g., pavement and buildings) which increases the amount of surface water generated.

Flash flooding is a dangerous form of flooding which can reach full peak in only a few minutes. Rapid onset allows little or no time for protective measures. Flash flood waters move at very fast speeds and can move boulders, tear out trees, scour channels, destroy buildings, and obliterate bridges. Flash flooding can result in higher loss of life, both human and animal, than slower developing river and stream flooding.

Localized/Stormwater Flooding: Localized stormwater flooding can occur throughout Collier County. Localized stormwater flooding occurs when heavy rainfall and an accumulation of runoff overburden the stormwater drainage system. The cause of localized stormwater flooding in Collier County can be attributed to its generally flat topography, among other factors.

Localized flooding may be caused by the following issues:

- **Inadequate Capacity** – An undersized/under capacity pipe system can cause water to back-up behind a structure which can lead to areas of ponded water and/or overtopping of banks.
- **Clogged Inlets** – Debris covering the asphalt apron and the top of grate at catch basin inlets may contribute to an inadequate flow of stormwater into the system. Debris within the basin itself may also reduce the efficiency of the system by reducing the carrying capacity.
- **Blocked Drainage Outfalls** – Debris blockage or structural damage at drainage outfalls may prevent the system from discharging runoff, which may lead to a back-up of stormwater within the system.
- **Improper Grade** – Poorly graded asphalt around catch basin inlets may prevent stormwater from entering the catch basin as designed. Areas of settled asphalt may create low spots within the roadway that allow for areas of ponded water.

While localized flooding may not be as destructive as coastal flooding, it is a chronic problem. The repetitive damage caused by such flooding can add up. Sewers may back up, yards can be inundated, and homes, businesses and vehicles can be flooded. Drainage and sewer systems not designed to carry the capacity currently needed to handle increased storm runoff can cause water to back into basements and damage

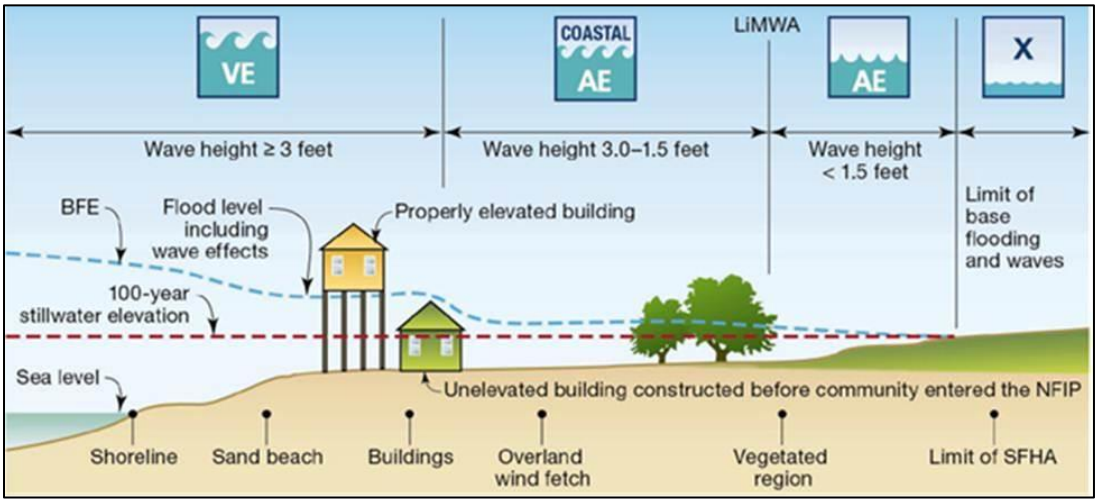
mechanical systems. These impacts, and other localized flooding impacts, can create public health and safety concerns.

In addition to these different types of flooding, flooding in Collier County is a factor of the amount and timing of rainfall and the tide cycle elevation. The amount of rainfall occurring in March would not have the same flooding effect if the same amount occurred in September. During the dry season, the water table elevation typically drops to several feet below natural ground elevations. This allows for larger storage volume in the soil, lakes, canals, ditches, and swales. During the wet season, however, the water table elevation is often near the natural ground surface, lakes are filled, and ditches are flowing. The rainfall added to such conditions creates more stormwater runoff.

FLOODING AND FLOODPLAINS

In coastal areas, flooding occurs due to high tides, tidal waves, storm surge, or heavy rains. In these areas, flood hazards typically include the added risk of wave action delineated by the VE Zone and Coastal AE Zone. Wave height and intensity decreases as floodwaters move inland. Figure 2.6 shows the typical coastal floodplain and the breakdown of flood zones in these settings. These flood zones are discussed further in Table 2.9.

Figure 2.6 – Characteristics of a Coastal Floodplain



Source: FEMA

In its common usage, the floodplain most often refers to that area that is inundated by the "100-year flood," which is the flood that has a 1% chance in any given year of being equaled or exceeded. The 500-year flood is the flood that has a 0.2 percent chance of being equaled or exceeded in any given year. The potential for flooding can change and increase through various land use changes and changes to land surface, which result in a change to the floodplain. A change in environment can create localized flooding problems inside and outside of natural floodplains by altering or confining natural drainage channels. These changes are most often created by human activity.

The 100-year flood, which is the minimum standard used by most federal and state agencies, is used by the National Flood Insurance Program (NFIP) as the standard for floodplain management and to determine the need for flood insurance. Participation in the NFIP requires adoption and enforcement of a local floodplain management ordinance which is intended to prevent unsafe development in the floodplain, thereby reducing future flood damages. Participation in the NFIP allows for the federal government to make flood insurance available within the community as a financial protection against flood losses. Since floods have an annual probability of occurrence, have a known magnitude, depth and velocity for each event, and in most cases, have a map indicating where they will likely occur, they are in many ways often the most predictable and manageable hazard.

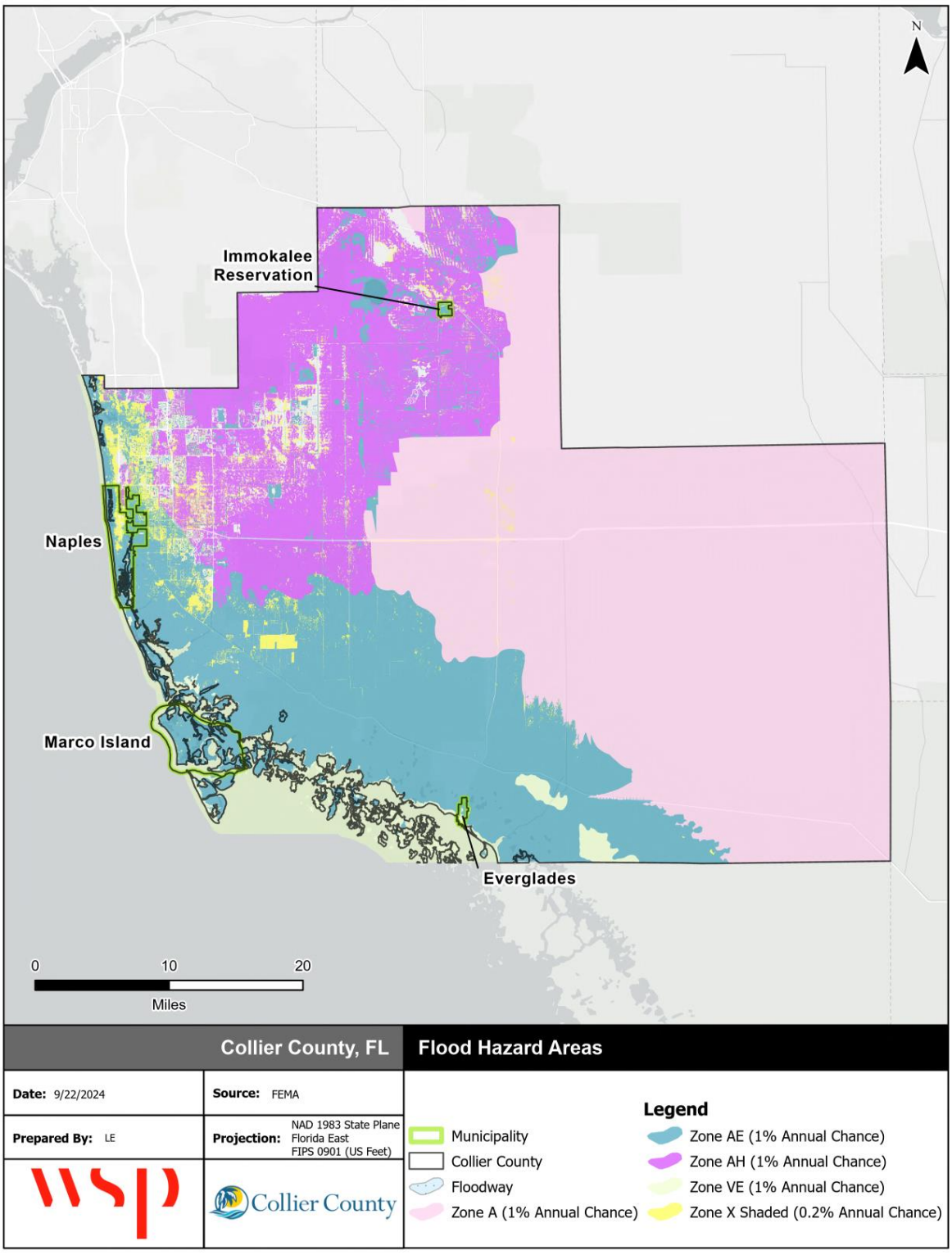
- *Warning Time: 3 – 6 to 12 hours*
- *Duration: 3 – Less than 1 week*

LOCATION

Figure 2.7 through Figure 2.11 reflect the effective mapped flood insurance zones for Collier County and each participating jurisdiction. All of Collier County and its jurisdictions are exposed to flood risk, either from the 1%-annual-chance flood or a larger magnitude flood, or from storm surge, sea level rise, or stormwater flooding.

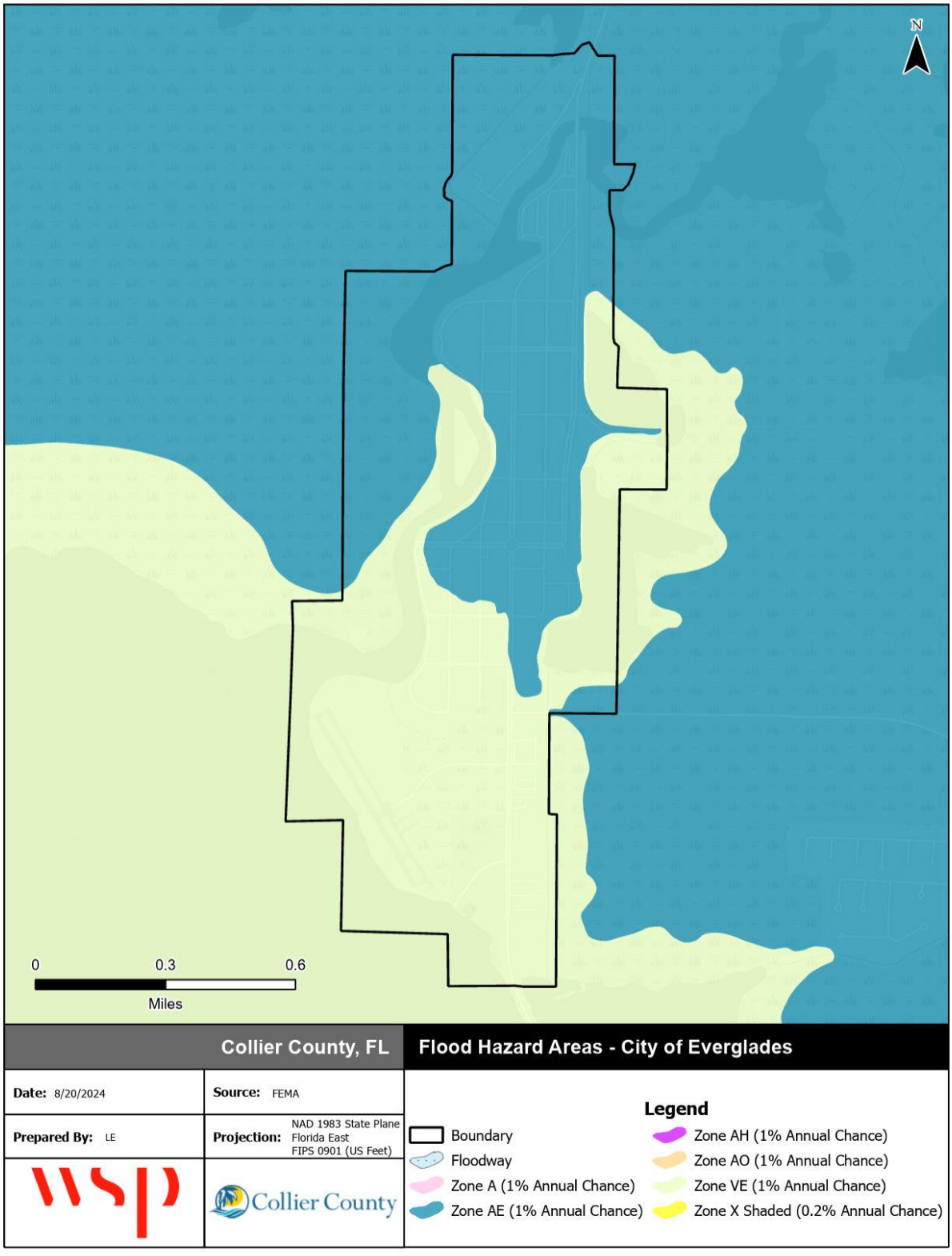
- *Spatial Extent: 4 – Large*

Figure 2.7 – FEMA Flood Hazard Areas in Collier County



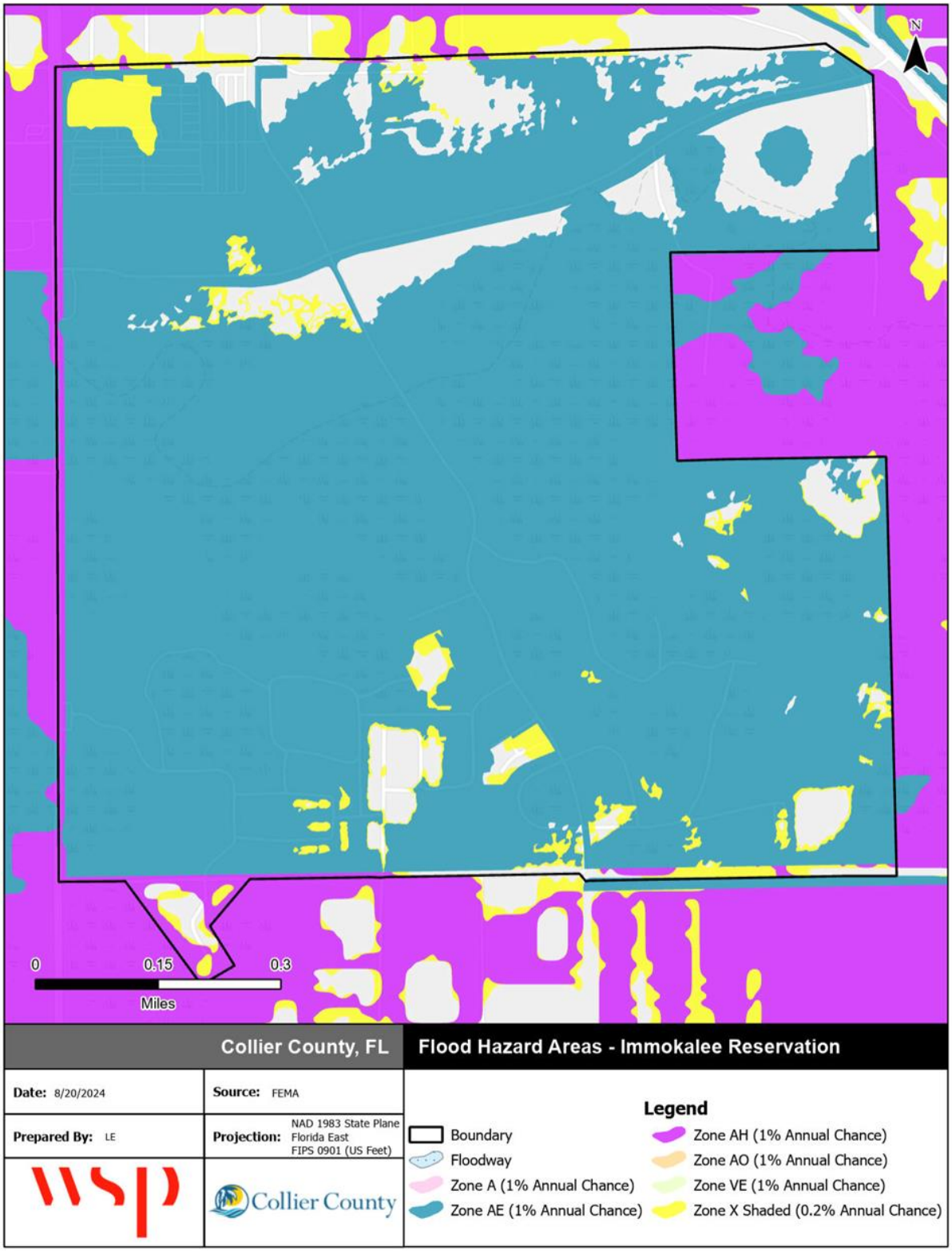
Source: FEMA Effective DFIRM

Figure 2.8 – FEMA Flood Hazard Areas, Everglades City



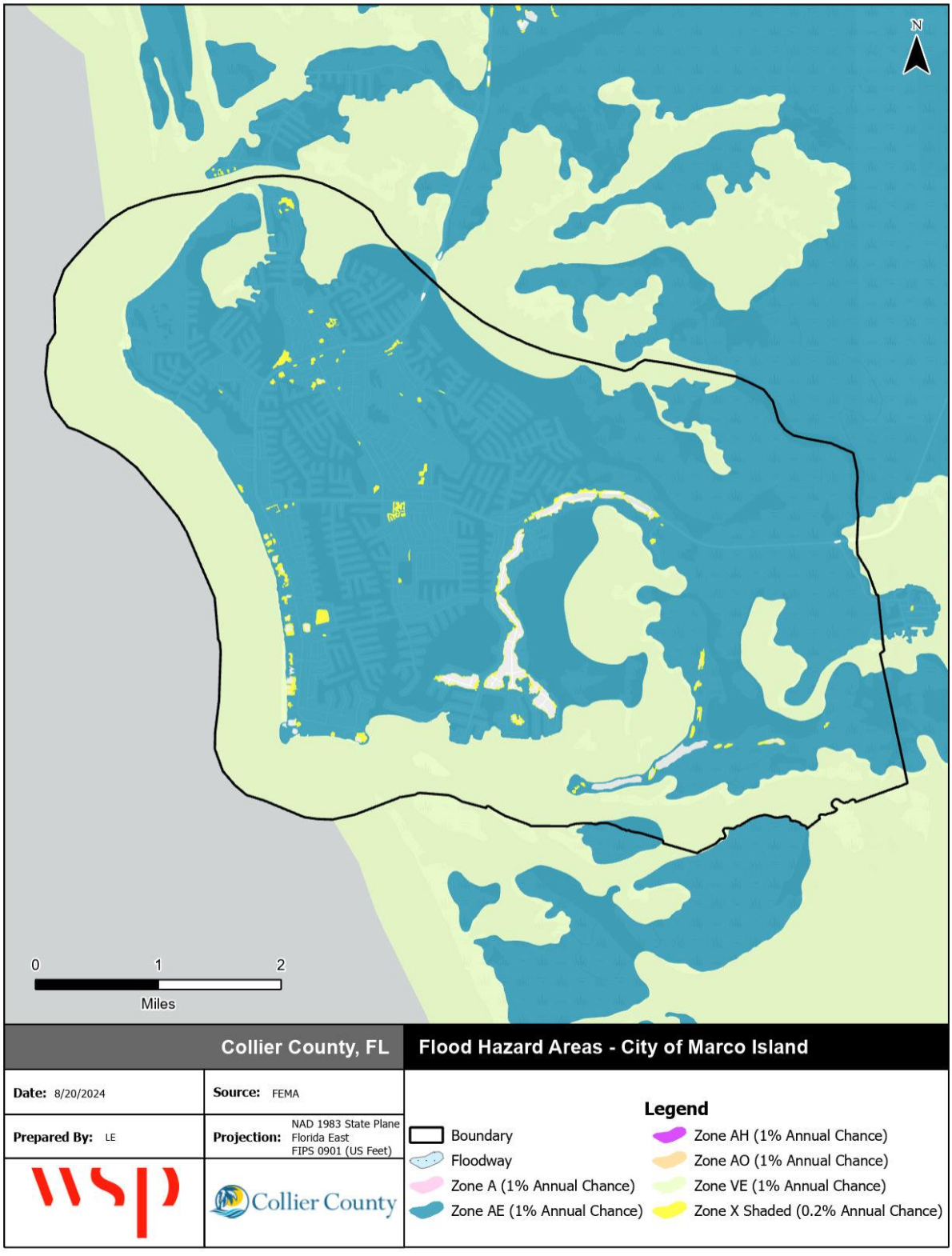
Source: FEMA Effective DFIRM

Figure 2.9 – FEMA Flood Hazard Areas, Seminole Tribe Immokalee Reservation



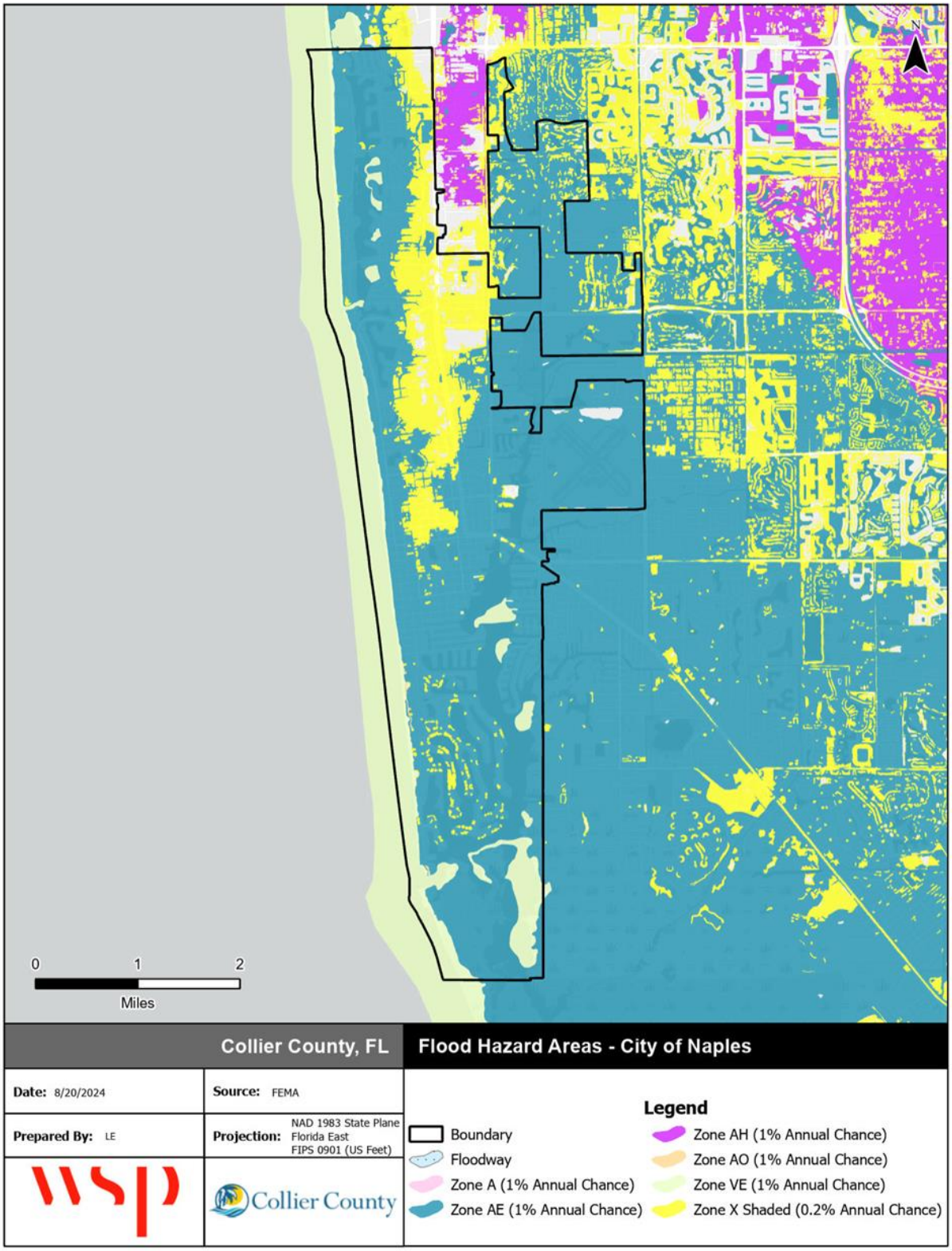
Source: FEMA Effective DFIRM

Figure 2.10 – FEMA Flood Hazard Areas, Marco Island



Source: FEMA Effective DFIRM

Figure 2.11 – FEMA Flood Hazard Areas, Naples



Source: FEMA Effective DFIRM

EXTENT

Flood extent can be defined by the amount of land in the floodplain and the potential magnitude of flooding as measured by flood height and velocity.

Regulated floodplains are illustrated on inundation maps called Flood Insurance Rate Maps (FIRMs). It is the official map for a community on which FEMA has delineated both the Special Flood Hazard Areas (SFHAs) and the risk premium zones applicable to the community. SFHAs represent the areas subject to inundation by the 100-year flood event. Structures located within the SFHA have a 26-percent chance of flooding during the life of a standard 30-year mortgage. Flood prone areas were identified within Collier County using the Effective FIRMs, dated February 8, 2024. Table 2.9 summarizes the flood insurance zones identified by the Digital FIRM (DFIRM).

Table 2.9 – Mapped Flood Insurance Zones within Collier County

Zone	Description
VE	Also known as the coastal high hazard areas. They are areas subject to high velocity water including waves; they are defined by the 1% annual chance (base) flood limits (also known as the 100-year flood) and wave effects 3 feet or greater. The hazard zone is mapped with base flood elevations (BFEs) that reflect the combined influence of stillwater flood elevations, primary frontal dunes, and wave effects 3 feet or greater.
AE	AE Zones, also within the 100-year flood limits, are defined with BFEs that reflect the combined influence of stillwater flood elevations and wave effects less than 3 feet. The AE Zone generally extends from the landward VE zone limit to the limits of the 100-year flood from coastal sources, or until it reaches the confluence with riverine flood sources. The AE Zones also depict the SFHA due to riverine flood sources, but instead of being subdivided into separate zones of differing BFEs with possible wave effects added, they represent the flood profile determined by hydrologic and hydraulic investigations and have no wave effects. The Coastal AE Zone is differentiated from the AE Zone by the Limit of Moderate Wave Action (LiMWA) and includes areas susceptible to wave action between 1.5 to 3 feet.
AH	Areas subject to inundation by 1% -annual-chance shallow flooding (usually areas of ponding) where average depths are between one and three feet. Base Flood Elevations (BFEs) derived from detailed hydraulic analyses are shown in this zone.
A	Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas, no depths or base flood elevations are shown within these zones.
0.2% Annual Chance (shaded Zone X)	Moderate risk areas within the 0.2-percent-annual-chance floodplain, areas of 1-percent-annual-chance flooding where average depths are less than 1 foot, areas of 1-percent-annual-chance flooding where the contributing drainage area is less than 1 square mile, and areas protected from the 1-percent-annual-chance flood by a levee. No BFEs or base flood depths are shown within these zones. (Zone X (shaded) is used on new and revised maps in place of Zone B.)
Zone X (unshaded)	Minimal risk areas outside the 1-percent and .2 percent-annual-chance floodplains. No BFEs or base flood depths are shown within these zones. Zone X (unshaded) is used on new and revised maps in place of Zone C.

Approximately 95 percent of Collier County falls within the SFHA. Table 2.10 provides a summary of the County's total area (excluding open water) by flood zone on the 2024 effective DFIRM. Figure 2.12 shows the depth of flooding predicted from a 1% annual chance flood.

Table 2.10 – Flood Zone Acreage in Collier County

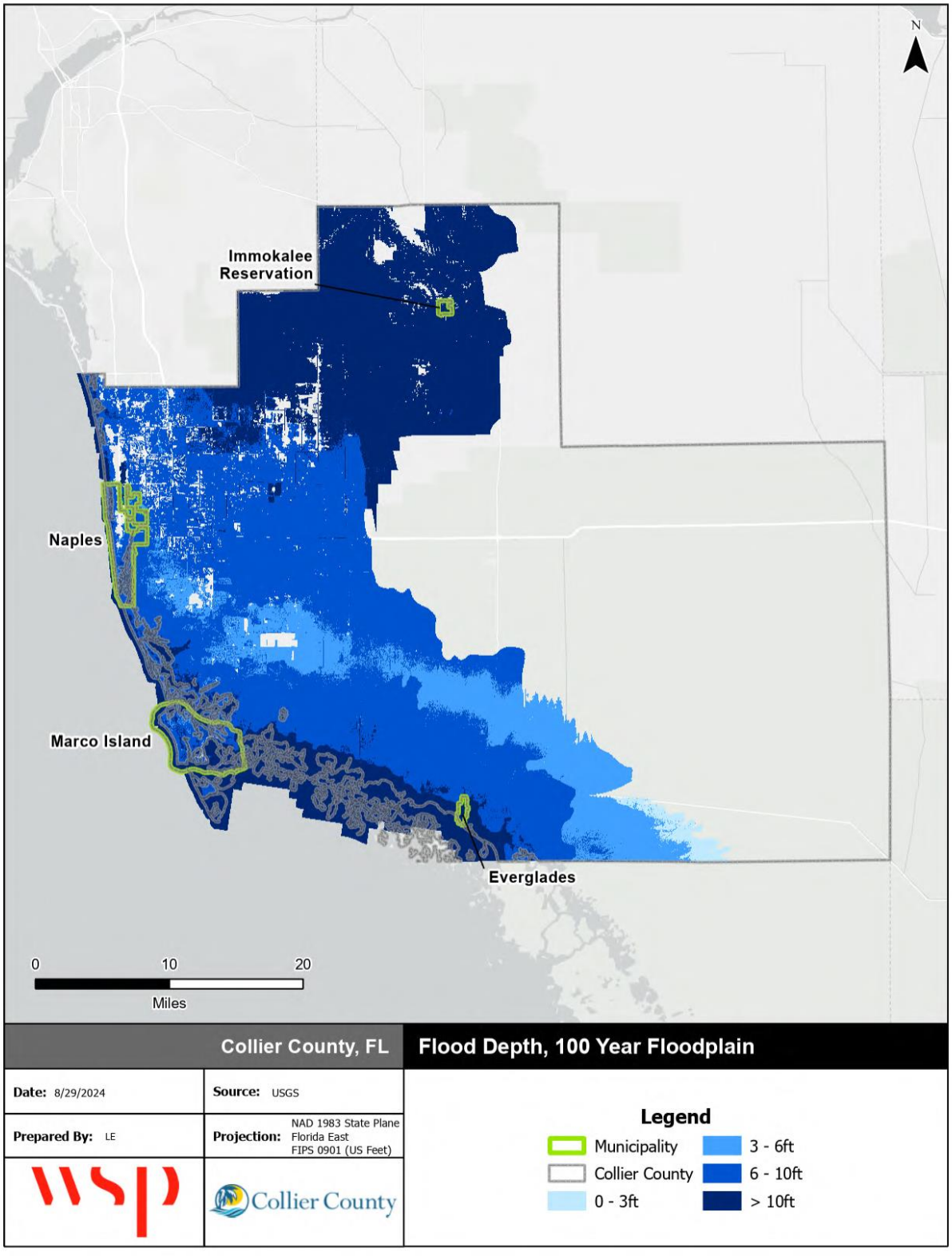
Flood Zone	Acreage	Percent of Total (%)
Everglades City		
A	0.0	0.0%
AE	368.02	47.9%
AH	0.0	0.0%
VE	400.11	52.1%
0.2% Annual Chance Flood Hazard	0.0	0.0%
Unshaded X	0.0	0.0%
Total	768.12	--
SFHA Total	768.12	100%
Seminole Tribe Immokalee Reservation		
A	0.0	0.0%
AE	519.34	84.3%
AH	11.80	1.9%
VE	0.0	0.0%
0.2% Annual Chance Flood Hazard	64.37	10.5%
Unshaded X	20.31	3.3%
Total	615.82	--
SFHA Total	531.14	86.2%
Marco Island		
A	0.0	0.0%
AE	9,931.72	63.0%
AH	0.0	0.0%
VE	5,510.81	34.9%
0.2% Annual Chance Flood Hazard	191.07	1.2%
Unshaded X	140.79	0.9%
Total	15,774.39	--
SFHA Total	15,442.53	97.9%
Naples		
A	0.0	0.0%
AE	7,197.92	59.9%
AH	449.69	3.7%
VE	2,998.33	25.0%
0.2% Annual Chance Flood Hazard	597.01	5%
Unshaded X	772.46	6.4%
Total	12,015.41	--
SFHA Total	10,645.95	88.6%
Unincorporated Collier County		
A	631,424.54	46.8%
AE	317,657.32	23.5%
AH	246,751.22	18.3%
VE	86,548.87	6.4%
0.2% Annual Chance Flood Hazard	32,945.50	2.4%
Unshaded X	33,705.33	2.5%
Total	1,349,032.77	--
SFHA Total	1,282,381.94	95.1%

Flood Zone	Acreage	Percent of Total (%)
Collier County Total		
A	631,424.54	45.8%
AE	335,674.32	24.4%
AH	247,212.72	17.9%
VE	95,458.12	6.9%
0.2% Annual Chance Flood Hazard	33,797.95	2.5%
Unshaded X	34,638.88	2.5%
Total	1,378,206.52	--
SFHA Total	1,309,769.69	95%

Source: FEMA Effective DFIRM

Note: Less than zero percent of flood zone AO can be found in Unincorporated Collier County. Due to the small percentage of acreage this zone was omitted from this table.

Figure 2.12 – Flood Depth, 100-Year Floodplain, Collier County



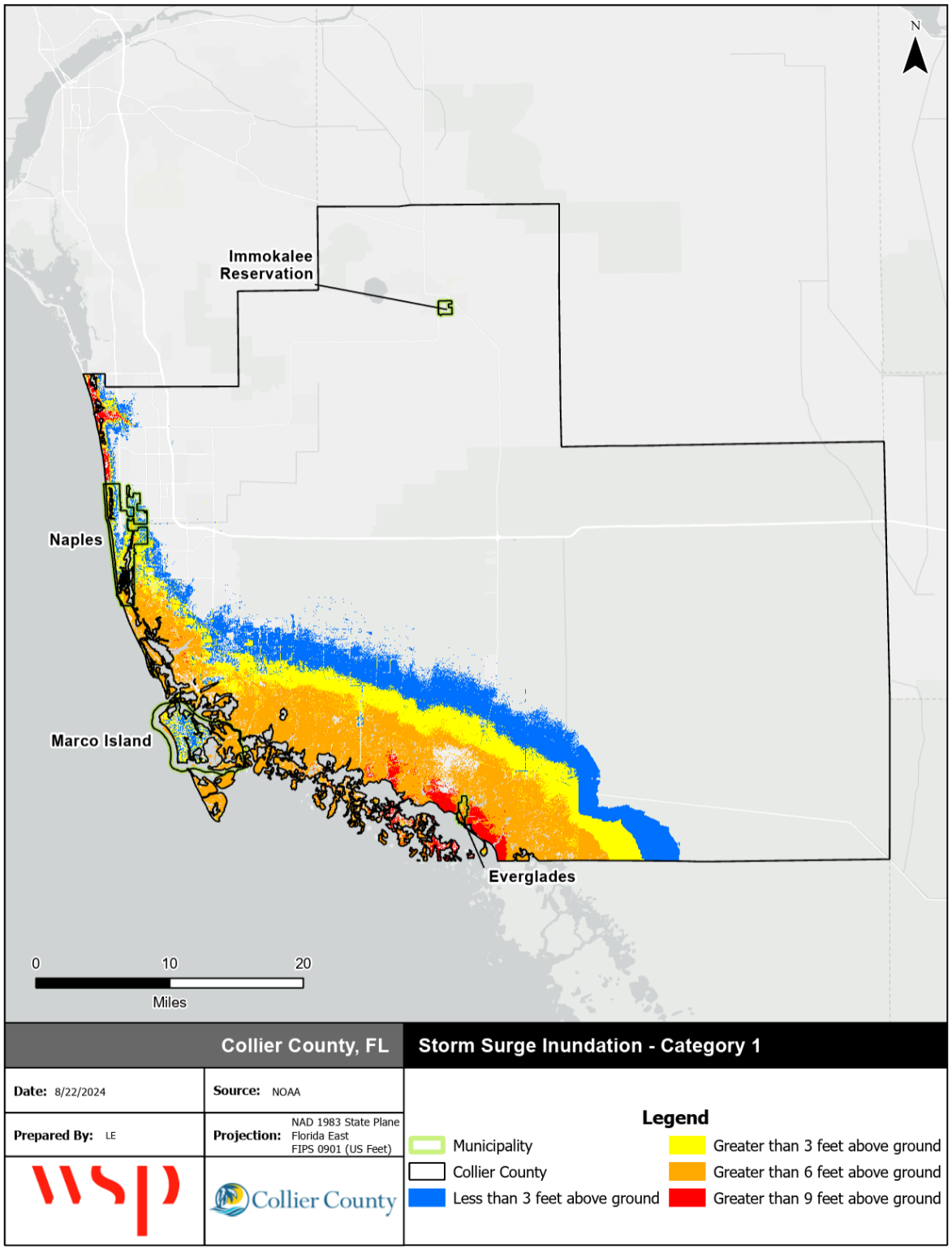
Source: FEMA Effective DFIRM

The NFIP utilizes the 100-year flood as a basis for floodplain management. The Flood Insurance Study (FIS) defines the probability of flooding as flood events of a magnitude which are expected to be equaled or exceeded once on the average during any 100-year period (recurrence intervals). Considered another way, properties in a 100-year flood zone have a one percent probability of flooding during any given year. Mortgage lenders require that owners of properties with federally backed mortgages located within SFHAs purchase and maintain flood insurance policies on their properties. Consequently, newer and recently purchased properties in the community are typically insured against flooding.

Storm surge affects areas along coastal and sound-side shorelines and further inland depending on the height of the surge. Figure 2.13 through Figure 2.17 show the estimated extent of surge by storm category according to NOAA's SLOSH model. Note that the SLOSH inundation results do not illustrate the storm surge that will occur from any given storm but rather the full potential extent of surge from all possible storms. However, SLOSH does not account for freshwater contribution, so it may underestimate total flooding that could results from a hurricane or tropical storm.

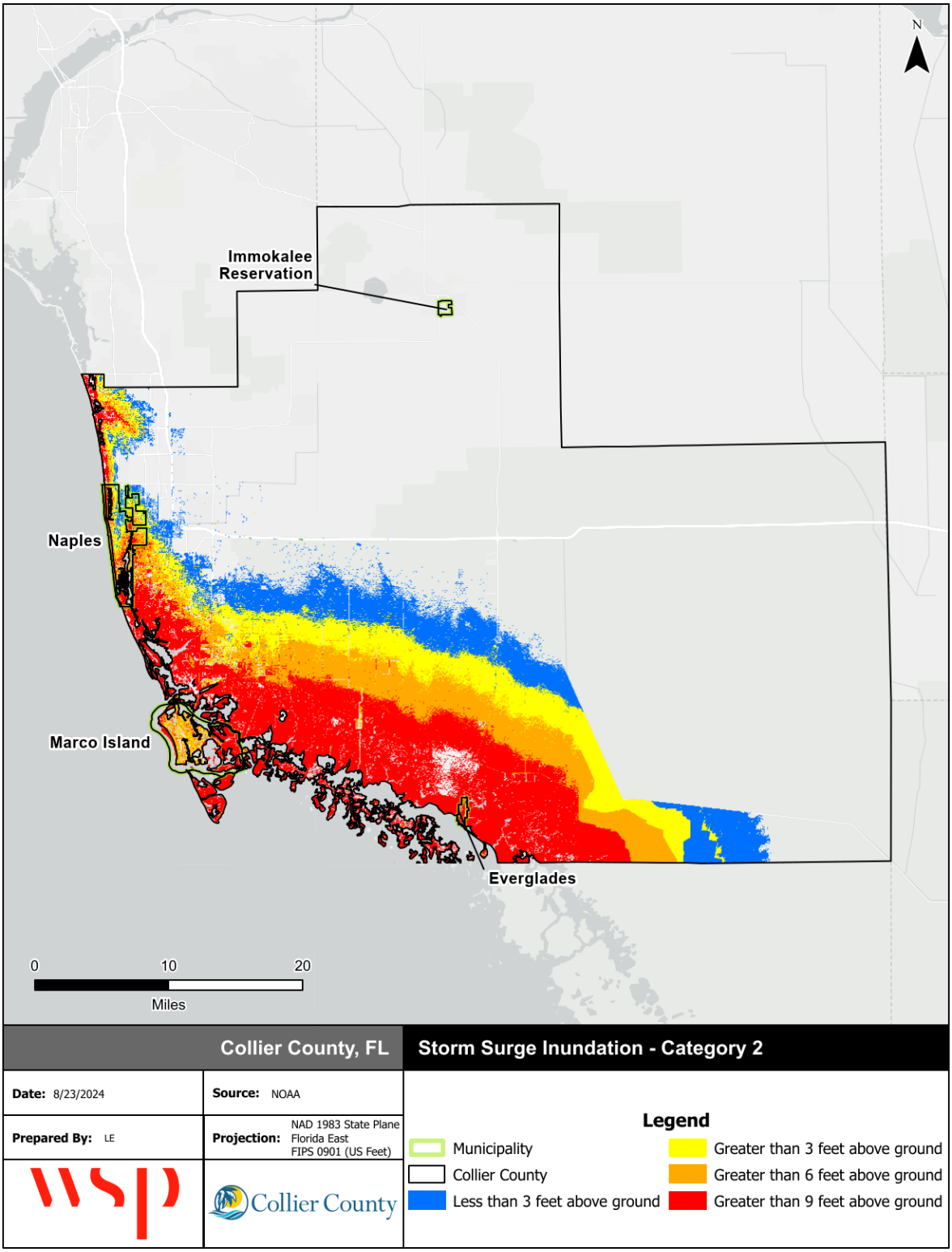
- *Impact: 3 – Critical*

Figure 2.13 - Category 1 Storm Surge Inundation



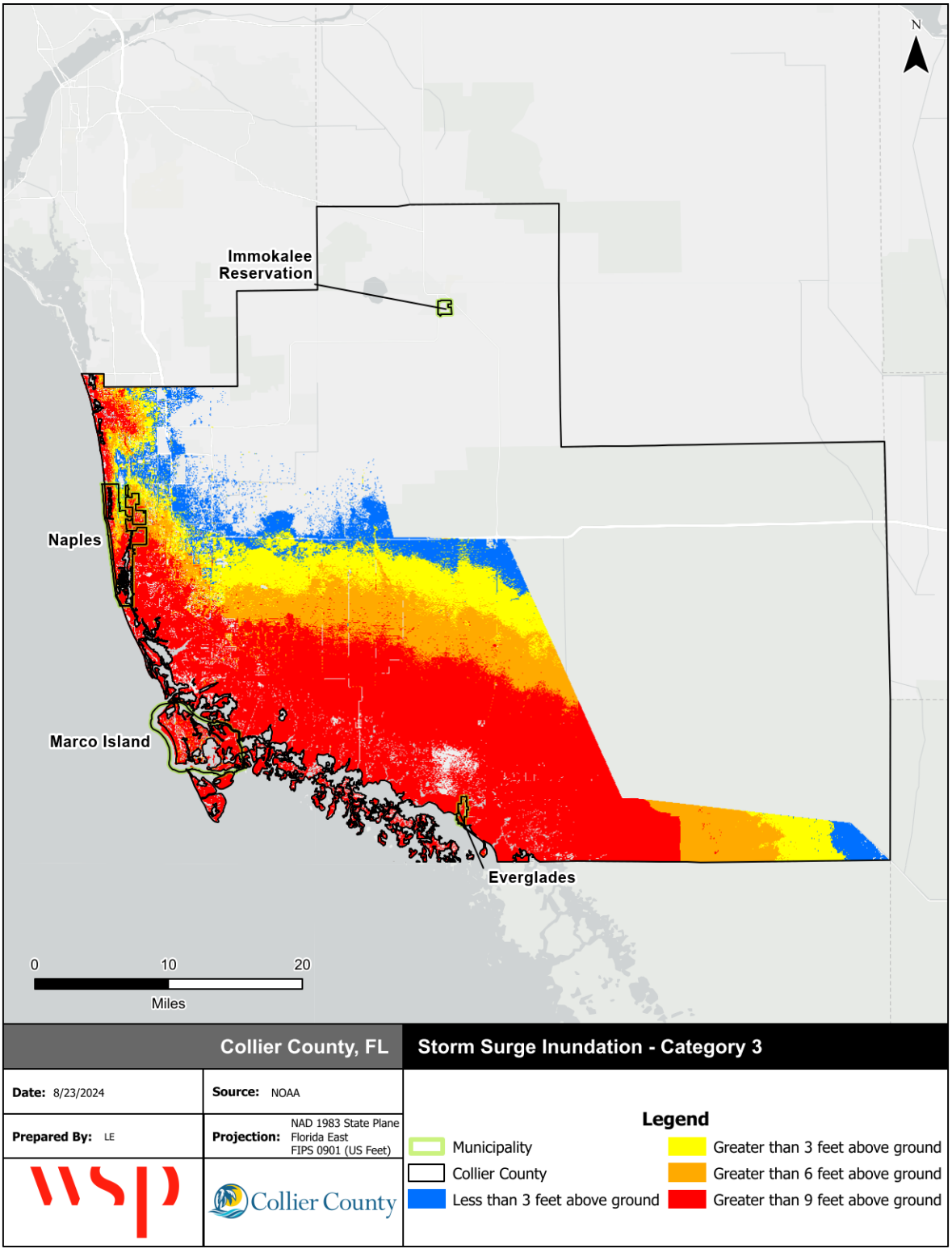
Source: NOAA National Storm Surge Hazard Maps

Figure 2.14 - Category 2 Storm Surge Inundation



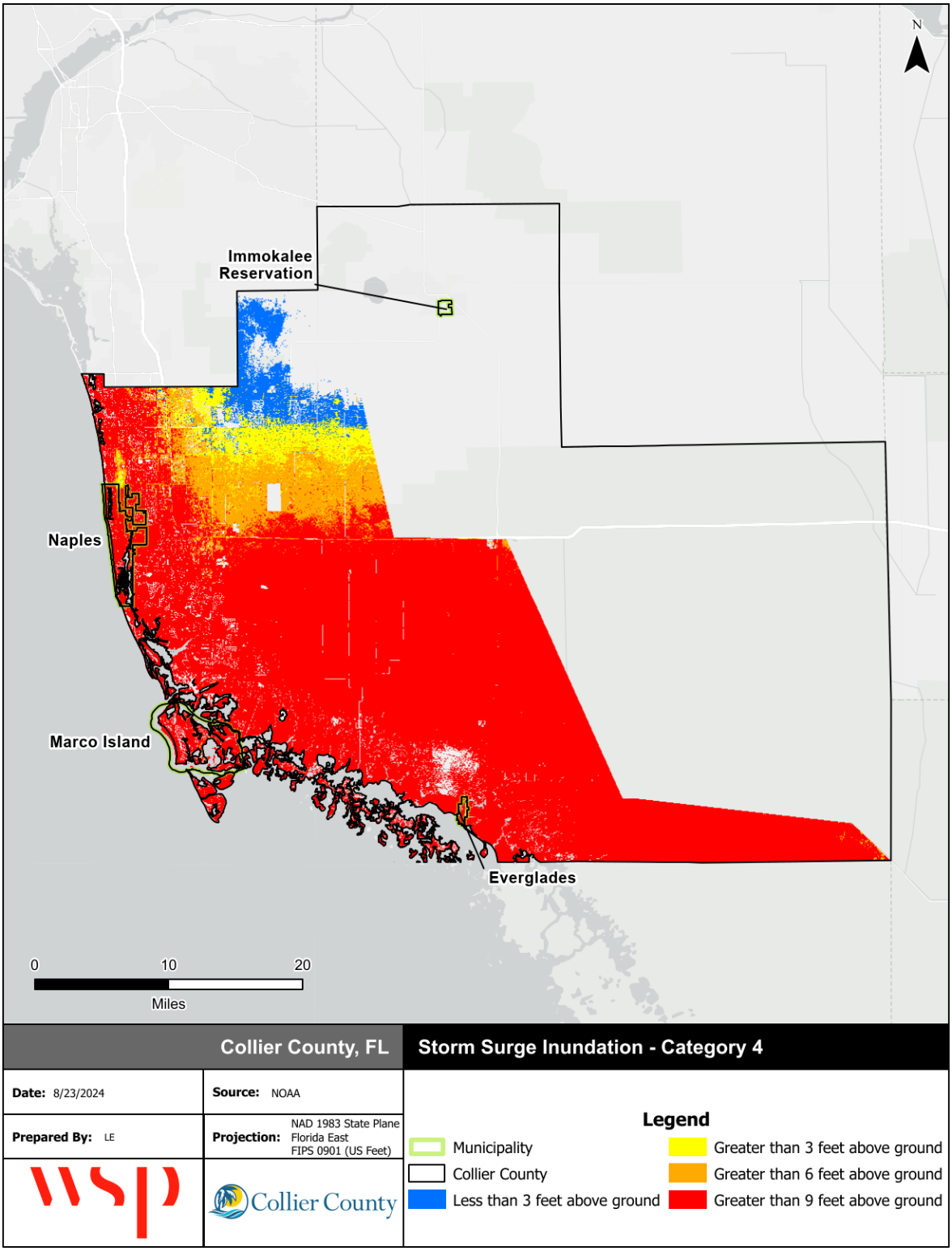
Source: NOAA National Storm Surge Hazard Maps

Figure 2.15 - Category 3 Storm Surge Inundation



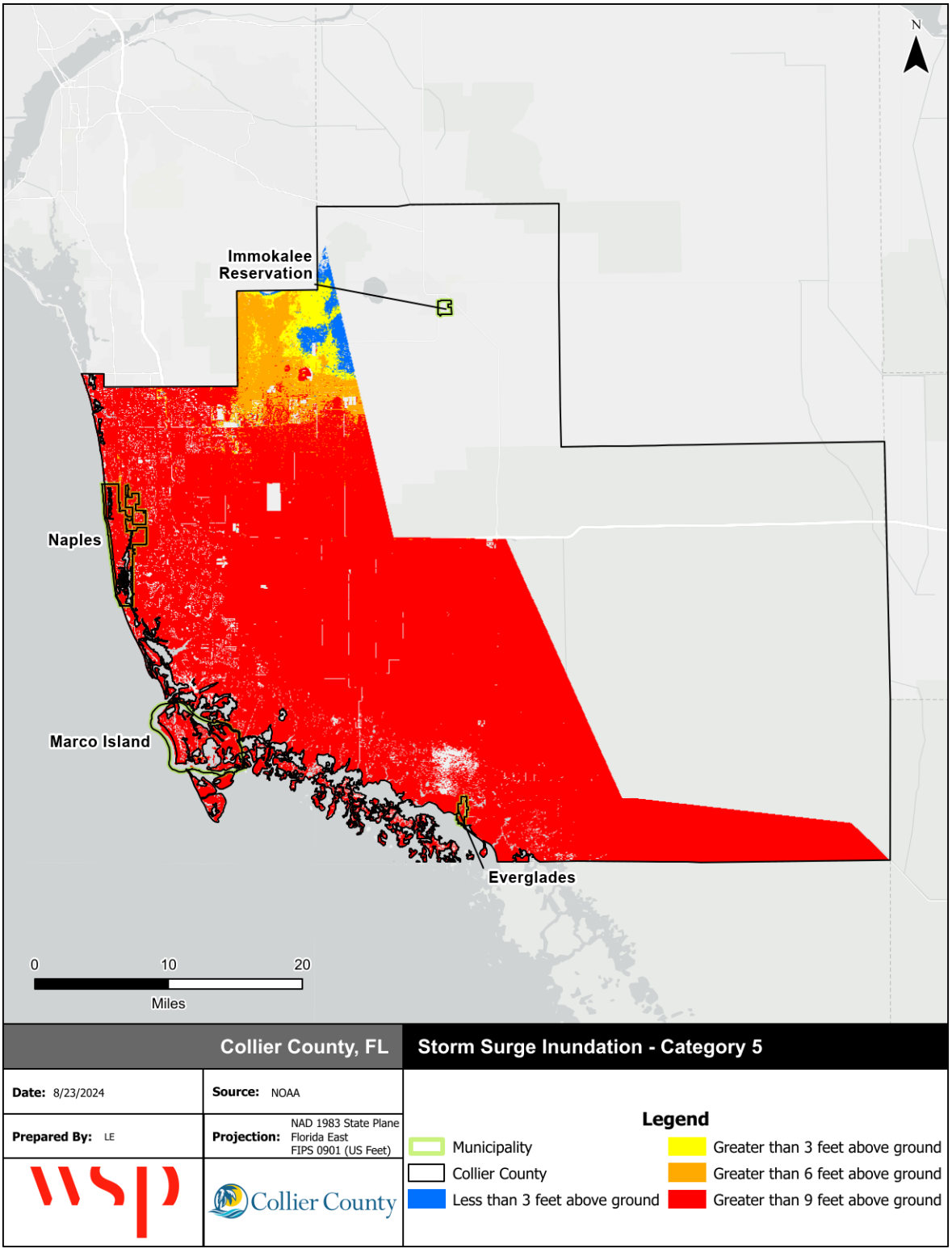
Source: NOAA National Storm Surge Hazard Maps

Figure 2.16 - Category 4 Storm Surge Inundation



Source: NOAA National Storm Surge Hazard Maps

Figure 2.17 - Category 5 Storm Surge Inundation



Source: NOAA National Storm Surge Hazard Maps

HISTORICAL OCCURRENCES

Table 2.11 details the historical occurrences of flooding identified from 2000 through 2023 by NCEI Storm Events database. It should be noted that only those historical occurrences listed in the NCEI database are shown here and that other, unrecorded or unreported events may have occurred within the planning area during this timeframe.

Table 2.11 - NCEI Records of Flooding, 2000-2023

Type	Event Count	Deaths/ Injuries	Reported Property Damage
Coastal Flood	9	0/0	$71,000
Flash Flood	9	0/0	$340,000
Flood	18	0/0	$43,500
Heavy Rain	4	0/0	$60,000
Storm Surge	8	3/0	$6,060,000
Total	48	3/0	$6,574,500

Source: NCEI

According to NCEI, 48 recorded flood events affected the planning area from 2000 to 2023 causing an estimated $6,574,500 in property damage, with three fatalities, and no injuries or crop damage.

Table 2.12 provides a summary of this historical information by location. It is important to note that many of the events attributed to the county are countywide or include incorporated areas. Similarly, though some events have a starting location identified, the event may have covered a larger area including multiple jurisdictions. Still, this list provides an indication of areas that may be particularly flood prone.

Table 2.12 – Summary of Historical Flood Occurrences by Location, 2000-2023

Location	Event Count	Deaths/Injuries	Property Damage
Seminole Tribe Immokalee Reservation	2	0/0	$0
Marco Island	8	0/0	$193,000
Naples	17	0/0	$190,500
Unincorporated/Countywide*	21	3/0	$6,191,000
Total	48	3/0	$6,574,500

Source: NCEI

*Note: Unincorporated Collier County includes the following jurisdictions: Collier County Government, Everglades City, Collier County Public Schools, Collier Mosquito Control District, North Collier Fire Control District, Greater Naples Fire Rescue District, Immokalee Fire Control District, Naples Airport Authority, Port of the Isles, and South Florida Water Management District.

The following event narratives are provided in the NCEI Storm Events Database and illustrate the impacts of flood events on the county:

July 23, 2001 – At least four residences and 20 vehicles were damaged by flood waters on Marco Island and in East Naples. 48-hour rainfall amounts of 4 to 10 inches of rain were measured over southwest Florida as a trough of low pressure stalled in the eastern Gulf of Mexico. Radar estimated 8-12 inches of rain fell over a 96-hour period in Marco Island. Strong onshore winds caused some minor tidal flooding of streets.

September 29, 2003 – Very heavy rainfall fell across southwest Florida with radar estimated amount of 8 to 10 inches. Naples measured a record 6.99 inches. The resulting flood closed numerous roads in Collier County. Numerous cars were stalled. Houses and businesses, including a shopping mall, suffered minor flood damage.

October 24, 2005 – Hurricane Wilma produced a maximum measured storm tide of 8 feet at the USGS tide gauge at the Turner River near Chokoloskee in southern Collier County, with a storm surge of 7 feet after subtracting a 1-foot astronomical tide. Significant damage to structures close to the water was observed in Chokoloskee, along with some washing out of part of the road leading to the town. A storm tide of 7 feet was estimated in Marco Island by Collier County Emergency Management, along with significant beach erosion. An NWS survey team estimated a storm tide of 4 feet in Everglades City based on debris line heights, with little structural damage. The NOS tide gauge in Naples recorded a maximum storm tide of 4.8 feet, with a storm surge of 3.8 feet after considering astronomical tide levels.

July 16, 2008 – A low pressure area over the eastern Gulf of Mexico provided a moist southwest flow across South Florida, leading to heavy rain bands which set up along portions of the Southwest Florida gulf coast. A combination of 6 to 8 inches of rain over a short period of time and high tide caused flooding on Marco Island. Coconuts, palm fronds, and plastic bags also clogged storm drains at some locations, exacerbating the flooding. One towing company in Marco Island pulled out 35 to 40 cars alone. Water reached around 2 feet deep in some roadways and a few inches deep in some residences. Several roads were closed, including the main bridge connecting Marco Island to the Mainland.

August 27, 2012 – Tropical Storm Isaac moved west-northwest across the Florida Straits south of the Florida Keys on August 26th. The northern edge of the wind and rain area associated with Isaac affected the South Florida peninsula throughout the day on the 26th. Severe beach erosion and coastal flooding occurred in Collier County on Monday, August 27th as the center of the storm moved into the Gulf of Mexico. A storm surge of 2.05 feet was measured at the Naples pier. Farther east along the coast, inundation depths as high as 3 feet were reported in Goodland and Everglades city. Inundation in the Naples area was about 1 foot. Most damage from coastal flooding was to infrastructure in Goodland and Everglades City areas and was estimated at $400,000. Severe beach erosion in the Naples and Marco Island areas led to damaged estimated at $5.6 million.

August 4, 2014 – Intense rainfall associated with several bands of thunderstorms developed across much of the Naples area during the early afternoon. The band moved little between 1230 and 1500 EDT with the training of cells leading to copious rain amounts and severe street flooding in parts of Naples and Golden Gate. The first report stated that at least two feet of water was on roads near Airport Road and Mercantile Avenue with cars stalled out. The Collier County Sheriff's Office reported at around 1510 EDT that there was severe flooding and stalled vehicles from Collier Blvd. to Tamiami Trail with some roads closed. Rainfall totals included 7 inches at Naples Beach Hotel and Club with 6.73 inches at the Naples Municipal Airport. A trained spotter measured 4.21 inches in just under an hour in the area of Airport and Pine Ridge Roads. A few

businesses had water enter their structures, with one business estimating $12,000 in damage. Over 300 cars were towed from area streets due to stalling in deep water. Damage total indicated in this report is estimated and based on number of cars stalled as well as the damage to businesses from water intrusion.

June 6, 2017 – A disturbance meandering across the Gulf of Mexico in combination with an upper-level system across the western Gulf of Mexico lead to nearly a week of heavy rainfall across South Florida. The heaviest rainfall fell in the corridor from Marco Island and southern Collier County northeast into Broward and southern Palm Beach counties. Many locations in this swath saw rainfall amounts in excess of 9 to 10 inches in a single day, and as high as almost 15 inches on the heaviest day, resulting in event totals of 15 to 20 inches in this area. This rainfall forced the closure of numerous roads across South Florida, especially in Collier and Broward counties where cars were trapped at times in the flood waters.

Multiple streets in Marco Island were closed due to flooding, including Bald Eagle Road from Bayport to San Marco Roads and South Collier Boulevard near Winterberry Drive. Multiple cars were stalled in the middle of the road at the time of call. Marco Island had received 6 to 8 inches of rainfall in 6 to 12 hours, with a storm total of up to 15 inches over a 3-day period. Flooding across central and eastern Collier County resulted in the closure of Gulf Coast Visitor Center of Everglades National Park, in Everglades City, the Everglades City Airport, as well as Big Cypress National Preserve from June 6th through June 7th. Pictures received from the National Park Service show flooding of numerous access roads, trails, campgrounds, and bridges around the park, along with widespread areas of higher-than-normal water across the park, including flooding of normally dry forest. The Ochopee Post Office was flooding during the event, with water encroaching on Tamiami Trail (US 41) in places where it bisects the park. County Road 29 south of Tamiami Trail (US 41), which is used to access many of these areas, was also closed.

August 25-27, 2017 – A slow moving tropical disturbance first moved west across South Florida, then northeast across Central and North Florida as a frontal boundary dropped into the state. This system would develop into Potential Tropical Cyclone 10 as it moved up the east coast, leaving a trailing trough that would bring additional heavy rainfall through Aug 29th. Significant flooding was reported over three days across Collier County, especially across the Naples area, with multiple roadways and intersections closed and standing water across the city. Flood waters entered a guest home along Trail Terrace, along with stranding vehicles along 10th Street south of 5th Avenue. As rain continued to fall, there was additional flooding along Logan Boulevard as well as Vanderbilt beach, with several sections impassable due to flooding.

September 10, 2017 – Major Hurricane Irma made landfall in Southwest Florida on Marco Island as a Category 3 hurricane around 3:30 PM EDT on September 10th. The storm traveled north through southwest Florida through the evening. Effects from Irma were felt across South Florida from September 9th through September 11th. Irma brought a significant storm surge on both coasts of South Florida and widespread rainfall and some flooding across the region. From the period between 8 AM September 9th and 8 AM September 11th, 8 to 15 inches of rain were measured over interior portions of Southwest Florida. This rainfall near the end of a wet summer led to significant flooding.

Storm surge across Collier County ranged from 4 to 8 feet, highest in the Chokoloskee and Everglades City area and lowest at the northern Collier County coast. Impacts were most severe in Chokoloskee, Everglades City, Plantation Island and Goodland where numerous homes were flooded and suffered major to catastrophic damage. Storm survey and data from USGS rapid deployment gauges indicated highest inundation from storm surge in Chokoloskee with up to 8 feet at waterfront, approximately 8 feet above Mean Higher High Water (MHHW), as well as 3-5 feet of inundation across the island. In Everglades City, there was a maximum 6 ft of inundation at the Everglades National Park Gulf Visitor Center, with 2-4 feet across the town and as high as 5 feet in a few areas. USGS high water mark data showed 1-2 feet of inundation as far inland as Tamiami Trail between State Road 29 and Collier-Seminole State Park. In Goodland, maximum storm tide was about 5.5 ft above MHHW, translating to between 5-6 ft of inundation at the waterfront and 3-4 ft across most of town. In Marco Island, storm tide was as high as 4.5 feet above MHHW, translating to between 2-4 ft inundation mainly over south and east parts of the island. Inland penetration was generally less than a half-mile. In Naples, NOS tide gauge at Naples Pier measured maximum storm tide of 5.14 feet above MHHW. Between 3-4 feet of inundation was noted along the Gulf beachfront within 1 block of beach, with less than a half-mile of inland penetration. Along Naples Bay, a maximum storm tide of about 2-3 ft above MHHW resulted in inundation of 1 to 2 feet on west side of bay just south of Tamiami Trail. This led to flooding of restaurants and shops.

October 9, 2018 – The high October astronomical tides, King tides, in combination with the strong winds and minor surge from Hurricane Michael in the Gulf of Mexico brought a couple days of minor saltwater flooding along both the Atlantic and Gulf coasts of South Florida. NBC2 in Fort Myers reported water covering County Road 92A between Marco Island and Goodland. Videos and photos shared via social media shows abnormally high tide moving into and above sand dunes at Naples Beach as well as water over topping the seawall and approaching the backs of residences in the Isles of Capri neighborhood.

May 18, 2020 – Tropical Storm Arthur, which was moving over the outer banks of North Carolina, was forecast to continue moving northeastward off the Mid-Atlantic coastline. At the same time, the tail of Arthur, basically a trough of low pressure, extended into the southeastern portion of the country. This also combined with a mid to upper-level area of low pressure moving into the Tennessee Valley and a trough of low pressure moving into the eastern Gulf of Mexico which allowed for a south southwesterly flow across South Florida. This allowed for the Gulf coast sea breeze to push inland as the east coast sea breeze remained pushed up against the east coast. This eventually led to the development of scattered to numerous showers and thunderstorms across all of South Florida. The primary impacts with these storms were heavy rainfall and associated flooding, frequent lightning strikes, small hail, and gusty winds.

September 13, 2021 – High pressure over the western Atlantic waters allowed for light easterly wind flow to set up across South Florida. With the light flow in place, waterspouts were able to develop across the Atlantic waters. In fact, one even moved onshore. The Atlantic Sea breeze also was able push westward across South FL while the Gulf Sea breeze remained pinned across the west coast metro areas. This allowed for strong showers and storms to develop during the afternoon hours, including over the Gulf and

Atlantic waters due to outflow boundaries. Strong wind gusts, heavy rainfall, flooding, and frequent lightning were the main hazards.

August 29, 2023 – The center of Hurricane Idalia passed about 180 miles west of Naples as a Category 2 moving north over the eastern Gulf of Mexico. The outermost edge of Idalia's tropical storm force wind field skirted the SW Florida Gulf coast, and a few outer rain bands moved through South Florida on August 29th and 30th bringing brief tropical storm force wind gusts. A storm surge of about 3 feet, combined with high astronomical tides, led to minor coastal flooding in Collier County during the high tide cycles on August 29th and 30th.

PROBABILITY OF FUTURE OCCURRENCE

By definition of the 100-year flood event, SFHAs are defined as those areas that will be inundated by the flood event having a 1-percent chance of being equaled or exceeded in any given year. Properties located in these areas have a 26 percent chance of flooding over the life of a 30-year mortgage.

The 500-year flood area is defined as those areas that will be inundated by the flood event having a 0.2-percent chance of being equaled or exceeded in any given year; it is not the flood that will occur once every 500 years.

While exposure to flood hazards vary across jurisdictions, all jurisdictions have at least some area of land in FEMA flood hazard areas. Additionally, there is risk of localized and stormwater flooding as well as severe wind-driven surge in areas outside the SFHA and at different intervals than the 1% annual chance flood. Based on these considerations as well as the 48 flood-related events recorded by NCEI over the last 24 years, the probability of flooding is considered highly likely (100% annual probability) for all jurisdictions.

- *Probability: 4 – Highly Likely*

CLIMATE CHANGE

The potential for flooding can change and increase. Various land use changes and changes to land surface can result in changes to the floodplain and flood prone areas. For example, an increase in impervious surface can create localized flooding problems inside and outside of natural floodplains by altering or confining natural drainage channels. These changes are often created by human activity. However, changes in precipitation frequency and intensity can also result in changes to flood magnitudes and probabilities. For example, what we currently define as the 1-percent-annual-chance flood may occur more frequently in the future.

Per the Fifth National Climate Assessment, frequency and intensity of heavy precipitation events is expected to increase across the country. Additionally, increased levels of rainfall, temperatures, sea level rise, and land cover change can exacerbate flood risks and are expected to occur throughout the southeast. Therefore, with more rainfall falling in more intense incidents, the region may experience more frequent flash flooding. Increased flooding may also result from more intense tropical cyclone; researchers have noted the occurrence of more intense storms bringing greater rainfall totals, a trend that is expected to continue as ocean and air temperatures rise.

VULNERABILITY ASSESSMENT

METHODOLOGIES AND ASSUMPTIONS

WSP conducted a Level 2 Hazus Flood Simulation by leveraging the 1%-annual-chance flood boundaries from the effective FEMA Flood Insurance Study. Base Flood Elevations were converted to a depth raster using LiDAR topography obtained from USGS. WSP also leveraged the 2024 parcel data provided by Collier County for the loss determination. Parcels that intersected the SFHA were included for analysis.

Losses were derived in Hazus using USACE depth damage functions, shown in Table 2.13. Flood damage is directly related to the depth of flooding by the application of a depth damage curve. In applying the curve, a specific depth of water translates to a specific percentage of damage to the structure, which translates to the same percentage of the structure's replacement value. Figure 2.12 depicts the depth of flooding that can be expected within the Collier County planning area during the 100-year flood event.

Table 2.13 – Depth Damage Percentages

Depth (ft)	Percent Damaged (%)						
	Agricultural	Commercial	Education	Government	Industrial	Religious	Residential
0	0	1	0	0	1	0	18
1	6	9	5	5	10	10	22
2	11	14	7	8	12	11	25
3	15	16	9	13	15	11	28
4	19	18	9	14	19	12	30
5	25	20	10	14	22	12	31
6	30	23	11	15	26	13	40
7	35	26	13	17	30	14	43
8	41	30	15	19	35	14	43
9	46	34	17	22	29	15	45
10	51	38	20	26	42	17	46
11	57	42	24	31	48	19	47
12	63	47	28	37	50	24	47
13	70	51	33	44	51	30	49
14	75	55	39	51	53	38	50
15	79	58	45	59	54	45	50
16	82	61	52	65	55	52	50
17	84	64	59	70	55	58	51
18	87	67	64	74	56	64	51
19	89	69	69	79	56	69	52
20	90	71	74	83	57	74	52
21	92	74	79	87	57	78	53
22	93	76	84	91	57	82	53
23	95	78	89	95	58	85	54
24	96	80	94	98	58	88	54

Source: Hazus

Building foundation types were not available in the parcel or building data provided by Collier County but are required for Hazus. Therefore, based on local knowledge and

County input, WSP made the assumption that 90% of the foundations in Collier County are slab on grade, 5% are crawl space and 5% are elevated. Number of stories was also not provided so WSP assumed 50% of buildings are one-story and 50% are two-story.

Loss numbers are based on improved parcel values listed in the 2024 parcel data from Collier County. Content value estimations are based on Hazus methodologies of estimating value as a percent of improved structure values by property type. Table 2.14 shows the breakdown of the different property types and their estimated content replacement value percentages.

Table 2.14 – Content Replacement Factors

Property Type	Content Replacement Values
Residential	50%
Commercial	100%
Educational	100%
Government	100%
Religious	100%
Industrial/Agriculture	150%

Source: Hazus

PEOPLE

Flood events pose many threats to public health and safety. While such problems are often not reported, three general types of health hazards accompany floods: physical hazards from the water itself, environmental hazards in the aftermath of the flood, and long-term psychological hazards. These common health and safety hazards are detailed below:

- **Contaminated water:** Floodwaters carry anything that was on the ground that the upstream runoff picked up, including dirt, oil, animal waste, and lawn, farm and industrial chemicals. Pastures and areas where farm animals are kept or where their wastes are stored can contribute polluted waters to the receiving streams. Floodwaters also saturate the ground, which leads to infiltration into sanitary sewer lines, or wastewater treatment plants may be flooded or over loaded. When wastewater treatment plants are flooded, there is nowhere for the sewage to flow. Infiltration and lack of treatment can lead to overloaded sewer lines that can back up into low-lying areas and homes. Even when it is diluted by flood waters, raw sewage can be a breeding ground for bacteria such as E.coli and other disease causing agents. Private sewer and septic systems may also introduce pollutants into floodwaters. Private wells may become contaminated through infiltration of polluted water. Given the many potential sources of contamination, direct or indirect contact with floodwaters poses a significant health risk for contraction of infectious disease.
- **Debris:** During a flood, debris carried by floodwaters can cause physical injury from impact. During the recovery process, people may often need to clear debris out of their properties but may encounter dangers such as sharp materials or rusty nails that pose a risk of tetanus.

- **Unsafe food:** If floodwaters come into contact with food items, that food may no longer be safe for consumption due to the potential contaminants in the floodwaters. Foods stored in cardboard, plastic bags, jars, bottles, and paper packaging may all be subject to contamination. Even if foods don't come into direct contact with floodwaters, the introduction of mold and mildew from flooding may cause foods to spoil faster. Additionally, power outages may cause refrigerated and frozen foods to spoil.
- **Mosquitos and animals:** After most of the water has receded, stagnant pools can become breeding grounds for mosquitoes, which may carry infectious diseases such as West Nile virus or St. Louis encephalitis. Wild animals such as snakes or rodents may carried by floodwaters or lose their habitat and seek shelter in buildings. Snakes may also be swimming in floodwaters seeking higher ground. People may be at risk for bites or disease if they come in contact with these animals or animal carcasses.
- **Mold and mildew:** Areas of a building that were exposed to excessive moisture can breed mold and mildew. Molds can start to grow in only 24 to 48 hours and will continue to grow without steps to dry out and disinfect the affected surface. Some molds are allergens, while others can produce harmful mycotoxins. Exposure to mold can cause respiratory problems; nasal and sinus congestion; eye, nose, and throat irritation; aches and pains; and effects on the nervous system. Infants, children, immunocompromised individuals, elderly adults, pregnant women, and individuals with respiratory conditions are all at higher risk.
- **Reentering a flooded building:** Health hazards may occur when heating ducts in a forced air system are not properly cleaned after inundation. When the furnace or air conditioner is turned on, the sediments left in the ducts are circulated throughout the building and breathed in by the occupants. If the public water systems lose pressure, public water supplies may be contaminated, and a boil order may be issued to protect people and animals from contaminated water.
- **Mental stress:** Long-term psychological impacts can result after having been through a flood and seeing one's home damaged and personal belongings destroyed. The cost and labor needed to repair a flood-damaged home can also put a severe strain on people, especially individuals who were unprepared and uninsured. There is also a long-term problem for those who know that their homes can be flooded again. The resulting stress on floodplain residents takes its toll in the form of aggravated physical and mental health problems.

Floods can also result in fatalities. Individuals face high risk when driving through flooded streets. According to NCEI records, there have been three deaths in Collier County caused by flood events.

Population at risk to flood was estimated based on the vulnerability of residential property. Counts of residential buildings at risk were multiplied by a household factor for each jurisdiction, based on the 2018-2022 American Community Survey's average household size. The resulting estimates of population at risk are shown in Table 2.15. Overall, an estimated 170,009 people live in high-risk flood zones.

Table 2.15 – Collier County Population at Risk to Flood

Jurisdiction	Residential Parcels at Risk	Household Factor	Population at Risk
Everglades City	375	1.99	747
Seminole Tribe Immokalee Reservation	55	4.03	222
Marco Island	7,452	1.93	14,383
Naples	5,029	1.97	9,908
Unincorporated Collier County*	60,312	2.40	144,749
Total	73,223	--	170,009

Source: FEMA; U.S. Census Bureau 2018-2022 ACS 5-Year Estimates; Collier County 2024 parcel data

*Note: Unincorporated Collier County includes the following jurisdictions: Collier County Government, Collier County Public Schools, Collier Mosquito Control District, North Collier Fire Control District, Greater Naples Fire Rescue District, Immokalee Fire Control District, Naples Airport Authority, Port of the Isles, and South Florida Water Management District.

- **Population Patterns**:
  - Rapid population growth in flood-prone coastal and inland areas, such as East Naples and Immokalee.
  - Increased residential density in vulnerable zones, elevating the number of people at risk.
  - Seasonal population increases may impact evacuation capacity and sheltering during floods.
  - **Underserved Populations**: Low-income communities in older, poorly elevated homes may lack the resources to evacuate or recover quickly. Non-English speakers may face challenges receiving real-time flood alerts or evacuation instructions.

PROPERTY

Residential, commercial, and public buildings, as well as critical infrastructure such as transportation, water, energy, and communication systems may be damaged or destroyed by flood waters. The increased number of flood days and general encroachment of shoreline associated with sea level rise, discussed in Section 2.5.7, will likely cause additional flood-related property damage in the future, although it is unclear exactly what this will look like. Additionally, rising seas, and associated increased flood days, can overwhelm and undermine the effectiveness of stormwater drainage system and other infrastructure. Other future changes may also affect vulnerability to flooding. Increased development in high-risk areas would directly increase exposure and risk. Increased impervious surface in the floodplain or throughout a watershed can affect how flooding occurs and may also increase risk.

- **Land Use/Development Trends**:
  - Increased urbanization and impervious surfaces contributing to stormwater runoff and localized flooding.

- Development of residential and commercial buildings near low-lying areas and natural water drainage paths.
- Expansion of floodplain boundaries due to new developments without sufficient mitigation measures.
- Ongoing construction of stormwater management infrastructure and retrofits in high-risk areas.

Table 2.16 details the estimated losses for the 1%-annual-chance flood event, calculated using the methodology and assumptions described above. The total damage estimate value is based on damages to the total of improved building value and contents value. Land value is not included in any of the loss estimates as generally land is not subject to loss from floods.

Table 2.16 – Estimated Building Damage and Content Loss for 1% Annual Chance Flood

Occupancy Type	Total Buildings with Loss	Total Value (Building & Contents)	Estimated Building Damage	Estimated Content Loss	Estimated Total Damage	Loss Ratio
Everglades City						
Agriculture	0	$0	$0	$0	$0	0%
Commercial	98	$55,420,128	$24,208,051	$8,963,908	$33,171,959	60%
Educational	0	$0	$0	$0	$0	0%
Government	2	$80,676	$40,338	$11,936	$52,274	65%
Industrial	1	$4,260	$1,613	$670	$2,283	54%
Religious	1	$34,350	$17,175	$2,693	$19,868	58%
Residential	375	$66,108,034	$16,399,161	$31,181,791	$47,580,952	72%
Total	477	$121,647,448	$40,666,338	$40,160,998	$80,827,336	66%
Seminole Tribe Immokalee Reservation						
Agriculture	0	$0	$0	$0	$0	0%
Commercial	26	$22,960,300	$10,645,170	$7,025,605	$17,670,775	77%
Educational	0	$0	$0	$0	$0	0%
Government	0	$0	$0	$0	$0	0%
Industrial	0	$0	$0	$0	$0	0%
Religious	0	$0	$0	$0	$0	0%
Residential	55	$19,568,450	$5,218,255	$10,577,015	$15,795,269	81%
Total	81	$42,528,750	$15,863,425	$17,602,620	$33,466,044	79%
Marco Island						
Agriculture	0	$0	$0	$0	$0	0%
Commercial	595	$1,038,870,938	$377,178,852	$106,109,345	$483,288,197	47%
Educational	0	$0	$0	$0	$0	0%
Government	4	$5,197,558	$2,350,471	$364,996	$2,715,468	52%
Industrial	0	$0	$0	$0	$0	0%
Religious	2	$39,150	$18,743	$2,398	$21,141	54%
Residential	7,452	$6,316,972,693	$1,264,023,231	$2,318,485,852	$3,582,509,083	57%
Total	8,053	$7,361,080,339	$1,643,571,297	$2,424,962,592	$4,068,533,890	55%
Naples						
Agriculture	0	$0	$0	$0	$0	0%
Commercial	851	$2,047,883,854	$734,649,443	$197,677,694	$932,327,137	46%

Occupancy Type	Total Buildings with Loss	Total Value (Building & Contents)	Estimated Building Damage	Estimated Content Loss	Estimated Total Damage	Loss Ratio
Educational	0	$0	$0	$0	$0	0%
Government	8	$774,062	$375,685	$57,535	$433,220	56%
Industrial	4	$232,091	$66,466	$20,967	$87,433	38%
Religious	1	$22,176	$10,303	$1,331	$11,633	52%
Residential	5,029	$9,962,923,973	$2,075,134,898	$3,820,376,920	$5,895,511,818	59%
Total	5,893	$12,011,836,156	$2,810,236,794	$4,018,134,447	$6,828,371,241	57%
Unincorporated Collier County*						
Agriculture	70	$2,864,478	$1,021,416	$805,397	$1,826,813	64%
Commercial	3,534	$5,735,614,146	$2,057,291,492	$644,674,991	$2,701,966,483	47%
Educational	3	$1,090,340	$389,912	$67,480	$457,392	42%
Government	80	$15,271,102	$6,794,254	$1,122,886	$7,917,140	52%
Industrial	25	$34,488,982	$11,857,048	$4,277,528	$16,134,576	47%
Religious	9	$292,312	$144,701	$35,150	$179,850	62%
Residential	60,312	$30,244,333,795	$6,540,526,875	$12,197,479,172	$18,738,006,047	62%
Total	64,033	$36,033,955,155	$8,618,025,697	$12,848,462,604	$21,466,488,300	60%
Countywide Totals						
Agriculture	70	$2,864,478	$1,021,416	$805,397	$1,826,813	64%
Commercial	5,104	$8,900,749,366	$3,203,973,007	$964,451,543	$4,168,424,550	47%
Educational	3	$1,090,340	$389,912	$67,480	$457,392	42%
Government	94	$21,323,398	$9,560,748	$1,557,354	$11,118,101	52%
Industrial	30	$34,725,333	$11,925,127	$4,299,165	$16,224,292	47%
Religious	13	$387,988	$190,922	$41,571	$232,493	60%
Residential	73,223	$46,609,906,945	$9,901,302,420	$18,378,100,750	$28,279,403,170	61%
Total	78,537	$55,571,047,848	$13,128,363,551	$19,349,323,260	$32,477,686,811	58%

Source: Hazus

*Note: Unincorporated Collier County includes the following jurisdictions: Collier County Government, Collier County Public Schools, Collier Mosquito Control District, North Collier Fire Control District, Greater Naples Fire Rescue District, Immokalee Fire Control District, Naples Airport Authority, Port of the Isles, and South Florida Water Management District.

The loss ratio is the loss estimate divided by the total potential exposure (i.e., total of improved and contents value for all buildings located within the SFHA) and displayed as a percentage of loss. FEMA considers loss ratios greater than 10% to be significant and an indicator a community may have more difficulties recovering from a flood. Loss ratios for all participating jurisdictions are at or above 10%. Therefore, in the event of a flood with a magnitude of the 1%-annual-chance event or greater, the planning area would face extreme difficulty in recovery. Even smaller, more probable floods may also result in the county having difficulty recovering. Estimated loss ratios are greatest in Seminole Tribe Immokalee Reservation and Everglades City; therefore, these jurisdictions may face the greatest potential impacts from a flood event.

Across the planning area there are 257 critical facilities located in the AE, A, and AH zones and 4 facilities located in the VE zone which may be at risk to damages. Table 2.17 details these critical facilities at risk to flooding by type. Table 2.18 lists each critical facility at risk to flood and the flood zone and estimated 100-year flood depth at that location.

Table 2.17 – Summary of Critical Facilities at Risk to Flood, 1% Annual Chance Event

Facility Type	Critical Facility Count by SFHA Zone				Total Facilities at Risk
	Zone A	Zone AE	Zone AH	Zone VE	
Communications	3	17	6	0	26
Energy	0	49	13	1	63
Food, Hydration, Shelter	0	15	4	1	20
Hazardous Materials	4	23	20	0	47
Health and Medical	0	19	2	0	21
Safety and Security	0	28	4	0	32
Transportation	7	9	2	0	18
Water Systems	4	17	11	2	34
Total	18	177	62	4	261

Source: Collier County Data, FEMA

Table 2.18 – Critical Facilities at Risk to Flood, 1% Annual Chance Event

Facility Type	Facility Name	Jurisdiction	Flood Zone	100-Yr Flood Depth (NAVD FT)
Communications	State Hwy Patrol Tower	Collier County	AH	7.84
Communications		Collier County	AH	8.41
Communications	WVOI	Collier County	AE	7.91
Communications	WNOG	Collier County	AH	10.54
Communications	WMKO	Collier County	AE	7.09
Communications	WMKO	Collier County	AE	6.62
Communications	WBGY	Everglades	AE	11.09
Communications	W286AK	Collier County	AE	6.64
Communications	W263BC	Collier County	A	0.10
Communications	W298AW	Collier County	AE	10.20
Communications	W272BM	Collier County	AE	7.67
Communications	W248AU	Collier County	AE	5.76
Communications	W260BI	Collier County	AE	5.76
Communications	W299BG	Collier County	AE	5.76
Communications	W262AJ	Collier County	AE	5.35
Communications	WAVV	Collier County	AH	7.99
Communications	WAFZ-FM	Collier County	AH	15.99
Communications	WFLU-LP	Collier County	A	0.10
Communications	WFLP-LP	Collier County	A	0.10
Communications	WGUF	Collier County	AE	5.09
Communications	W56DW	Naples	AE	8.93
Communications	WSGL	Collier County	AE	6.63
Communications	WXDT-LP	Naples	AE	7.92
Communications	WYDT-CA	Naples	AE	7.92
Communications	WZDT-LP	Naples	AE	7.92
Communications	WWG92 162.525	Collier County	AH	15.70
Food, Hydration, Shelter	Florida Sports Park	Collier County	AH	6.79
Food, Hydration, Shelter	United Way Of Collier County	Naples	AE	7.03
Food, Hydration, Shelter	Marco Island Ymca	Marco Island	AE	7.55
Food, Hydration, Shelter	Main Admin	Collier County	AE	7.34

Facility Type	Facility Name	Jurisdiction	Flood Zone	100-Yr Flood Depth (NAVD FT)
Food, Hydration, Shelter	County Hall / Main Courthouse	Collier County	AE	7.34
Food, Hydration, Shelter	Marco Town Center	Marco Island	AE	5.70
Food, Hydration, Shelter	Berkshire Commons	Collier County	AE	7.10
Food, Hydration, Shelter	Shops Of Marco	Marco Island	AE	7.64
Food, Hydration, Shelter	The Salvation Army	Collier County	AE	5.77
Food, Hydration, Shelter	Walmart	Collier County	AH	6.72
Food, Hydration, Shelter	Walmart	Collier County	AE	5.94
Food, Hydration, Shelter	Habitat For Humanity	Collier County	AE	4.92
Safety and Security	Collier County Jail/Sheriff Dept	Collier County	AE	7.62
Safety and Security	Big Cypress Wilderness Institute	Collier County	AE	4.50
Food, Hydration, Shelter	The Pace Program	Collier County	AH	21.72
Food, Hydration, Shelter	Everglades City School	Everglades	AE	9.57
Food, Hydration, Shelter	Lorenzo Walker Institute Of Technology	Collier County	AE	6.76
Safety and Security	Ochopee Fire Control Dist St 60	Everglades	AE	11.10
Safety and Security	Ochopee Fire Control Dist St 66	Collier County	AE	6.53
Safety and Security	NNFD #45	Collier County	AE	6.35
Safety and Security	IFD #31	Collier County	AH	22.00
Safety and Security	Isle Of Capri Fire Rescue St 90	Collier County	AE	7.42
Safety and Security	BCIFRD #11	Collier County	AH	14.24
Safety and Security	Naples Fire Station 1	Naples	AE	7.02
Safety and Security	Naples Fire Station 3	Naples	AE	6.78
Safety and Security	Marco Island Fire & Rescue St 50	Marco Island	AE	7.99
Safety and Security	Collier County Sheriff's Dept Dist. 7 Everglades City Substation	Collier County	AE	6.62
Safety and Security	Naples Police Dept Dispatch	Naples	AE	6.67
Safety and Security	ENFD #23	Collier County	AE	6.47
Safety and Security	Marco Island Fire Dept Sta 51 (Trng Sta)	Marco Island	AE	5.88
Safety and Security	Big Cypress Natl Preserve Fire & Avn	Collier County	AE	6.16
Safety and Security	FHP TROOP F (Office Closed)	Collier County	AH	7.76
Safety and Security	Marco Island Police Dept. Headquarters	Marco Island	AE	7.96
Safety and Security	Sheriff's Dept Hq & Jail	Collier County	AE	5.77
Safety and Security	Naples Public Safety Headquarters	Naples	AE	6.67
Safety and Security	Sheriff's Office-Special Oper	Naples	AE	7.97
Safety and Security	Marco Island Sheriff's Substation	Marco Island	AE	6.35
Safety and Security	GGFD #72	Collier County	AH	6.65
Safety and Security	EMS Station 23	Collier County	AE	6.47
Safety and Security	Ochopee Fire Control Dist St 61	Collier County	AE	6.16
Safety and Security	EMS Station 1/81	Naples	AE	6.56
Safety and Security	EMS Station 60	Everglades	AE	10.93
Safety and Security	EMS Heli OPNS Center	Naples	AE	6.68
Safety and Security	EMS Station 22	Collier County	AE	5.72
Safety and Security	EMS Station 50	Marco Island	AE	7.68

Facility Type	Facility Name	Jurisdiction	Flood Zone	100-Yr Flood Depth (NAVD FT)
Safety and Security	EMS Station 90	Collier County	AE	7.24
Safety and Security	EMS Station 61 (temp sta. loc.)	Collier County	AE	6.14
Energy	9300192	Marco Island	AE	6.33
Energy	8944342	Collier County	AE	6.86
Energy	8839579	Collier County	AE	5.78
Energy	8837297	Collier County	AE	7.47
Energy	8736147	Collier County	AE	5.84
Energy	8626224	Collier County	AE	7.55
Energy	8518636	Collier County	AE	5.83
Energy	8518330	Collier County	AE	7.08
Energy	8518283	Collier County	AH	22.41
Energy	8518223	Collier County	AE	5.58
Energy	8518207	Collier County	AH	19.15
Energy	8518180	Collier County	AE	6.54
Energy	8518176	Marco Island	AE	7.54
Energy	8518171	Collier County	AE	5.26
Energy	8518132	Collier County	AE	6.76
Energy	8518119	Collier County	AE	4.96
Energy	8519778	Collier County	AE	4.96
Energy	9700628	Collier County	AE	7.02
Energy	8518273	Marco Island	AE	6.34
Energy	8841809	Collier County	AE	5.14
Energy	8733271	Collier County	AE	6.77
Energy	9100553	Collier County	AH	7.92
Energy	9047281	Collier County	AE	6.36
Energy	8944686	Collier County	AE	6.37
Energy	8841367	Collier County	AE	6.00
Energy	8736533	Collier County	VE	15.48
Energy	8629445	Collier County	AE	7.65
Energy	8519336	Collier County	AH	7.75
Energy	8519228	Naples	AE	6.84
Energy	8518341	Collier County	AE	6.08
Energy	8518332	Collier County	AH	10.62
Energy	8518282	Collier County	AH	22.14
Energy	8518236	Collier County	AE	7.63
Energy	8518215	Collier County	AE	4.84
Energy	8518190	Collier County	AE	5.95
Energy	8518178	Marco Island	AE	7.93
Energy	8518163	Collier County	AE	5.03
Energy	8503336	Everglades	AE	11.23
Energy	8839708	Collier County	AH	8.82
Energy	8518136	Collier County	AE	5.12
Energy	8626888	Collier County	AE	6.09
Energy	8518334	Collier County	AH	23.81
Energy	8518356	Marco Island	AE	6.43
Energy	FPL-Capri	Collier County	AE	6.94

Facility Type	Facility Name	Jurisdiction	Flood Zone	100-Yr Flood Depth (NAVD FT)
Energy	FPL-Naples	Naples	AE	7.55
Energy	9802424	Collier County	AE	6.74
Energy	9803121	Collier County	AE	11.38
Energy	9401483	Everglades	AE	11.30
Energy	8626230	Naples	AE	6.78
Energy	8944687	Collier County	AH	22.16
Energy	9804326	Collier County	AE	5.60
Energy	8518316	Marco Island	AE	6.17
Energy	8944685	Collier County	AE	5.34
Energy	8518242	Collier County	AH	24.02
Energy	8519244	Collier County	AE	5.25
Energy	LCEC-Ave Maria South	Collier County	AH	13.92
Energy	LCEC-Belle Meade	Collier County	AE	6.60
Energy	LCEC-Carnestown	Collier County	AE	5.89
Energy	LCEC-Fred H. Smith	Marco Island	AE	7.73
Energy	LCEC-Immokalee	Collier County	AH	17.03
Energy	LCEC-Marco	Marco Island	AE	6.34
Energy	FPL-Collier Bl	Collier County	AH	5.96
Energy	LCEC-EGC	Everglades	AE	11.05
Hazardous Materials	Gargiulo - Bhn Research	Collier County	AH	14.66
Hazardous Materials	City Of Everglades City - Water Plant	Collier County	AE	5.96
Water Systems	Immokalee Water And Sewer District - Carson Road Wtp	Collier County	AH	0.10
Hazardous Materials	Immokalee Water And Sewer District - Jerry V Warden Wtp	Collier County	AH	18.70
Hazardous Materials	Immokalee Water And Sewer District - Airport Road Wtp	Collier County	AH	16.00
Hazardous Materials	Pacific Tomato Growers---2373	Collier County	AH	13.18
Hazardous Materials	B W J Farms - Lake Trafford Division	Collier County	AH	18.08
Hazardous Materials	Garguilo, Inc. Superior Plant Co.	Collier County	AH	9.15
Hazardous Materials	Farm Op - Farm 7 Pump Station 02	Collier County	AE	6.01
Hazardous Materials	Farm Op - Farm 7 Pump Station 03	Collier County	AE	5.85
Hazardous Materials	Farm Op - Farm 7 Pump Station 04	Collier County	AE	4.42
Hazardous Materials	Farmers Supply	Collier County	AH	23.97
Hazardous Materials	U A P Distribution - Immokalee	Collier County	AH	22.90
Hazardous Materials	Helena Chemical - Immokalee	Collier County	AH	23.47
Hazardous Materials	Farm Op - Farm 7 Greenhouse / Pump Station 9	Collier County	AE	5.39
Hazardous Materials	Collier County Utilities - South Regional WTP	Collier County	A	0.10
Hazardous Materials	F G U A - Golden Gate WTP - 2184	Collier County	A	0.10
Hazardous Materials	Port Of The Islands WWTP/ WTP	Collier County	AE	5.92
Hazardous Materials	Farm Op - Farm 7 Pump Station 14	Collier County	AE	5.18
Hazardous Materials	Farm Op - Farm 7 Pump Station 13	Collier County	AE	5.13

Facility Type	Facility Name	Jurisdiction	Flood Zone	100-Yr Flood Depth (NAVD FT)
Hazardous Materials	Farm Op - Farm 7 Pump Station 11	Collier County	AE	5.28
Hazardous Materials	City Of Everglades City - Wastewater Plant	Everglades	AE	11.99
Hazardous Materials	City Of Everglades City - Booster Water Plant	Everglades	AE	14.50
Hazardous Materials	Immokalee Groves	Collier County	AH	15.24
Hazardous Materials	Marco Island - Reverse Osmosis Facility	Marco Island	AE	7.79
Hazardous Materials	North Regional Water Reclamation Facility	Collier County	AE	7.02
Hazardous Materials	Troyer Brothers Agri	Collier County	AH	15.93
Hazardous Materials	Embarq - Golden Gate Central Office	Collier County	AH	7.94
Hazardous Materials	Everglades Farms	Collier County	A	0.10
Hazardous Materials	Immokalee Groves	Collier County	AH	15.06
Hazardous Materials	Collier County Utilities - North Regional WTP	Collier County	AH	0.10
Hazardous Materials	Gargiulo - Farm 7	Collier County	AE	6.02
Hazardous Materials	Qwest - Naples Pop	Collier County	AH	8.00
Hazardous Materials	Resource Conservation Systems - Mediterra Corso Circle	Collier County	AE	8.04
Hazardous Materials	Golf Turf Applications	Collier County	AE	6.84
Hazardous Materials	Embarq – North Naples---28862	Naples	AE	8.42
Hazardous Materials	Embarq - NAPLES---28870	Collier County	AE	7.45
Hazardous Materials	Howard Fertilizer - Immokalee	Collier County	AH	23.91
Hazardous Materials	Marco Island Wastewater Treatment Facility	Marco Island	AE	6.39
Hazardous Materials	Haleakala Construction	Collier County	AH	7.56
Hazardous Materials	Farm Op - Farm 8	Collier County	A	0.10
Hazardous Materials	Ag Mart Produce - Farm 12	Collier County	AH	13.84
Hazardous Materials	Farm Op - Farm 7 Pump Station 01	Collier County	AE	5.70
Hazardous Materials	Resource Conservation Systems - Messina Lane	Collier County	AH	7.38
Hazardous Materials	Farm Op - Farm 7 Pump Station 12	Collier County	AE	5.17
Hazardous Materials	Farm Op - Farm 7 Pump Station 17	Collier County	AE	5.60
Hazardous Materials	Ag Mart Produce - Immokalee Farm	Collier County	AH	15.85
Hazardous Materials	Embarq-Corporation - Naples - Lake Park Boulevard	Collier County	AE	5.64
Health and Medical	Sanitasole	Marco Island	AE	8.14
Health and Medical	Physicians Regional - Collier Blvd	Collier County	AH	5.06
Health and Medical	Vanderbilt Beach Assisted Living Home	Collier County	AE	6.77
Health and Medical	Orchid Terrace	Naples	AE	7.19
Health and Medical	Cove At Marbella, The	Collier County	AE	5.64
Health and Medical	Homewood Residence At Naples	Naples	AE	6.24
Health and Medical	Encore Senior Village At Naples	Collier County	AE	6.89

Facility Type	Facility Name	Jurisdiction	Flood Zone	100-Yr Flood Depth (NAVD FT)
Health and Medical	Naples Day Surgery South	Naples	AE	5.93
Health and Medical	Willough At Naples, The	Collier County	AE	4.99
Health and Medical	North Collier Hospital	Collier County	AE	6.90
Health and Medical	Collier County Public Health Unit	Collier County	AE	7.72
Health and Medical	Dsi Laboratories At N Collier Hospital	Collier County	AE	6.89
Health and Medical	Marion E Fether Medical Center	Collier County	AH	23.63
Health and Medical	Marco Healthcare Center	Marco Island	AE	8.68
Health and Medical	Manor Care Nursing & Rehabilitation Cent	Collier County	AE	5.80
Health and Medical	Manorcare At Lely Palms	Collier County	AE	5.29
Health and Medical	Imperial Health Care Center	Collier County	AE	7.05
Health and Medical	The Aristocrat	Collier County	AE	6.71
Health and Medical	The Chateau at Moorings Park	Naples	AE	7.00
Health and Medical	Premier Place at Glenview	Collier County	AE	9.04
Water Systems	Marco Island Transfer Station	Marco Island	AE	6.32
Water Systems	Immokalee Water	Collier County	AH	19.09
Water Systems	S.W. Florida Research Ed. Ctr.	Collier County	AH	24.95
Water Systems	Collier County Regional WTP	Collier County	AH	9.37
Water Systems	Florida Governmental Utility Authority	Collier County	AH	7.88
Water Systems	I-75 Reststop & Recreat. Area	Collier County	A	0.10
Water Systems	City Of Marco Island	Marco Island	AE	7.14
Water Systems	Immokalee WWTF	Collier County	AH	19.99
Water Systems	Handy Food Store #91	Collier County	AH	22.33
Water Systems	Davis Oil Company - Davis Service Center	Collier County	AH	22.23
Water Systems	I-75 Big Cypress Rest Stop	Collier County	A	0.10
Water Systems	Sunniland Mine - Florida Rock	Collier County	A	0.10
Water Systems	Pelican Bay Sewage Treat Plant	Collier County	AE	6.90
Water Systems	City Of Marco Island	Marco Island	AE	8.55
Water Systems	Trees Camp WTP	Collier County	AE	4.37
Water Systems	Port Of The Islands Water Plant	Collier County	AH	22.23
Water Systems	Lee Cypress Co-Op	Collier County	AE	5.93
Water Systems	Everglades Shores/Big Cypress Preserve	Collier County	AE	5.99
Water Systems	Oasis Ranger Station	Collier County	A	0.10
Water Systems	Marco Shores Utilities	Collier County	AE	7.08
Water Systems	Collier County North Regional WRF	Collier County	AE	7.46
Water Systems	Naples, City of - WWTP I	Naples	AE	7.45
Water Systems	Collier County South Regional WRF	Collier County	AE	4.75
Water Systems	Marco Island WWTF & Reclaimed Water Service Area	Marco Island	AE	6.19
Water Systems	Collier South Regional WTP	Collier County	AH	0.10
Water Systems	Marco Island, City of - RO Plant	Collier County	AE	4.90
Water Systems	Marco Shores Utilities	Collier County	AE	4.90

Facility Type	Facility Name	Jurisdiction	Flood Zone	100-Yr Flood Depth (NAVD FT)
Water Systems	Goodland Isles Estates	Collier County	AE	10.78
Water Systems	Orange Tree WWTP	Collier County	AH	10.32
Water Systems	Port of the Islands WWTP	Collier County	AE	6.23
Water Systems	Everglades City, City of - WWTF	Everglades	AE	12.29
Food, Hydration, Shelter	State Farmers' Market- Immokal	Collier County	AE	24.61
Food, Hydration, Shelter	Marco Island Veterans Park	Marco Island	AE	5.83
Food, Hydration, Shelter	K-Mart Plaza Parking Lot	Collier County	AH	8.21
Food, Hydration, Shelter	Freedom Square Parking Lot	Collier County	AE	7.21
Food, Hydration, Shelter	Ochopee Fire Department	Everglades	VE	12.70
Health and Medical	Collier Health Dept	Collier County	AE	5.76
Transportation	Everglades Airpark	Everglades	VE	14.28
Transportation	Oasis Ranger Station-U.S. Government	Collier County	A	0.10
Transportation	Wing South Airpark	Collier County	AE	6.52
Transportation	Naples Muni	Naples	AE	6.84
Transportation	Naples Grand Golf Resort	Collier County	AE	6.85
Transportation	Marco Island	Collier County	AE	7.32
Transportation	Calusa Ranch	Collier County	A	0.10
Transportation	Lost Horn Ranch	Collier County	A	0.10
Transportation	Little Deer	Collier County	A	0.10
Transportation	Romor Ranch	Collier County	A	0.10
Transportation	Dade-Collier Training And Transition	Collier County	A	0.10
Transportation	Immokalee	Collier County	AH	22.37
Transportation	US 41/State 90 and County 951 and State 951	Collier County	AE	6.08
Transportation	US 41/State 90 and County 29	Collier County	AE	8.66
Transportation	I-75 & State 84 & County 951	Collier County	AH	8.40
Transportation	I-75 & County 896	Collier County	AE	9.54
Transportation	I-75 & State 29	Collier County	A	0.10
Transportation	Isles of Capri Fire Dept	Collier County	AE	7.23
Transportation	Jolley Bridge	Collier County	AE	11.26
Transportation	Goodland Bridge (SR-92)	Collier County	VE	13.26

Source: Collier County Data, FEMA

FLOOD INSURANCE CLAIMS

Flood insurance data on active policies and past claims in a valuable source of information on flood hazards. Flood insurance is available in communities that participate in the National Flood Insurance Program (NFIP) and is required as a condition for federal aid or for a mortgage or loan that is federally insured for a building located in a FEMA flood zone. This section summarizes NFIP participation and flood insurance policies and claims for all NFIP participating communities in the planning area. The identified Floodplain managers for Collier County and its jurisdictions can be found in Annex I:

1. **Collier County:**

- The Building Plan Review & Inspection Division (BPRID) oversees the County's NFIP participation. Responsibilities include issuing or denying floodplain development/building permits, inspecting developments for compliance, maintaining floodplain development records, assisting with floodplain map revisions, and providing public information on flood insurance and construction within special flood hazard areas.
- The BPRID also manages the County's participation in the Community Rating System (CRS) program.
- Floodplain Management Section: This section operates under the Building Plan Review & Inspection Division and is responsible for overseeing the county's participation in the NFIP. The Floodplain Management Planning Committee (FMPC), comprising county staff and appointed public members, develops and maintains the Floodplain Management Plan.
- Floodplain Coordinator: The Floodplain Coordinator within the BPRID administration manages NFIP-related activities, including compliance and public outreach for the County.

2. **City of Naples:**
   - The Building Department administers NFIP participation by reviewing and approving development orders for compliance with local flood ordinances, inspecting developments, and maintaining floodplain records.
   - The Floodplain Coordinator is responsible for public outreach and ensuring compliance with FEMA floodplain mapping.
   - Floodplain Coordinator: The Floodplain Coordinator within the city's administration manages NFIP-related activities, including compliance and public outreach.
3. **City of Marco Island:**
   - The Growth Management Department manages floodplain management activities, promoting public awareness and ensuring compliance with the City’s Floodplain Ordinance.
   - The department also works closely with various agencies to maintain participation in the CRS program and NFIP compliance.
   - Floodplain Manager: The city's Floodplain Manager oversees NFIP participation and ensures adherence to floodplain regulations.
4. **Everglades City:**
   - Building Inspector: The Building Inspector serves as the Floodplain Administrator, handling NFIP responsibilities.
5. **Seminole Tribe of Florida**
   - Director of Environmental Resource Management/Floodplain Administrator: manages the tribe's NFIP participation.

These entities work collaboratively to ensure compliance with NFIP regulations and to manage floodplain development effectively within Collier County and its jurisdictions.

Collier County has been a regular participant in the NFIP since September 1979 and has participated in the Community Rating System (CRS) since October 1992. Collier County is currently a CRS Class 5. Table 2.19 and Table 2.20 reflect NFIP policy and claims data for the county categorized by structure occupancy type and by flood zone. According to data by occupancy, there are currently over 56,800 active policies in Collier County, and there have been over 6,700 paid claims, totalling nearly $390 million in paid losses. Most paid claims have been for single family residential properties in AE Zones.

Table 2.19 – NFIP Policy and Claims Data by Occupancy Type, Collier County

Occupancy	Number of Policies in Force	Total Premium	Insurance in Force	Number of Closed Paid Losses	Total of Closed Paid Losses
Single Family	27,655	$22,191,300	$8,452,999,000	4,854	$226,912,729.60
2-4 Family	4,435	$2,726,766	$1,018,021,000	587	$47,051,875.42
All Other Residential	23,428	$8,955,872	$5,157,987,000	795	$89,299,294.68
Non Residential	1,312	$3,077,027	$644,981,000	543	$26,712,737.38
Total	56,830	$36,950,965	$15,273,988,000	6,779	$389,976,637.08

Source: FEMA Community Information System as of 09/02/2024

Table 2.20 – NFIP Policy and Claims Data by Flood Zone, Collier County

Flood Zone	Number of Policies in Force	Total Premium	Total Coverage	Number of Closed Paid Losses	Total of Closed Paid Losses
A01-30 & AE Zones	29,851	$19,904,222	$7,227,831,000	5,111	$352,926,174.88
A Zones	6	$9,148	$1,653,000	5	$0.00
AH Zones	1,569	$1,091,009	$432,381,000	114	$3,818,198.50
V01-30 & VE Zones	66	$238,734	$14,063,000	147	$5,851,143.97
D Zones	40	$35,000	$12,816,000	4	$0.00
B, C & X Zone					
Standard	13,419	$10,574,063	$4,391,713,000	551	$9,341,435.54
Preferred	0	$0	$0	358	$9,556,023.72
Total	44,951	$31,852,176	$12,080,457,000	6,290	$381,492,976.61

Source: FEMA Community Information System as of 09/02/2024

Everglades City has been a regular participant in the NFIP since October 1972 and has participated in the Community Rating System (CRS) since October 1992. Everglades City is currently a CRS Class 9. Table 2.21 and Table 2.22 reflect NFIP policy and claims data for Everglades City categorized by structure occupancy type and by flood zone. Most current policies and past paid claims are for properties in AE Zones. Total paid claims exceed $10 million.

Table 2.21 – NFIP Policy and Claims Data by Occupancy Type, Everglades City

Occupancy	Number of Policies in Force	Total Premium	Insurance in Force	Number of Closed Paid Losses	Total of Closed Paid Losses
Single Family	57	$94,399	$14,889,000	179	$6,599,911.77
2-4 Family	0	$0	$0	0	$0.00
All Other Residential	54	$39,308	$12,773,000	11	$529,424.54
Non Residential	21	$228,280	$10,130,000	43	$3,218,958.32
Total	132	$361,987	$37,792,000	233	$10,348,294.63

Source: FEMA Community Information System as of 09/02/2024

Table 2.22 – NFIP Policy and Claims Data by Flood Zone, Everglades City

Flood Zone	Number of Policies in Force	Total Premium	Total Coverage	Number of Closed Paid Losses	Total of Closed Paid Losses
A01-30 & AE Zones	131	$360,815	$37,751,000	221	$10,236,774.81
V01-30 & VE Zones	1	$1,172	$41,000	12	$111,519.82
Total	132	$361,987	$37,792,000	233	$10,348,294.63

Source: FEMA Community Information System as of 09/02/2024

The Seminole Tribe of Florida has been a regular participant in the NFIP since March 2002. Table 2.23 and Table 2.24 reflect NFIP policy and claims data for the Seminole Tribe categorized by structure occupancy type and by flood zone. Note that this data reflects all property within the Seminole Tribe of Florida's lands, not just property at Seminole Tribe Immokalee Reservation. There are currently 26 policies in force and there have never been any paid claims.

Table 2.23 – NFIP Policy and Claims Data by Occupancy Type, Seminole Tribe of Florida

Occupancy	Number of Policies in Force	Total Premium	Insurance in Force	Number of Closed Paid Losses	Total of Closed Paid Losses
Single Family	25	$21,176	$8,159,000	0	$0
2-4 Family	0	$0	$0	0	$0
All Other Residential	0	$0	$0	0	$0
Non Residential	1	$2,005	$1,000,000	0	$0
Total	26	$23,181	$9,159,000	0	$0

Source: FEMA Community Information System as of 09/02/2024

Table 2.24 – NFIP Policy and Claims Data by Flood Zone, Seminole Tribe of Florida

Flood Zone	Number of Policies in Force	Total Premium	Insurance in Force	Number of Closed Paid Losses	Total of Closed Paid Losses
A01-30 & AE Zones	3	$4,334	$1,700,000	0	$0
A Zones	0	$0	$0	0	$0
B, C & X Zone					
Standard	7	$7,441	$2,450,000	0	$0
Preferred	0	$0	$0	0	$0

Flood Zone	Number of Policies in Force	Total Premium	Insurance in Force	Number of Closed Paid Losses	Total of Closed Paid Losses
Total	10	$11,775	$4,150,000	0	$0

Source: FEMA Community Information System as of 09/02/2024

The City of Marco Island has been a regular participant in the NFIP since October 1998. Marco Island entered the CRS program in 2000 and is currently a CRS Class 5. Table 2.25 and Table 2.26 reflect NFIP policy and claims data for Marco Island categorized by structure occupancy type and by flood zone. There are currently 12,635 policies in force. Past claims have totaled more than $40 million.

Table 2.25 – NFIP Policy and Claims Data by Occupancy Type, Marco Island

Occupancy	Number of Policies in Force	Total Premium	Insurance in Force	Number of Closed Paid Losses	Total of Closed Paid Losses
Single Family	4,108	$5,625,477	$1,341,187,000	1,071	$14,631,749.67
2-4 Family	451	$466,427	$97,001,000	82	$2,585,250.90
All Other Residential	7,859	$4,240,112	$1,694,959,000	310	$17,451,323.76
Non Residential	217	$806,911	$90,218,000	120	$5,617,497.31
Total	12,635	$11,138,927	$3,223,365,000	1,583	$40,285,821.64

Source: FEMA Community Information System as of 09/02/2024

Table 2.26 – NFIP Policy and Claims Data by Flood Zone, Marco Island

Flood Zone	Number of Policies in Force	Total Premium	Insurance in Force	Number of Closed Paid Losses	Total of Closed Paid Losses
A01-30 & AE Zones	12,514	$11,052,237	$3,199,630,000	1,567	$40,066,019.25
V01-30 & VE Zones	34	$44,577	$2,497,000	13	$189,595.25
B, C & X Zone					
Standard	88	$45,109	$21,488,000	2	$30,207.14
Preferred	0	$0	$0	1	$0.00
Total	12,636	$11,141,923	$3,223,615,000	1,583	$40,285,821.64

Source: FEMA Community Information System as of 09/02/2024

The City of Naples has been a regular participant in the NFIP since July 1971. Naples entered the CRS program in 1992 and is currently a CRS Class 6. Table 2.27 and Table 2.28 reflect NFIP policy and claims data for Naples categorized by structure occupancy type and by flood zone. There are currently over 12,000 policies in force. Past claims have totaled more than $480 million.

Table 2.27 – NFIP Policy and Claims Data by Occupancy Type, Naples

Occupancy	Number of Policies in Force	Total Premium	Insurance in Force	Number of Closed Paid Losses	Total of Closed Paid Losses
Single Family	2,920	$4,596,628	$960,896,000	2,200	$219,445,293.12
2-4 Family	824	$830,101	$190,330,000	345	$53,301,746.52
All Other Residential	8,029	$5,611,019	$1,862,820,000	750	$171,205,547.20
Non Residential	484	$1,926,412	$237,636,000	465	$36,764,757.78
Total	12,257	$12,964,160	$3,251,682,000	3,760	$480,717,344.62

Source: FEMA Community Information System as of 09/02/2024

Table 2.28 – NFIP Policy and Claims Data by Flood Zone, Naples

Flood Zone	Number of Policies in Force	Total Premium	Insurance in Force	Number of Closed Paid Losses	Total of Closed Paid Losses
A01-30 & AE Zones	11,358	$11,694,916	$2,957,070,000	3,539	$461,771,696.93
A Zones	0	$0	$0	2	$10,531.76
AH Zones	56	$91,534	$16,263,000	4	$68,922.24
V01-30 & VE Zones	112	$469,775	$28,797,000	146	$16,049,521.03
D Zones	2	$7,479	$696,000	3	$517,766.54
B, C & X Zone					
Standard	648	$645,174	$217,793,000	35	$1,907,009.35
Preferred	0	$0	$0	25	$274,884.55
Total	12,176	$12,908,878	$3,220,619,000	3,754	$480,600,332.40

Source: FEMA Community Information System as of 09/02/2024

REPETITIVE LOSS

A repetitive loss property is a property for which two or more flood insurance claims of more than $1,000 have been paid by the NFIP within any 10-year period since 1978. A severe repetitive loss property is classified as such if it has four or more separate claim payments of more than $5,000 each (including building and contents payments) or two or more separate claim payments (building only) where the total of the payments exceeds the current value of the property. An analysis of repetitive loss was completed to examine repetitive losses within the planning area.

According to 2023 and 2024 NFIP records, there are a total of 525 repetitive loss properties within the Collier County planning area including 46 mitigated properties and 479 unmitigated properties. Of the unmitigated properties, 415 (86%) are insured. Overall, approximately 88% of all repetitive loss properties in the County are residential, and 11% are non-residential. There are 26 properties on the list classified as severe repetitive loss properties.

Table 2.29 summarizes repetitive loss properties by jurisdiction in Collier County as identified by FEMA through the NFIP.

Table 2.29 – Repetitive Loss Properties by Jurisdiction

Jurisdiction	Property Count	Total Number of Losses	Occupancy		% Insured	Total Amount of Claims Payments	Average Claim Payment	SRL Count
			Res	Non-Res				
Everglades City	9	9	9	0	99%	$4,752,861	$528,095	1
Marco Island	37	37	34	3	95%	$2,205,061	$59,596	0
Naples	147	147	136	11	80%	$57,300,183	$389,797	15
Unincorporated Collier County*	442	442	416	26	87%	$86,077,835	$194,746	51
Total	635	635	595	40	86%	$150,335,940.00	$236,749	67

Source: FEMA/ISO; OpenFEMA Dataset: NFIP Multiple Loss Properties (2/24/2024) & Community Status Book (8/5/2024)
Note: SRL = Severe Repetitive Loss; Res = Residential, Non-Res = Non-Residential
Claim amounts was not available through FEMA Open Data
*Note: Unincorporated Collier County includes the following jurisdictions: Collier County Government, Collier County Public Schools, Collier Mosquito Control District, North Collier Fire Control District, Greater Naples Fire Rescue District, Immokalee Fire Control District, Naples Airport Authority, Port of the Isles, and South Florida Water Management District.

Repetitive Loss and Severe Repetitive Loss Structures

Repetitive Loss (RL) and Severe Repetitive Loss (SRL) structures are a critical component in understanding flood vulnerability across Collier County. RL structures are defined as properties with two or more flood insurance claims of at least $1,000 each within a 10-year period, while SRL properties meet more stringent criteria, with at least four claims exceeding $5,000 each or two claims that exceed the structure's value.

Data Overview

The National Flood Insurance Program (NFIP) maintains records of RL and SRL structures across all jurisdictions in Collier County. As of the latest data collection in 2024, the following RL and SRL data has been identified:

The table 2.30 below provides the estimated numbers and types of RL and SRL structures across each jurisdiction in Collier County, based on NFIP records:

Table 2.30 Jurisdictional Breakdown of RL & SRL Structures

Jurisdiction	Total RL Structures	Total SRL Structures	Residential Structures	Commercial Structures	Other (e.g., critical facilities)	Claims Paid (RL)	Claims Paid (SRL)
Unincorporated Collier County*	442	51	416	26	0	$ 70,164,770	$15,913,065
Naples	147	15	136	11	0	$ 47,555,087	$ 9,745,096
Marco Island	37	0	34	3	0	$ 2,205,061.00	$ 0
Everglades City	8	1	9	0	0	$ 4,461,209	$ 291,652
TOTALS	568	67	595	40	0	$124,386,127.00	$25,949,813.00

*Note: Unincorporated Collier County includes the following jurisdictions: Collier County Government, Collier County Public Schools, Collier Mosquito Control District, North Collier Fire Control District, Greater Naples Fire Rescue District, Immokalee Fire Control District, Naples Airport Authority, Port of the Isles, and South Florida Water Management District.

Vulnerability and Risk Assessment (Repetitive Loss & Severe Repetitive Loss)

RL and SRL structures represent areas of persistent flood vulnerability and a significant financial burden for the NFIP. These properties are often located in Special Flood Hazard Areas (SFHAs) and are subject to repetitive flood damage due to their location and lack of sufficient mitigation measures.

To address these vulnerabilities, mitigation strategies are essential, including:

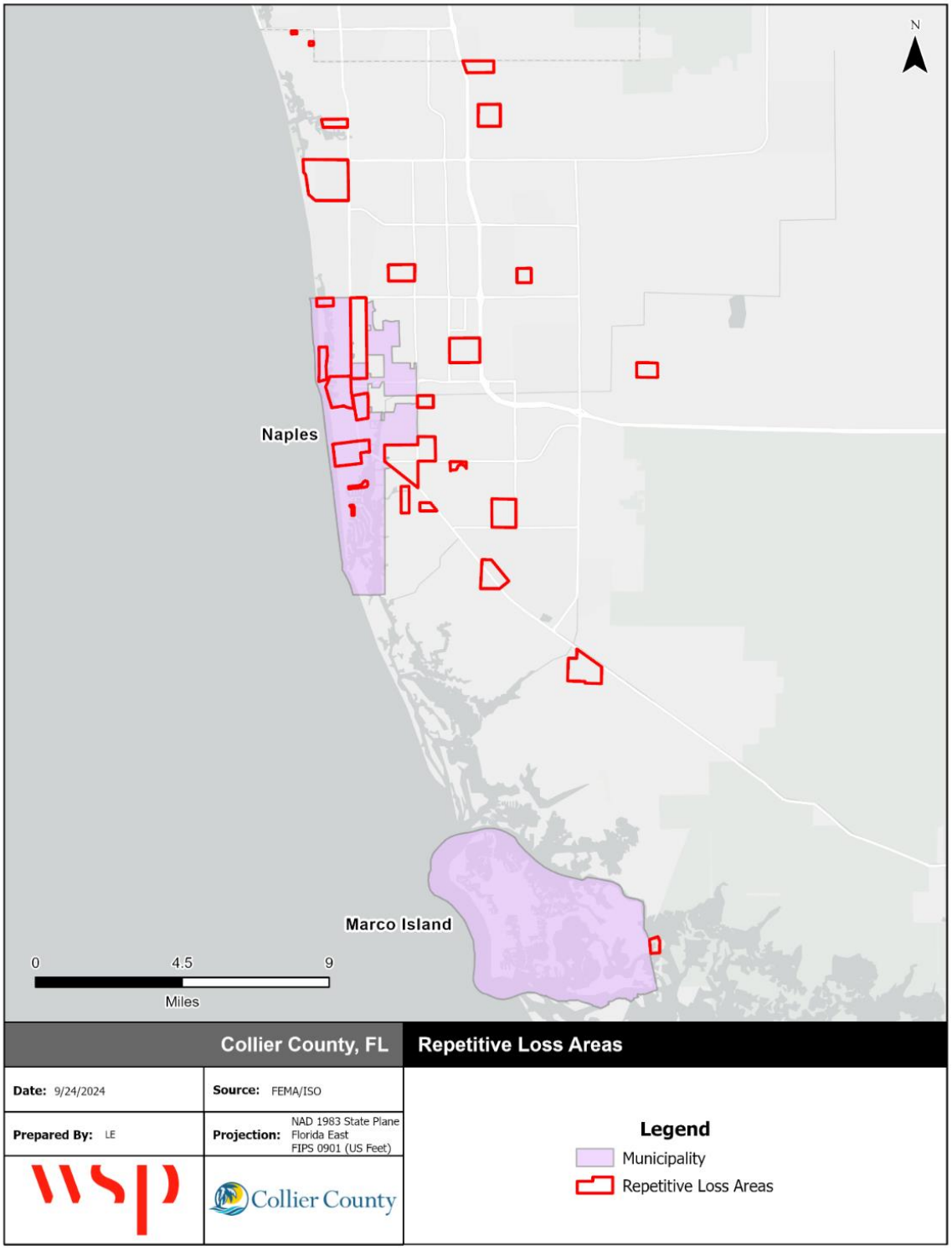
1. **Acquisition and Buyout Programs**: Targeting RL and SRL structures for voluntary buyouts to permanently remove them from high-risk areas.

2. **Elevation Projects**: Elevating structures above the Base Flood Elevation (BFE) to reduce future flood risks.
3. **Floodproofing**: Implementing wet or dry floodproofing measures, especially for commercial properties.
4. **Community Engagement**: Educating property owners on risk reduction options and available financial incentives.
5. **Infrastructure Upgrades**: Enhancing drainage systems in areas with high concentrations of RL and SRL properties.

Future Goals

The Collier County LMS Working Group will continue to work with FEMA and NFIP to update RL and SRL data annually. Additionally, mitigation projects addressing these structures will be prioritized to reduce future claims, increase community resilience, and enhance eligibility for federal and state funding opportunities.

Figure 2.18 – Repetitive Loss Areas



Source: FEMA/ISO

Based on the findings of this flood hazard risk and vulnerability assessment, the mapped 1% annual chance floodplain, repetitive loss areas, and coastal low-lying areas are likely to continue to flood in the future. Changes in flood risk may occur due to climate change and sea level rise, discussed in more detail in Section 2.5.7. The vulnerability assessment in Section 2.5.7 also describes the potential impact of future flooding by presenting property exposure to areas that could be impacted by sea level rise.

ENVIRONMENT

During a flood event, chemicals and other hazardous substances may end up contaminating local water bodies. Flooding kills animals and in general disrupts the ecosystem. Snakes and insects may also make their way to the flooded areas.

Floods can also cause significant erosion, which can alter streambanks and deposit sediment, changing the flow of streams and rivers and potentially reducing the drainage capacity of those waterbodies.

CONSEQUENCE ANALYSIS

Table 2.31 summarizes the potential detrimental consequences of flood.

Table 2.31 – Consequence Analysis - Flood

Category	Consequences
Public	Localized impact expected to be severe for incident areas and moderate to light for other adversely affected areas.
Responders	First responders are at risk when attempting to rescue people from their homes. They are subject to the same health hazards as the public. Flood waters may prevent access to areas in need of response or the flood may prevent access to the critical facilities themselves which may prolong response time. Damage to personnel will generally be localized to those in the flood areas at the time of the incident and is expected to be limited.
Continuity of Operations (including Continued Delivery of Services)	Floods can severely disrupt normal operations, especially when there is a loss of power. Damage to facilities in the affected area may require temporary relocation of some operations. Localized disruption of roads, facilities, and/or utilities caused by incident may postpone delivery of some services.
Property, Facilities and Infrastructure	Buildings and infrastructure, including transportation and utility infrastructure, may be damaged or destroyed. Impacts are expected to be localized to the area of the incident. Severe damage is possible.
Environment	Chemicals and other hazardous substances may contaminate local water bodies. Wildlife and livestock deaths possible. The localized impact is expected to be severe for incident areas and moderate to light for other areas affected by the flood or HazMat spills.
Economic Condition of the Jurisdiction	Local economy and finances will be adversely affected, possibly for an extended period. During floods (especially flash floods), roads, bridges, farms, houses and automobiles are destroyed. Additionally, the local government must deploy firemen, police and other emergency response personnel and equipment to help the affected area. It may take years for the affected communities to be re-built and business to return to normal.
Public Confidence in the Jurisdiction's Governance	Ability to respond and recover may be questioned and challenged if planning, response, and recovery are not timely and effective.

HAZARD SUMMARY BY JURISDICTION

The following table summarizes flood hazard risk by jurisdiction. Flood risk due to storm surge, high tide flooding, flash flooding, and stormwater flooding exists across the entire county. All participating jurisdictions have over 86% of their area in the SFHA and thus have a high degree of exposure to flooding; given that other sources of flooding and other levels of flooding may occur beyond these areas, the spatial extent was considered large for all jurisdictions. Impact ratings were based upon Hazus loss estimates as well as the overall risk of death or injury; all jurisdictions were rated with an impact of critical. All communities also face a uniform probability of flooding.

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Everglades City	4	3	4	3	3	3.5	H
Seminole Tribe Immokalee Reservation	4	3	4	3	3	3.5	H
Marco Island	4	3	4	3	3	3.5	H
Naples	4	3	4	3	3	3.5	H
Unincorporated Collier County*	4	3	4	3	3	3.5	H

*Note: Unincorporated Collier County includes the following jurisdictions: Collier County Government, Collier County Public Schools, Collier Mosquito Control District, North Collier Fire Control District, Greater Naples Fire Rescue District, Immokalee Fire Control District, Naples Airport Authority, Port of the Isles, and South Florida Water Management District.

TROPICAL CYCLONES

HAZARD DESCRIPTION

Hurricanes and tropical storms are classified as cyclones and defined as any closed circulation developing around a low-pressure center in which the winds rotate counterclockwise in the Northern Hemisphere (or clockwise in the Southern Hemisphere) and whose diameter averages 10 to 30 miles across. A tropical cyclone refers to any such circulation that develops over tropical waters. Tropical cyclones act as a “safety-valve,” limiting the continued build-up of heat and energy in tropical regions by maintaining the atmospheric heat and moisture balance between the tropics and the pole-ward latitudes. The primary damaging forces associated with these storms are high-level sustained winds, heavy precipitation, and tornadoes.

The key energy source for a tropical cyclone is the release of latent heat from the condensation of warm water. Their formation requires a low-pressure disturbance, warm sea surface temperature, rotational force from the spinning of the earth, and the absence of wind shear in the lowest 50,000 feet of the atmosphere. Most hurricanes and tropical storms form in the Atlantic Ocean, Caribbean Sea, and Gulf of Mexico during the official Atlantic hurricane season, which encompasses the months of June through November. The peak of the Atlantic hurricane season is in early to mid-September and the average number of storms that reach hurricane intensity per year in the Atlantic basin is about six.

While hurricanes pose the greatest threat to life and property, tropical storms and depressions also can be devastating. A tropical disturbance can grow to a more intense

stage through an increase in sustained wind speeds. The progression of a tropical disturbance is described below.

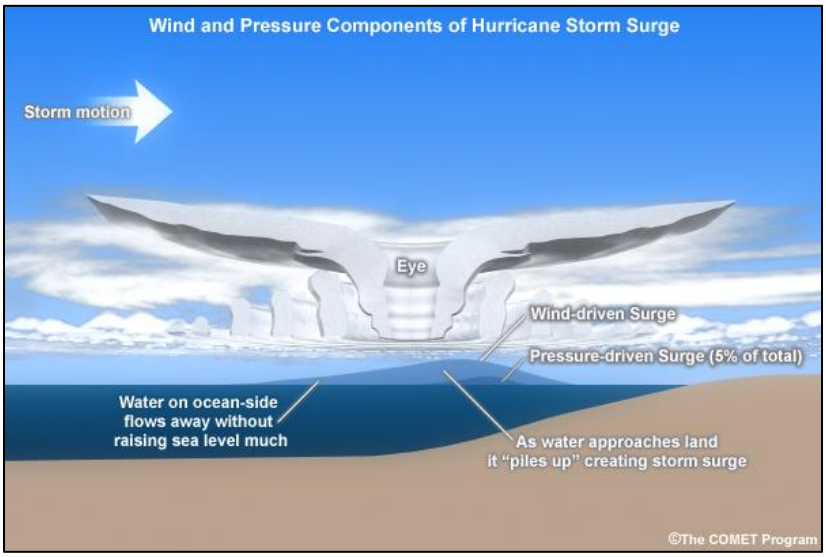
- Tropical Depression: A tropical cyclone with maximum sustained winds of 38 mph (33 knots) or less.
- Tropical Storm: A tropical cyclone with maximum sustained winds of 39 to 73 mph (34 to 63 knots).
- Hurricane: A tropical cyclone with maximum sustained winds of 74 mph (64 knots) or higher. In the western North Pacific, hurricanes are called typhoons; similar storms in the Indian Ocean and South Pacific Ocean are called cyclones.
- Major Hurricane: A tropical cyclone with maximum sustained winds of 111 mph (96 knots) or higher, corresponding to a Category 3, 4 or 5 on the Saffir-Simpson Hurricane Wind Scale.

As an incipient hurricane develops, barometric pressure (measured in millibars or inches) at its center falls and winds increase. If the atmospheric and oceanic conditions are favorable, it can intensify into a tropical depression. When maximum sustained winds reach or exceed 39 miles per hour, the system is designated a tropical storm, given a name, and is monitored by the National Hurricane Center in Miami, Florida. When sustained winds reach or exceed 74 miles per hour the storm is deemed a hurricane. Hurricanes are given a classification based on the Saffir-Simpson Scale; this scale is reproduced in Table 2.32.

The greatest potential for loss of life related to a hurricane is from the storm surge. Storm surge is water that is pushed toward the shore by the force of the winds swirling around the storm as shown in Figure 2.19. This advancing surge combines with the normal tides to create the hurricane storm tide, which can increase the mean water level to heights impacting roads, homes and other critical infrastructure. In addition, wind driven waves are superimposed on the storm tide. This rise in water level can cause severe flooding in coastal areas, particularly when the storm tide coincides with the normal high tides.

The maximum potential storm surge for a location depends on several different factors. Storm surge is a very complex phenomenon because it is sensitive to the slightest changes in storm intensity, forward speed, size (radius of maximum winds-RMW), angle of approach to the coast, central pressure (minimal contribution in comparison to the wind), and the shape and characteristics of coastal features such as bays and estuaries. Other factors which can impact storm surge are the width and slope of the continental shelf and the depth of the ocean bottom. A narrow shelf, or one that drops steeply from the shoreline and subsequently produces deep water close to the shoreline, tends to produce a lower surge but higher and more powerful storm waves. A shallow slope, as is found off the coast of Collier County, will produce a greater storm surge than a steep shelf.

Figure 2.19 – Components of Hurricane Storm Surge



Source: NOAA/The COMET Program

Damage during hurricanes may also result from inland flooding from associated heavy rainfall.

Like hurricanes, nor'easters are ocean storms capable of causing substantial damage to coastal areas in the Eastern United States due to their strong winds and heavy surf. Nor'easters are named for the winds that blow in from the northeast and drive the storm up the East Coast along the Gulf Stream. They are caused by the interaction of the jet stream with horizontal temperature gradients and generally occur during the fall and winter months when moisture and cold air are plentiful.

Nor'easters are known for dumping heavy amounts of rain and snow, producing hurricane-force winds, and creating high surf that causes severe beach erosion and coastal flooding. There are two main components to a nor'easter: (1) a Gulf Stream low-pressure system (counter-clockwise winds) generated off the southeastern U.S. coast, gathering warm air and moisture from the Atlantic, and pulled up the East Coast by strong northeasterly winds at the leading edge of the storm; and (2) an Arctic high-pressure system (clockwise winds) which meets the low-pressure system with cold, arctic air blowing down from Canada. When the two systems collide, the moisture and cold air produce a mix of precipitation and can produce dangerously high winds and heavy seas. As the low-pressure system deepens, the intensity of the winds and waves increases and can cause serious damage to coastal areas as the storm moves northeast.

- *Warning Time: 1 – More than 24 hours*
- *Duration: 3 – Less than 1 week*

LOCATION

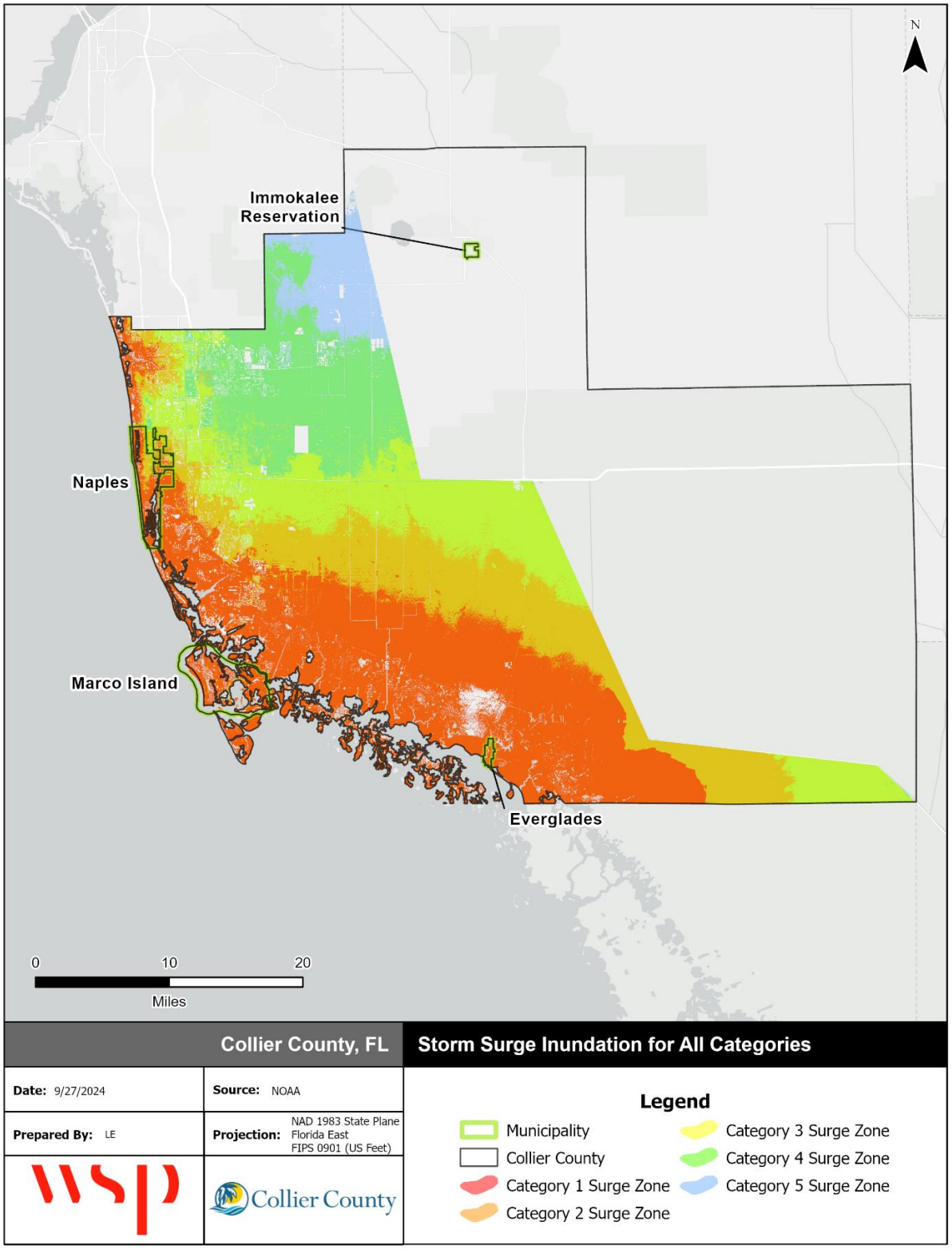
Hurricanes and tropical storms can occur anywhere within the Collier County planning area. While coastal areas are most vulnerable to hurricanes, their wind and rain impacts

can be felt hundreds of miles inland. Storm surge impacts are more limited, affecting areas along coastal and estuarine shorelines and reaching further inland depending on the height of the surge. All of Collier County and its jurisdictions are vulnerable to hurricane and tropical storm surge, but to varying degrees, with areas closer to the coast and water bodies that drain into the coast facing greater risk.

Figure 2.20 shows the estimated extent of surge by storm category according to NOAA Sea, Lake, and Overland Surges from Hurricanes (SLOSH) data. The SLOSH model is a computerized numerical model developed by the NWS to estimate storm surge heights resulting from historical, hypothetical, or predicted hurricanes by considering the atmospheric pressure, size, forward speed, and track data. The model creates outputs for all different storm simulations from all points of the compass. Each direction has a MEOW (maximum envelope of water) for each category of storm (1-5), and all directions combined result in a MOMs (maximum of maximums) set of data. Note that the MOM does not illustrate the storm surge that will occur from any given storm but rather the full potential extent of surge from all possible storms. As shown in these maps, Collier County is vulnerable to storm surge impacts from all storm categories. Marco Island, Everglades City, and much of Naples are likely to be impacted from storms rated as Category 1 and greater.

- *Spatial Extent: 4 – Large*

Figure 2.20 – Storm Surge Inundation for All Categories



Source: NOAA SLOSH Data

EXTENT

As an incipient hurricane develops, barometric pressure (measured in millibars or inches) at its center falls and winds increase. If the atmospheric and oceanic conditions are favorable, it can intensify into a tropical depression. When maximum sustained winds reach or exceed 39 miles per hour, the system is designated a tropical storm, given a name, and is closely monitored by the National Hurricane Center in Miami, Florida. When sustained winds reach or exceed 74 miles per hour the storm is deemed a hurricane. Hurricane intensity is further classified by the Saffir-Simpson Scale (Table 2.32), which rates hurricane intensity on a scale of 1 to 5, with 5 being the most intense.

Table 2.32 – Saffir-Simpson Scale

Category	Maximum Sustained Wind Speed (MPH)	Types of Damage
1	74–95	Very dangerous winds will produce some damage; Well-constructed frame homes could have damage to roof, shingles, vinyl siding and gutters. Large branches of trees 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 a few to several days.
2	96–110	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	Devastating damage will occur; Well-built 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	Catastrophic damage will occur; Well-built 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 +	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: National Hurricane Center

The Saffir-Simpson Scale categorizes hurricane intensity linearly based upon maximum sustained winds and barometric pressure, which are combined to estimate potential damage Categories 3, 4, and 5 are classified as “major” hurricanes and, while hurricanes within this range comprise only 20 percent of total tropical cyclone landfalls, they account for over 70 percent of the damage in the United States. Table 2.33 describes the damage that could be expected for each category of hurricane. Damage during hurricanes may also result from spawned tornadoes, storm surge, and inland flooding associated with heavy rainfall that usually accompanies these storms.

Table 2.33 – Hurricane Damage Classifications

Storm Category	Damage Level	Description of Damages	Photo Example
1	MINIMAL	No real damage to building structures. Damage primarily to unanchored mobile homes, shrubbery, and trees. Also, some coastal flooding and minor pier damage.	
2	MODERATE	Some roofing material, door, and window damage. Considerable damage to vegetation, mobile homes, etc. Flooding damages piers and small craft in unprotected moorings may break their moorings.	
3	EXTENSIVE	Some structural damage to small residences and utility buildings, with a minor amount of curtainwall failures. Mobile homes are destroyed. Flooding near the coast destroys smaller structures, with larger structures damaged by floating debris. Terrain may be flooded well inland.	
4	EXTREME	More extensive curtainwall failures with some complete roof structure failure on small residences. Major erosion of beach areas. Terrain may be flooded well inland.	
5	CATASTROPHIC	Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown over or away. Flooding causes major damage to lower floors of all structures near the shoreline. Massive evacuation of residential areas may be required.	

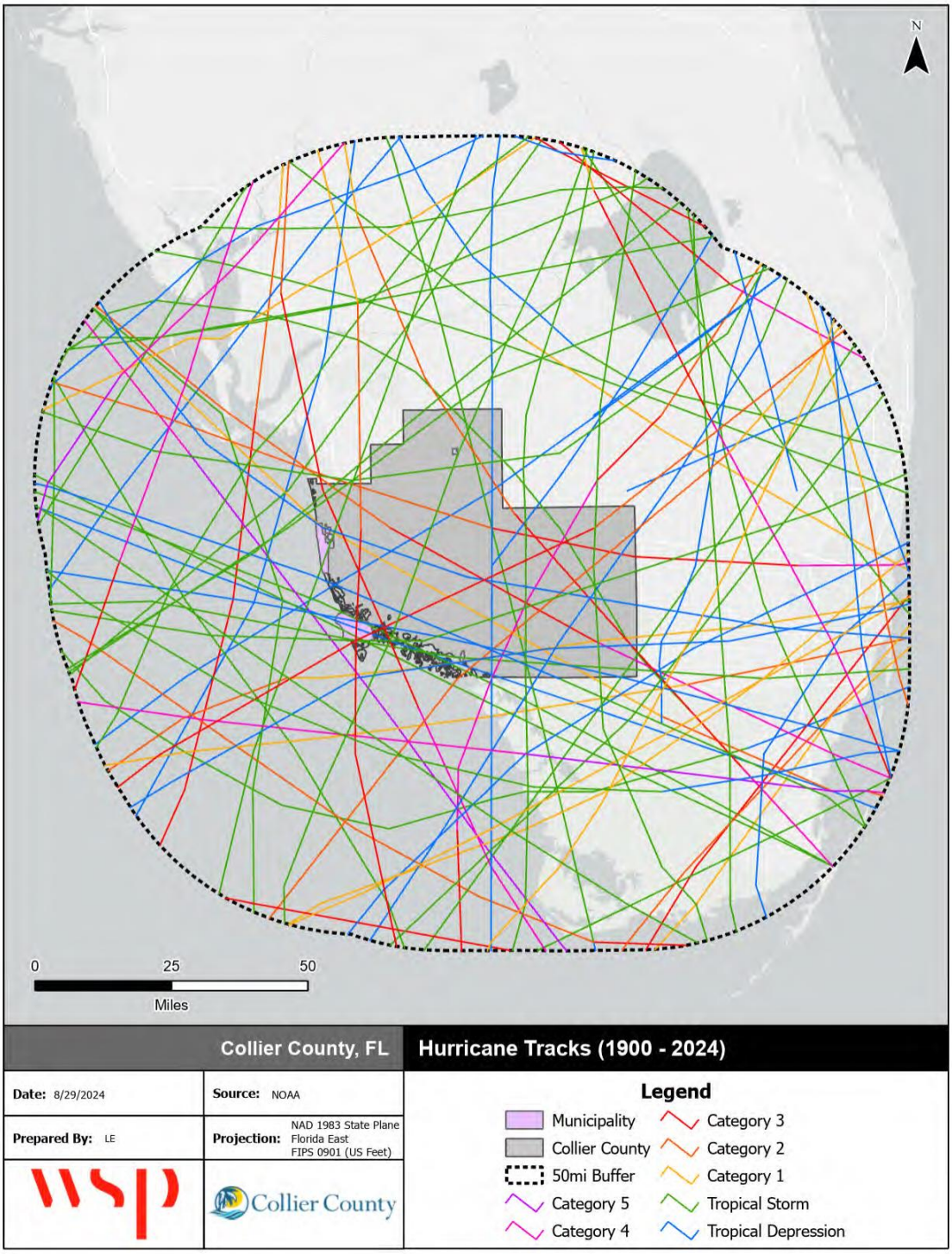
Source: National Hurricane Center; Federal Emergency Management Agency

The Saffir-Simpson scale provides a measure of extent of a hurricane. The county is susceptible to the full force of every category of hurricane.

- *Impact: 4 – Catastrophic*

HISTORICAL OCCURRENCES

According to the Office of Coastal Management's Tropical Cyclone Storm Segments data, which is a subset of the International Best Track Archive for Climate Stewardship (IBTrACS) dataset, 85 hurricanes and tropical storms passed within 50 miles of Collier County between 1900 and 2024. These storm tracks are shown in Figure 2.21. The date, storm name, storm category, and maximum wind speed of each event are detailed in Table 2.34. Figure 2.21 – Hurricane/Tropical Storm Tracks within 50 miles of Collier County, 1900-2024



Source: NOAA Office of Coastal Management

Table 2.34 – Tropical Cyclone Tracks Passing within 50 Miles of Collier County, 1900-2024

Date	Storm Name	Max Storm Category*	Max Wind Speed (mph)
8/10/1901	Unnamed	Tropical Storm	46
9/11/1903	Unnamed	Category 1	86
10/17/1904	Unnamed	Category 1	81
10/20/1904	Unnamed	Tropical Depression	36
6/17/1906	Unnamed	Category 1	86
10/18/1906	Unnamed	Category 3	121
10/22/1906	Unnamed	Tropical Depression	34
9/18/1907	Unnamed	Tropical Depression	34
6/28/1909	Unnamed	Tropical Storm	52
8/29/1909	Unnamed	Tropical Storm	52
9/25/1909	Unnamed	Tropical Depression	34
10/17/1910	Unnamed	Category 4	132
5/14/1916	Unnamed	Tropical Storm	46
8/25/1916	Unnamed	Tropical Storm	46
11/15/1916	Unnamed	Extratropical Storm	63
10/15/1921	Unnamed	Tropical Depression	34
10/20/1924	Unnamed	Category 2	104
12/1/1925	Unnamed	Tropical Storm	63
9/18/1926	Unnamed	Category 4	144
8/13/1928	Unnamed	Tropical Storm	69
9/17/1928	Unnamed	Category 4	144
9/28/1929	Unnamed	Category 3	115
8/30/1932	Unnamed	Tropical Storm	63
7/31/1933	Unnamed	Tropical Storm	58
9/3/1935	Unnamed	Category 5	184
11/4/1935	Unnamed	Category 2	98
6/15/1936	Unnamed	Tropical Storm	46
7/29/1936	Unnamed	Tropical Storm	63
10/6/1941	Unnamed	Category 2	98
10/19/1944	Unnamed	Category 3	115
9/4/1945	Unnamed	Tropical Storm	40
9/15/1945	Unnamed	Category 4	132
9/17/1947	Unnamed	Category 4	132
10/12/1947	Unnamed	Category 1	92
9/22/1948	Unnamed	Category 4	132
10/5/1948	Unnamed	Category 2	104
8/27/1949	Unnamed	Category 4	132
10/18/1950	King	Category 4	132
10/2/1951	How	Tropical Storm	63
2/3/1952	Unnamed	Tropical Storm	63
7/11/1953	Unnamed	Tropical Depression	34
8/29/1953	Unnamed	Tropical Depression	28
10/9/1953	Hazel	Category 1	86
6/19/1954	Unnamed	Tropical Depression	34
10/16/1956	Unnamed	Tropical Storm	63

Date	Storm Name	Max Storm Category*	Max Wind Speed (mph)
10/18/1959	Judith	Tropical Storm	63
9/10/1960	Donna	Category 4	144
9/24/1960	Florence	Tropical Storm	40
8/27/1964	Cleo	Category 2	104
10/14/1964	Isbell	Category 3	127
9/8/1965	Betsy	Category 3	127
6/4/1968	Abby	Tropical Storm	69
6/18/1968	Brenda	Tropical Depression	28
8/10/1968	Dolly	Tropical Depression	34
9/27/1968	Unnamed	Tropical Depression	34
9/7/1969	Gerda	Tropical Depression	28
10/2/1969	Jenny	Tropical Storm	46
8/13/1971	Unnamed	Tropical Storm	28
8/30/1971	Unnamed	Tropical Storm	28
9/5/1972	Dawn	Tropical Storm	34
6/11/1976	Unnamed	Tropical Storm	23
8/19/1976	Dottie	Tropical Storm	40
7/2/1981	Unnamed	Tropical Depression	
8/17/1981	Dennis	Tropical Storm	40
10/26/1984	Unnamed	Tropical Depression	31
7/23/1985	Bob	Tropical Storm	46
10/11/1990	Marco	Tropical Storm	58
6/30/1991	Ana	Tropical Depression	23
8/24/1992	Andrew	Category 5	167
11/16/1994	Gordon	Tropical Storm	52
11/5/1998	Mitch	Tropical Storm	63
8/21/1999	Harvey	Tropical Storm	58
10/15/1999	Irene	Category 1	81
8/13/2004	Charley	Category 4	150
9/21/2004	Ivan	Tropical Depression	28
8/25/2005	Katrina	Category 1	81
10/24/2005	Wilma	Category 3	127
8/30/2006	Ernesto	Tropical Storm	46
8/19/2008	Fay	Tropical Storm	69
7/23/2010	Bonnie	Tropical Storm	40
9/10/2017	Irma**	Category 4	132
9/3/2018	Gordon	Tropical Storm	57
9/12/2020	Sally	Tropical Storm	40
6/4/2022	Alex	Tropical Storm	42
9/28/2022	Ian	Category 4	161

Source: NCEI

*Reports the most intense category that occurred within 50 miles of Collier County, not for the storm event overall.

The above map of storms is not an exhaustive list of hurricanes that have affected Collier County. Several storms have passed further than 50 miles away from the Region yet had strong enough wind or rain impacts to cause impacts. NCEI records hurricane and tropical

storm events across the region by county and zone; therefore, one event that impacts multiple jurisdictions may be recorded multiple times. During the 24-year period from 2000 through 2023, NCEI records 16 hurricane and tropical storm reports across 11 separate days. These events are summarized in Table 2.35. This table only represents those events reported to NCEI as a hurricane or tropical storm. Where property damage estimates were broken out by type, NCEI reports only the value of wind-related damages. While there are no records for wind related damages due to Hurricane Irma and storm surge in the NCEI database, it had significant impact on the County. Following the storm, it was reported that $320 million in damages occurred in unincorporated areas of the County alone, a number which is likely much higher when considering Naples, Marco Island, and Everglades City all experienced damage as well. In total, 50 Florida counties were included in the disaster declaration and eligible for individual assistance. FEMA has approved over $1 billion individual and household program dollars across these counties.

Table 2.35 – Recorded Hurricanes and Typhoons in Collier County, 2000-2023

Date	Storm	Deaths/Injuries	Property Damage	Crop Damage
9/16/2000	Tropical Storm Gordon	0/0	$0	$0
9/13/2001	Tropical Storm Gabrielle	0/0	$50,000	$0
8/13/2004	Hurricane Charley	0/0	$2,500,000	$0
9/4/2004	Hurricane Frances	0/0	$0	$0
7/8/2005	Hurricane Dennis	0/0	$0	$0
10/24/2005	Hurricane Wilma	1/0	$0	$0
8/30/2006	Tropical Storm Ernesto	0/0	$0	$0
8/18/2008	Tropical Storm Fay	0/0	$20,000	$0
8/26/2012	Tropical Storm Isaac	0/0	$0	$0
9/9/2017	Hurricane Irma	0/0	$222,500,000	$0
9/28/2022	Hurricane Ian	0/0	$2,200,000,000	$0
	Total	0/0	$2,425,070,000	$0

Source: NCEI

STORM SURGE

Collier County is also vulnerable to storm surge caused by hurricanes and tropical storms. Although previously summarized in Section 2.5.1, Table 2.36 further details storm surge events that have impacted Collier County in the 24-year period from 2000 through 2023. Event narratives following this table provide a fuller scope of the impacts from selected events.

Table 2.36 – Recorded Storm Surge events in Collier County, 2000-2023

Date	Storm	Deaths/Injuries	Property Damage	Crop Damage
10/24/2005	Hurricane Wilma	0/0	$0	$0
8/18/2008	Tropical Storm Fay	0/0	$60,000	$0
8/26/2012	Tropical Storm Isaac	0/0	$6,000,000	$0
6/6/2016	Tropical Storm Colin	0/0	$0	$0
9/10/2017	Hurricane Irma	0/0	$0	$0
11/11/2020	Hurricane Eta	0/0	$0	$0
9/28/2022	Hurricane Ian	3/0	$0	$0

Date	Storm	Deaths/Injuries	Property Damage	Crop Damage
8/29/2023	Hurricane Idalia	0/0	$0	$0
	Total	0/0	$6,060,000	$0

Source: NCEI

September 16, 2000 – Tropical Storm Gordon formed in the Gulf of Mexico about 375 miles west of Naples late on September 15th. It moved northeast, briefly intensified to hurricane strength, then moved ashore in the Big Bend area of Florida as a tropical storm late on September 17th. The outer fringes of Gordon moved across south Florida, producing 3-6 inches of rain, numerous funnel clouds and waterspouts, and at least three tornadoes.

September 13, 2001 – Tropical storm Gabrielle formed in the eastern Gulf of Mexico from a trough of low pressure that had lingered over Florida since September 8. Gabrielle moved east northeast at 7 to 12 mph with the center crossing the Florida west coast near Venice at noon on September 14. The minimum central pressure in Collier County was 999.4 mb at Naples. Maximum winds in Collier County were at Everglades City with sustained winds of 44 knots and peak gusts of 61 knots. Storm surge values of 3 to 5 feet were observed along much of the Collier County coast which caused some coastal flooding and minor to moderate beach erosion. The estimate to repair the beach erosion was $3 million. Flooding by rainfall of 2 to 5 inches along with the storm surge damaged 60 to 70 residences and 12,500 customers lost electrical power.

August 13, 2004 – Early on August 13, Hurricane Charley intensified to Category 4 status and turned to a north-northeast direction before making landfall near Port Charlotte around 3 PM EDT. The first outer rain band, with wind gusts estimated up to 60 mph, impacted the south Florida Peninsula between midnight and 2 AM EDT. In Collier County, a peak wind gust of 84 mph was measured at 2:50 PM EDT on the top of a condominium at Vanderbilt Beach before the equipment failed. The Naples ASOS equipment failed well before the maximum winds or minimum pressure occurred. Wind gusts at La Belle were estimated at 80 mph. Rainfall in most locations in Collier County was around two inches with an unofficial amount of 7.5 inches reported in North Naples. Radar local rainfall estimates of 8 to 10 inches were made in North Naples. Flooding was mostly minimal.

The highest Storm Tide along the southwest Florida Coast was estimated at three feet near Wiggins Pass with heights of one to two feet from Naples to Marco Island to Everglades City. Tidal flooding was minimal. Lake Okeechobee levels increased up to three feet above normal along the north and northeast shores. Hurricane wind damage was greatest in North Naples and Vanderbilt Beach with numerous power poles, trees and signs blown down, and a few roofs damaged. Damage also occurred to screened porches throughout the Naples-Marco Island metropolitan areas. Damage occurred to Gulf-side structures along most of the coastline but beach erosion was mostly minor. Four persons in Naples suffered minor injuries when their vehicle was touched by a downed power line during the storm. Three persons in Collier County died from indirect causes after the hurricane. An estimated 130,000 customers in Collier County lost power. About 2,500 people took refuge in six shelters.

October 24, 2005 – Wilma was a classic October hurricane which struck South Florida as a Category 3 hurricane on October 24th, 2005. The hurricane made landfall as a category 3 storm shortly before 7 AM Monday, October 24th on the southwest Florida coast between Everglades City and Cape Romano with maximum sustained winds of 125 mph and an estimated minimum central pressure of 950 mb. Wilma exhibited a very large 55- to 65-mile-wide eye while crossing the state, and the eye covered large portions of South Florida, including the eastern two-thirds of Collier County. Sustained hurricane force winds (74 mph or greater) were observed over most areas. The highest recorded gusts were in the 100-120 mph range. Rainfall amounts across South Florida generally ranged from 2 to 4 inches across southern sections of the peninsula to 4 to 6 inches across western Collier County and around Lake Okeechobee. A storm surge of around 8 feet was estimated in Marco Island, with 4 feet in Everglades City. One confirmed tornado was observed in rural Collier County around 2:30 AM on the 24th, moving rapidly northwest from the intersection of U.S. 41 and State Road 29 to the town of Copeland three miles to the north. An F1 intensity was assigned to the tornado as it caused snapped power poles, uprooted large trees, and significantly damaged mobile homes.

In Collier, winds caused one direct fatality. While no monetary impacts were reported in NCEI for Collier County, total damage estimates across South Florida range from $9 to $12 billion. Damage was widespread, with large trees and power lines down virtually everywhere, causing widespread power outages. Structural damage was heaviest in Broward and Palm Beach counties where roof damage and downed or split power poles were noted in some areas. High-rise buildings suffered considerable damage, mainly in the form of broken windows. This was observed mainly along the southeast metro areas, but also in Naples, which underscores the higher wind speeds with height commonly observed in hurricanes.

August 18, 2008 - The center of Tropical Storm Fay moved across Key West early in the evening of the 18th and into the mainland of South Florida at Cape Romano shortly before 5 AM on the 19th. Maximum sustained winds were estimated to be around 52 knots (60 MPH) at landfall, however a maximum wind gust of 69 knots (79 MPH) was recorded on a South Florida Water Management gauge on Lake Okeechobee as the storm passed. Wind gusts to tropical storm force were felt area-wide, with sustained tropical storm force winds experienced over portions Collier County. Wind damage was most significant in the areas affected by tropical storm force sustained winds, primarily around Lake Okeechobee and interior sections of southwest Florida, with only minor wind damage elsewhere. Rainfall ranged 6-8 inches in southwest Florida. The height of the storm tide was around 5 feet in the Everglades City and Chokoloskee areas. Minimal storm surge was noted elsewhere. All the associated effects of Tropical Storm Fay in South Florida resulted in 1 fatality, 4 injuries, and $3.949 million in property damage. In Collier County, total wind damages were reported to be $20,000 and total surge damages at $60,000.

August 26, 2012 – The center of Tropical Storm Isaac moved over the Florida Straits south of the Florida Keys on Sunday, August 26th, passing just south of Key West. Rain bands and winds on the north side of the circulation of Isaac affected Southeast Florida throughout the day of the 26th and part of the 27th. Maximum storm tide values were observed at 4.9 feet at Naples, with estimates of 5 to 7 feet along the southern Collier County coast from Goodland to Everglades City. Highest estimated inundation values of

up to 3 feet above ground level were noted in Goodland and Everglades City. Major beach erosion was also observed along the Collier County beaches. Flooding caused by storm tides along the coast in Collier County resulted in about $400,000 in damage. Damage from beach erosion in Collier and Broward counties was estimated at $6 million.

September 10, 2017 – Major Hurricane Irma made landfall in Southwest Florida on Marco Island as a Category 3 hurricane around 330 PM EDT on September 10th. The strength and size of Hurricane Irma allowed for impacts to be felt across all of South Florida. Irma brought widespread wind damage, heavy rainfall and storm surge to all areas. Hurricane-force sustained wind were measured in much of Collier County. Gusts to hurricane force were felt over all South Florida, with the maximum measured wind gust of 142 mph in Naples. Widespread tree damage and some structural damage occurred across all of South Florida, with most structural damage on the minor side. Hurricane Irma brought widespread rainfall and some flooding across the region. From the period between 8 AM EDT September 9th and 8 AM EDT September 11th, 8 to 15 inches of rain were measured over interior portions of Southwest Florida. This rainfall near the end of a wet summer led to significant flooding over these areas. 5 to 10 inches of rain were noted elsewhere across South Florida, with areas of minor to moderate flooding. $222.5 million in damage came in from Collier County. Details about storm surge from Hurricane Irma can be found in section.

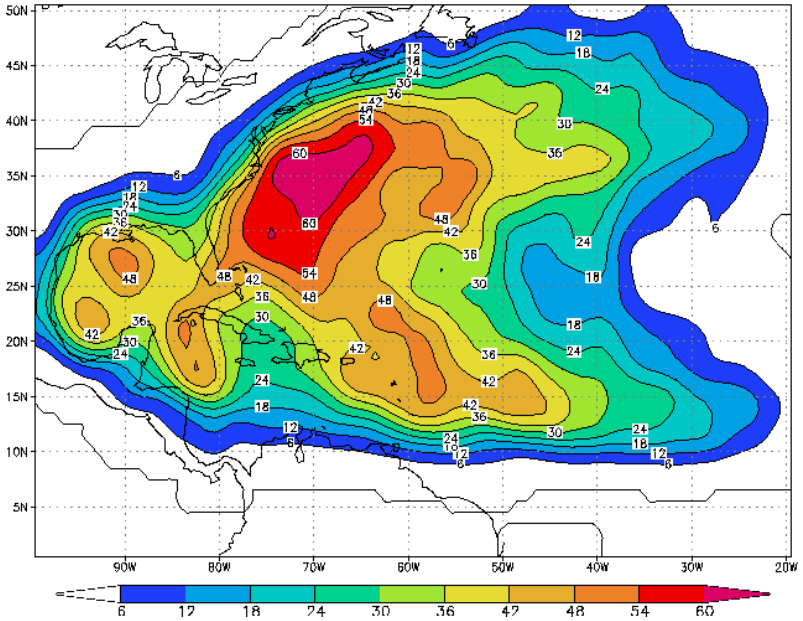
September 28, 2022 – A tropical depression formed in the central Caribbean Sea on September 23rd, then was upgraded to Tropical Storm Ian at 11 PM on September 23rd. Ian moved westward, then turned northwest on September 25th, passing just west of Jamaica and near the Cayman Islands. Ian became a hurricane on Monday, September 26th south of western Cuba, then moved north and made landfall in Pinar Del Rio Province, Cuba early on Tuesday, September 27th as a Category 3 hurricane with maximum sustained winds of 125 mph. Ian moved into the SE Gulf of Mexico around midday on Tuesday, September 27th, then moved over Dry Tortugas as a Category 3 hurricane later that evening. Ian strengthened over the SE Gulf of Mexico as it approached Southwest Florida, becoming a Category 4 hurricane at 7 AM on Wednesday, September 28th with maximum sustained winds of 155 mph and a lowest central pressure of 936 mb. Ian produced a catastrophic storm surge across coastal sections of SW Florida. Storm surge from surveys was estimated in the 8-11 ft range above MHHW along the Gulf beaches from Naples north to Barefoot Beach, and extending inland about 1 mile. Storm surge of 4-7 ft above MHHW was surveyed in the Naples Bay area and extending north to the Naples Airport area, as well as in North Naples near the Cocohatchee River. The vast majority of damage was likely caused by the significant to major storm surge in Collier County. Wind gusts as high as 110 mph were measured in the Naples area at heights well above the standard surface elevation of 33 feet. Sustained winds in the 70-75 mph range likely occurred in NW Collier County as well as far western sections of Hendry and Glades counties. A total of 13 reported tornadoes were spawned by Ian on Tuesday, September 27th and early on Wednesday, September 28th as it was approaching the SW Florida coast, the strongest being an EF-2 in the Delray Beach area of Palm Beach County.

PROBABILITY OF FUTURE OCCURANCE

In the 24-year period from 2000 through 2023, 11 hurricanes and tropical storms have impacted Collier County, which equates to a 45 percent annual probability of hurricane winds impacting the planning area in any given year. This probability does not account for impacts from hurricane rains or storm surge, which may also be severe. The probability of a hurricane or tropical storm impacting Collier County is likely.

Figure 2.22 shows, for any location, the chance of a hurricane or tropical storm affecting the area sometime during the Atlantic hurricane season. The figure was created by the NOAA's Hurricane Research Division, using data from 1944 to 1999. The figure shows the number of times a storm or hurricane was located within approximately 100 miles (165 kilometers) of a given spot in the Atlantic basin

Figure 2.22 – Empirical Probability of a Named Hurricane or Tropical Storm



Source: National Oceanic and Atmospheric Administration, Hurricane Research Division

Florida has over 8,000 miles of coastline that often gets hit by direct storms. The state is very vulnerable to the impacts of hurricanes and tropical storms as detailed in this section. Substantial hurricane damage is typically most likely to be expected in the coastal counties of the state; however, hurricane and tropical storm-force winds have significantly impacted areas far inland.

- *Probability: 3 – Likely*

CLIMATE CHANGE

Collier County's coastal location makes it a prime target for hurricane landfalls and changing climate and weather conditions may increase the number and frequency of future hurricane events. Hurricanes and other coastal storms may result in increased flooding, injuries, deaths, and extreme property loss. According to the US Government Accountability Office, national storm losses from changing frequency and intensity of storms is projected to increase anywhere from $4-6 billion in the near future.

According to NOAA, weather extremes will likely cause more frequent, stronger storms in the future due to rising surface temperatures. NOAA models predict that while there may be less frequent, low-category storm events (Tropical Storms, Category 1 Hurricanes), there will be more, high-category storm events (Category 4 and 5 Hurricanes) in the future. This means that there may be fewer hurricanes overall in any given year, but when hurricanes do form, it is more likely that they will become large storms that can create massive damage.

VULNERABILITY ASSESSMENT

PEOPLE

The very young, the elderly and the handicapped are especially vulnerable to harm from hurricanes. For those who are unable to evacuate for medical reasons, there should be provision to take care of special-needs patients and those in hospitals and nursing homes. Many of these patients are either oxygen- dependent, insulin-dependent, or in need of intensive medical care. There is a need to provide ongoing treatment for these vulnerable citizens, either on the coast or by air evacuation to upland hospitals. The stress from disasters such as a hurricane can result in immediate and long-term physical and emotional health problems among victims.

- **Population Patterns**:
    - Rising coastal population densities, particularly in Naples, Marco Island, and other coastal areas.
    - Significant seasonal population influx affecting evacuation timing and available sheltering resources.
    - Vulnerable populations, such as retirees and tourists, may face challenges in evacuating quickly.
    - Growth in densely populated areas requiring higher capacity for emergency shelters.
    - **Underserved Populations**: Low-income residents in mobile homes or non-hurricane-hardened housing may be disproportionately impacted. Residents without private vehicles may face difficulties reaching evacuation shelters.

Individuals in mobile homes are more vulnerable to hurricane winds, especially if their unit does not have tie downs and other wind safety measures. Overall, the housing stock in Collier County includes 11,189 mobile home units, comprising of almost 5 percent of the total housing stock. Approximately 15 percent of the housing stock in Everglades City is comprised of mobile home units. There are approximately 10,892 mobile home units in unincorporated Collier County. These communities may face more severe impacts from hurricane events as a result.

Table **2.37** shows mobile home units by jurisdiction.

Table 2.37 – Mobile Home Units by Jurisdiction, 2022

Jurisdiction	Total Housing Units	Mobile Home Units	Mobile Home Units, Percent of Total
Everglades City	314	47	15%
Marco Island	18,135	89	0.5%
Naples	18,501	154	0.8%
Unincorporated Collier County*	192,793	10,892	5.6%
Seminole Tribe Immokalee Reservation	71	7	9.9%
Total	229,814	11,189	4.9%

Source: American Community Survey 5-Year Estimates, 2022

*Note: Unincorporated Collier County includes the following jurisdictions: Collier County Government, Collier County Public Schools, Collier Mosquito Control District, North Collier Fire Control District, Greater Naples Fire Rescue District, Immokalee Fire Control District, Naples Airport Authority, Port of the Isles, and South Florida Water Management District.

PROPERTY

Hurricanes can cause catastrophic damage to coastlines and several hundred miles inland. Hurricanes can produce winds exceeding 157 mph as well as tornadoes and microbursts. Additionally, hurricanes often bring intense rainfall that can result in flash flooding. Floods and flying debris from the excessive winds are often the deadly and most destructive results of hurricanes.

- **Land Use/Development Trends**:
    - Coastal redevelopment and resort expansions increasing economic and physical exposure to storm surge.
    - Construction of high-rise residential complexes and resorts in surge-prone zones along the Naples and Marco Island coastline.
    - Growth of inland developments away from evacuation zones, shifting demand for new sheltering sites.
    - Erosion of natural buffer zones, such as mangroves, that previously mitigated surge impacts

A Hazus level 1 analysis was used to determine hurricane risk based on probabilistic parameters for the 100-year and 500-year return periods. This analysis produced estimates of the likelihood of varying levels of damage as well as building-related economic losses. Note that Hazus only assesses hurricane wind and does not account for any other hazards associated with hurricane. Vulnerability to flooding is discussed in Section 2.5.1.

Table 2.38 and Table 2.39 provide the likelihood of damage at varying levels of severity by occupancy type. During the probabilistic hurricane event with a 100-year return period, it's estimated that more than 68% of buildings in the county are likely to sustain damages.

During the 500-year return period event, over 92% of the county's buildings are likely to be damaged.

Table 2.38 – Likelihood of Damage by Severity and Occupancy, 100-year Hurricane Event

Occupancy	Buildings at Risk	Value at Risk	Likelihood of Damage (%)				
			None	Minor	Moderate	Severe	Destruction
Agriculture	688	$364,767,000	34.01%	26.61%	21.12%	15.12%	3.14%
Commercial	9,828	$11,936,652,000	32.15%	23.58%	27.65%	16.12%	0.51%
Education	187	$2,072,074,000	28.35%	22.01%	35.26%	14.35%	0.03%
Government	219	$596,868,000	28.87%	20.06%	36.03%	15.02%	0.03%
Industrial	3,192	$2,371,208,000	31.83%	17.99%	25.00%	24.06%	1.12%
Religion	477	$652,641,000	33.16%	29.15%	24.05%	13.58%	0.05%
Residential	174,176	$64,541,967,000	34.60%	39.62%	18.93%	5.14%	1.71%
Total	188,767	$82,536,177,000	31.85%	25.57%	26.86%	14.77%	0.94%

Source: Hazus

Table 2.39 – Likelihood of Damage by Severity and Occupancy, 500-year Hurricane Event

Occupancy	Buildings at Risk	Value at Risk	Likelihood of Damage (%)				
			None	Minor	Moderate	Severe	Destruction
Agriculture	688	$364,767,000	7.28%	18.08%	29.70%	30.83%	14.11%
Commercial	9,828	$11,936,652,000	8.30%	14.00%	30.68%	43.01%	4.01%
Education	187	$2,072,074,000	7.01%	11.65%	33.88%	46.12%	1.33%
Government	219	$596,868,000	7.16%	10.37%	33.60%	47.97%	0.90%
Industrial	3,192	$2,371,208,000	7.66%	9.68%	24.27%	50.76%	7.63%
Religion	477	$652,641,000	7.66%	18.21%	31.73%	39.93%	2.48%
Residential	174,176	$64,541,967,000	5.74%	24.20%	33.12%	24.16%	12.78%
Total	188,767	$82,536,177,000	7.26%	15.17%	31.00%	40.40%	6.18%

Source: Hazus

Table 2.40 details estimated property damages from the 100-year and 500-year hurricane wind events by occupancy type.

Table 2.40 - Estimated Property Damages, 100-year and 500-year Hurricane Wind Events

Area	Residential	Commercial	Industrial	Others	Total
100-year Hurricane Event					
Building	$5,808,763,350	$1,018,964,320	$228,321,620	$300,316,490	$7,356,365,780
Content	$1,875,287,590	$610,210,620	$192,519,620	$172,978,570	$2,850,996,400
Inventory	$0	$122,775,620	$29,309,290	$14,926,900	$167,011,810
Total	$7,684,050,940	$1,751,950,560	$450,150,530	$488,221,960	$10,374,373,990
500-year Hurricane Event					
Building	$21,603,287,630	$3,226,583,840	$775,454,960	$987,311,090	$26,592,637,520
Content	$8,626,240,620	$2,343,777,760	$743,043,520	$728,692,050	$12,441,753,950

Area	Residential	Commercial	Industrial	Others	Total
Inventory	$0	$459,491,000	$113,350,540	$64,508,310	$637,349,850
Total	$30,229,528,250	$6,029,852,600	$1,631,849,020	$1,780,511,450	$39,671,741,320

Source: Hazus

Estimated property damages for the 100-year hurricane wind event total $10,374,373,990, which equates to a loss ratio of approximately 12 percent. Estimated property damages for the 500-year event total $39,671,741,320, which represents a loss ratio of over 48 percent. FEMA considers a loss ratio of 10 percent or more to be an indicator that a community will have significant difficulty recovering from an event. The 500-year event will cause significant difficulties for recovery. Damages from an actual hurricane event would likely also involve flood impacts that would raise the damage total. Therefore, even a 100-year hurricane event may cause more serious damages that what is reported here from Hazus.

Due to the limitations of a Hazus level 1 analysis, damage estimates for critical facilities could not be calculated.

ENVIRONMENT

Aquatic species within the lake will either be displaced or destroyed. The velocity of the flood wave will likely destroy riparian and instream vegetation and destroy wetland function. The flood wave will like cause erosion within and adjacent to the stream. Deposition of eroded deposits may choke instream habitat or disrupt riparian areas. Sediments within the lake bottom and any low oxygen water from within the lake will be dispersed, potentially causing fish kills or releasing heavy metals found in the lake sediment layers.

CONSEQUENCE ANALYSIS

Table **2.41** summarizes the potential negative consequences of hurricanes and tropical storms.

Table 2.41 – Consequence Analysis – Hurricane and Tropical Storm

Category	Consequences
Public	Impacts include injury or death, loss of property, outbreak of diseases, mental trauma and loss of livelihoods. Power outages and flooding are likely to displace people from their homes. Water can become polluted such that if consumed, diseases and infection can be easily spread. Residential, commercial, and public buildings, as well as critical infrastructure such as transportation, water, energy, and communication systems may be damaged or destroyed, resulting in cascading impacts on the public.
Responders	Localized impact expected to limit damage to personnel in the inundation area at the time of the incident.
Continuity of Operations (including Continued Delivery of Services)	Damage to facilities/personnel from flooding or wind may require temporary relocation of some operations. Operations may be interrupted by power outages. Disruption of roads and/or utilities may postpone delivery of some services.

Category	Consequences
	Regulatory waivers may be needed locally. Fulfillment of some contracts may be difficult. Impact may reduce deliveries.
Property, Facilities and Infrastructure	Structural damage to buildings may occur; loss of glass windows and doors by high winds and debris; loss of roof coverings, partial wall collapses, and other damages requiring significant repairs are possible in a major (category 3 to 5) hurricane.
Environment	Hurricanes can devastate wooded ecosystems and remove all the foliation from forest canopies, and they can change habitats so drastically that the indigenous animal populations suffer as a result. Specific foods can be taken away as high winds will often strip fruits, seeds and berries from bushes and trees. Secondary impacts may occur; for example, high winds and debris may result in damage to an above-ground fuel tank, resulting in a significant chemical spill.
Economic Condition of the Jurisdiction	Local economy and finances adversely affected, possibly for an extended period, depending on damages. Intangible impacts also likely, including business interruption and additional living expenses.
Public Confidence in the Jurisdiction's Governance	Likely to impact public confidence due to possibility of major event requiring substantial response and long-term recovery effort.

HAZARD SUMMARY BY JURISDICTION

The following table summarizes extreme heat hazard risk by jurisdiction. Due to its coastal geography, the entire county is susceptible to the impacts of hurricanes, tropical storms, and the associated storm surges and flooding. While hurricanes have the possibility of being catastrophic across all jurisdictions, certain areas have higher vulnerability. Impacts may be greater in more highly developed areas with greater amounts of impervious surface and higher exposure in terms of both property and population density. Areas with more mobile homes are also more vulnerable to damage, while areas with higher property values have greater overall exposure and potential for damages. Despite these differences, all jurisdictions have the possibility for catastrophic impacts.

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Everglades City	3	4	4	1	3	3.3	H
Seminole Tribe Immokalee Reservation	3	4	4	1	3	3.3	H
Marco Island	3	4	4	1	3	3.3	H
Naples	3	4	4	1	3	3.3	H
Unincorporated Collier County*	3	4	4	1	3	3.3	H

*Note: Unincorporated Collier County includes the following jurisdictions: Collier County Government, Collier County Public Schools, Collier Mosquito Control District, North Collier Fire Control District, Greater Naples Fire Rescue District, Immokalee Fire Control District, Naples Airport Authority, Port of the Isles, and South Florida Water Management District.

2.5.2 SEVERE STORMS AND TORNADOES

HAZARD DESCRIPTION

THUNDERSTORM WINDS

Thunderstorms result from the rapid upward movement of warm, moist air. They can occur inside warm, moist air masses and at fronts. As the warm, moist air moves upward, it cools, condenses, and forms cumulonimbus clouds that can reach heights of greater than 35,000 ft. As the rising air reaches its dew point, water droplets and ice form and begin falling the long distance through the clouds towards earth's surface. As the droplets fall, they collide with other droplets and become larger. The falling droplets create a downdraft of air that spreads out at earth's surface and causes strong winds associated with thunderstorms.

There are four ways in which thunderstorms can organize: single cell, multi-cell cluster, multi-cell lines (squall lines), and supercells. Even though supercell thunderstorms are most frequently associated with severe weather phenomena, thunderstorms most frequently organize into clusters or lines. Warm, humid conditions are favorable for the development of thunderstorms. The average single cell thunderstorm is approximately 15 miles in diameter and lasts less than 30 minutes at a single location. However, thunderstorms, especially when organized into clusters or lines, can travel intact for distances exceeding 600 miles.

Thunderstorms are responsible for the development and formation of many severe weather phenomena, posing great hazards to the population and landscape. Damage that results from thunderstorms is mainly inflicted by downburst winds, large hailstones, and flash flooding caused by heavy precipitation. Stronger thunderstorms can produce tornadoes and waterspouts. While conditions for thunderstorm conditions may be anticipated within a few hours, severe conditions are difficult to predict. Regardless of severity, storms generally pass within a few hours.

- *Warning Time: 4 – Less than six hours*
- *Duration: 1 – Less than six hours*

LIGHTNING

Lightning is a sudden electrical discharge released from the atmosphere that follows a course from cloud to ground, cloud to cloud, or cloud to surrounding air, with light illuminating its path. Lightning's unpredictable nature causes it to be one of the most feared weather elements.

All thunderstorms produce lightning, which often strikes outside of the area where it is raining and is known to fall more than 10 miles away from the rainfall area. When lightning strikes, electricity shoots through the air and causes vibrations creating the sound of thunder. A bolt of lightning can reach temperatures approaching 50,000 degrees Fahrenheit. According to the CDC, on average, 28 people in the United States die each year from lightning strikes. Lightning strikes can also start building fires and wildland fires, and damage electrical systems and equipment.

The watch/warning time for a given storm is usually a few hours. There is no warning time for any given lightning strike. Lightning strikes are instantaneous. Storms that cause lightning usually pass within a few hours.

- *Warning Time: 4 – Less than six hours*
- *Duration: 1 – Less than six hours*

HAIL

According to the National Oceanic and Atmospheric Administration (NOAA), hail is precipitation that is formed when updrafts in thunderstorms carry raindrops upward into extremely cold areas of the atmosphere causing them to freeze. The raindrops form into small frozen droplets and then continue to grow as they encounter super-cooled water which will freeze on contact with the frozen rain droplet. This frozen rain droplet can continue to grow and form hail. If the updraft forces can support or suspend the weight of the hailstone, hail can continue to grow.

At the time when the updraft can no longer support the hailstone, it will fall to the earth. For example, a ¼" diameter or pea sized hail requires updrafts of 24 mph, while a 2 ¾" diameter or baseball sized hail requires an updraft of 81 mph. The largest hailstone recorded in the United States was found in Vivian, South Dakota on July 23, 2010; it measured eight inches in diameter, almost the size of a soccer ball. While soccer-ball-sized hail is the exception, but even small pea sized hail can do damage.

Hailstorms in Florida cause damage to property, crops, and the environment, and kill and injure livestock. In the United States, hail causes more than $1 billion in damage to property and crops each year. Much of the damage inflicted by hail is to crops. Even relatively small hail can shred plants to ribbons in a matter of minutes. Vehicles, roofs of buildings and homes, and landscaping are the other things most commonly damaged by hail. Hail has been known to cause injury to humans; occasionally, these injuries can be fatal.

The onset of thunderstorms with hail is generally rapid. However, advancements in meteorological forecasting allow for some warning. Storms usually pass in a few hours.

- *Warning Time: 4 – Less than six hours*
- *Duration: 1 – Less than six hours*

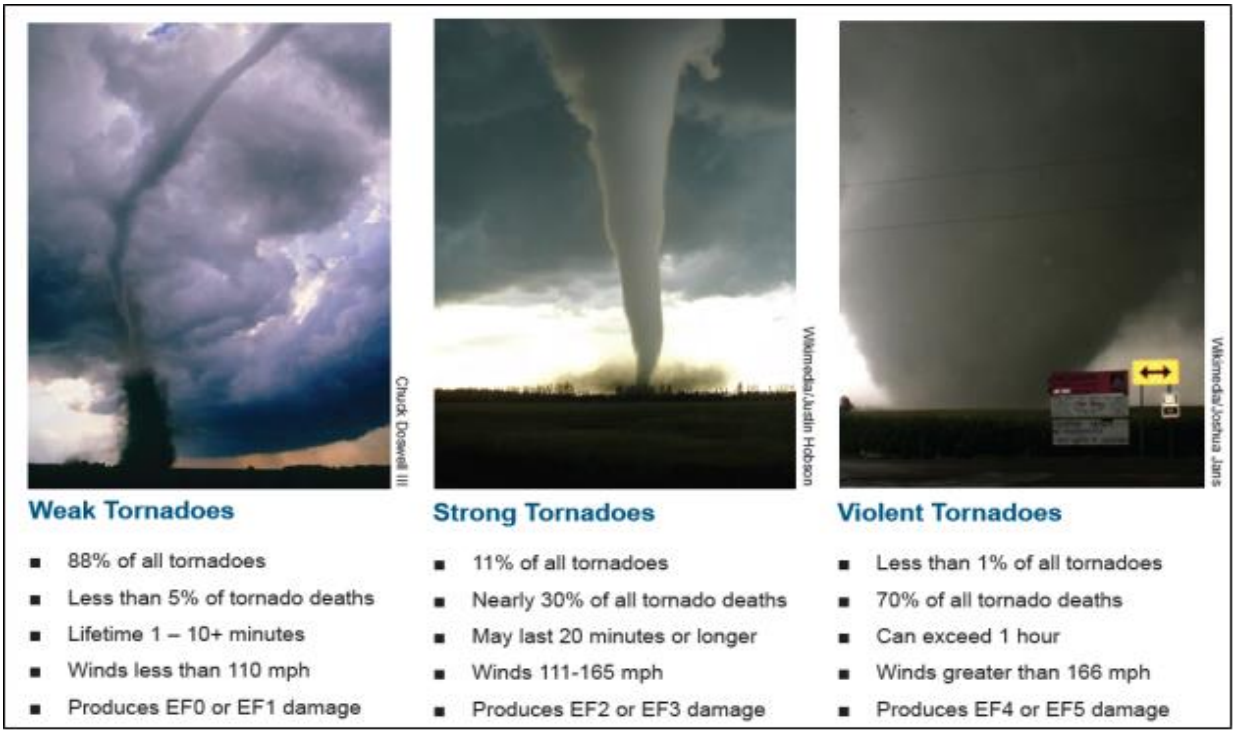
TORNADO

According to the Glossary of Meteorology (AMS 2000), a tornado is "a violently rotating column of air, pendant from a cumuliform cloud or underneath a cumuliform cloud, and often (but not always) visible as a funnel cloud." Tornadoes can appear from any direction. Most move from southwest to northeast, or west to east. Some tornadoes have changed direction amid path, or even backtracked.

Tornadoes are commonly produced by land falling tropical cyclones. Those making landfall along the Gulf coast traditionally produce more tornadoes than those making landfall along the Atlantic coast. Tornadoes that form within hurricanes are more common

in the right front quadrant with respect to the forward direction but can occur in other areas as well. According to the NOAA, more than half of the landfalling hurricanes will spawn at least one tornado. Tornadoes are more likely to be spawned within 24 hours of landfall and are usually within 30 miles of the tropical cyclone's center.

Tornadoes have the potential to produce winds in excess of 200 mph (EF5 on the Enhanced Fujita Scale) and can be very expansive – some in the Great Plains have exceeded two miles in width. Tornadoes associated with tropical cyclones, however, tend to be of lower intensity (EF0 to EF2) and much smaller in size than ones that form in the Great Plains.

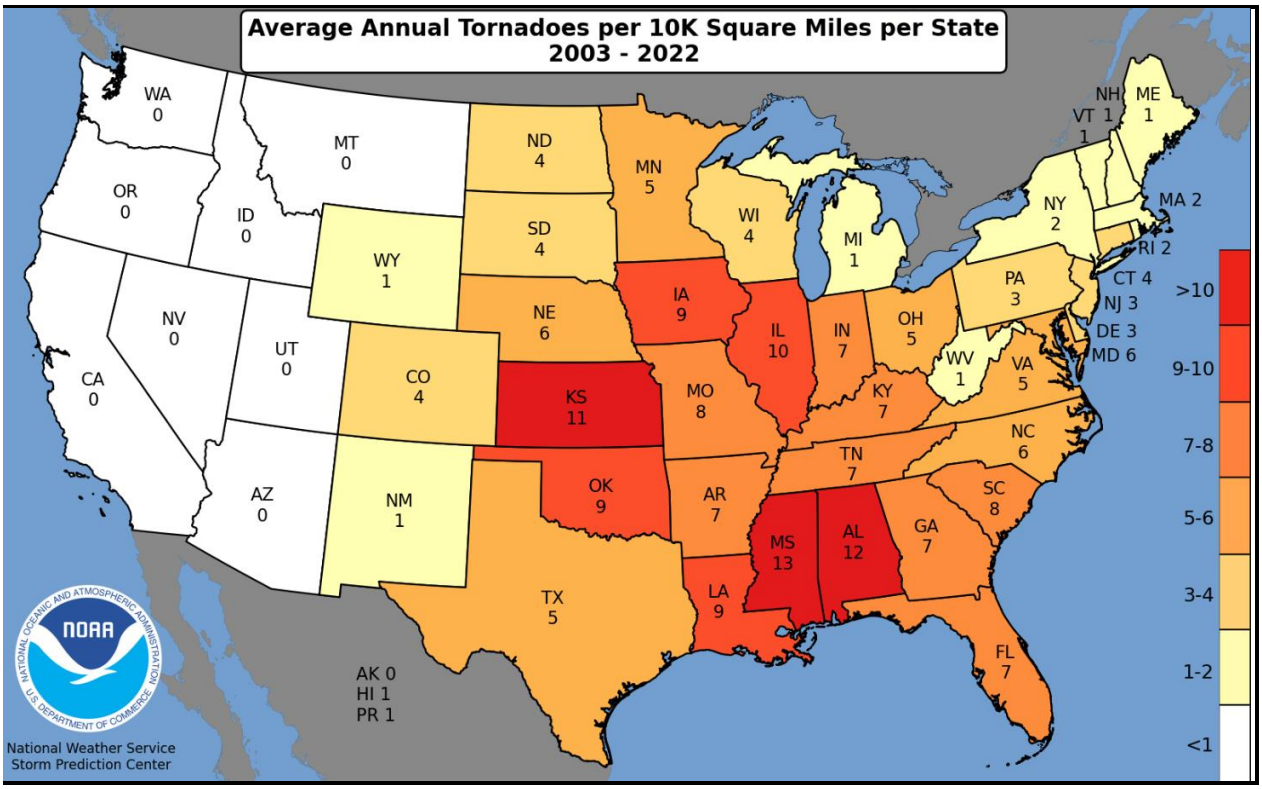


Source: NOAA National Weather Service

- *Warning Time: 4 – Less than six hours*
- *Duration: 1 – Less than six hours*

According to the NOAA Storm Prediction Center (SPC), the United States experiences an average of 1,248 tornadoes per year with the highest concentration of tornadoes occurring in the region surrounding Oklahoma, Texas, and Kansas. Although the Great Plains region of the Central United States does favor the development of the largest and most dangerous tornadoes (earning the designation of "tornado alley"), the southeast experiences tornado threats throughout the cooler months of the year before they move to the central plains during May and June. The below figure shows tornado activity in the United States based on the number of recorded tornadoes per 10,000 square miles.

Figure 2.23 – Tornado Activity in the U.S.



Source: NOAA National Weather Service

LOCATION

Thunderstorm wind, lightning, and hail events do not have a defined vulnerability zone. The scope of lightning and hail is generally confined to the footprint of its associated thunderstorm. All of Collier County and its jurisdictions shares equal risk to the threat of severe storms and tornadoes.

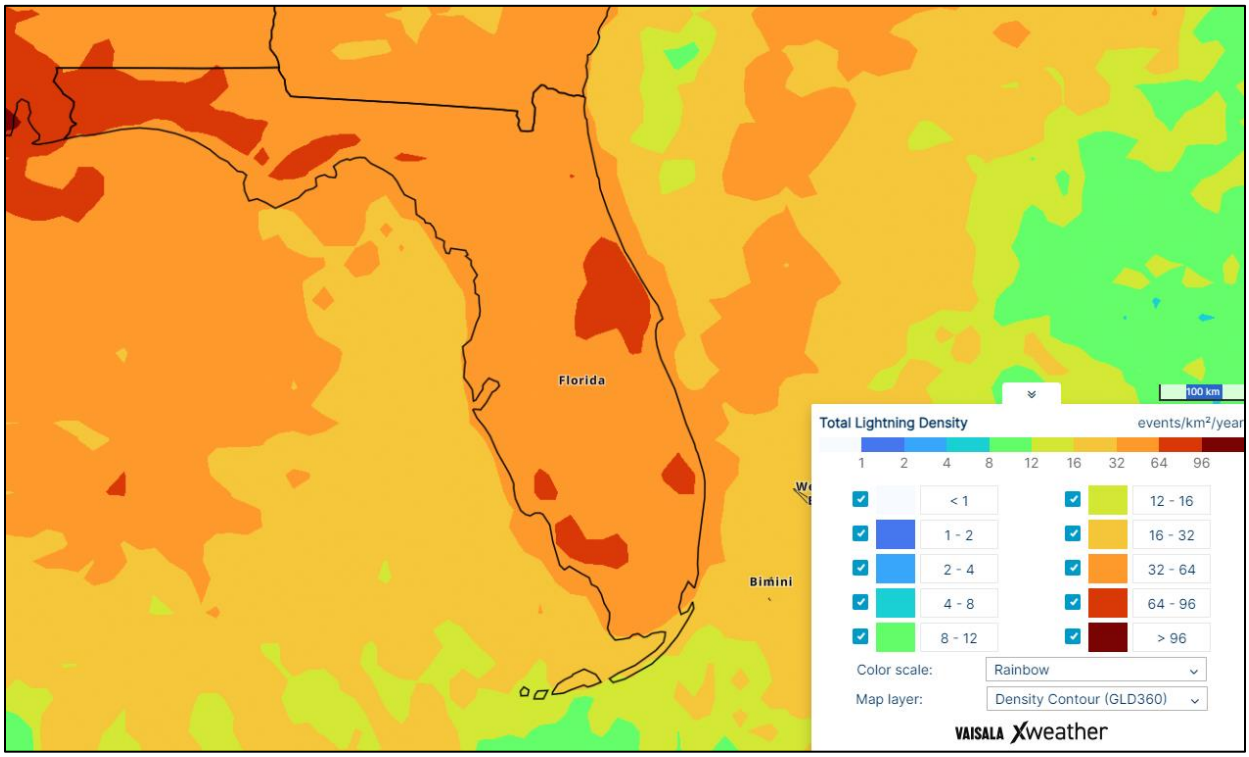
- *Spatial Extent: 4 – Large*

According to the Vaisala Interactive Global Lightning Density Map, shown in Figure 2.24, the majority of Florida experiences 32-64 lightning events per square kilometer per year. However, some regions including portions of Collier County, experience 64-96 lightning events per year. Florida had 5,815,300 total flashes of lightning during the year 2023, more than any other state. It should be noted that future lightning occurrences may exceed these figures.

While the total area vulnerable to a lightning strike corresponds to the footprint of a given thunderstorm, a specific lightning strike is usually a localized event and occurs randomly. While lightning is most often affiliated with severe thunderstorms, it may also strike outside of heavy rain and might occur as far as 10 miles away from any rainfall.

- *Spatial Extent: 1 – Negligible*

Figure 2.24 - Lightning Flash Density (2016-2023)



Source: Vaisala Interactive Global Lightning Density Map

Figure 2.25 reflects the tracks of past tornados that passed through Collier County from 1950 through 2023 according to data from the NOAA/NWS Storm Prediction Center.

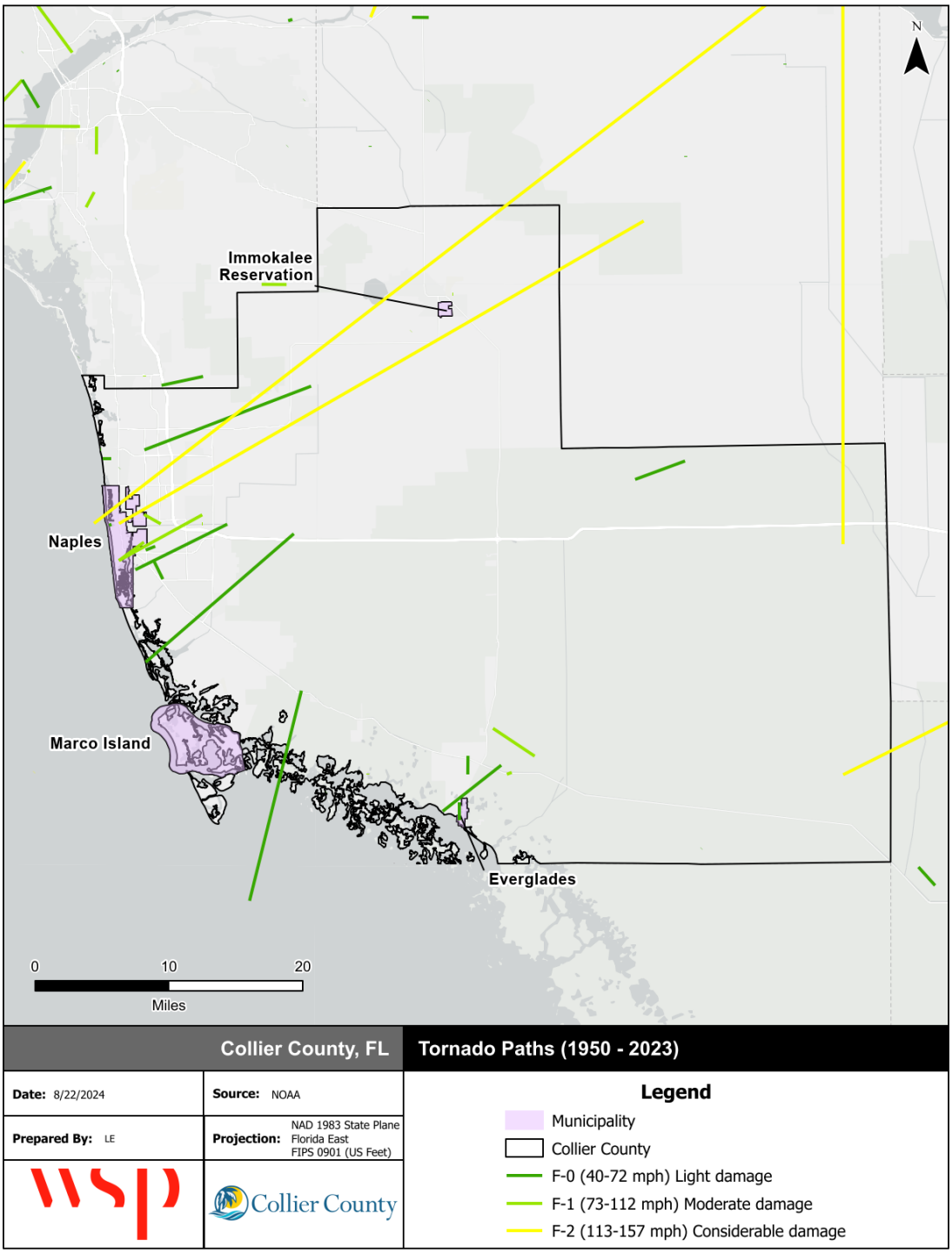
Tornados can occur anywhere in the County and affect all it's jurisdictions. Tornadoes typically impact a small area, but damage may be extensive. Tornado locations are completely random, meaning risk to tornado isn't increased in one area of the county versus another. All of Collier County is uniformly exposed to tornadoes.

- *Spatial Extent: 2 – Small*

Hailstorms frequently accompany thunderstorms, so their locations and spatial extents coincide. Collier County and it's jurisictions is uniformly exposed to severe thunderstorms; therefore, the entire planning area is equally exposed to hail which may be produced by such storms. However, large-scale hail tends to occur in a more localized area within the storm.

- *Spatial Extent: 2 – Small*

Figure 2.25 – Tornado Paths Through Collier County, 1950-2023



Source: NOAA/NWS Storm Prediction Center

EXTENT

THUNDERSTORM WINDS

The magnitude of a thunderstorm event can be defined by the storm's maximum wind speed and its impacts. NCEI divides wind events into several types including High Wind, Strong Wind, Thunderstorm Wind, Tornado and Hurricane. For this severe weather risk assessment, High Wind, Strong Wind and Thunderstorm Wind data was collected. Hurricane Wind and Tornadoes are addressed as individual hazards. The following definitions come from the NCEI Storm Data Preparation document.

- High Wind – Sustained non-convective winds of 40mph or greater lasting for one hour or longer or winds (sustained or gusts) of 58 mph for any duration on a widespread or localized basis.
- Strong Wind – Non-convective winds gusting less than 58 mph, or sustained winds less than 40 mph, resulting in a fatality, injury, or damage.
- Thunderstorm Wind – Winds, arising from convection (occurring within 30 minutes of lightning being observed or detected), with speeds of at least 58 mph, or winds of any speed (non-severe thunderstorm winds below 58 mph) producing a fatality, injury or damage.

The strongest recorded thunderstorm wind event in the county occurred on January 17, 2016 with a measured gust of 78 mph in Naples and estimated gusts of 79 to 82 mph elsewhere across the county. The event reportedly caused no fatalities, injuries, or damages.

- *Impact: 2 – Limited*

LIGHTNING

Lightning is measured by the Lightning Activity Level (LAL) scale, created by the NWS to define lightning activity into a specific categorical scale. The LAL is a common parameter that is part of fire weather forecasts nationwide. The scale is shown in Table 2.42.

Table 2.42 – Lightning Activity Level Scale

Lightning Activity Level Scale	
LAL 1	No thunderstorms
LAL 2	Isolated thunderstorms. Light rain will occasionally reach the ground. Lightning is very infrequent, 1 to 5 cloud to ground lightning strikes in a five-minute period
LAL 3	Widely scattered thunderstorms. Light to moderate rain will reach the ground. Lightning is infrequent, 6 to 10 cloud to ground strikes in a five-minute period
LAL 4	Scattered thunderstorms. Moderate rain is commonly produced. Lightning is frequent, 11 to 15 cloud to ground strikes in a five-minute period
LAL 5	Numerous thunderstorms. Rainfall is moderate to heavy. Lightning is frequent and intense, greater than 15 cloud to ground strikes in a five-minute period
LAL 6	Dry lightning (same as LAL 3 but without rain). This type of lightning has the potential for extreme fire activity and is normally highlighted in fire weather forecasts with a Red Flag warning

Source: National Weather Service

With the right conditions in place, the entire county is susceptible to each lightning activity level as defined by the LAL. Most lightning strikes cause limited damage to specific structures in a limited area, and cause very few injuries or fatalities, and minimal disruption on quality of life.

Impact: 1 – Minor

HAIL

The NWS classifies hail by diameter size, and corresponding everyday objects to help relay scope and severity to the population. Table 2.43 indicates the hailstone measurements utilized by the NWS.

Table 2.43 – Hailstone Measurement Comparison Chart

Average Diameter	Corresponding Household Object
.25 inch	Pea
.5 inch	Marble/Mothball
.75 inch	Dime/Penny
.875 inch	Nickel
1.0 inch	Quarter
1.5 inch	Ping-pong ball
1.75 inch	Golf ball
2.0 inch	Hen egg
2.5 inch	Tennis ball
2.75 inch	Baseball
3.00 inch	Teacup
4.00 inch	Grapefruit
4.5 inch	Softball

Source: National Weather Service

The Tornado and Storm Research Organization (TORRO) has further described hail sizes by their typical damage impacts. Table 2.44 describes typical intensity and damage impacts of the various sizes of hail.

Table 2.44 – Tornado and Storm Research Organization Hailstorm Intensity Scale

Intensity Category	Diameter (mm)	Diameter (inches)	Size Description	Typical Damage Impacts
Hard Hail	5-9	0.2-0.4	Pea	No damage
Potentially Damaging	10-15	0.4-0.6	Mothball	Slight general damage to plants, crops
Significant	16-20	0.6-0.8	Marble, grape	Significant damage to fruit, crops, vegetation
Severe	21-30	0.8-1.2	Walnut	Severe damage to fruit and crops, damage to glass and plastic structures, paint and wood scored
Severe	31-40	1.2-1.6	Pigeon's egg > squash ball	Widespread glass damage, vehicle bodywork damage
Destructive	41-50	1.6-2.0	Golf ball > Pullet's egg	Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries
Destructive	51-60	2.0-2.4	Hen's egg	Bodywork of grounded aircraft dented, brick walls pitted

Intensity Category	Diameter (mm)	Diameter (inches)	Size Description	Typical Damage Impacts
Destructive	61-75	2.4-3.0	Tennis ball > cricket ball	Severe roof damage, risk of serious injuries
Destructive	76-90	3.0-3.5	Large orange > softball	Severe damage to aircraft bodywork
Super Hailstorms	91-100	3.6-3.9	Grapefruit	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open
Super Hailstorms	>100	4.0+	Melon	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open

Source: Tornado and Storm Research Organization (TORRO), Department of Geography, Oxford Brookes University

Notes: In addition to hail diameter, factors including number and density of hailstones, hail fall speed and surface wind speeds affect severity.

The average hailstone size recorded between 2000 and 2023 in Collier County was a little under 1" in diameter; the largest hailstone recorded was 1.5", recorded on April 6, 2012 and June 26, 2014. The largest hailstone ever recorded in the U.S. fell in Vivian, SD on June 23, 2010, with a diameter of 8 inches and a circumference of 18.62 inches.

- *Impact: 1 – Minor*

TORNADO

Prior to February 1, 2007, tornado intensity was measured by the Fujita (F) scale. This scale was revised and is now the Enhanced Fujita (EF) scale. Both scales are sets of wind estimates (not measurements) based on damage. The new scale provides more damage indicators (28) and associated degrees of damage, allowing for more detailed analysis, better correlation between damage and wind speed. It is also more precise because it considers the materials affected and the construction of structures damaged by a tornado.

Table **2.45** shows the wind speeds associated with the enhanced Fujita scale ratings and the damage that could result at different levels of intensity.

Table 2.45 – Enhanced Fujita Scale

EF Number	3 Second Gust (mph)	Damage
0	65-85	Light damage. Peels surface off some roofs; some damage to gutters or siding; branches broken off trees; shallow-rooted trees pushed over.
1	96-110	Moderate damage. Roofs severely stripped; mobile homes overturned or badly damaged; loss of exterior doors; windows and other glass broken.
2	111-135	Considerable damage. Roofs torn off well-constructed houses; foundations of frame homes shifted; mobile homes destroyed; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground.
3	136-165	Severe damage. Entire stories of well-constructed houses destroyed; severe damage to large buildings such as shopping malls; trains overturned; trees debarked;

EF Number	3 Second Gust (mph)	Damage
		heavy cars lifted off the ground and thrown; structures with weak foundations blown away some distance.
4	166-200	Devastating damage. Well-constructed houses and whole frame houses completely leveled; cars thrown, and small missiles generated.
5	Over 200	Incredible damage. Strong frame houses leveled off foundations and swept away; automobile-sized missiles fly in excess of 100 m; high-rise buildings have significant structural deformation; incredible phenomena will occur.

The most intense tornado to pass through Collier County in the past 20 years was an EF1 in Ochopee on September 9, 2017. While NCEI reports no property damage occurred, narratives of the event say that it occurred simultaneous to Hurricane Irma and caused damage to multiple trees along its path. The tornado was 0.25 miles long and 50 yards wide.

- *Impact: 3 – Critical*

HISTORICAL OCCURRENCES

THUNDERSTORM WINDS

Between January 1, 2000 and December 31, 2023, the NCEI recorded 62 separate incidents of thunderstorm winds, occurring on 40 separate days. These events caused $207,500 in recorded property damage and $3,000 in crop damages but zero injuries or fatalities were reported. The recorded gusts averaged 54 miles per hour, with the highest gusts recorded at 78 mph, recorded on January 17, 2016. Of these events, 18 caused property damage. Wind gusts with property damage recorded averaged $11,572 in damage, with one gust causing a reported $50,000 in damage (in East Naples on August 9, 2006). These incidents are aggregated by the date the events occurred and are recorded in Table 2.46 below:

Table 2.46 – Recorded Thunderstorm Winds with Property Damages, Collier County, 2000-2023

Location	Date	Wind Speed (mph)	Fatalities	Injuries	Property Damage
Vanderbilt Beach	6/26/2001	70	0	0	$50,000
Naples	7/17/2002	50	0	0	$0
Naples	2/22/2003	55	0	0	$0
Vanderbilt Beach	7/4/2003	65	0	0	$0
Golden Gate	4/12/2004	55	0	0	$10,000
Immokalee	6/4/2004	54	0	0	$0
Marco Island	8/13/2004	55	0	0	$0
Everglades City	4/7/2005	50	0	0	$5,000
Golden Gate	7/16/2005	50	0	0	$1,000
East Naples	8/9/2006	70	0	0	$50,000
Naples	8/19/2006	55	0	0	$0
Jerome	5/5/2007	56	0	0	$0
Immokalee	5/6/2007	61	0	0	$10,000
(Apf)Naples Muni Arp	5/14/2007	52	0	0	$0

Location	Date	Wind Speed (mph)	Fatalities	Injuries	Property Damage
Golden Gate	6/8/2007	61	0	0	$1,000
East Naples	6/25/2007	56	0	0	$500
(Apf)Naples Muni Arp	9/17/2007	54	0	0	$20,000
Sunniland	6/7/2009	52	0	0	$0
Naples Park	4/26/2010*	50	0	0	$2,000
Immokalee	6/15/2011*	50	0	0	$40,000
(Apf)Naples Muni Arp	4/6/2012	52	0	0	$2,000
Immokalee	5/24/2013	52	0	0	$0
East Naples	3/6/2014*	52	0	0	$0
Corkscrew	3/29/2014	52	0	0	$0
Golden Gate	6/15/2014	52	0	0	$0
Golden Gate	6/11/2015*	52	0	0	$0
(Apf)Naples Muni Arp	9/29/2015	56	0	0	$0
Naples	1/17/2016*	78	0	0	$0
Marco Island Arpt	2/16/2016	52	0	0	$0
Goodland	1/23/2017	52	0	0	$0
(Apf)Naples Muni Arp	7/31/2017	50	0	0	$2,000
(Apf)Naples Muni Arp	12/9/2017	51	0	0	$0
Marco Island	3/20/2018	53	0	0	$0
East Naples	5/30/2018	43	0	0	$5,000
Marco Island	10/19/2019*	39	0	0	$2,000
North Naples	4/25/2020	43	0	0	$1,000
North Naples	4/26/2020*	56	0	0	$1,000
East Naples	5/18/2020*	50	0	0	$1,000
East Naples	5/22/2020	50	0	0	$0
Golden Gate	5/31/2021	52	0	0	$0
		Total	0	0	$207,500

Source: NCEI; Note: *Multiple events occurred on these dates. Injury, fatality, and damage stats are totaled; wind speed is highest reported.

In addition to recorded thunderstorm wind events, NCEI reports 3 high wind and strong wind events during this same period that caused $5,000 in property damage. Of all 65 wind events during this period, there were no incidents that directly caused deaths or injuries.

LIGHTNING

According to NCEI data, there were 32 lightning strikes reported between 2000 and 2023. Of these, 20 recorded property damage totaling over $4.8 million. The highest rate of property damage recorded for a single incident was $2,000,000. Four events caused fatalities, and eight events caused a total of 13 injuries. Event narratives indicate in some cases that property damage occurred but was not estimated; therefore, actual property damage amounts are higher. No crop damage was recorded by these strikes. It should be noted that lightning events recorded by the NCEI are only those that are reported; it is certain that additional lightning incidents have occurred in Collier County. Table 2.47 details NCEI-recorded lightning strikes from 2000 through 2023.

Table 2.47 – Recorded Lightning Strikes in Collier County, 2000-2023

Location	Date	Time	Fatalities	Injuries	Property Damage
Naples Park	6/18/2001	18:30	0	0	$2,000
Immokalee	4/28/2003	13:30	1	2	$0
Naples	8/5/2003	14:00	0	1	$5,000
Lely	8/7/2006	12:45	0	1	$500,000
Golden Gate	8/15/2006	14:00	0	1	$0
North Naples	7/27/2007	18:55	0	0	$40,000
Collier City	9/17/2008	20:00	0	0	$75,000
Corkscrew	6/23/2009	12:50	0	2	$0
Naples	7/14/2010	14:15	0	0	$10,000
Naples Park	9/26/2010	14:30	0	0	$1,000
Golden Gate	9/23/2011	16:50	0	0	$600
Corkscrew	6/26/2013	12:35	1	0	$0
Marco	7/9/2013	14:00	0	0	$0
Marco	8/18/2013	16:30	0	0	$0
North Naples	9/2/2013	12:10	0	0	$2,000,000
East Naples	9/6/2013	19:30	0	0	$2,000
Vanderbilt Beach	9/7/2013	15:45	0	0	$30,000
Golden Gate	4/17/2014	14:55	0	0	$0
East Naples	7/15/2014	10:20	0	0	$5,000
Naples	6/22/2015	17:00	0	0	$2,000,000
Naples Park	7/1/2015	18:00	0	0	$2,000
North Naples	7/1/2015	18:30	0	0	$10,000
East Naples	8/15/2015	14:00	0	1	$0
Golden Gate	5/28/2016	14:00	1	0	$0
Marco Island	8/24/2016	13:50	0	3	$0
North Naples	6/30/2017	17:00	0	0	$10,000
Naples Park	7/18/2019	12:30	0	0	$80,000
North Naples	5/18/2020	16:50	0	0	$50,000
Marco	7/17/2021	14:47	1	0	$0
North Naples	7/26/2021	17:00	0	2	$0
Naples Park	9/11/2021	18:50	0	0	$2,000
Naples	7/6/2022	13:45	0	0	$2,000
		Total	4	13	$4,826,600

Source: NCEI

The following are a selection of narrative descriptions recorded in NCEI for lightning events that occurred in Collier County:

April 28, 2003 – A 52-year-old was killed while working near a ditch at a farm two miles from Oil Well Road. Two other men standing about 10 feet away were injured by the same lightning strike. It was raining heavily at the time.

June 23, 2009 – Two truck drivers were shocked by a nearby lightning strike as they were loading a dump truck in the Golden Gate Estates area. Both men received minor burns on their thighs and complained that their feet were stinging and burning. The injuries were

not believed to be serious. One of the men was 22 years old and the other's age was unclear.

June 26, 2013 – Lightning fatally struck a 35-year-old male construction worker who was working on the exterior of a single-family home on scaffolding.

May 28, 2016 – OSHA reported a fatality due to a lightning strike to a construction worker who was struck while working on a roof. The date of death was reported to be the following day, May 29th, 2016.

August 24, 2016 – A family visiting from out of town was leaving the south beach area of Marco Island as storms approached when lightning struck near their location. A 15-year-old male, as well as his brother and another female fell into the sand. All three were able to recover, but the 15-year-old male reported numbness in the chest, legs, and arms. All three victims and was taken to a local hospital and later released with minor injuries.

May 18, 2020 – Broadcast media reported a house fire due to a lightning strike near the corner of Ridge Dr and East Ave near North Naples. The family had safely evacuated the home by the time crews arrived on scene. Naples Fire-Rescue Department confirms a lightning strike hit the roof of a home.

September 11, 2021 – A lightning strike caused a utility pole to burst into flames in Naples. Witnesses say a lightning bolt struck the pole outside of Paragon Pavilion on Vanderbilt Road. The pole popped a couple of times before catching fire. No injuries reported. Time based on National Lightning Detection Network data.

HAIL

NCEI records 45 separate hail incidents across 30 days between January 1, 2000 and December 31, 2023 in Collier County. Of these, only $500 of property damage was reported from a singular event, while none caused death, injury or crop damage. However, this damage estimate may be under reported, as damage was reported in the narratives of many events but was not recorded in terms of a monetary value. The largest diameter hail recorded in the County was 1.5 inches, which occurred on two occasions: in Golden Gate on April 6, 2012 and in North Naples on June 26, 2014. The average hail size of all events in the County was just under one inch in diameter. Table 2.48 shows the summary of hail occurrences.

Table 2.48 – Summary of Hail Occurrences by Location, 2000-2023

Location	Number of Occurrences	Average Hail Diameter
Copeland	1	1.00”
Everglades City	1	0.75”
Golden Gate	14	0.95”
Harker	1	1.25”
Immokalee	4	0.90”
Jerome	1	1.00”
Marco Island	3	0.96”
Miles City	1	1.00”
Monroe Station	1	0.75”
Naples	6	0.84”

Location	Number of Occurrences	Average Hail Diameter
Naples Park	5	0.88”
North Naples	5	1.05”
Royal Palm	1	1.00”
Total	45	0.93”

Source: NCEI

The following narratives provide detail on select hailstorms from the above list of NCEI recorded events:

April 6, 2012 – A strong cold front produced a line of strong to severe thunderstorms that moved across South Florida during the morning and early afternoon. Approximately 4,000 customers lost power in Collier County, with an estimated 5,800 in Broward and Miami-Dade counties. Hail of 1.5-inch diameter was reported near Golden Gate Boulevard about one mile east of Collier Blvd.

June 26, 2014 – A moist and unstable airmass resulted in scattered late afternoon and evening showers and thunderstorms. A Facebook picture showed a 1.5-inch hail diameter in Wilshire Lakes just north of Vanderbilt Beach Road and east of I-75.

June 11, 2018 – Morning storms once again developed along the east coast with the Atlantic Sea breeze, with numerous storms across the interior and Gulf coast as sea breeze moved west and collided with the Gulf breeze along the Gulf coast during the afternoon hours. Shower and storm development along these boundaries were enhanced by a lingering upper-level low across the northern Florida and the eastern Gulf of Mexico, allowing several strong storms to develop. Hail and a funnel cloud were reported in Palm Beach County with the morning activity, along with a lightning-induced fatality in Broward County. Hail was reported in Collier County during the afternoon hours. A video received via social media shows approximately dime sized hail falling in the Palm River area of North Naples. Time is estimated based on video post time and radar.

May 22, 2020 – An upper-level low ejected northeastward and away from the southeast US which allowed for heights to rebound across South Florida as a ridge builds in from the western Atlantic. With the return of easterly flow, the Atlantic Sea breeze pushed inland and across the interior while the Gulf Breeze remained pinned along the west coast. This allowed the main focus for afternoon convection to be in western portions of South Florida where the two sea breeze boundaries collided. With temperatures aloft rather cool along with steepened lapse rates, parcel accelerations were strong enough for the development of hail and strong downbursts. Pictures received via social media reported 3/4-inch hail near the intersection of Collier Blvd and Vanderbilt Beach Rd.

August 3, 2022 – Cold air aloft coupled with afternoon heating led to the development of sea breezes which focused strong to severe thunderstorms over SW Florida during the afternoon. Member of the public reported quarter-sized hail (estimated) and trees downed just east of NCH North Naples Hospital near Sharwood Drive.

TORNADO

NCEI storm reports were reviewed from 2000 through 2023 to assess whether recent trends varied from the longer historical record. According to NCEI, Collier County

experienced 27 tornado incidents between 2000 and 2023, causing 2 injuries, over $900 thousand in property damage and no fatalities or crop damage. However, this damage estimate may be under reported, as damage was reported in the narratives of many events but was not recorded in terms of a monetary value. Table 2.49 shows historical tornadoes in Collier County during this time period.

Table 2.49 – Recorded Tornadoes in Collier County, 2000-2023

Location	Date	Time	Magnitude	Deaths/Injuries	Property Damage
Naples	6/16/2001	16:45	F0	0/0	$2,000
Naples	3/27/2003	14:20	F1	0/0	$50,000
Ochopee	3/27/2003	15:00	F0	0/0	$0
Ochopee	7/15/2003	17:59	F0	0/0	$0
Monroe Station	10/29/2003	13:20	F0	0/0	$0
Golden Gate	4/12/2004	17:45	F1	0/0	$100,000
North Naples	7/10/2004	17:00	F0	0/0	$5,000
East Naples	9/19/2004	15:15	F1	0/0	$75,000
East Naples	9/19/2004	15:20	F0	0/0	$10,000
Naples	9/27/2005	16:27	F0	0/0	$0
Copeland	10/24/2005	13:30	F1	0/0	$40,000
Jerome	9/22/2007	19:00	EF0	0/0	$0
North Naples	12/21/2007	20:10	EF0	0/0	$15,000
Everglades City	2/12/2008	21:45	EF0	0/0	$444,590
Naples	4/6/2012	20:43	EF0	0/0	$10,000
East Naples	6/23/2012	14:35	EF0	0/0	$35,000
Naples Park	6/23/2012	15:00	EF0	0/1	$0
Goodland	6/24/2012	10:10	EF0	0/0	$0
Golden Gate	6/24/2012	11:00	EF0	0/0	$0
Corkscrew	6/24/2012	11:25	EF0	0/0	$0
Vanderbilt Beach	9/29/2015	21:00	EF0	0/0	$0
Sunniland	2/16/2016	17:10	EF0	0/0	$0
Ochopee	9/9/2017	11:20	EF1	0/0	$0
Corkscrew	11/22/2017	16:40	EF0	0/0	$0
Marco	1/16/2022	09:07	EF0	0/1	$20,000
Everglades City	1/16/2022	10:53	EF0	0/0	$0
Naples Muni Airport	8/24/2023	15:55	EF0	0/0	$100,000
			Total	0/2	$906,590

Source: NCEI

Narratives from NCEI illustrate that damage occurred in many of these incidents even if a monetary value was not recorded. Specific incidents with some level of impact include:

April 12, 2004 – A tornado associated with a squall line touched down near I-75 and Santa Barbara Boulevard and lifted near the Golden Gate Parkway. The tornado caused minor roof damage to houses, destroyed sheds and uprooted trees. Minor damage was also reported at Naples Municipal Airport.

September 19, 2004 – A tornado touched down in a vacant construction site just south of the Imperial Wilderness Mobile Home Park then moved northwest through the MHP. Damage was sustained to twenty homes with six suffering major damage.

February 12, 2008 – An EF0 Tornado touched down at the Everglades City Airport, flipping two Cessna Aircrafts while moving northeast. The tornado then moved across western sections of Everglades City producing roof and minor structural damage to a condo, school, and storage building and downing trees and power poles and damaging fences before dissipating on the north side of town.

June 23, 2012 – The outer bands from Tropical Storm Debby located in the northeast Gulf of Mexico spawned two tornadoes in the Naples area both with EF0 intensity. A brief tornado touchdown occurred at the North Collier Hospital in North Naples on the corner of Immokalee and Goodlette-Frank Roads. Damage was reported to trees and light poles broken off, but no structural damage to the hospital. One person was struck by a downed tree limb and was treated on-site. The tornado was likely spawned by the same storm that produced the earlier tornado in East Naples.

November 22, 2017 – A frontal boundary across the region and a few showers across South Florida. A brief tornado/ land spout occurred in rural portions of Collier County. Collier County Sheriff Office reported via a police helicopter a tornado in the Corkscrew area in Collier County. The tornado was brief and stayed in an open field with no damage reported.

January 16, 2022 – An area of low pressure moving across the Southeast United States dragged its associated cold front across the FL peninsula, bringing severe thunderstorms to the region. A band of thunderstorms moved through the area, with strong winds aloft providing the necessary ingredients for a few waterspouts/tornadoes as well as strong and gusty straight-line winds. Members of the public shared video of the tornadoes as it passed near Everglades City after coming ashore. The survey observed a leaning power pole along Tamiami Trail just east of the intersection with State Road 29.

PROBABILITY OF FUTURE OCCURRENCE

Based on historical occurrences recorded by NCEI for the 24-year period from 2000 through 2023, Collier County averages 2.6 thunderstorm wind events per year. Over this same period, 32 lightning events were reported as having caused death, injury, or property damage, which equates to an average of 1.3 damaging lightning strikes per year.

The average hailstorm in Collier County occurs in the afternoon and has a hail stone with a diameter of just under one inch. Over the 24-year period from 2000 through 2023, Collier County experienced 45 reported hail incidents; this averages just under two reported incidents per year somewhere in the planning area, or a 100% chance that the County will experience a hail incident each year.

Based on these historical occurrences, there is a 100% chance that the County will experience severe weather each year. The probability of a damaging impacts is highly likely.

In over a 20-year span between 2000 and 2023, Collier County experienced 27 separate tornado incidents over 21 separate days. This correlates to over a 100 percent annual

probability that the Region will experience a tornado somewhere in its boundaries. None of these past tornado events was a magnitude EF2 or greater; therefore, the annual probability of a significant tornado event is less than 1 percent.

- *Probability: 4 – Highly Likely*

CLIMATE CHANGE

Per the Fifth National Climate Assessment, “The complexes of thunderstorms that bring substantial precipitation to the central United States during the warm season have become more frequent and longer lasting over the past two decades.” As temperatures rise humidity may increase atmospheric variability associated with the origination of severe thunderstorms and tornadoes. These changes are likely to lengthen the severe thunderstorm season throughout the Southeast during the cool-season months. Hail and lightning are often associated with thunderstorms and are predicted to follow a similar trend. Additionally, the Fifth National Climate Assessment states that “while the average annual number of tornadoes appears to have remained relatively constant, there is evidence that tornado outbreaks have become more frequent, that tornado power has increased, that tornado activity is increasing in the fall, and that “Tornado Alley” has shifted eastward.” There presently is not enough data or research to quantify the magnitude of change that climate change may have related to severe storms and tornados and the level of significance of this hazard should be revisited over time.

VULNERABILITY ASSESSMENT

PEOPLE

People and populations exposed to the elements are most vulnerable to severe weather. A common hazard associated with wind events is falling trees and branches. Risk of being struck by lightning is greater in open areas, at higher elevations, and on the water.

Lightning can also cause cascading hazards, including power loss. Loss of power could critically impact those relying on energy to service, including those that need powered medical devices. Additionally, the ignition of fires is always a concern with lightning strikes.

The availability of sheltered locations such as basements, buildings constructed using hail-resistant materials and methods, and public storm shelters, all reduce the exposure of the population. Residents living in mobile homes are more vulnerable to hail events due to the lack of shelter locations and the vulnerability of the housing unit to damages. Overall, the housing stock in Collier County includes 11,189 mobile home units, comprising of almost 5 percent of the total housing stock. Approximately 15 percent of the housing stock in Everglades City is comprised of mobile home units. These communities may face more severe impacts from hurricane events as a result.

Since 2000, the NCEI records 4 fatalities and 13 injuries attributed to lightning in Collier County. NCEI records no fatalities, and no injuries attributed to wind events in Collier County. There are no injuries or fatalities attributed to hail.

People and populations exposed to the elements are most vulnerable to tornados. Since 2000, the NCEI database records no fatalities, and two injuries attributed to tornadoes in Collier County.

- **Population Patterns**:
    - Rising population in mobile home parks and low-cost housing developments vulnerable to high winds.
    - Increased urban population exposed to falling debris and infrastructure damage.
    - Vulnerable populations, such as outdoor workers, are at higher risk during severe weather events.
    - **Underserved Populations**: Low-income households may lack access to safe storm shelters or reinforced structures. Non-English-speaking residents may experience communication barriers when receiving warnings for fast-moving storms

PROPERTY

All property, including residential and commercial buildings as well as critical facilities and infrastructure, are vulnerable to impacts from severe storms and tornadoes.

Property damage caused by lightning usually occurs in one of two ways – either by direct damages through fires ignited by lightning, or by secondary impacts due to power loss. According to data collected on lightning strikes in Collier County, most recorded property damage was due to structure fires.

NCEI records lightning impacts over 20 years (2000-2023), with $4,826,600 in property damage recorded (no incidents were recorded in 2000, 2002, 2004, 2005, 2012, 2018, or 2023). Based on these records, the planning area experiences an annualized loss of $201,108 in property damage. The average impact from lightning per incident in Collier County is $150,831.

General damages to property from hail are direct, including destroyed windows, dented cars, and building, roof and siding damage in areas exposed to hail. Hail can also cause enough damage to cars to cause them to be totaled. The level of damage is commensurate with both a material's ability to withstand hail impacts, and the size of the hailstones that are falling. Construction practices and building codes can help maximize the resistance of the structures to damage. Large amounts of hail may need to be physically cleared from roadways and sidewalks, depending on accumulation. Hail can cause other cascading impacts, including power loss.

During a 24-year span between January 1, 2000 and December 31, 2023 in Collier County, NCEI reported only $500 worth of property damage as a direct result of hail. It should be noted that property damage due to hail is usually insured loss, with damages covered under most major comprehensive insurance plans. Because of this, hail losses are notoriously underreported by the NCEI. It is difficult to find an accurate repository of hail damages in Collier County, thus the NCEI is still used to form a baseline.

Wind events reported in NCEI for the 24-year period from 2000 through 2023 totaled $207,500 in property damage, which equates to an annualized loss of $8,645 across the planning area.

General damages to property are both direct (what the tornado physically destroys) and indirect, which focuses on additional costs, damages and losses attributed to secondary hazards spawned by the tornado, or due to the damages caused by the tornado. Depending on the size of the tornado and its path, a tornado is capable of damaging and eventually destroying almost anything. Construction practices and building codes can help maximize the resistance of the structures to damage.

- **Land Use/Development Trends**:
    - Increased development of large commercial complexes and high-rise structures that require wind-hardening measures.
    - Expansion of suburban neighborhoods with limited underground utilities, increasing the risk of power outages.
    - Growth of new outdoor recreational facilities that are vulnerable to lightning strikes and wind damage

Secondary impacts of tornado damage often result from damage to infrastructure. Downed power and communications transmission lines, coupled with disruptions to transportation, create difficulties in reporting and responding to emergencies. These indirect impacts of a tornado put tremendous strain on a community. In the immediate aftermath, the focus is on emergency services.

Since 2000, damaging tornadoes in the County are directly responsible for nearly $906,590 worth of damage to property according to NCEI data. This equates to an annualized loss of $37,774.

ENVIRONMENT

The main environmental impact from wind is damage to trees or crops. Wind events can also bring down power lines, which could cause a fire and result in even greater environmental impacts. Lightning may also result in the ignition of wildfires. This is part of a natural process, however, and the environment will return to its original state in time.

Hail can cause extensive damage to the natural environment, pelting animals, trees and vegetation with hailstones. Melting hail can also increase both river and flash flood risk.

Tornadoes can cause massive damage to the natural environment, uprooting trees and other debris within the tornado’s path. This is part of a natural process, however, and the environment will return to its original state in time.

CONSEQUENCE ANALYSIS

Table 2.50 summarizes the potential negative consequences of severe weather.

Table 2.50 – Consequence Analysis – Severe Weather

Category	Consequences
Public	Injuries; fatalities
Responders	Injuries; fatalities; potential impacts to response capabilities due to storm impacts
Continuity of Operations (including Continued Delivery of Services)	Potential impacts to continuity of operations due to storm impacts; delays in providing services
Property, Facilities and Infrastructure	Possibility of structure fire ignition; potential for disruptions in power and communications infrastructure; destruction and/or damage to any exposed property, especially windows, cars and siding; mobile homes see increased risk. The weakest tornadoes, EF0, can cause minor roof damage, while strong tornadoes can destroy frame buildings and even badly damage steel reinforced concrete structures. Buildings are vulnerable to direct impact from tornadoes and from wind borne debris. Mobile homes are particularly susceptible to damage during tornadoes.
Environment	Potential fire ignition from lightning; hail damage to wildlife and foliage. Potential devastating impacts in storm's path.
Economic Condition of the Jurisdiction	Lightning damage contingent on target; can severely impact/destroy critical infrastructure and other economic drivers. Contingent on tornado's path; can severely impact/destroy critical infrastructure and other economic drivers.
Public Confidence in the Jurisdiction's Governance	Public confidence is not generally affected by severe weather events if response and recovery are not timely and effective.

HAZARD SUMMARY BY JURISDICTION

The following table summarizes severe weather hazard risk by jurisdiction. Most aspects of severe storm risk do not vary substantially by jurisdiction; however, mobile home units are more vulnerable to wind damage. Approximately 15 percent of the housing units in Everglades City are mobile home units. Additionally, there are over 11,000 mobile home units in Collier County, comprising almost 5 percent of the housing stock. These communities may therefore face more severe impacts from wind. Where priority ratings vary between wind, lightning, and hail for impact and spatial extent, these scores represent an average rating with greater weight given to thunderstorm wind because it occurs much more frequently.

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Everglades City	4	2	3	4	1	2.9	M
Seminole Tribe Immokalee Reservation	4	1	3	4	1	2.6	M
Marco Island	4	1	3	4	1	2.6	M
Naples	4	1	3	4	1	2.6	M
Unincorporated Collier County*	4	2	3	4	1	2.9	M

*Note: Unincorporated Collier County includes the following jurisdictions: Collier County Government, Collier County Public Schools, Collier Mosquito Control District, North Collier Fire Control District, Greater Naples Fire Rescue District, Immokalee Fire Control District, Naples Airport Authority, Port of the Isles, and South Florida Water Management District.

2.5.3 WILDFIRE

HAZARD DESCRIPTION

A wildfire is an uncontained fire that spreads through the environment. Wildfires can consume large areas, including infrastructure, property, and resources. When massive fires, or conflagrations, develop near populated areas, evacuations possibly ensue. Not only do the flames impact the environment, but the massive volumes of smoke spread by certain atmospheric conditions also impact the health of nearby populations. There are three general types of fire spread that are recognized.

- Ground fires – burn organic matter in the soil beneath surface litter and are sustained by glowing combustion.
- Surface fires – spread with a flaming front and burn leaf litter, fallen branches and other fuels located at ground level.
- Crown fires – burn through the top layer of foliage on a tree, known as the canopy or crown fires. Crown fires, the most intense type of fire and often the most difficult to contain, need strong winds, steep slopes and a heavy fuel load to continue burning.

Generally, wildfires are started by humans, either through arson or carelessness. Fire intensity is controlled by both short-term weather conditions and longer-term vegetation conditions. During intense fires, understory vegetation, such as leaves, small branches, and other organic materials that accumulate on the ground, can become additional fuel for the fire. The most explosive conditions occur when dry, gusty winds blow across dry vegetation.

Weather plays a major role in the birth, growth and death of a wildfire. In support of forecasting for fire weather, the NWS Fire Weather Program emerged in response to a need for weather support to large and dangerous wildfires. This service is provided to federal and state land management agencies for the prevention, suppression, and management of forest and rangeland fires.

Weather conditions favorable to wildfire include drought, which increases flammability of surface fuels, and winds, which aid a wildfire’s progress. The combination of wind, temperature, and humidity affects how fast wildland fires can spread. Rapid response can contain wildfires and limit their threat to property.

Collier County experiences a variety of wildfire conditions found in the Keetch-Byram Drought Index, which is described in

Table **2.51**. The Keetch-Byram Drought Index (KBDI) for September 19, 2024 is shown in

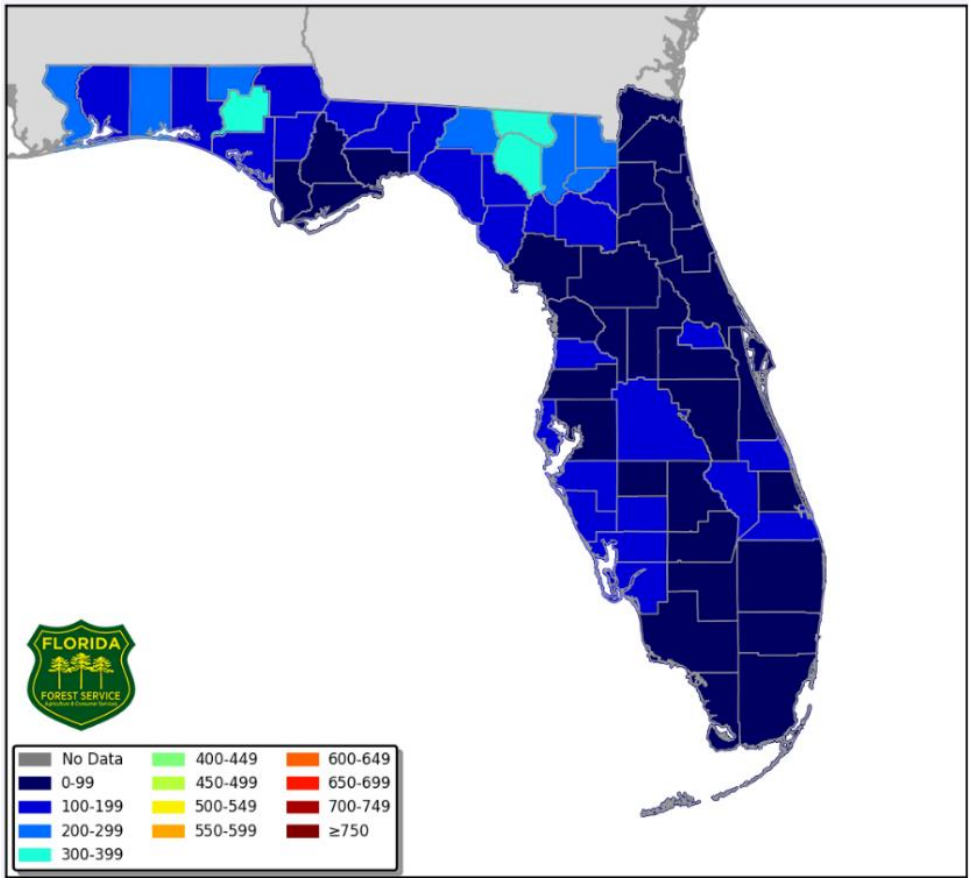
Figure 2.26 along with a Daily Fire Danger Estimate Adjective Rating for certain points across the state. The KBDI for Collier County and the surrounding areas at this time was between 0-99.

Table 2.51 – Keetch-Byram Drought Index Fire Danger Rating System

KBDI	Description
0-200	Soil and fuel moisture are high. Most fuels will not readily ignite or burn. However, with enough sunlight and wind, cured grasses and some light surface fuels will burn in sports and patches.
200-400	Fires more readily burn and will carry across an area with no gaps. Heavier fuels will still not readily ignite and burn. Also, expect smoldering and the resulting smoke to carry into and possibly through the night.
400-600	Fire intensity begins to significantly increase. Fires will readily burn in all directions exposing mineral soils in some locations. Larger fuels may burn or smolder for several days creating possible smoke and control problems.
600-800	Fires will burn to mineral soil. Stumps will burn to the end of underground roots and spotting will be a major problem. Fires will burn through the night and heavier fuels will actively burn and contribute to fire intensity.

Source: United State Forest Service Wildland Fire Assessment System

Figure 2.26 – Keetch-Byram Drought Index, September 19, 2024



Source: Florida Department of Agriculture and Consumer Services

- *Warning Time: 4 – Less than 6 hours*
- *Duration: 3 – Less than 1 week*

LOCATION

The location of wildfire risk can be defined by the acreage of Wildland Urban Interface (WUI). The WUI is described as the area where structures and other human improvements meet and intermingle with undeveloped wildland or vegetative fuels, and thus demarcates the spatial extent of wildfire risk. The WUI is essentially all the land in the county that is not heavily urbanized. The expansion of residential development from urban centers out into rural landscapes increases the potential for wildland fire threat to public safety and the potential for damage to forest resources and dependent industries. Population growth within the WUI substantially increases the risk of wildfire. Collier County and all of its jurisdictions are exposed to wildfire.

Table 2.52 details the extent of the WUI in Collier County, and Figure 2.27 maps the WUI. It is important to note that Collier County is the second largest county in Florida by area where 196,092 acres (15% of WUI acres) is inside the WUI, leaving 1,107,046 outside the WUI.

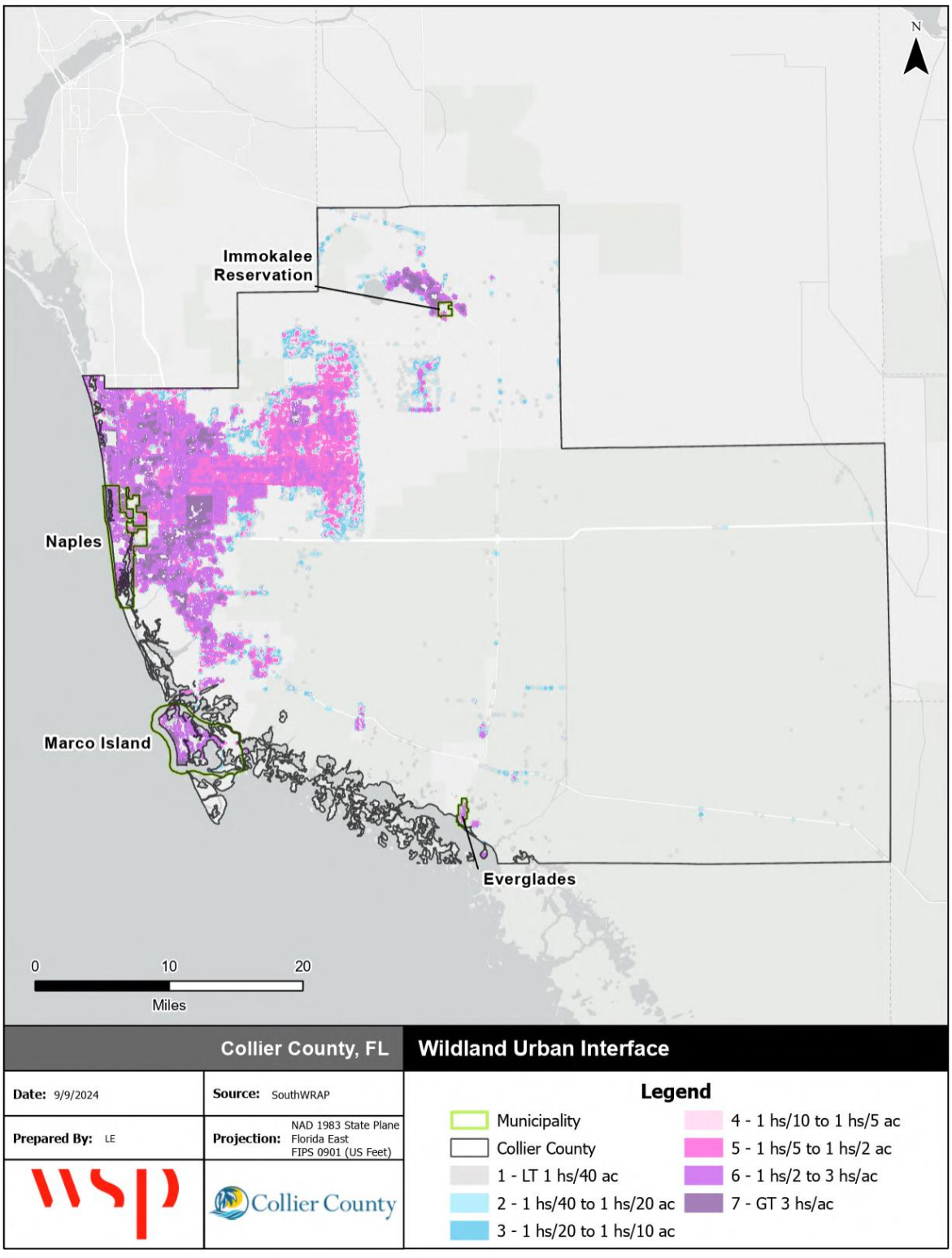
- *Spatial Extent: 3 – Moderate*

Table 2.52 – Wildland Urban Interface, Population and Acres

	Housing Density	WUI Acres	Percent of WUI Acres
	LT 1hs/40ac	25,792	13.2%
	1hs/40ac to 1hs/20ac	10,596	5.4%
	1hs/20ac to 1hs/10ac	14,362	7.3%
	1hs/10ac to 1hs/5ac	17,246	8.8%
	1hs/5ac to 1hs/2ac	43,739	22.3%
	1hs/2ac to 3hs/1ac	68,147	34.8%
	GT 3hs/1ac	16,211	8.3%
	Total	196,092	100.0%

Source: WSP GIS Analysis

Figure 2.27 – Wildland Urban Interface, Collier County



Source: Southern Wildfire Risk Assessment

EXTENT

The extent of a wildfire can be quantified by assessing its intensity, which refers to the energy output or heat released by the fire as it burns. One of the most commonly used tools to measure wildfire intensity is the Characteristic Fire Intensity Scale (CFIS). This scale is instrumental in identifying areas where significant fuel hazards exit- those regions with a high potential to support dangerous and uncontrollable fires. The CFIS now only measures the current intensity of a wildfire but also helps to predict the potential for severe fires by analyzing the available fuel, topography, and weather conditions.

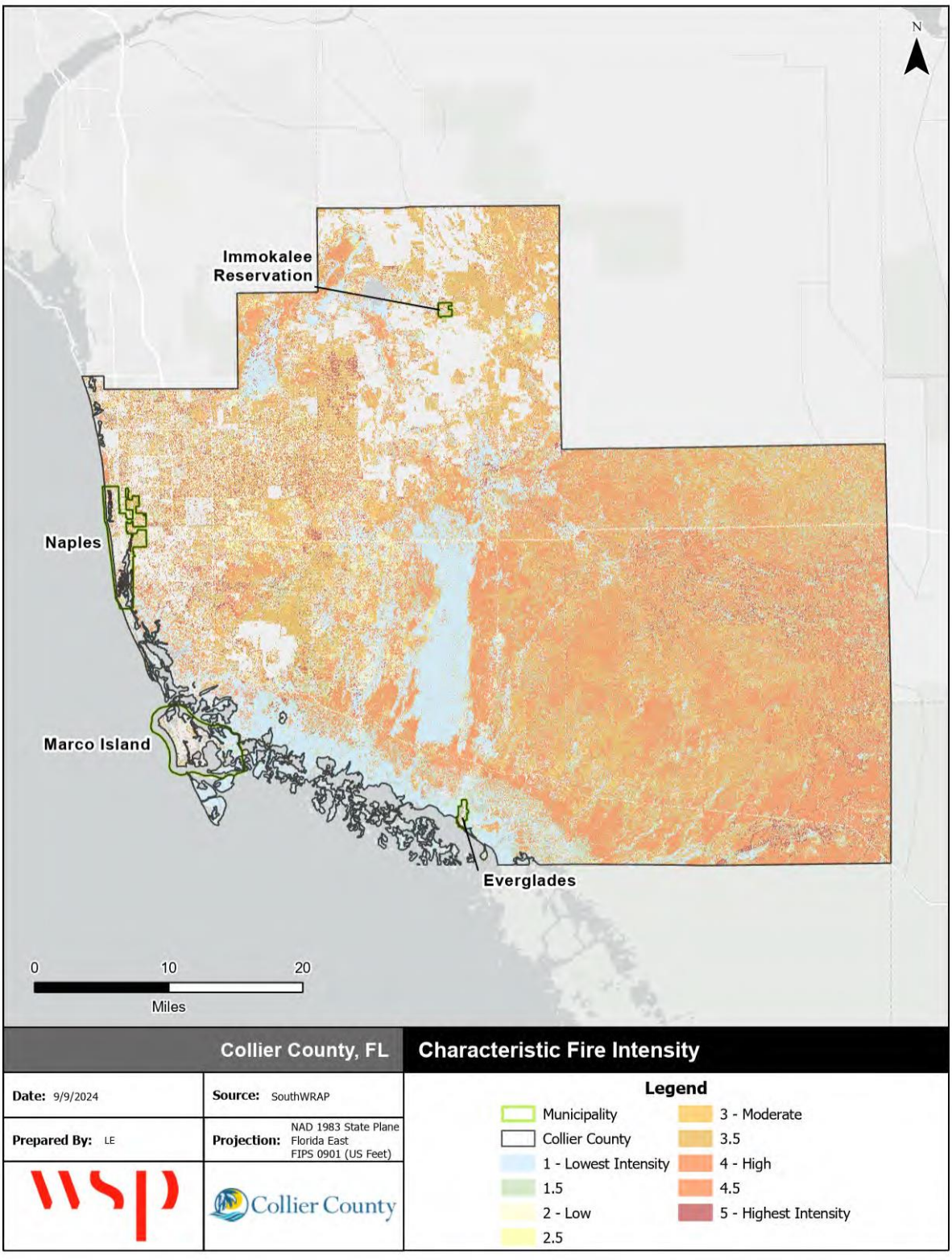
Fire intensity ratings provide critical information about the potential for extreme fire behavior by considering a range of factors that influence how a fire will behave. These factors include the type, amount, and arrangement of fuels (such as vegetation or trees), the slope and layout of the land (topography), and weather patterns, including wind speed, humidity, and temperature. The ratings are determined using a weighted average of four percentile weather categories, which represent different levels of fire weather conditions, from relatively mild to extreme. The Fire Intensity Scale consists of five classes, as defined by Southern Wildfire Risk Assessment and is shown in Table 2.53. Figure 2.28 shows the potential fire intensity within the WUI across Collier County.

Table 2.53 – Fire Intensity Scale

Class	Description
1, Very Low	Very small, discontinuous flames, usually less than 1 foot in length; very low rate of spread; no spotting. Fires are typically easy to suppress by firefighters with basic training and non-specialized equipment.
2, Low	Small flames, usually less than two feet long; small amount of very short-range spotting possible. Fires are easy to suppress by trained firefighters with protective equipment and specialized tools.
3, Moderate	Flames up to 8 feet in length; short-range spotting is possible. Trained firefighters will find these fires difficult to suppress without support from aircraft or engines, but dozer and plows are generally effective. Increasing potential for harm or damage to life and property.
4, High	Large Flames, up to 30 feet in length; short-range spotting common; medium range spotting possible. Direct attack by trained firefighters, engines, and dozers is generally ineffective, indirect attack may be effective. Significant potential for harm or damage to life and property.
5, Very High	Very large flames up to 150 feet in length; profuse short-range spotting, frequent long-range spotting; strong fire-induced winds. Indirect attack marginally effective at the head of the fire. Great potential for harm or damage to life and property.

Source: Southern Wildfire Risk Assessment

Figure 2.28 – Characteristic Fire Intensity, Collier County



Source: Southern Wildfire Risk Assessment

A significant portion, approximately 33.6 percent, of Collier County may experience a Class 4 or higher Fire Intensity, which poses significant harm or damage to life and property. However, the areas with greatest potential fire intensity are largely outside the WUI. Over 24 percent of the county may experience Class 3 or 3.5 Fire Intensity, which has potential for harm to life and property but is easier to suppress with dozer and plows. The remainder of the region is either non-burnable (12.6%) or would face a Class 1 or Class 2 Fire Intensity (29.5%), which are easily suppressed, shown in Table 2.54.

Table 2.54 - Characteristic Fire Intensity Scale Category

	Class	Acres	Percent
	Non-Burnable	163,733	12.6%
	1 Lowest Intensity	190,122	14.6%
	1.5	117,218	9.0%
	2 Low	31,854	2.4%
	2.5	45,526	3.5%
	3 Moderate	60,803	4.7%
	3.5	256,644	19.7%
	4 High	131,765	10.1%
	4.5	259,638	19.9%
	5 Highest Intensity	45,835	3.5%
	Total	1,303,138	100.0%

Source: Southern Wildfire Risk Assessment & GIS Analysis

- *Impact: 2 – Limited*

HISTORICAL OCCURRENCES

NCEI records the following 24 wildfires for Collier County within the 24-year period from January 2000 through December 2023.

Table 2.55 – Wildfires in Collier County, 2000-2023

Location	Date	Fatalities	Injuries	Property Damage
Golden Gate	4/9/2000	0	0	$200,000
Golden Gate	5/19/2001	0	0	$0
Unknown	5/4/2007	0	0	$0
Unknown	5/7/2007	0	0	$75,000
Unknown	6/1/2007	0	0	$0
Unknown	5/29/2008	0	0	$850,000
Unknown	4/22/2009	0	0	$0
Unknown	5/1/2009	0	0	$0
Unknown	5/8/2009	0	0	$65,000
Unknown	4/26/2011	0	0	$80,000
Unknown	5/1/2011	0	0	$80,000
Unknown	3/5/2017	0	0	$578,000
Unknown	3/18/2017	0	0	$0
Unknown	3/30/2017	0	0	$0

Location	Date	Fatalities	Injuries	Property Damage
Unknown	4/20/2017	0	1	$3,500,000
Unknown	4/20/2017	0	0	$0
Unknown	3/23/2018	0	0	$0
Unknown	5/1/2020	0	0	$0
Unknown	5/7/2020	0	0	$0
Unknown	5/13/2020	0	0	$0
Unknown	5/22/2021	0	0	$0
Unknown	3/3/2023	0	0	$0
Unknown	4/4/2023	0	0	$0
Unknown	5/1/2023	0	0	$0
	Total	0	1	$5,428,000

Source: NCEI

Almost $5.5 million in property damage was accrued in Collier County over 24 years, giving an average of $226,166 per year. The Florida Department of Agriculture and Consumer Services maintains records of acreage burned and number of fires within the State of Florida. Between January 1st and September 15, 2024, there were 1,768 wildfires across the State with a total of 49,206 acres burned.

Florida participates in the national Ready, Set, Go! program which helps prepare first responders to best address wildfires when they occur. This program is also used as outreach to help citizens understand their risk and how to be prepared. Collier County has addressed fire hazards in their building codes and comprehensive plan. Additionally, The State of Florida crated a State Wildfire Mitigation Plan, in which Collier County is a part of the Caloosahatchee Forestry Center Wildfire Mitigation Plan.

According to the Caloosahatchee Forestry Center Wildfire Mitigation Plan, Collier County is home to many prescribed burn programs due to its abundance of public parks and forests. The largest wildfire hazard area in Collier County is Golden Gates Estates because of its density and location in heavily wooded areas. Between 2005 and 2015, lightning was the main cause of wildfires in the County accounting for 39 percent of the 810 wildfires. One of the many goals of the Wildfire Mitigation Plan is to complete a Community Wildfire Protection Plan for Collier County.

The State of Florida uses this Active Wildfires Dashboard to communicate to others where the currently burning wildfires are located. At the time this data is collected, there are no active wildfires in the State of Florida.

The region experienced prolonged periods of severe drought in 1998 and 2001, as well as extreme drought in 2010 to 2012, and again in 2017. These periods of drought may explain some of the annual variation in fires and acreage burned.

On average, Collier County experiences almost one fire annually based on data reported by the NCEI database. Actual number of fires is likely higher because smaller fires within jurisdictional boundaries are managed by local fire departments.

PROBABILITY OF FUTURE OCCURRENCE

The Southern Wildfire Risk Assessment provides a Burn Probability analysis which predicts the probability of an area burning based on landscape conditions, weather, historical ignition patterns, and historical fire prevention and suppression efforts. Burn Probability data is generated by simulating fires under different weather, fire intensity, and other conditions. Values in the Burn Probability (BP) data layer indicate, for each pixel, the number of times that cell was burned by a modeled fire, divided by the total number of annual weather scenarios simulated. The simulations are calibrated to historical fire size distributions. The Burn Probability for Collier County is presented in Table 2.56 and illustrated in Figure 2.29.

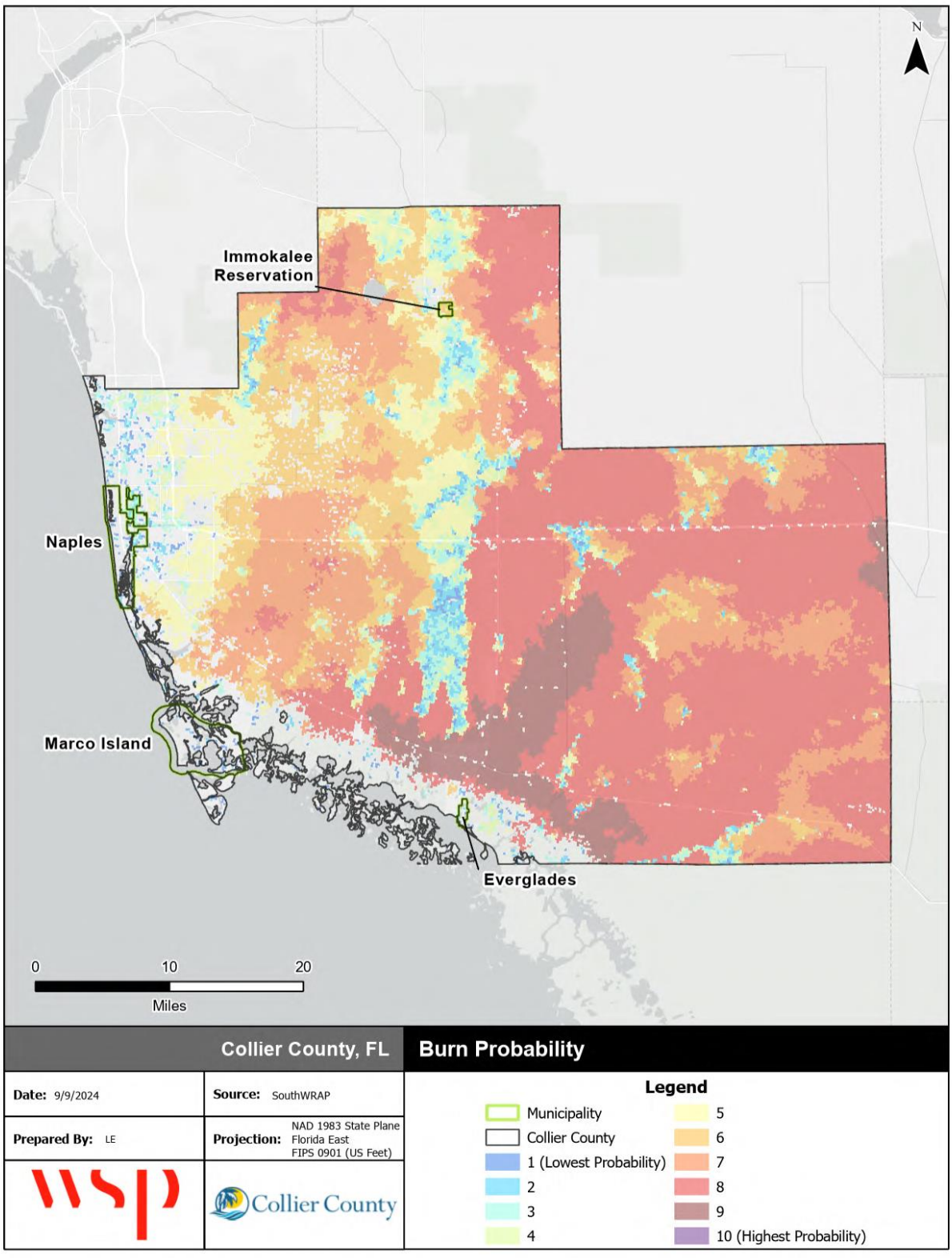
According to this data, approximately 12.3 percent of Collier County has no burn probability.

Table 2.56 - Burn Probability, Collier County

	Class	Acres	Percent
	0 – no probability	160,313	12.3%
	1	10,422	0.8%
	2	25,005	1.9%
	3	36,790	2.8%
	4	28,736	2.2%
	5	91,303	7.0%
	6	152,290	11.7%
	7	237,524	18.2%
	8	483,124	37.0%
	9	78,743	6.0%
	10	0	0.0%
	Total	1,304,250	100.0%

Source: Southern Wildfire Risk Assessment

Figure 2.29 – Burn Probability, Collier County



Source: Southern Wildfire Risk Assessment

Over 80 percent of Collier County has a burn probability between classes 6 and 9. The areas of higher burn probability are located along U.S. Highway 41 near Everglades and in the Big Cypress National Preserve. The northwestern corner of the county and areas surrounding lakes have a burn probability between classes 1 to 4. The probability of wildfire across the county is considered likely, defined as between a 10% and 100% annual chance of occurrence. Everglades, Marco Island, and Naples are largely non-burnable or contain only small areas of very low burn probability. The communities containing a higher burn probability, as noted, have a comparatively higher probability of occurrence.

- *Probability: 3 – Likely*

CLIMATE CHANGE

Climate change is expected to have far-reaching effects on various environmental processes, including the frequency an intensity of extreme heat and drought events, both of which could profoundly influence wildfire behavior. As global temperatures rise, the likelihood of more frequent and prolonged periods of extreme heat increase, which can dry out vegetation, soil, and organic matter, making them more susceptible to ignition. Additionally, the intensification of drought conditions means that water availability for plants and ecosystems could become increasingly scarce, leading to a reduction in the moisture content of vegetation, soils, and decomposing organic material, all of which play a critical tole in wildfire dynamics. Moreover, the unpredictability of climate change means that both seasons could become more extreme in their respective ways, amplifying the impacts on wildfire behavior throughout Collier County, and it's jurisdictions.

VULNERABILITY ASSESSMENT

PEOPLE

Wildfire pose significant risks to human life and health, causing fatalities, injuries, and long-term health complications such as respiratory issues due to smoke inhalation. To mitigate these dangers, it is crucial to implement comprehensive procedures for rapid warning and evacuation. Developing reliable early warning systems that utilize satellite monitoring, drones, and weather forecasts can help alert communities to emerging threats. Local authorities should communicate through various channels, including SMS alerts, social media and community radio, to ensure that messages everyone effectively.

Effective communication and coordination among local fire departments, law enforcement, and emergency management agencies are vital for an orderly and safe evacuation process. After evacuations, providing support affected individuals and families is crucial, including access to medical care, mental health services, and resources for rebuilding. Establishing community networks can further assist residents during recovery.

Based on 2020 housing density data, Southern Wildfire Risk Assessment (SWRA) estimates that 196,092 people of the total planning area population live within the WUI and are therefore at risk to wildfire.

- **Population Patterns**:
    - Increased suburban expansion into wildland-urban interface areas like Golden Gate Estates.
    - Growing rural communities with limited fire mitigation measures.
    - Higher risk for elderly and lower-income residents in rural areas with limited access to emergency services.
    - **Underserved Populations**: Migrant farmworkers and rural populations may face challenges accessing emergency notifications due to remote locations and language barriers.

PROPERTY

Wildfire can lead to sustainable direct property losses, impacting buildings, vehicles, landscaped areas, agricultural lands, and livestock. The destruction of homes and businesses not only results in financial losses but can also displace families and disrupt communities. One effective approach to increasing fire resistance is the use of fire-rated materials in construction such as non-combustible roofing, siding, and decks, as well as tempered glass windows that can withstand high temperatures. Additionally, building codes that require certain fire safety measures, such as proper ventilation and firebreaks, can further protect properties from encroaching flames.

- **Land Use/Development Trends**:
    - Land clearing for housing developments creating new wildland-urban interfaces.
    - Construction of fire-prone properties (e.g., wood-frame homes) in fire zones.
    - New roads and utilities increasing human activity and ignition risks in wildfire-prone areas.
    - Limited implementation of defensible space regulations and fire-resistant building codes in some new developments.

Landscaping practices are another vital element in reducing vulnerability to wildfires. By incorporating fire-resistant plants and creating defensible space around properties—typically a buffer zone that extends at least 30 feet from structures—homeowners can limit the flammability of their surroundings. Techniques such as maintaining a green lawn, using gravel or stone mulch, and keeping trees trimmed can minimize the potential for fire to spread to buildings.

Exposure to wildfire was estimated using SWRA's Wildland Urban Interface Risk Index (WUIRI). The WUIRI provides a rating of the potential impact of a wildfire on people and properties. It is derived using a Response Function modeling approach which involves assigning a net change in the value to a resource or asset based on susceptibility to fire at different intensity levels, such as flame length. The range of values is from -1 to -9, with -1 representing the least negative impact and -9 representing the most negative impact.

For example, areas with high housing density and high flame lengths are rated -9 while areas with low housing density and low flame lengths are rated -1.

To calculate the WUIRI, SWRA combines WUI housing density data with Flame Length data and response functions to represent potential impacts. Response functions were defined by a team of experts based on values defined by SWRA. By combining flame length with the WUI housing density data, you can determine where the greatest potential impact to homes and people is likely to occur.Table **2.57** summarizes the number of parcels and their total value that fall within areas with moderate to high risk for wildfire impacts, defined as ratings of -5 to -9 on the WUIRI. This table represents exposure within the area rated under -5, however, actual damages in the event of a wildfire would vary. Based on this analysis, over 71 percent of the planning area is exposed to moderate to high critical facility risk. Exposure is highest in Everglades City and Seminole Tribe Immokalee Reservation, where over 81 percent of the property inventory is exposed. Critical facility exposure to moderate and high risk for wildfire impacts is summarized by jurisdiction and FEMA lifeline category in Table 2.58.

Table 2.57 – Property Exposure in Areas with Moderate to High Risk of Wildfire Impacts

Occupancy	Parcels at Risk	% of Total Parcels	Structure Value	Estimated Content Value	Total Value
Everglades City					
Commercial	66	67.3%	$19,935,847	$19,935,847	$39,871,693
Government	0	0.0%	$0	$0	$0
Industrial	0	0.0%	$0	$0	$0
Religious	1	100.0%	$17,175	$17,175	$34,350
Residential	320	85.3%	$37,918,615	$18,959,307	$56,877,922
Total	387	81.1%	$57,871,637	$38,912,329	$96,783,966
Seminole Tribe Immokalee Reservation					
Commercial	27	77.1%	$12,523,811	$12,523,811	$25,047,623
Residential	77	83.7%	$19,829,368	$9,914,684	$29,744,052
Total	104	81.9%	$32,353,179	$22,438,495	$54,791,674
Marco Island					
Commercial	469	71.3%	$260,009,768	$260,009,768	$520,019,535
Government	4	100.0%	$2,598,779	$2,598,779	$5,197,558
Religious	1	50.0%	$13,740	$13,740	$27,480
Residential	4,750	60.6%	$2,300,904,180	$1,150,452,090	$3,451,356,270
Total	5,224	61.4%	$2,563,526,466	$1,413,074,376	$3,976,600,843
Naples					
Commercial	666	54.8%	$893,334,210	$893,334,210	$1,786,668,421
Government	3	37.5%	$251,133	$251,133	$502,266
Industrial	2	50.0%	$750	$1,125	$1,875
Religious	1	20.0%	$16,771	$16,771	$33,542
Residential	4,797	64.6%	$5,941,067,784	$2,970,533,892	$8,911,601,676
Total	5,469	63.2%	$6,834,670,648	$3,864,137,131	$10,698,807,780
Unincorporated Collier County*					
Agriculture	15	14.9%	$804,738	$804,738	$1,609,476
Commercial	4,735	62.0%	$5,317,488,531	$5,317,488,531	$10,634,977,062
Education	1	20.0%	$24,727	$24,727	$49,454
Government	32	22.4%	$2,363,915	$2,363,915	$4,727,830
Industrial	27	56.3%	$1,044,857	$1,567,286	$2,612,143
Religious	7	50.0%	$145,849	$145,849	$291,698
Residential	92,134	78.3%	$30,157,316,981	$15,078,658,490	$45,235,975,471

Occupancy	Parcels at Risk	% of Total Parcels	Structure Value	Estimated Content Value	Total Value
Total	96,951	77.2%	$35,479,189,598	$20,401,053,536	$55,880,243,134
Countywide					
Agriculture	15	14.9%	$804,738	$804,738	$1,609,476
Commercial	5,270	54.6%	$5,597,434,145	$5,597,434,145	$11,194,868,291
Education	1	20.0%	$24,727	$24,727	$49,454
Government	36	22.9%	$4,962,694	$4,962,694	$9,925,388
Industrial	27	50.9%	$1,044,857	$1,567,286	$2,612,143
Religious	9	40.9%	$176,764	$176,764	$353,528
Residential	97,204	72.8%	$32,496,139,775	$16,248,069,888	$48,744,209,663
Total	102,562	71.5%	$38,100,587,701	$21,853,040,242	$59,953,627,943

Source: GIS Analysis, Southern Wildfire Risk Assessment

*Note: Unincorporated Collier County includes the following jurisdictions: Collier County Government, Collier County Public Schools, Collier Mosquito Control District, North Collier Fire Control District, Greater Naples Fire Rescue District, Immokalee Fire Control District, Naples Airport Authority, Port of the Isles, and South Florida Water Management District.

Table 2.58 – Critical Facility Exposure in Areas with Moderate to High Risk of Wildfire Impacts

FEMA Lifeline	Facility County by Jurisdiction						Total Structure Value
	Unincorporated Collier County*	Everglades City	Seminole Tribe Immokalee Reservation	Marco Island	Naples	Total	
Communications	13	1	0	0	5	19	31,304,422
Energy	92	3	0	5	7	107	74,630,835
Food, Hydration, Shelter	30	1	0	2	6	39	324,302,461
Hazardous Materials	39	2	0	2	3	46	132,822,047
Health & Medical	43	0	0	2	6	51	593,033,530
Safety and Security	44	2	0	5	10	61	262,688,606
Transportation	5	1	0	0	0	6	6,328,920
Water Systems	27	1	1	4	2	35	106,346,697
Total	293	11	1	20	39	364	$1,531,457,516

Source: GIS Analysis, Southern Wildfire Risk Assessment

*Note: Unincorporated Collier County includes the following jurisdictions: Collier County Government, Collier County Public Schools, Collier Mosquito Control District, North Collier Fire Control District, Greater Naples Fire Rescue District, Immokalee Fire Control District, Naples Airport Authority, Port of the Isles, and South Florida Water Management District.

ENVIRONMENT

Wildfires have the potential to cause extensive damage to forest and forage resources, significantly affecting both natural habitats and agricultural land. When a wildfire sweeps through a forest, it can obliterate vast areas of vegetation, leading to loss of trees, shrubs, and underbrush that provide habitat for wildlife. This destruction disrupts ecosystems, displacing animal species and impacting their food sources.

Additionally, wildfires can severely damage agricultural crops on private land. The intense heat and smoke can harm plants, leading to reduced yields or complete crop failure. This not only affects farmers economically but can also have broader implications for local and regional food supplies. The destruction of crops can lead to higher food prices and food scarcity, impacting communities that depend on these resources.

The recovery process can vary based on factors such as the severity of the fire, the type of ecosystem affected, and climate conditions. In many cases, wildfires can lead to the growth of new, diverse plant communities that enhance soil quality and increase habitat complexity. Additionally, the ash left behind can provide essential nutrients that stimulate the growth of new vegetation.

CONSEQUENCE ANALYSIS

Table **2.59** summarizes the potential detrimental consequences of wildfire.

Table 2.59 – Consequence Analysis - Wildfire

Category	Consequences
Public	In addition to the potential for fatalities, wildfire and the resulting diminished air quality pose health risks. Exposure to wildfire smoke can cause serious health problems within a community, including asthma attacks and pneumonia, and can worsen chronic heart and lung diseases. Vulnerable populations include children, elderly, and people with respiratory problems or heart disease. Even healthy citizens may experience symptoms such as sore throats and itchy eyes.
Responders	Public and firefighter safety is the priority in all wildland fire management activities. Wildfires are a real threat to the health and safety of the emergency services. Most fire-fighters in rural areas are 'retained'. This means that they are part-time and can be called away from their normal work to attend to fires.
Continuity of Operations (including Continued Delivery of Services)	Wildfire events can lead to power outages, disrupting operations significantly. Fallen trees, damaged power lines, and poor road conditions can hinder access to essential facilities and emergency equipment.
Property, Facilities and Infrastructure	Wildfires frequently damage community infrastructure, including roadways, communication networks and facilities, power lines, and water distribution systems. Restoring basic services is critical and a top priority. Efforts to restore roadways include the costs of maintenance and damage assessment teams, field data collection, and replacement or repair costs. Direct impacts to municipal water supply may occur through contamination of ash and debris during the fire, destruction of aboveground distribution lines, and soil erosion or debris deposits into waterways after the fire. Utilities and communications repairs are also necessary for equipment damaged by a fire. This includes power lines, transformers, cell phone towers, and phone lines.
Environment	Wildfires damage the natural environment by killing vegetation and wildlife. The aftermath increases the risk of floods and debris flows, as bare ground and the loss of plants leave areas more vulnerable. Moreover, the secondary effects of wildfires—such as erosion, landslides, the introduction of invasive species, and changes in water quality—can often be more catastrophic than the fire itself.
Economic Condition of the Jurisdiction	Wildfires can have significant short-term and long-term effects on the local economy. Wildfires, and extreme fire danger, may reduce recreation and tourism in and near the fires. If aesthetics are impaired, local property values can decline. Extensive fire damage

Category	Consequences
	to trees can significantly alter the timber supply, both through a short-term surplus from timber salvage and a longer-term decline while the trees regrow. Water supplies can be degraded by post-fire erosion and stream sedimentation.
Public Confidence in the Jurisdiction's Governance	Wildfire events can undermine public confidence due to their visible effects on the community. The level of trust in local governance may be shaped by actions taken before a disaster, such as mitigation efforts, preparation initiatives, public education, timely warnings to residents, response measures, and the speed and effectiveness of recovery efforts.

HAZARD SUMMARY BY JURISDICTION

The following table summarizes flood hazard risk by jurisdiction. Wildfire warning time and duration do not vary by jurisdiction. Spatial extent ratings were estimated based on the proportion of area within the WUI; all jurisdictions have between 10% and 50% of their area in the WUI and were assigned a spatial extent rating of 3, except for the City of Everglades which has close to 100% of its area in the WUI and was thus given a rating of 4. Impact ratings were based on fire intensity data from SWRA. Jurisdictions with significant clusters of moderate to high fire intensity were assigned a rating of 3; all other jurisdictions were assigned a rating of 2. Probability ratings were determined based on burn probability data from SWRA. Jurisdictions with clusters of moderate burn probability or higher were assigned a rating of 3; the remaining jurisdictions have minimal to no burn probability and were assigned a probability of 1.

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Everglades City	1	3	4	4	3	2.7	M
Seminole Tribe Immokalee Reservation	3	3	3	4	3	3.1	H
Marco Island	1	2	3	4	3	2.2	M
Naples	1	2	3	4	3	2.2	M
Unincorporated Collier County*	3	3	3	4	3	3.1	H

*Note: Unincorporated Collier County includes the following jurisdictions: Collier County Government, Collier County Public Schools, Collier Mosquito Control District, North Collier Fire Control District, Greater Naples Fire Rescue District, Immokalee Fire Control District, Naples Airport Authority, Port of the Isles, and South Florida Water Management District.

2.5.4 COASTAL EROSION

HAZARD DESCRIPTION

COASTAL EROSION

Coastal erosion is a process whereby large storms, flooding, strong wave action, sea level rise, and human activities, such as inappropriate land use, alterations, and shore protection structures, wear away the beaches and bluffs along the coast. Erosion undermines and often destroys homes, businesses, and public infrastructure and can have long-term economic and social consequences. According to NOAA, coastal erosion is responsible for approximately $500 million per year in coastal property loss in the

United States, including damage to structures and loss of land. To mitigate coastal erosion, the federal government subsidizes beach nourishment projects and other shoreline erosion control measures. Since 2018, the federal government has spent more than $770 million for emergency beach nourishment projects in Florida, Georgia, and the Carolinas.

Coastal erosion has both natural causes and causes related to human activities. Gradual coastal erosion and accretion results naturally from the impacts of tidal longshore currents. Severe coastal erosion can occur over a short period when the state is impacted by hurricanes, tropical storms and other weather systems. Sand is continually removed by longshore currents in some areas, but it is also continually replaced by sand carried in by the same type of currents. Structures such as piers or sea walls, jetties, and navigational inlets may interrupt the movement of sand. Sand can become “trapped” in one place by these types of structures. The currents will, of course, continue to flow, though depleted of sand trapped elsewhere. With significant amounts of sand trapped in the system, the continuing motion of currents (now deficient in sand) results in erosion. In this way, human construction activities that result in the unnatural trapping of sand have the potential to result in significant coastal erosion.

Erosion rates and potential impacts are highly localized. Severe storms can remove wide beaches, along with substantial dunes, in a single event. In undeveloped areas, these high recession rates are not likely to cause significant concern, but in some heavily populated locations, one or two feet of erosion may be considered catastrophic (NOAA, 2014).

STREAM BANK EROSION

Stream banks erode by a combination of direct stream processes, like down cutting and lateral erosion, and indirect processes, like mass-wasting accompanied by transportation. When the channel bends, water on the outside of the bend (the cut-bank) flows faster and water on the inside of the bend (the point) flows slower. This distribution of velocity results in erosion occurring on the outside of the bend and deposition occurring on the inside of the bend.

Stream bank erosion is a natural process, but acceleration of this natural process leads to a disproportionate sediment supply, stream channel instability, land loss, habitat loss and other adverse effects. Stream bank erosion processes, although complex, are driven by two major components: stream bank characteristics (erodibility) and hydraulic/gravitational forces. Many land use activities can affect both components and lead to accelerated bank erosion. The vegetation rooting characteristics can protect banks from fluvial entrainment and collapse and provide internal bank strength. When riparian vegetation is changed from woody species to annual grasses and/or forbs, the internal strength is weakened, causing acceleration of mass wasting processes. Stream bank aggradation or degradation is often a response to stream channel instability. Since bank erosion is often a symptom of a larger, more complex problem, the long-term solutions often involve much more than just bank stabilization. Numerous studies have demonstrated that stream bank erosion contributes a large portion of the annual sediment yield.

Determining the cause of accelerated streambank erosion is the first step in solving the problem. When a stream is straightened or widened, streambank erosion increases. Accelerated streambank erosion is part of the process as the stream seeks to re-establish a stable size and pattern. Damaging or removing streamside vegetation to the point where it no longer provides for bank stability can cause a dramatic increase in bank erosion. A degrading streambed results in higher and often unstable, eroding banks. When land use changes occur in a watershed, such as clearing land for agriculture or development, runoff increases. With this increase in runoff the stream channel will adjust to accommodate the additional flow, increasing streambank erosion. Addressing the problem of streambank erosion requires an understanding of both stream dynamics and the management of streamside vegetation.

- *Warning Time: 1 – More than 24 hours*
- *Duration: 3 – Less than 1 week*

LOCATION

Erosion can occur along any shoreline in the Collier County. Erosion is likely to be more frequent and severe along the Atlantic coast, but erosion of estuarine and streambank shorelines can also occur. In Collier County, erosion is typically caused by coastal tides, ocean currents, storm events, and failure of water control structures. Erosion rates are dependent on many characteristics, including soil type. Coastal soils are composed of fine-grained particles such as sand while inland soils tend to have greater organic matter content. This makes coastal areas more susceptible to erosion. More developed coastal areas, such as Marco Island, the City of Naples, Everglades City, and Port of the Isles are more susceptible to coastal erosion. However Collier County and it's jurisdictions are exposed to erosion because of the expanse of water control structures throughout.

- *Spatial Extent: 2 – Small*

EXTENT

The magnitude of erosion can be measured as a rate of change from a measured previous condition. Erosion rates can vary significantly across the region due to several factors including fetch, shoreline orientation, and soil composition. To account for these variations, long-term erosion can also be measured by land cover changes and increases in open water. While a small fraction of the shoreline may exhibit accretion over a short period of time, cumulative impacts can still indicate an overall loss of estuarine coastline and marsh habitat. Table 2.60 provides data from the NOAA Coastal Change Analysis Program (C-CAP) Land Cover Atlas showing land cover changes in the Region from 1996 to 2016.

Table 2.60 – Land Cover Changes, 1996-2016

Land Cover Type	Collier Net Change
Developed, High Intensity	15.07 sq. mi
Developed, Low Intensity	16.31 sq. mi
Developed, Open Space	11.49 sq. mi
Grassland/Herbaceous	1.63 sq. mi
Agriculture	-15.78 sq. mi

Forested	-0.15 sq. mi
Scrub/Shrub	-4.99 sq. mi
Woody Wetland	-21.70 sq. mi
Emergent Wetland	-0.63 sq. mi
Bare Land	0.93 sq. mi
Open Water	-2.19 sq. mi

Source: https://coast.noaa.gov/digitalcoast/data/ccapregional.html

The C-CAP data indicates that there was a slight decrease in open water and a larger net decrease in wetlands. Wetland loss can make coastlines even more vulnerable to erosion because wetlands help dampen the energy of ocean currents which would otherwise damage a shoreline. Additionally, Collier County saw a large increase in development. Greater development typically results in more impervious surface coverage. Greater impervious area – parking lots, sidewalks, roads, buildings, etc. – can increase stormwater runoff, alter drainage patterns, and further exacerbate erosion and flood issues.

In terms of the magnitude of impacts, erosion may cause property damage when severe but is unlikely to cause injury or death.

- *Impact: 2 – Limited*

HISTORICAL OCCURRENCES

million. Figure 2.30 identifies areas of coastline that are experiencing beach erosion and indicates the severity of the erosion, as determined by the Florida Department of Environmental Protection's staff of coastal engineers. This data is based on the state's 2024 Critical Erosion Report, which is used to document areas of change and to help the beach management staff with prioritizing projects and resources to the areas of greatest need. Per this data, there are multiple areas of critical beach erosion, including the coastline north and south of Wiggins Pass, along Vanderbilt Beach Estates, along Naples north and south of Doctor's Pass, along Marco Island and the inlet at Big Marco Pass, and the coastlines of Kice Island and Morgan Island.

Erosion is typically an ongoing process; however, it can be intensified during storm events, particularly hurricane storm tides. Per an examination of event narratives in NCEI records for hurricanes, tropical storms, storm surges, and coastal floods, the following instances of major erosion are noted in Collier County:

September 13, 2001 (Tropical Storm) – Tropical Storm Gabrielle crossed the west Florida coast near Venice on September 14th. Storm surge values of 3 to 5 feet were observed along much of the Collier County coast, causing some coastal flooding and minor to moderate beach erosion.

October 24, 2005 (Storm Surge) – Hurricane Wilma produced a maximum measured storm tide of 8 feet at the USGS tide gauge at the Turner River near Chokoloskee in southern Collier County, equating to a storm surge of 7 feet after subtracting a one-foot astronomical tide. A storm tide estimated at 7 feet Marco Island was estimated to cause significant beach erosion by Collier County Emergency Management.

September 19, 2008 (Tropical Storm) – Due to Tropical Storm Fay remaining at tropical storm strength and the rather limited nature of its wind field, storm surge and coastal flooding impacts were rather minor. The highest storm tide was estimated to be in the Everglades City/Chokoloskee areas, where the maximum storm tide was in the 5 foot range according to tide gauge data and estimates from local officials. Minimal storm surge was noted elsewhere, although moderate to locally severe beach erosion occurred in Naples.

August 26-27, 2012 (Tropical Storm) – The center of Tropical Storm Isaac moved over the Florida Straits south of the Florida Keys on Sunday, August 26th, passing just south of Key West. Severe beach erosion and coastal flooding occurred on Monday, August 27th as the center of Tropical Storm Isaac moved into the Gulf of Mexico. Maximum storm tide values were observed at 4.9 feet at Naples, with estimates of 5 to 7 feet along the southern Collier County coast from Goodland to Everglades City. Highest estimated inundation values of up to 3 feet above ground level were noted in Goodland and Everglades City. Major beach erosion was also observed along the Collier County beaches. Severe beach erosion in the Naples and Marco Island areas led to damage estimated at $5.6 million. Figure 2.30 – Erosion Hotspots, Collier County

September 10, 2017 (Tropical Storm) - Hurricane Irma made landfall on September 10, 2017, near Marco Island in Collier County, causing substantial beach erosion. The Florida Department of Environmental Protection reported that the greatest coastal damage occurred along the northeast and central Atlantic coast, the Florida Keys, and Collier County in southwest Florida. In response, Collier County initiated a beach renourishment project estimated at $29 million to repair the damage, including constructing surge barriers such as sand dunes.

September 2022 (Tropical Storm) - Hurricane Ian, which struck in September 2022, further exacerbated coastal erosion in Collier County. The U.S. Geological Survey assessed potential coastal change impacts during the hurricane, highlighting the vulnerability of the region's beaches.

Following Ian, the Vanderbilt Beach Hurricane Restoration Project was launched, encompassing repairs to the beach access drive, boardwalks, bathroom building, parking garage, and other elements damaged by the storm.

2023: In 2023, Hurricanes Helene and Milton caused additional erosion along Collier County's beaches. Park Shore Beach, in particular, underwent a multi-million dollar renourishment project to restore sand lost due to natural erosion and these hurricanes. Cleanup efforts were also reported in Naples, with crews working to clear debris and sand from streets and beach accesses across the county. These cumulative impacts have led to ongoing restoration projects aimed at mitigating erosion and preserving the county's beaches. The U.S. Army Corps of Engineers is studying storm risk management in Collier County, a process that began after Hurricane Irma but gained renewed attention following Hurricane Ian.

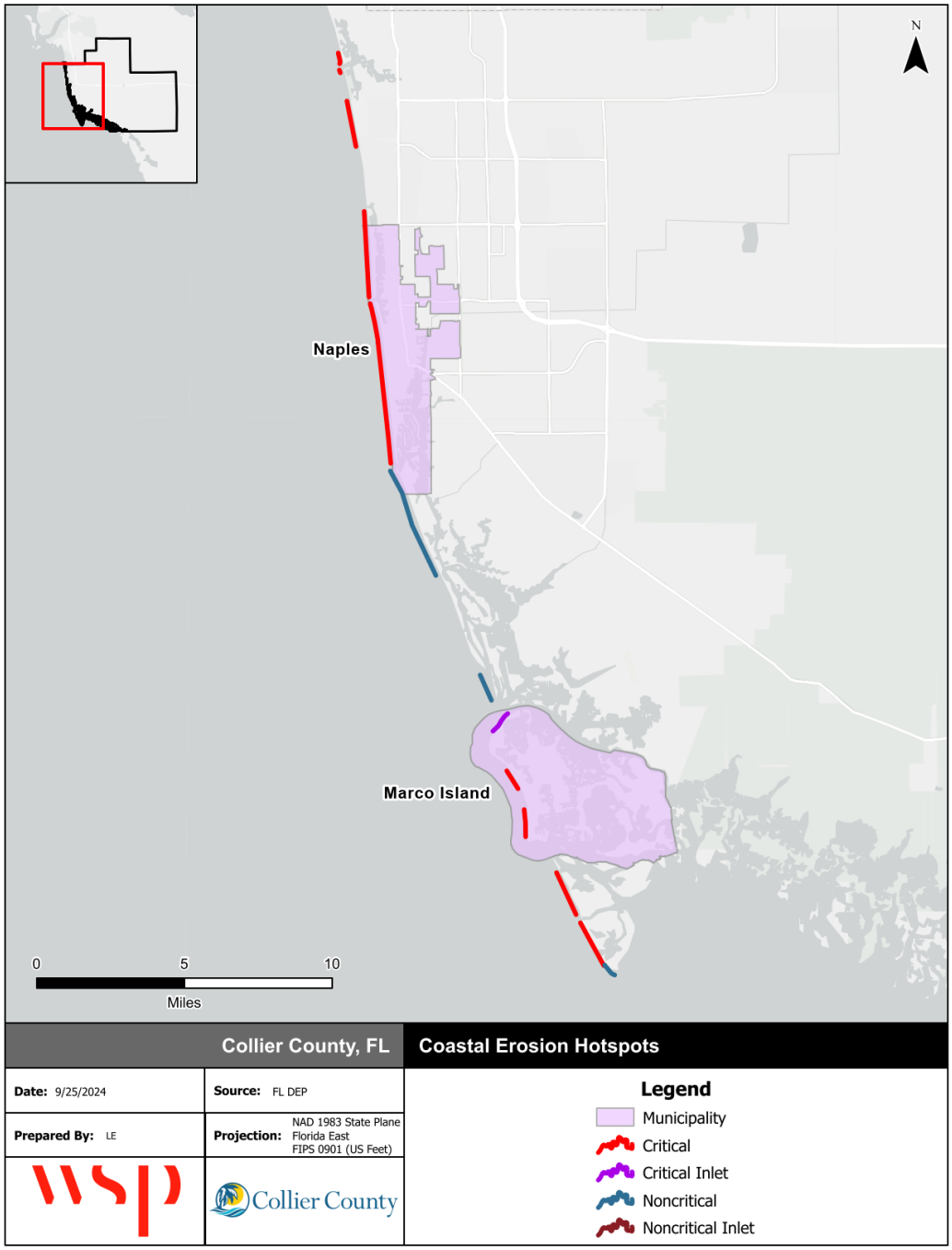
In summary, Collier County has faced significant coastal erosion due to Hurricanes Irma, Ian, Helene, and Milton. The county continues to implement and plan restoration projects to address the damage and enhance resilience against future storms.

Non-Storm Related Erosion: Erosion around water control structures, such as weirs and levees, is a concern in Collier County's stormwater management system. The county maintains an extensive network of stormwater infrastructure, including 81 weir structures and 6 pump stations, to manage water flow and mitigate flooding.

Regular maintenance is essential to prevent erosion and ensure the functionality of these structures. The county's Stormwater Maintenance Section is responsible for activities such as debris removal, vegetation control, and structural repairs. Specific measures include regrading and revegetating side slopes, embankments, and spillways to address erosion issues.

While routine maintenance addresses potential erosion, there have been instances where erosion around water control structures required attention. For example, the county has implemented erosion control measures, such as the use of riprap or other forms of erosion protection, in areas with concentrated water flow to prevent structural damage. The county does not maintain specific records on the number of stormwater structure repairs attributed to erosion, as these repairs are considered part of ongoing maintenance activities.

In summary, Collier County proactively manages and maintains its stormwater infrastructure to prevent and address erosion around water control structures, ensuring the system's effectiveness in flood control and water management.



Source: Florida Department of Environmental Protection

PROBABILITY OF FUTURE OCCURRENCE

Erosion and accretion are natural processes that are likely to continue to occur. The likelihood of significant instances of erosion will likely be tied to the occurrence of hurricane, tropical storm, and nor'easter events. According to NCEI, 6 events caused reported erosion in the region over the 24-year span between 2000-2023. This equates

to a 25 percent chance of significant erosion occurring every year. Additionally, drawing from the likelihood of hurricanes, tropical storms, and Nor'easters, erosion is likely to occur.

- *Probability: 3 – Likely*

CLIMATE CHANGE

As discussed under Climate Change in Section 0, climate change is expected to make heavy rain events and tropical storms and hurricanes more frequent and intense. As a result, the erosion typically caused by these storms can be expected to occur more frequently. Coastal erosion is also expected to increase as a result of rising seas. A 2018 study found that globally, between 1984 and 2015 erosion outweighed accretion. However, the study could not conclude the degree to which erosion during this period is attributed to climate changes or increased coastal development. Nonetheless, increases in erosion have been observed and are expected to continue.

VULNERABILITY ASSESSMENT

PEOPLE

Erosion is unlikely to have any direct impact on the health or safety of individuals. However, it can pose a financial risk. Households and businesses along the shore may have to relocate or make expensive structural changes on their property. Relocating is difficult for anyone, but it can be especially challenging for lower-income individuals.

- **Population Patterns**:
    - Population growth in beachfront and low-elevation neighborhoods along the Collier Gulf Coast.
    - Seasonal residents in vulnerable properties increasing exposure during peak hurricane seasons.
    - Wealthier enclaves at risk of property value declines due to erosion and flooding.
    - **Underserved Populations**: Low-income renters in coastal areas may face displacement as property owners convert damaged properties to higher-cost, resilient housing.

PROPERTY

Erosion can cause buildings to become closer to the water's edge, increasing the likelihood of water inundating a structure. This can lead to damage or destruction of a foundation. In addition to structural repairs, property owners may be subject to higher insurance premiums to account for increased risk. Data is not available on specific property or critical facility risk to erosion.

- **Land Use/Development Trends**:
    - Construction of beachfront properties and commercial developments near dune systems or on one of the many canals in Collier County.

- Hardening of shorelines (e.g., seawalls) limiting natural buffer zones and accelerating erosion.
- Rising demand for new housing in elevated inland areas due to perceived risks of sea level rise.
- Insufficient adoption of nature-based solutions, such as living shorelines, to address coastal erosion.

ENVIRONMENT

Erosion can change the shape and characteristics of coastal shorelines and riverine floodplains. Eroded material may clog waterways and decrease drainage capacity. Erosion can also negatively impact water quality by increasing sediment loads in waterways.

CONSEQUENCE ANALYSIS

Table 2.61 summarizes the potential negative consequences of erosion.

Table 2.61 – Consequence Analysis – Erosion

Category	Consequences
Public	Erosion is unlikely to impact public health and safety.
Responders	Erosion is unlikely to require immediate response or rescue operations.
Continuity of Operations (including Continued Delivery of Services)	Erosion is unlikely to impact public continuity of operations.
Property, Facilities and Infrastructure	Erosion can result in property damage if it is severe enough or if scour occurs that undermines the integrity of structural foundations.
Environment	Erosion can increase sediment loads in waterbodies and change riverine and coastal topography.
Economic Condition of the Jurisdiction	Beach re-nourishment projects to counter erosion are extremely costly. Water dependent industries may suffer from lost shoreline and degraded water quality.
Public Confidence in the Jurisdiction's Governance	Erosion is unlikely to impact public confidence.

HAZARD SUMMARY BY JURISDICTION

The following table summarizes erosion hazard risk by jurisdiction. Exposure to erosion varies across jurisdictions, therefore probability and spatial extent are dependent upon the area at risk. Jurisdictions with shoreline at risk were assigned a probability of 3 (likely), an impact of 2 (limited), and a spatial extent of 2 (small). Jurisdictions with little to no shoreline at risk were assigned a probability score of 1 (unlikely), an impact of 1 (minor), and a spatial extent of 1 (negligible). Warning time and duration are inherent to the hazard and remain constant across jurisdictions.

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Everglades City	3	2	2	1	3	2.3	M
Seminole Tribe Immokalee Reservation	1	1	1	1	3	1.2	L

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Marco Island	3	2	2	1	3	2.3	M
Naples	3	2	2	1	3	2.3	M
Unincorporated Collier County*	3	2	2	1	3	2.3	M

*Note: Unincorporated Collier County includes the following jurisdictions: Collier County Government, Collier County Public Schools, Collier Mosquito Control District, North Collier Fire Control District, Greater Naples Fire Rescue District, Immokalee Fire Control District, Naples Airport Authority, Port of the Isles, and South Florida Water Management District.

2.5.5 DROUGHT

HAZARD DESCRIPTION

Drought is a prolonged period of below-average precipitation. It is a natural and recurring aspect of climate that can occur across nearly all climate zones. The length of a drought can vary significantly. Some droughts develop rapidly and last only briefly, often worsen by extreme heat and wind, and there are other cases when drought spans multiple years or even decades. Studying the paleoclimate record is often helpful in identifying when long-lasting droughts have occurred. Common types of droughts are detailed below in Table 2.62.

Table 2.62 – Types of Droughts

Type	Details
Meteorological Drought	Meteorological Drought is based on the degree of dryness (rainfall deficit) and the length of the dry period.
Agricultural Drought	Agricultural Drought is based on the impacts to agriculture by factors such as rainfall deficits, soil water deficits, reduced ground water, or reservoir levels needed for irrigation.
Hydrological Drought	Hydrological Drought is based on the impact of rainfall deficits on the water supply such as stream flow, reservoir and lake levels, and ground water table decline.
Socioeconomic Drought	Socioeconomic drought is based on the impact of drought conditions (meteorological, agricultural, or hydrological drought) on supply and demand of some economic goods. Socioeconomic drought occurs when the demand for an economic good exceeds supply as a result of a weather-related deficit in water supply.

As these stages evolve over time, the impacts to the economy, society, and environment can converge into an emergency. The wide variety of disciplines affected by drought, its diverse geographical and temporal distribution, and the many scales drought operates on make it difficult to develop both a definition to describe drought and an index to measure it. Many quantitative measures of drought have been developed in the United States, depending on the discipline affected, the region being considered, and the application. Several indices developed by Wayne Palmer, as well as the Standardized Precipitation Index, are useful for describing the many scales of drought.

The U.S. Drought Monitor provides a summary of drought conditions across the United States and Puerto Rico. Often described as a blend of art and science, the Drought Monitor map is updated weekly by combining a variety of data-based drought indices and indicators and local expert input into a single composite drought indicator. In 2007, the

state of Florida adopted a Drought Action Plan outlining response strategy for different levels of declared drought. The plan establishes guidelines for coordinating a unified statewide response to drought conditions.

The Palmer Drought Severity Index (PDSI) devised in 1965, was the first drought indicator to assess moisture status comprehensively. It uses temperature and precipitation data to calculate water supply and demand, incorporates soil moisture, and is considered most effective for unirrigated cropland. It primarily reflects long-term drought and has been used extensively to initiate drought relief. It is more complex than the Standardized Precipitation Index (SPI) and the Drought Monitor.

The Standardized Precipitation Index (SPI) is a way of measuring drought that is different from the Palmer Drought Severity Index (PDSI). Like the PDSI, this index is negative for drought, and positive for wet conditions. But the SPI is a probability index that considers only precipitation, while Palmer's indices are water balance indices that consider water supply (precipitation), demand (evapotranspiration) and loss (runoff).

- *Warning Time: 1 – More than 24 hours*
- *Duration: 4 – More than one week*

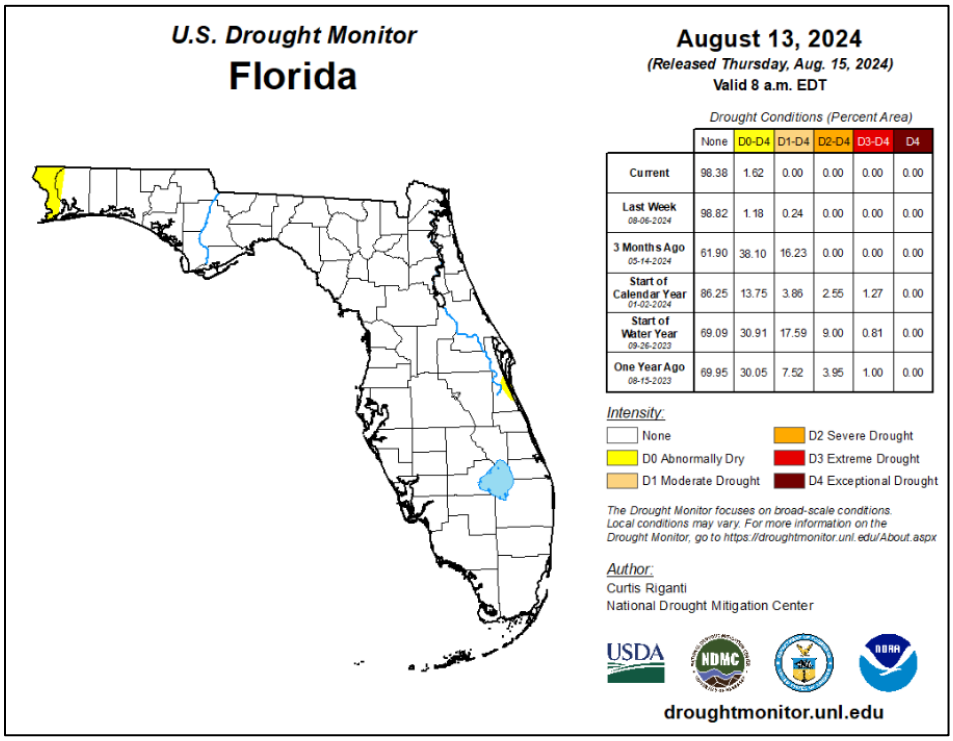
LOCATION

Since droughts are often regional events that impact multiple counties and states simultaneously, it is reasonable to assume that a drought will impact the entire planning area to some extent. Collier County and its jurisdictions are exposed to drought.

- *Spatial Extent: 4 – Large*

Figure 2.31 below notes the U.S. Drought Monitor’s drought ratings for Florida as of August 13, 2024; as of that date, Collier County was experiencing no drought.

Figure 2.31 – US Drought Monitor for Week of August 13, 2024



Source: U.S. Drought Monitor

EXTENT

Drought severity is commonly measured using the U.S. Drought Monitor scale, which classifies intensity based on various indicators. These include the Plamer Drought Severity Index, the Standardized Precipitation Index, the Keetch-Byram Drought Index, soil moisture levels, and reports on the drought's impact on communities. Figure 2.32 outlines the classifications used by the U.S. Drought Monitor. When a drought reaches a category of D2 (severe) or higher, it often leads to pasture or crop losses, water shortages, and the implementation of water restrictions.

Figure 2.32 – US Drought Monitor Classifications

			Ranges				
Category	Description	Possible Impacts	Palmer Drought Severity Index (PDSI)	CPC Soil Moisture Model (Percentiles)	USGS Weekly Streamflow (Percentiles)	Standardized Precipitation Index (SPI)	Objective Drought Indicator Blends (Percentiles)
D0	Abnormally Dry	Going into drought: ▪ short-term dryness slowing planting, growth of crops or pastures Coming out of drought: ▪ some lingering water deficits ▪ pastures or crops not fully recovered	-1.0 to -1.9	21 to 30	21 to 30	-0.5 to -0.7	21 to 30
D1	Moderate Drought	▪ Some damage to crops, pastures ▪ Streams, reservoirs, or wells low, some water shortages developing or imminent ▪ Voluntary water-use restrictions requested	-2.0 to -2.9	11 to 20	11 to 20	-0.8 to -1.2	11 to 20
D2	Severe Drought	▪ Crop or pasture losses likely ▪ Water shortages common ▪ Water restrictions imposed	-3.0 to -3.9	6 to 10	6 to 10	-1.3 to -1.5	6 to 10
D3	Extreme Drought	▪ Major crop/pasture losses ▪ Widespread water shortages or restrictions	-4.0 to -4.9	3 to 5	3 to 5	-1.6 to -1.9	3 to 5
D4	Exceptional Drought	▪ Exceptional and widespread crop/pasture losses ▪ Shortages of water in reservoirs, streams, and wells creating water emergencies	-5.0 or less	0 to 2	0 to 2	-2.0 or less	0 to 2

Source: US Drought Monitor

Droughts can impact different regions of Florida differently. Drought in Florida tend to affect areas where water resources and ecosystems are highly sensitive to dry conditions. Collier County relies on groundwater and surface water sources for drinking water, irrigation, and industry. This makes the planning area particularly vulnerable during periods of prolonged drought.

- *Impact: 1 – Minor*

HISTORICAL OCCURRENCES

The worst drought in Florida's recorded history was from 1954-1956. Lots of crops and timber were lost. The Northern Counties got the worst part of the drought but most of the State was in drought for all of 1956. Another major drought occurred in 1981-1982 when rain was scarce, and Lake Okeechobee reached the lowest water level ever recorded. All the State was in moderate or severe drought, but many regions were out of drought by the end of 1981.

Florida had a severe drought from 1998 to 2001. During this, crops were destroyed, lake levels were at an all-time low, and wildfires raged. This drought caused the water management districts to restrict water use, municipalities to hike water rates, and many restaurants were ordered to stop serving water except for to customers who asked. Several wildfires also occurred in 2007 because of a drought from 2006 to 2007. This period saw the largest rainfall deficit since the 1950s and was considered a one in 25-year drought event.

From 2010 to 2012, the State saw a drought that affected most counties, but the northern central and Panhandle regions were classified as in "extreme drought" for an extended period. Again in 2016, drought conditions developed and lasted into 2017 causing many wildfires.

There has never been a Presidential Major Disaster Declaration for drought in Florida. However, the USDA has declared agricultural disasters because of drought. Disaster designations help producers get loans and emergency assistance in these situations.

U.S. Drought Monitor records drought intensity weekly throughout the country. Table 2.63 presents the number of weeks that Collier County spent in drought by intensity over the period from 2000 through 2024, for which the Drought Monitor has records for 1,289 weeks.

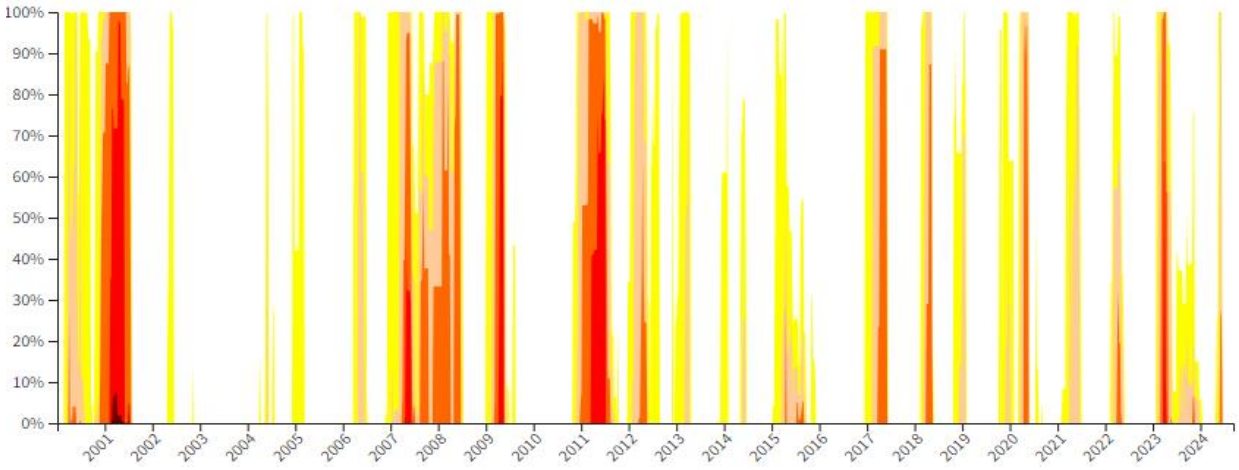
Table 2.63 – Weeks in Drought, 2000-2024

	Weeks in Drought						% of time in Severe Drought or Worse
County	Total	D0	D1	D2	D3	D4	
Collier	995	572	371	199	60	14	15.4%

Source: U.S. Drought Monitor History

Figure 2.33 shows the historical periods where the State was considered in some level of drought condition. The color key shown in Figure 2.32 indicates the intensity of the drought.

Figure 2.33 – US Drought Monitor Historical Trends, Collier County



Source: U.S. Drought Monitor

The National Drought Mitigation Center (NDMC), located at the University of Nebraska in Lincoln, provides a clearinghouse for information on the effects of drought, based on reports from media, observers, impact records, and other sources. According to the National Drought Mitigation Center's Drought Impact Reporter, during the 13-year period from 2010 through 2023, 44 drought impacts were noted for Collier County. Table 2.64 summarizes the number of impacts reported by category and the years impacts were reported for each category. Note that the Drought Impact Reporter assigns multiple categories to each impact.

Table 2.64 – Drought Impacts Reported for Collier County, January 2010 through 2023

Category	Impacts	Years Reported
Agriculture	4	2010, 2011, 2015, 2017, 2020
Business & Industry	2	2010, 2011
Fire	21	2010, 2011, 2016, 2017, 2018, 2019, 2020, 2021
Plants & Wildlife	9	2011, 2012, 2013, 2017, 2018, 2020, 2021, 2023
Relief, Response & Restrictions	28	2010, 2011, 2012, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2023
Society & Public Health	3	2011, 2012, 2018
Tourism & Recreation	1	2012
Water Supply & Quality	15	2011, 2012, 2013, 2017, 2020, 2023

Source: Drought Impact Reporter, http://droughtreporter.unl.edu

PROBABILITY OF FUTURE OCCURRENCE

Over the 24-year period from 2000 to 2024, for which the U.S. Drought Monitor reported on 1,289 weeks, Collier County had 995 weeks of drought conditions ranging from abnormally dry to exceptional drought. Of this time, approximately 199 weeks were categorized as a severe (D2) drought or greater; which equates to over a 15 percent chance of severe drought in any given week.

Central and southern Florida is likely to experience 0 to 13 weeks of drought each year. This hazard was determined to occur about every 5 to 10 years.

- *Probability: 3 – Likely*

CLIMATE CHANGE

According to the Fourth National Climate Assessment, the United States is experiencing a rise in both average and extreme temperatures, with a notable decrease in average annual precipitation in the Southeast. The frequency of heavy precipitation events is increasing, which is likely to lead to a higher number of consecutive dry days. As temperatures are expected to keep rising, evaporation rates will also increase, leading to reduced surface soil moisture. Combined, these trends indicate that drought conditions in the Southeast are expected to become more intense and last longer.

VULNERABILITY ASSESSMENT

PEOPLE

Drought affects people in numerous ways, from immediate impacts on water supply and agriculture to broader economic, environmental and health consequences. Drought leads to lower water levels which can reduce availability of safe drinking water. When water is scarce, the cost of water often rises due to higher demand and the need for more expensive water management solutions. This can place a financial burden on households. Prolonged exposure to extreme heat and reduced water availability can lead to health issues such as dehydration, heat stress, and heatstroke. Vulnerable populations such as elderly or those with pre-existing health conditions are particularly at risk.

- **Population Patterns**:
    - Increased year-round population placing higher demand on limited water resources.
    - Vulnerable groups, such as agricultural workers and seniors, are more exposed to extreme heat.
    - Seasonal population peaks contributing to higher water usage during dry periods.
    - **Underserved Populations**: Outdoor laborers, such as farmworkers, may have limited access to cooling centers and adequate hydration. Low-income households may struggle with increased utility costs during extreme heat events.

PROPERTY

Drought is generally unlikely to cause significant damage to the built environment, including private properties and critical facilities. However, in regions characterized by shrinking and expansive soils, drought conditions can potentially lead to structural damage. The reduce in soil moisture can cause soil shrinkage, which may lead to shifting foundations and cracks in buildings and infrastructure. In contrast, the agricultural sector is vulnerable to the impacts of drought. Severe property loss can occur due to substantial crop failures and livestock losses. Drought conditions can significantly diminish soil moisture, impair crop growth, and reduce yields. The USDA's Risk Management Agency (RMA) maintains a database of all paid crop insurance claims; however, no claims were made in Collier County between 2007-2021 as a result of drought.

- **Land Use/Development Trends**:
    - Expansion of golf courses, artificial lakes, and water-intensive landscaping.
    - Increased residential and commercial developments with high water usage.
    - Limited adoption of drought-tolerant landscaping and water-saving infrastructure in new developments.
    - Development of new infrastructure projects, such as reservoirs or water conservation systems, to address increased demand.

ENVIRONMENT

Drought can affect local wildlife by shrinking food supplies and damaging habitats. Sometimes this damage is only temporary, and other times it is irreversible. Wildlife may face increased disease rates due to limited access to food and water. Increased stress on endangered species could cause extinction.

Another concern during a drought is that contaminants such as pesticides and fertilizers may concentrate in the soil as precipitation wanes and then enter waterways during heavy rains and flooding. Given the cultural and economic importance of water access in Collier County, any increase in contaminant load of the river could adversely affect the planning area.

Drought conditions can also provide a substantial increase in wildfire risk. As plants and trees die from a lack of precipitation, increased insect infestations, and diseases—all of which are associated with drought—they become fuel for wildfire. Long periods of drought can result in more intense wildfires, which bring additional consequences for the economy, the environment, and society. Drought may also increase likelihood of wind and water erosion of soils.

CONSEQUENCE ANALYSIS

Table 2.65 summarizes the potential negative consequences of drought.

Table 2.65 – Consequence Analysis - Drought

Category	Consequences
Public	Drought can cause impacts on people due to lower water levels, reducing the availability of water, which then makes the cost of water rise due to higher demand.
Responders	Impacts to responders are unlikely. Exceptional drought conditions may impact the amount of water immediately available to respond to wildfires.
Continuity of Operations (including Continued Delivery of Services)	Drought would have minimal impacts on continuity of operations due to the relatively long warning time that would allow for plans to be made to maintain continuity of operations.
Property, Facilities and Infrastructure	Drought has the potential to affect water supply for residential, commercial, institutional, industrial, and government-owned areas. Drought can reduce water supply in wells and reservoirs. Utilities may be forced to increase rates.
Environment	Environmental impacts include strain on local plant and wildlife; increased probability of erosion and wildfire.
Economic Condition of the Jurisdiction	Farmers may face crop losses or increased livestock costs. Businesses that depend on farming may experience secondary impacts. Extreme drought has the potential to impact local businesses in landscaping, recreation and tourism, and public utilities.
Public Confidence in the Jurisdiction's Governance	When drought conditions persist with no relief, local or State governments must often institute water restrictions, which may impact public confidence.

HAZARD SUMMARY BY JURISDICTION

The following table summarizes drought hazard risk by jurisdiction. Drought risk is uniform across the planning area. Warning time, duration, and spatial extent are inherent to the hazard and remain constant across jurisdictions. Most damages that result from drought are to crops and other agriculture-related activities as well as water-dependent industries; therefore, the magnitude of the impacts is typically greater in unincorporated areas. In more heavily developed areas, the magnitude of drought is less severe, with lawns and local gardens affected and potential impacts on local water supplies during severe, prolonged drought.

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Everglades City	3	1	4	1	4	2.5	M
Seminole Tribe Immokalee Reservation	3	1	4	1	4	2.5	M
Marco Island	3	1	4	1	4	2.5	M

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Naples	3	1	4	1	4	2.5	M
Unincorporated Collier County*	3	1	4	1	4	2.5	M

*Note: Unincorporated Collier County includes the following jurisdictions: Collier County Government, Collier County Public Schools, Collier Mosquito Control District, North Collier Fire Control District, Greater Naples Fire Rescue District, Immokalee Fire Control District, Naples Airport Authority, Port of the Isles, and South Florida Water Management District.

2.5.6 EXTREME HEAT

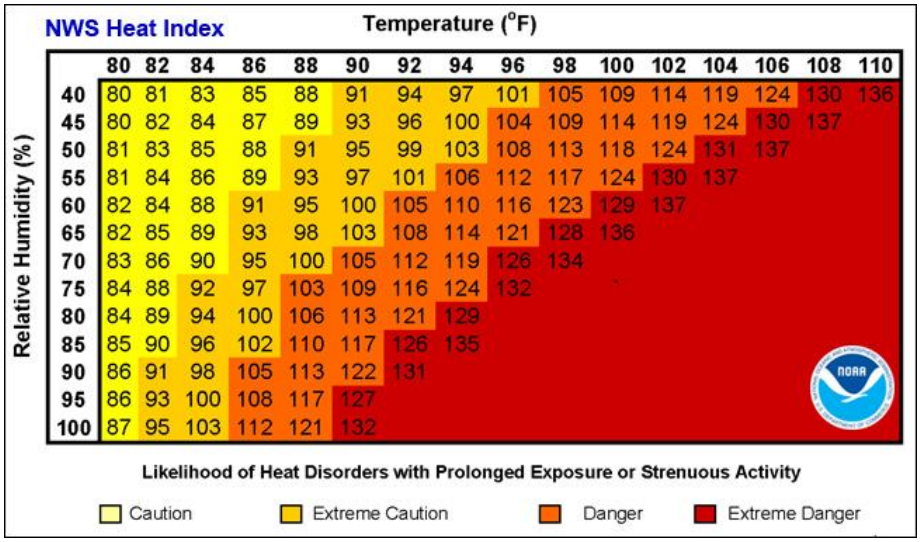
HAZARD DESCRIPTION

Per information provided by FEMA, in most of the United States extreme heat is defined as a long period (2 to 3 days) of high heat and humidity with temperatures above 90 degrees. In extreme heat, evaporation is slowed, and the body must work extra hard to maintain a normal temperature, which can lead to death by overwork of the body. Extreme heat often results in the highest annual number of deaths among all weather-related disasters. Per Ready.gov:

- Extreme heat can occur quickly and without warning
- Older adults, children, and sick or overweight individuals are at greater risk from extreme heat
- Humidity increases the feeling of heat as measured by heat index

Ambient air temperature is one component of heat conditions, with relative humidity being the other. The relationship of these factors creates what is known as the apparent temperature. The Heat Index Chart in Figure 2.34 uses both factors to produce a guide for the apparent temperature or relative intensity of heat conditions.

Figure 2.34 – Heat Index Chart



Source: National Weather Service (NWS) https://www.weather.gov/safety/heat-index

Note: Exposure to direct sun can increase Heat Index values by as much as 15°F. The shaded zone above 105°F corresponds to a heat index that may cause increasingly severe heat disorders with continued exposure and/or physical activity.

During these conditions, the human body has difficulties cooling through the normal method of the evaporation of perspiration. Health risks rise when a person is overexposed to heat. The most dangerous place to be during an extreme heat incident is in a permanent home, with little or no air conditioning. Those at greatest risk for heat-related illness include people 65 years of age and older, young children, people with chronic health problems such as heart disease, people who are obese, people who are socially isolated, and people who are on certain medications, such as tranquilizers, antidepressants, sleeping pills, or drugs for Parkinson's disease. However, even young and healthy individuals are susceptible if they participate in strenuous physical activities during hot weather or are not acclimated to hot weather. Table 2.66 lists typical symptoms and health impacts of heat exposure.

Table 2.66 – Typical Health Impacts of Extreme Heat

Heat Index (HI)	Disorder
80-90° F (HI)	Fatigue possible with prolonged exposure and/or physical activity
90-105° F (HI)	Sunstroke, heat cramps, and heat exhaustion possible with prolonged exposure and/or physical activity
105-130° F (HI)	Heatstroke/sunstroke highly likely with continued exposure

Source: National Weather Service Heat Index Program, www.weather.gov/os/heat/index.shtml

The NWS has a system in place to initiate alert procedures (advisories or warnings) when the Heat Index is expected to have a significant impact on public safety. The expected severity of the heat determines whether advisories or warnings are issued. Criteria for heat advisories and warnings are discussed below under Extent.

Impacts of extreme heat are not only focused on human health, as prolonged heat exposure can have devastating impacts on infrastructure as well. Prolonged high heat exposure increases the risk of pavement deterioration, as well as railroad warping or buckling. High heat also puts a strain on energy systems and consumption, as air conditioners are run at a higher rate and for longer; extreme heat can also reduce transmission capacity over electric systems.

- *Warning Time: 1 – More than 24 hours*
- *Duration: 3 – Less than one week*

LOCATION

Collier County and its jurisdictions are susceptible to high temperatures and incidents of extreme heat.

- *Spatial Extent: 4 – Large*

EXTENT

The extent of extreme heat can be defined by the maximum apparent temperature reached. Apparent temperature is a function of ambient air temperature and relative humidity and is reported as the heat index. The NWS Southern Region sets the following criteria for heat advisory and excessive heat warning:

- Heat Advisory – Heat Index of 108°F or higher or temperature of 103°F or higher
- Excessive Heat Warning – Heat Index of 113°F or higher for any duration or temperature of 103°F or higher

Table 2.67 notes the highest temperature on record at nine weather stations in Collier County according to the NWS, which maintains temperature records for the highest maximum temperature each month.

Table 2.67 – Highest Temperature by Location

Temperature	Location	Date
99°F	Chokoloskee	August 2007
100°F	Everglades	May 1991
102°F	Immokalee	June 1998
98°F	Marco Island	July 2011
104°F	Miles City	June 1987
99°F	Naples	September 1986
98°F	Naples Municipal Airport	June 2023
103°F	Oasis Ranger Station	June 1981
97°F	Sunniland	May 1953

Source: NOAA, National Weather Service, Northeast Regional Climate Center CLIMOD 2

- *Impact: 2 – Limited*

HISTORICAL OCCURRENCES

Table 2.68 provides maximum monthly temperature for 2002-2024, the only years for which data was available, at the Naples Municipal Airport weather station (KAPF). This location is used as an indicator for Collier County overall. Data was summarized with the Northeast Regional Climate Center's Climate Information for Management and Operational Decisions (CLIMOD 2) tool which uses data from NCEI. The highest recorded temperature is 98°F and occurred in both June 2019 and August 2023. The data also indicates that it is typical to have maximum temperature days over 90°F for the majority of the year (April-October).

Table 2.68 – Historical Monthly Maximum Temperature, Naples Municipal Airport (KAPF), 2002-2024

Year	Maximum Temperature by Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2002	78	84	88	91	94	93	94	95	93	93	88	84
2003	82	85	88	89	93	94	94	94	93	90	89	83

Year	Maximum Temperature by Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2004	85	84	85	88	93	97	96	92	93	91	88	83
2005	84	81	87	88	92	92	94	96	95	92	87	83
2006	85	82	86	88	93	94	94	94	93	92	87	85
2007	84	85	89	94	93	96	96	98	95	95	88	85
2008	83	86	91	89	94	96	92	93	93	91	88	84
2009	83	83	87	91	92	93	95	95	93	93	89	87
2010	82	81	82	88	93	97	95	95	94	90	88	80
2011	83	84	89	93	96	97	97	95	93	89	86	83
2012	86	86	87	87	92	94	93	95	94	91	83	84
2013	85	84	84	92	92	92	94	95	93	90	89	86
2014	85	87	85	91	94	95	92	95	93	93	85	84
2015	84	86	90	90	94	93	95	96	95	91	92	89
2016	86	84	87	91	93	93	95	95	93	92	89	88
2017	82	88	87	95	95	94	94	95	93	93	86	84
2018	87	89	88	90	94	96	96	94	94	92	89	87
2019	89	90	86	92	94	98	96	96	97	96	91	88
2020	83	90	91	94	94	96	95	96	96	93	90	83
2021	84	88	89	90	94	93	93	95	95	91	85	87
2022	86	88	89	91	95	96	94	96	94	-	91	85
2023	84	87	90	93	94	94	97	98	94	92	89	84
2024	78	83	86	89	97	95	96	96	-	-	-	-
Max	89	90	91	95	97	98	97	98	97	96	92	89
Avg	84	85	87	91	94	95	95	95	94	92	88	85

Source: Northeast Regional Climate Center CLIMOD 2

PROBABILITY OF FUTURE OCCURRENCE

Data was gathered from the Northeast Regional Climate Center's CLIMOD 2 Tool using the Naples Municipal Airport weather station as an approximation for Collier County. Based on 22 years of available data, the Region regularly experiences maximum temperatures year-round that can impact public health and safety.

- *Probability: 4 – Highly Likely*

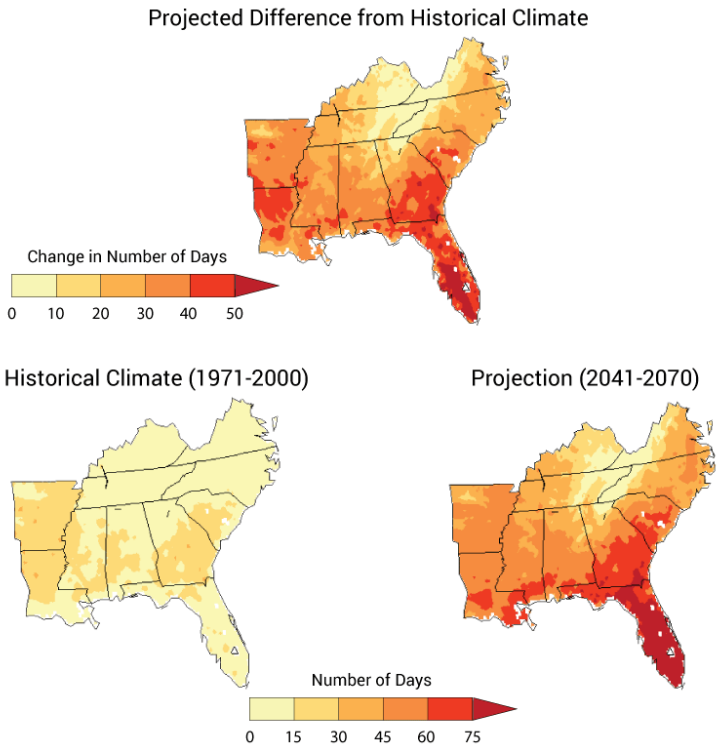
CLIMATE CHANGE

Research shows that average temperatures will continue to rise in the Southeast United States and globally, directly affecting Collier County. Per the Fourth National Climate Assessment, "extreme temperatures are projected to increase even more than average temperatures. Cold waves are projected to become less intense and heat waves more intense." The number of days over 95°F is expected to increase by between 20 and 30 days annually, as shown in Figure 2.35.

Daily minimum temperatures (overnight lows) have increased at a faster rate than maximum temperatures (afternoon highs). The number of days with high minimum temperatures (nighttime temperatures that stay above 75ºF) has been increasing across the Southeast, and this trend is projected to intensify, with some areas experiencing more

than 100 additional warm nights per year by the end of the century. Exposure to high nighttime minimum temperatures reduces the ability of some people to recover from high daytime temperatures, resulting in heat-related illness and death.

Figure 2.35 – Projected Change in Number of Days Over 95°F



Source: NOAA NCDC from 2014 National Climate Assessment

VULNERABILITY ASSESSMENT

METHODOLOGIES AND ASSUMPTIONS

No data is available to assess the vulnerability of people or property in the planning area to extreme heat.

PEOPLE

Extreme heat can cause heat stroke and even loss of human life. The elderly and the very young are most at risk to the effects of heat. People who are isolated are also more vulnerable to extreme heat. The 2022 American Community Survey 5-year estimates report 15,873 County residents under 5 years old and 124,784 residents 65 or older. Together that is 37% of residents that are especially vulnerable to impacts from extreme heat.

- **Population Patterns**:
    - Increased year-round population placing higher demand on limited water resources throughout Collier County.

- Vulnerable groups, such as agricultural workers, children and seniors, are more exposed to extreme heat.
- Seasonal population peaks contributing to higher water usage during winter dry periods.
- **Underserved Populations**: Outdoor laborers, such as farmworkers, may have limited access to cooling centers and adequate hydration. Low-income households may struggle with increased utility costs during extreme heat events.

PROPERTY

Extreme heat is unlikely to cause significant damages to the built environment. However, road surfaces can be damaged as asphalt softens, and concrete sections may buckle under expansion caused by heat. Train rails may also distort or buckle under the stress of head induced expansion. Power transmission lines may sag from expansion and if contact is made with vegetation the line may short out causing power outages. Additional power demand for cooling also increases power line temperature adding to heat impacts.

- **Land Use/Development Trends**:
  - Expansion of golf courses, artificial lakes, and water-intensive landscaping.
  - Increased residential and commercial developments with high water usage.
  - Limited adoption of drought-tolerant landscaping and water-saving infrastructure in new developments.
  - Development of new infrastructure projects, such as reservoirs or water conservation systems, to address increased demand

Extreme heat can also cause significant agricultural losses. Between 2007-2024, the USDA Risk Management Agency reports one crop insurance claim due to heat in Collier County in the amount of $39,330. This equates to an average annual loss of $3,278.

ENVIRONMENT

Wild animals are vulnerable to heat disorders like humans, including mortality. Vegetation growth will be stunted, or plants may be killed if temperatures rise above their tolerance extremes.

CONSEQUENCE ANALYSIS

Table 2.69 summarizes the potential negative consequences of extreme heat.

Table 2.69 – Consequence Analysis – Extreme Heat

Category	Consequences
Public	Extreme heat may cause illness and/or death.
Responders	Consequences may be greater for responders if their work requires exertion and/or wearing heavy protective gear.

Continuity of Operations (including Continued Delivery of Services)	Continuity of operations is not expected to be impacted by extreme heat because warning time for these events is long.
Property, Facilities and Infrastructure	Minor impacts may occur, including possible damages to road surfaces and power lines.
Environment	Environmental impacts include strain on local plant and wildlife, including potential for illness or death.
Economic Condition of the Jurisdiction	Farmers may face crop losses or increased livestock costs.
Public Confidence in the Jurisdiction's Governance	Extreme heat is unlikely to impact public confidence.

HAZARD SUMMARY BY JURISDICTION

The following table summarizes extreme heat hazard risk by jurisdiction. Extreme heat risk does not vary significantly by jurisdiction.

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Everglades City	4	2	4	1	3	3.0	H
Seminole Tribe Immokalee Reservation	4	2	4	1	3	3.0	H
Marco Island	4	2	4	1	3	3.0	H
Naples	4	2	4	1	3	3.0	H
Unincorporated Collier County*	4	2	4	1	3	3.0	H

*Note: Unincorporated Collier County includes the following jurisdictions: Collier County Government, Collier County Public Schools, Collier Mosquito Control District, North Collier Fire Control District, Greater Naples Fire Rescue District, Immokalee Fire Control District, Naples Airport Authority, Port of the Isles, and South Florida Water Management District.

2.5.7 SEA LEVEL RISE AND OTHER CLIMATE CHANGE CHARACTERISTICS

HAZARD DESCRIPTION

Sea level rise is the increase in sea levels because of atmospheric and oceanic warming which causes water expansion as well as ice melt from ice sheets and glaciers. Sea level rise is a result of global climate change. Climate change is a natural occurrence in which the earth has warmed and cooled periodically over geologic time. However, the recent and rapid warming of the earth over the past century has been cause for concern, as this warming is very likely due to the accumulation of human-caused greenhouse gases, such as CO2, in the atmosphere (IPCC, 2007). This warming is occurring almost everywhere in the world which suggests a global cause rather than changes in localized weather patterns. In 2018, the Intergovernmental Panel on Climate Change (IPCC) reported with high confidence that warming due to such emissions will cause long-term changes in the climate system such as sea level rise and its associated impacts.

There are generally two separate mechanics involved in global sea level rise. The first is directly attributed to global temperature increases, which warm the oceans waters and cause them to expand. The second is attributed to the melting of ice over land, which simply adds water to the oceans. Global sea level rise is likely caused by a combination

of these two mechanics and can be exasperated on the local level by factors such as erosion and subsidence. The rate of sea level rise has varied throughout geologic history, and studies have shown that global temperature and sea level are strongly correlated.

Due to sea-level rise projected throughout the 21st century and beyond, coastal systems and low-lying areas will increasingly experience adverse impacts such as submergence, coastal flooding, and coastal erosion. The population and assets projected to be exposed to coastal risks as well as human pressures on coastal ecosystems will increase significantly in the coming decades due to population growth, economic development, and urbanization (IPCC, 2014). Collier County is particularly vulnerable to the effects of sea level rise due to its coastal location, subtropical environment, low topography and tourism economy.

- *Warning Time: 1 – More than 24 hours*
- *Duration: 4 – More than one week*

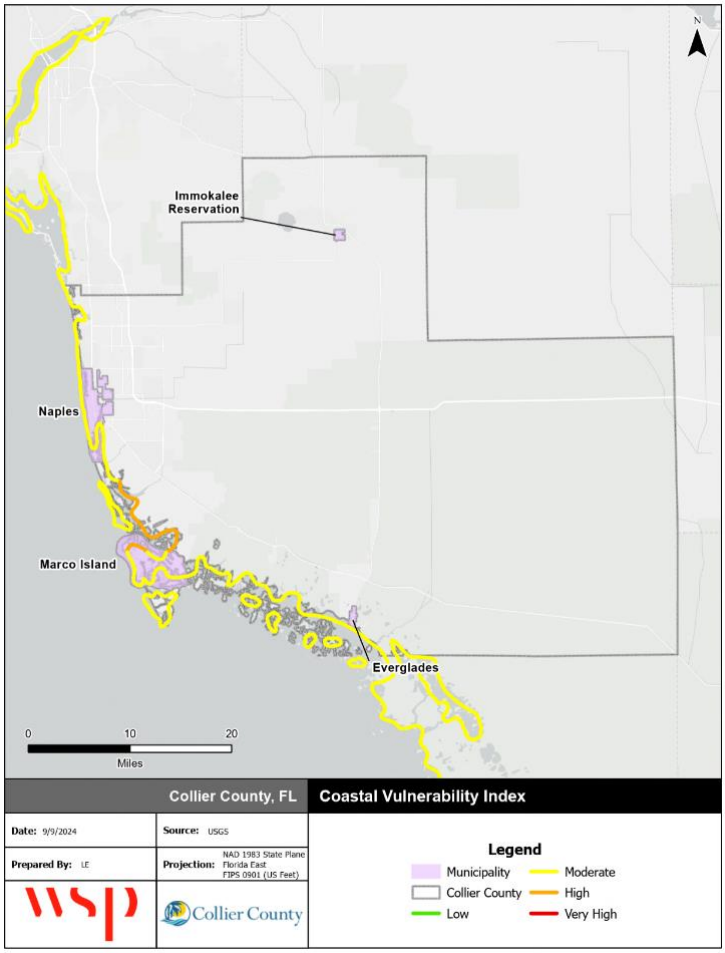
LOCATION

Sea level rise can occur anywhere along the coast and along major waterways in Collier County. The Coastal Vulnerability Index (CVI), developed by United States Geological Survey (USGS), provides a preliminary overview of the relative susceptibility of the United States coast to sea level rise. The CVI is based on geomorphology, regional coastal slope, tide range, wave height, relative sea level rise, and shoreline erosion and acceleration rates. For each study area, each variable is scored on a 1-5 scale based on defined parameters, where “1” indicates low contribution to coastal vulnerability and “5” indicates high contribution to vulnerability. These scores are then aggregated into a single index through a mathematical formula. The resulting index gives an overview of where physical changes may occur due to sea-level rise.

Figure 2.36 shows the CVI for Collier County. The coastline between Naples and Marco Island is the most vulnerable area in the region, rated high on the CVI. The remainder of the coastline is rated as having moderate vulnerability. Collier County and it’s jurisdictions are susceptible to sea level rise and other climate change characteristics.

- *Spatial Extent: 3 – Moderate*

Figure 2.36 – Coastal Vulnerability Index, Collier County

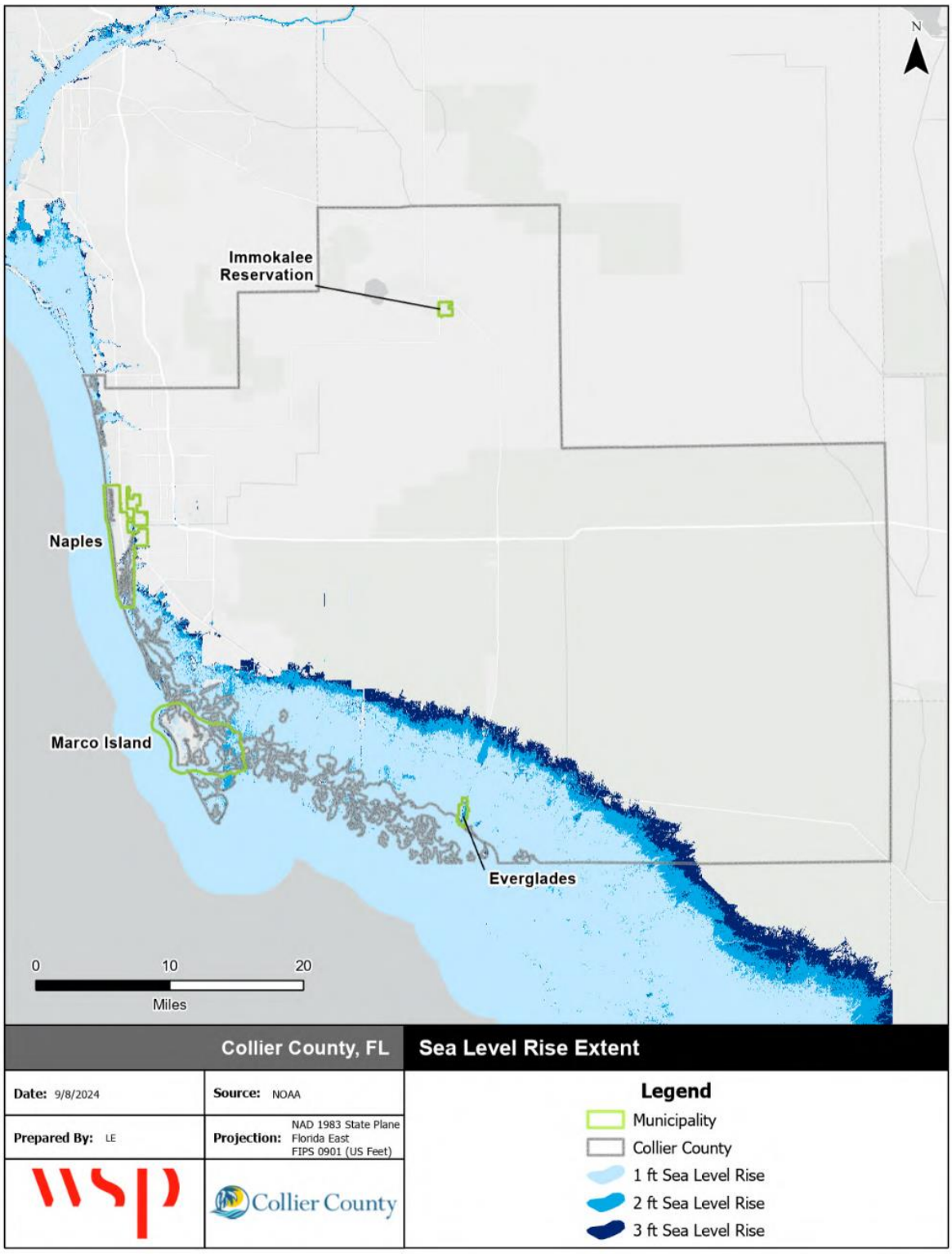


Source: USGS Coastal Change Hazards Portal

EXTENT

Sea level rise is measured by the number of feet of relative rise and the areas that such rise would inundate. The estimated impacts of 1-foot, 2-foot, and 3-foot, sea level rise are shown in Figure 2.37. The sea level rise estimate maps show inundation above mean higher high water (the average of each day's higher high tide line). Sea level rise will likely affect coastal marsh lands as well as land along rivers, canals, and their tributaries. Additionally, sea level rise will likely increase future risk of flooding from the other flood hazards discussed in this plan, as more land will have a lower elevation relative to sea level. For example, with much of the barrier islands and wetlands inundated, inland areas will lose their natural protection and may become susceptible to coastal flooding with velocity wave action.

Figure 2.37 - Estimated Impact of Sea Level Rise in Collier County

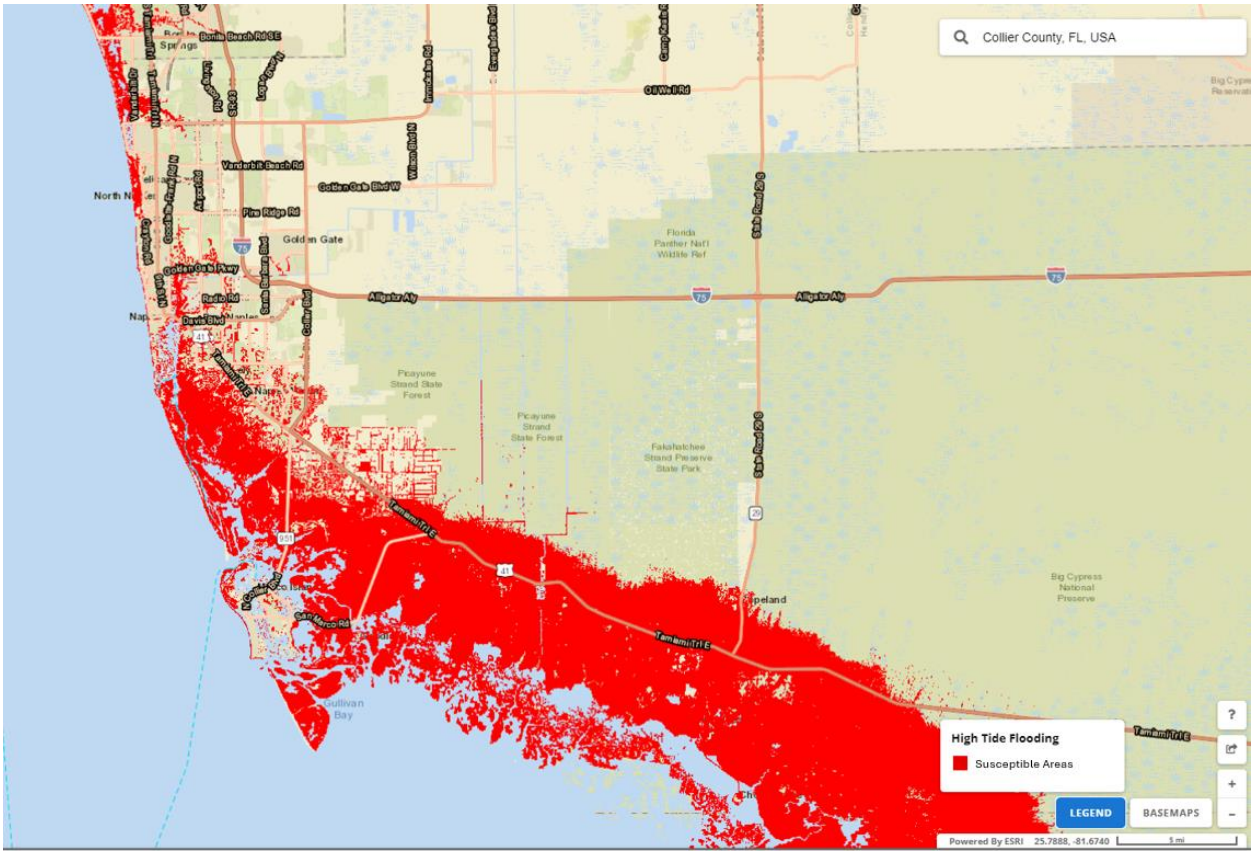


Source: NOAA

Sea level rise is a slow onset hazard, and because the full extent of anticipated sea level rise has not yet been realized, the effects of sea level rise have not yet been fully felt. However, sea level rise has already begun to cause “clear sky” or “nuisance” flooding, which is brought on by high tidewaters rather than storm or rain events. Tidal flooding causes temporary inundation of low-lying areas during high-tide events. The 2022 NOAA Sea Level Rise Technical Report finds that the national rate of high-tide flooding has more than doubled since 2000 due to sea level rise. NOAA projects that by 2050 high tide flooding events will occur 45 to 70 days a year, triple the current rate. While sea level rise increases the frequency of these events, it also is expected to increase the depth and extent of tidal flooding. Figure 2.38 shows areas in Collier County that are susceptible to high tide flooding as defined by NOAA based on derived national flood thresholds from NOAA Technical Report NOS CO-OPS 086: Patterns and Projections of High Tide Flooding along the U.S. Coastline Using a Common Impact Threshold.

- *Impact: 3 – Critical*

Figure 2.38 – Areas Susceptible to High Tide Flooding, Collier County



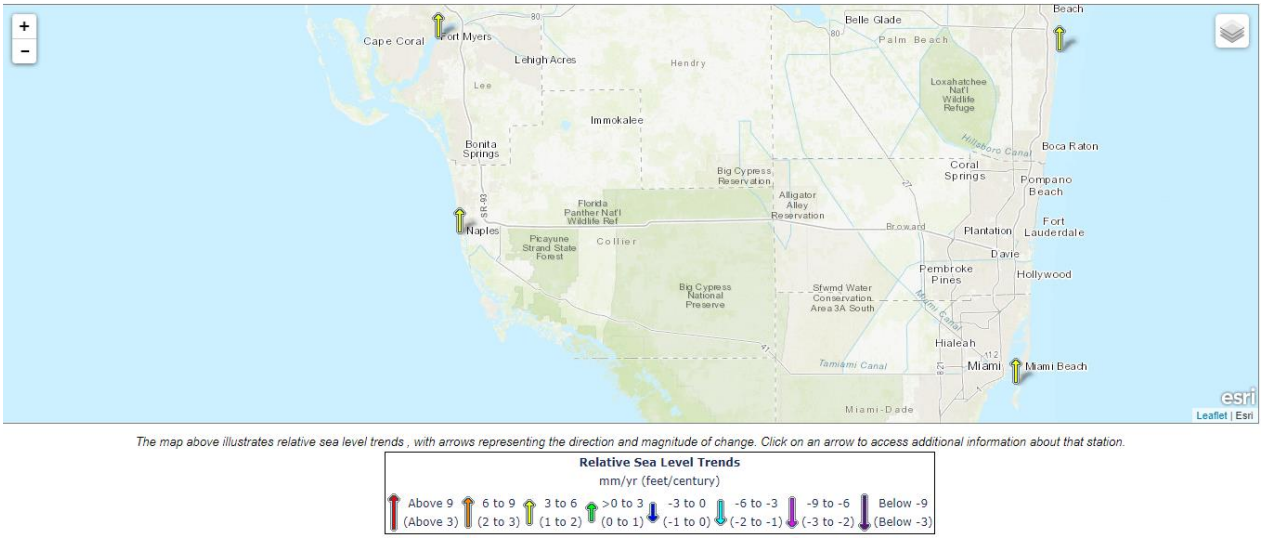
Source: NOAA Coastal Flood Exposure Mapper

HISTORICAL OCCURRENCES

Historic trends in local MSL are best determined from tide gauge records. The Center for Operational Oceanographic Products and Services (CO-OPS) has been measuring sea

level for over 150 years, with tide stations operating on all U.S. coasts. Changes in Mean Sea Level (MSL), either a sea level rise or sea level fall, have been computed at 142 long-term water level stations using a minimum span of 30 years of observations at each location. These measurements have been averaged by month to remove the effect of higher frequency phenomena (e.g. storm surge) in order to compute an accurate linear sea level trend. Figure 2.39 illustrates regional trends in sea level from NOAA. At the Naples, FL station (indicated by the yellow arrow in Collier County), the relative sea level trend is 3.35 mm/year with a 95% confidence interval of +/- 0.42 mm/year based on monthly mean sea level data from 1965 to 2023 which is equivalent to a change of 1.10 feet in 100 years. It should be noted that the Naples, FL station only contains data until 2023 and has been inactive since the beginning of 2024.

Figure 2.39 – Sea Level Trends, Collier County



The map above illustrates relative sea level trends , with arrows representing the direction and magnitude of change. Click on an arrow to access additional information about that station.

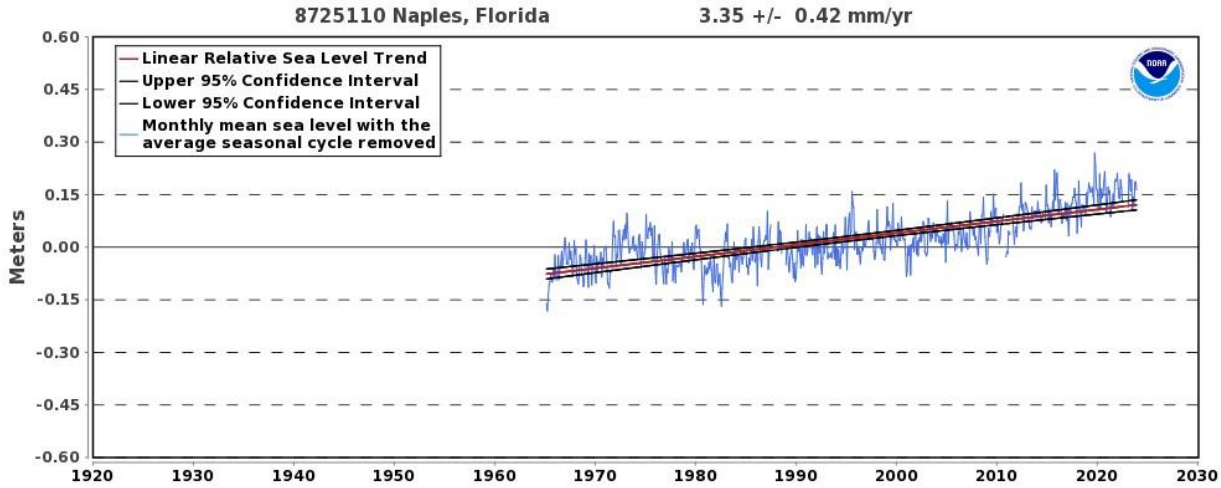
Relative Sea Level Trends
mm/yr (feet/century)

Above 9 (Above 3)	6 to 9 (2 to 3)	3 to 6 (1 to 2)	>0 to 3 (0 to 1)	-3 to 0 (-1 to 0)	-6 to -3 (-2 to -1)	-9 to -6 (-3 to -2)	Below -9 (Below -3)

Source: http://tidesandcurrents.noaa.gov/sltrends/sltrends.shtml

Figure 2.40 shows the monthly mean sea level at NOAA's Naples, FL station without the regular seasonal fluctuations due to coastal ocean temperatures, salinities, winds, atmospheric pressures, and ocean currents. The long-term linear trend is also shown, including its 95% confidence interval. The plotted values are relative to the most recent Mean Sea Level datum established by CO-OPS.

Figure 2.40 - Mean Sea Level Trends, Naples, FL



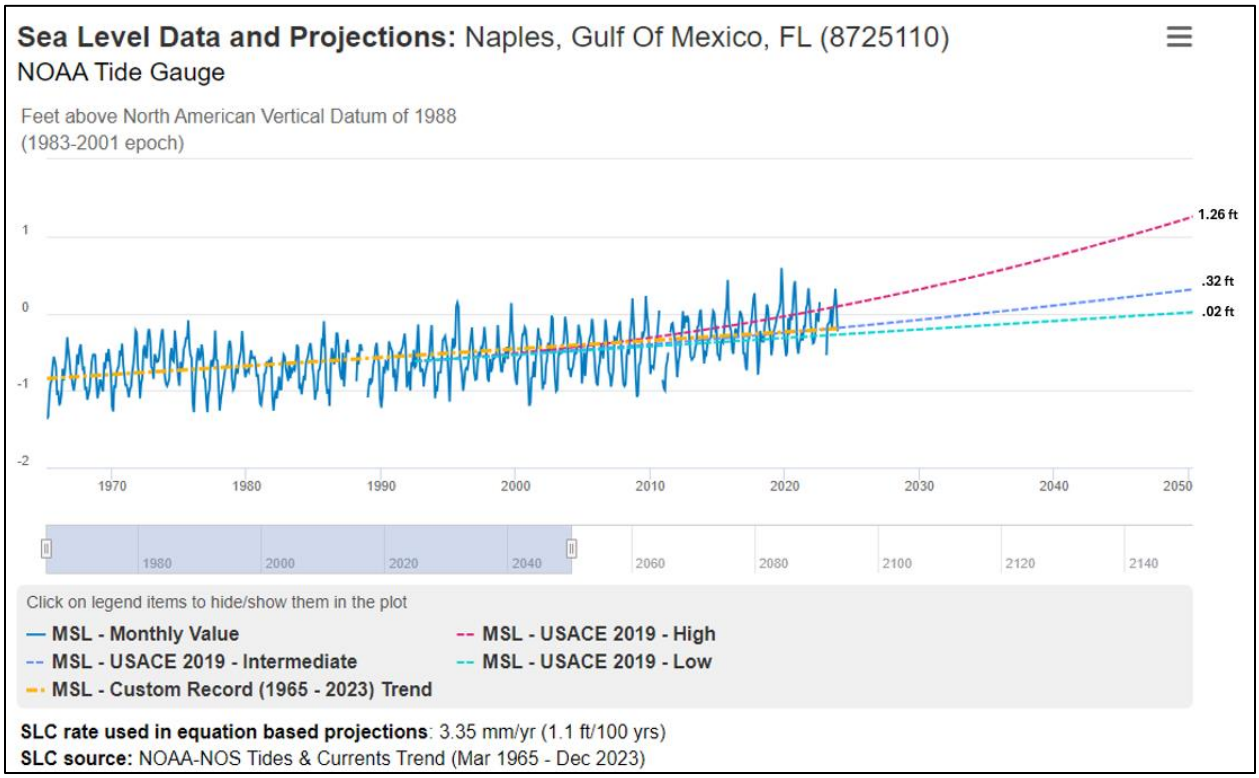
Source: NOAA Tides and Currents, September 2024

PROBABILITY OF FUTURE OCCURRENCE

The U.S. Army Corps of Engineers (USACE)'s Sea Level Analysis Tool (SLAT) allows users to visualize changes in observed sea level rise and compare observations to projected sea level change. Figure 2.41 uses SLAT's scenario projections for the Naples, FL station. The model assumes a rate of 3.35 mm of sea level rise per year (or 1.1 ft/100 years) based on observed sea level rise at the Naples station between March 1965 and December 2023. It incorporates an equation-based projection that uses July 1992 as its projected point in time and factors in three potential scenarios – low, intermediate, and high - that reflect future emission levels. Given that the USACE low scenario does not consider further climate change, the USACE intermediate and high scenarios are more likely. However, the likelihood of either scenario – intermediate or high – is dependent on future emissions, and WSP selected the more conservative estimate of the intermediate scenario for this analysis. To estimate the potential sea level rise by 2050, the monthly MSL observed at the Naples station in July 1992 was compared to the July 2050 projected MSL. Based on an intermediate emissions scenario, Collier County should plan for 1.02 feet of sea level rise from 1992 levels by 2050.

- *Probability: 3 – Likely*

Figure 2.41 – Sea Level Rise Projections for Collier County (1992-2100)



Source: USACE, 2024

CLIMATE CHANGE

Sea level rise is a direct result of global climate change. Estimates for sea level rise are based on projected greenhouse gas emission levels and their associated impacts on global temperature change. Most sea level rise models do not fully account for ice melt, and therefore actual sea level rise may be significantly higher than current estimates suggest. As such, these projections contain substantial variability but are nonetheless important to consider when planning for coastal areas because they indicate where flooding can be expected should actual sea level rise meet estimated levels.

VULNERABILITY ASSESSMENT

METHODOLOGIES AND ASSUMPTIONS

Vulnerability to sea level rise was assessed based on past occurrences nationally and internationally as well as data from NOAA, USGS, the Intergovernmental Panel on Climate Change (IPCC), and other sources.

PEOPLE

Sea level rise will lead to increased flooding and the associated harms to humans, such as illness, or injury or death from driving into flooded waters and drowning.

Population at risk to 1-, 2-, and 3-feet of sea level rise was estimated based on the exposure of residential property. Counts of residential buildings exposed to sea level rise were multiplied by a household factor for each jurisdiction, based on the 2018-2022 American Community Survey's average household size. The resulting estimates of population at risk are shown in Table 2.70. Overall, an estimated 7,272 people live in areas that may be directly impacted by up to three feet or less of sea level rise. Note that there is no property exposure to sea level rise in the Immokalee area; therefore, it is excluded from this analysis.

- **Population Patterns**:
    - Population growth in beachfront and low-elevation neighborhoods along the Gulf Coast.
    - Seasonal residents in vulnerable properties increasing exposure during peak hurricane seasons.
    - Wealthier enclaves at risk of property value declines due to erosion and flooding.
    - **Underserved Populations**: Low-income renters in coastal areas may face displacement as property owners convert damaged properties to higher-cost, resilient housing.

Table 2.70 – Collier County Population at Risk to Sea Level Rise

Jurisdiction	Residential Parcels at Risk	Household Factor	Population at Risk
1 Foot Sea Level Rise			
Everglades City	78	1.99	156
Marco Island	201	1.93	388
Naples	328	1.97	647
Unincorporated Collier County*	458	2.4	1,100
Total	1,065	--	2,291
2 Foot Sea Level Rise			
Everglades City	241	1.99	480
Marco Island	25	1.93	49
Naples	17	1.97	34
Unincorporated Collier County*	351	2.4	843
Total	634	--	1,406
3 Foot Sea Level Rise			
Everglades City	53	1.99	106
Marco Island	72	1.93	139
Naples	305	1.97	601
Unincorporated Collier County*	1,137	2.4	2,729
Total	1,567	--	3,575

Source: NOAA; Collier County parcel data; GIS analysis

*Note: Unincorporated Collier County includes the following jurisdictions: Collier County Government, Collier County Public Schools, Collier Mosquito Control District, North Collier Fire Control District, Greater Naples Fire Rescue District, Naples Airport Authority, Port of the Isles, and South Florida Water Management District.

PROPERTY

The increased number of flood days and general encroachment of shoreline associated with sea level rise will likely cause water damage to homes, businesses and vehicles. Homes within the areas that may be inundated will potentially be uninhabitable. Additionally, rising seas, and associated increased flood days, can overwhelm and undermine the effectiveness of stormwater drainage system and other infrastructure, such as roads and bridges.

- **Land Use/Development Trends**:
    - Construction of beachfront properties and commercial developments near dune systems.
    - Hardening of shorelines (e.g., seawalls) limiting natural buffer zones and accelerating erosion.
    - Rising demand for new housing in elevated inland areas due to perceived risks of sea level rise.
    - Insufficient adoption of nature-based solutions, such as living shorelines, to address coastal erosion.

To estimate the potential impact to properties in Collier County, WSP conducted an analysis that intersected parcels in Collier County with NOAA sea level rise data. The analysis included three potential sea level rise scenarios – 1, 2, and 3 ft above average high tides. Results for the county and participating jurisdictions are shown in the tables below. Due to its inland location, 1-3 ft of sea level rise does not impact the Seminole Tribe Immokalee Reservation, and therefore, it is excluded from this analysis.

Table 2.71 - Impact of Sea Level Rise on Properties in Unincorporated Collier County

Occupancy	Estimated Parcel Count	Structure Value	Estimated Content Value	Total Value
1 Foot Sea Level Rise	588	$116,449,797	$63,592,099	$180,041,896
Agriculture	1	$16,967	$16,967	$33,934
Commercial	115	$9,132,607	$9,132,607	$18,265,215
Education	0	$0	$0	$0
Government	11	$1,303,098	$1,303,098	$2,606,196
Industrial	3	$140,864	$211,296	$352,160
Religious	0	$0	$0	$0
Residential	458	$105,856,260	$52,928,130	$158,784,391
2 Foot Sea Level Rise	378	$122,899,238	$65,173,913	$188,073,152
Agriculture	0	0	$0	$0
Commercial	27	$7,448,588.67	$7,448,589	$14,897,177
Education	0	0	$0	$0
Government	0	0	$0	$0
Industrial	0	0	$0	$0
Religious	0	0	$0	$0
Residential	351	$115,450,649	$57,725,325	$173,175,974

Occupancy	Estimated Parcel Count	Structure Value	Estimated Content Value	Total Value
3 Foot Sea Level Rise	1,225	$289,557,276	$154,294,675	$443,851,951
Agriculture	1	$500	$500	$1,000
Commercial	71	$17,725,621	$17,725,621	$35,451,241
Education	0	$0	$0	$0
Government	16	$1,305,953	$1,305,953	$2,611,906
Industrial	0	$0	$0	$0
Religious	0	$0	$0	$0
Residential	1137	$270,525,203	$135,262,601	$405,787,804

Source: Collier County, NOAA

Table 2.72 - Impact of Sea Level Rise on Properties in Everglades City

Occupancy	Estimated Parcel Count	Structure Value	Estimated Content Value	Total Value
1 Foot Sea Level Rise	100	$10,380,834	$7,242,425	$17,623,259
Agriculture	0	$0	$0	$0
Commercial	20	$4,063,678	$4,063,678	$8,127,357
Education	0	$0	$0	$0
Government	2	$40,338	$40,338	$80,676
Industrial	0	$0	$0	$0
Religious	0	$0	$0	$0
Residential	78	$6,276,818	$3,138,409	$9,415,226
2 Foot Sea Level Rise	297	$38,360,706	$26,168,035	$64,528,741
Agriculture	0	0	$0	$0
Commercial	56	$13,975,364	$13,975,364	$27,950,729
Education	0	0	$0	$0
Government	0	0	$0	$0
Industrial	0	0	$0	$0
Religious	0	0	$0	$0
Residential	241	$24,385,341	$12,192,671	$36,578,012
3 Foot Sea Level Rise	72	$22,099,259	$15,735,239	$37,834,499
Agriculture	0	$0	$0	$0
Commercial	17	$9,350,637	$9,350,637	$18,701,273
Education	0	$0	$0	$0
Government	0	$0	$0	$0
Industrial	1	$1,704	$2,556	$4,260
Religious	1	$17,175	$17,175	$34,350
Residential	53	$12,729,744	$6,364,872	$19,094,616

Source: Collier County, NOAA

Table 2.73 - Impact of Sea Level Rise on Properties in Marco Island

Occupancy	Estimated Parcel Count	Structure Value	Estimated Content Value	Total Value
1 Foot Sea Level Rise	213	$316,419,731	$161,647,519	$478,067,250
Agriculture	0	$0	$0	$0
Commercial	9	$6,875,156	$6,875,156	$13,750,313
Education	0	$0	$0	$0
Government	3	$150	$150	$300
Industrial	0	$0	$0	$0

Occupancy	Estimated Parcel Count	Structure Value	Estimated Content Value	Total Value
Religious	0	$0	$0	$0
Residential	201	$309,544,425	$154,772,213	$464,316,638
2 Foot Sea Level Rise	29	$22,794,033	$12,133,893	$34,927,926
Agriculture	0	0	$0	$0
Commercial	4	$1,473,753	$1,473,754	$2,947,508
Education	0	0	$0	$0
Government	0	0	$0	$0
Industrial	0	0	$0	$0
Religious	0	0	$0	$0
Residential	25	$21,320,279	$10,660,140	$31,980,419
3 Foot Sea Level Rise	75	$101,892,791	$51,045,755	$152,938,546
Agriculture	0	$0	$0	$0
Commercial	3	$198,720	$198,720	$397,440
Education	0	$0	$0	$0
Government	0	$0	$0	$0
Industrial	0	$0	$0	$0
Religious	0	$0	$0	$0
Residential	72	$101,694,071	$50,847,035	$152,541,106

Source: Collier County, NOAA

Table 2.74 - Impact of Sea Level Rise on Properties in Naples

Occupancy	Estimated Parcel Count	Structure Value	Estimated Content Value	Total Value
1 Foot Sea Level Rise	364	$337,108,297	$181,380,242	$518,488,539
Agriculture	0	$0	$0	$0
Commercial	33	$25,645,204	$25,645,204	$51,290,407
Education	0	$0	$0	$0
Government	2	$6,934	$6,934	$13,868
Industrial	1	$25	$38	$63
Religious	0	$0	$0	$0
Residential	328	$311,456,134	$155,728,067	$467,184,201
2 Foot Sea Level Rise	21	$49,059,125	$29,395,753	$78,454,879
Agriculture	0	0	$0	$0
Commercial	4	$9,732,381	$9,732,381	$19,464,763
Education	0	0	$0	$0
Government	0	0	$0	$0
Industrial	0	0	$0	$0
Religious	0	0	$0	$0
Residential	17	$39,326,744	$19,663,372	$58,990,116
3 Foot Sea Level Rise	340	$322,041,605	$179,230,637	$501,272,241
Agriculture	0	$0	$0	$0
Commercial	32	$36,386,096	$36,386,096	$72,772,191
Education	0	$0	$0	$0
Government	2	$33,413	$33,413	$66,826
Industrial	1	$80	$120	$200
Religious	0	$0	$0	$0
Residential	305	$285,622,016	$142,811,008	$428,433,024

Source: Collier County, NOAA

Critical facility exposure to sea level rise was also evaluated through a spatial analysis. Table lists critical facilities that may be exposed to direct impacts from sea level rise. Facilities are listed according to the lowest level of sea level rise that could affect the facility.

Table 2.75 – Critical Facility Exposure to Sea Level Rise

FEMA Lifeline	Name	Address	Jurisdiction
1 Foot Sea Level Rise			
Communications	WVOI (Radio Communications Tower)	12801 Curcie Rd	Collier County
Safety and Security	Ochopee Fire Control Dist St 66	41015 Tamiami Trl E	Collier County
Safety and Security	Collier County Sheriff's Dept Dist. 7 Everglades City Substation	32020 Tamiami Trail E	Collier County
Energy	8736533 - Fuel Facility along Evacuation Route	150 Smallwood Dr	Collier County
Hazardous Materials	City of Everglades City - Booster Water Plant	North Copeland Avenue	Everglades
Food, Hydration, Shelter	Ochopee Fire Department	201 Buckner Ave.	Everglades
Transportation	US 41/State 90 And County 29		Collier County
2 Foot Sea Level Rise			
Safety and Security	Ochopee Fire Control Dist St 60	201 Buckner Ave N	Everglades
Energy	8503336 - Fuel Facility along Evacuation Route	603 Collier Ave	Everglades
Energy	9401483 - Fuel Facility along Evacuation Route	203 Collier Ave	Everglades
Water Systems	Everglades City, City of - WWTF	401 Copeland Ave S	Everglades
Transportation	Everglades Airpark	650 EC Airpark Rd	Everglades
3 Foot Sea Level Rise			
Communications	WMKO (Radio Communications Tower)		Collier County
Communications	WBGY (Radio Communications Tower)		Everglades
Safety and Security	Big Cypress Natl Preserve Fire & Avn	33090 Satinwood Dr	Collier County
Safety and Security	EMS Station 60	201 Buckner Ave N	Everglades
Energy	8518190 - Fuel Facility along Evacuation Route	20018 Tamiami Trl E	Collier County
Energy	FPL-Capri (Electric Substation)	5785 Collier Blvd	Collier County
Energy	LCEC-EGC (Electric Substation)	603 Begonia St	Everglades
Hazardous Materials	City Of Everglades City - Water Plant		Collier County
Hazardous Materials	City Of Everglades City - Wastewater Plant	401 Copeland Ave S	Everglades
Hazardous Materials	Gargiulo - Farm 7	15000 East Us Highway 41	Collier County
Water Systems	Lee Cypress Co-Op	Po Box 513	Collier County
Water Systems	Everglades Shores/Big Cypress Preserve		Collier County

ENVIRONMENT

Sea level rise can have numerous negative consequences on the environment including increased erosion and all impacts associated with that. Another concern is the inundation of normally dry land, which could lead to the loss of marshes and wetlands and the positive benefits associated with those areas. These areas buffer against waves and

storm surge, protect from erosion and even encourage accretion, and provide natural wildlife habitats. Finally, sea level rise may lead to saltwater intrusion as the groundwater table may also rise, potentially leading to contaminated drinking and agriculture water.

CONSEQUENCE ANALYSIS

Table 2.76 summarizes the potential negative consequences of sea level rise.

Table 2.76 – Consequence Analysis – Sea Level Rise

Category	Consequences
Public	Sea Level Rise may cause increased flooding which may lead to illness, injury, or death. Additionally, sea level rise may cause psychological stress from loss of home, economy, and culture.
Responders	Sea Level Rise induced flooding may cause increased burden on responders.
Continuity of Operations (including Continued Delivery of Services)	As sea levels rise and cause more regular, chronic flooding, continuity of operations, such as delivery of services may be interrupted due to localized disruption of roads, facilities, and/or utilities.
Property, Facilities and Infrastructure	Sea level rise can cause damage to property as flooding becomes more regular in the short term and as sea levels continue to rise in the long term. SLR can also compromise infrastructure such as drainage systems and roads.
Environment	Sea level rise can lead to increased erosion, salt water intrusion, and inundation of wetlands and previous dry land.
Economic Condition of the Jurisdiction	Sea level rise can severely disrupt the economy, particularly in a region that relies so heavily on tourism.
Public Confidence in the Jurisdiction's Governance	Sea level rise is unlikely to impact public confidence.

HAZARD SUMMARY BY JURISDICTION

The following table summarizes sea level rise risk by jurisdiction. Most jurisdictions face at least some risk from sea level rise, but coastal and waterfront areas have greater exposure. Spatial extent varies by jurisdiction depending on the area exposed to sea level rise impacts. Given that the Seminole Tribe Immokalee Reservation is located inland, it receives a negligible rating, while Marco Island and Naples are primarily coastal and experience a high spatial risk. Unincorporated Collier County includes both inland and coastal areas, so its spatial extent is moderate.

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Everglades City	3	3	3	1	4	2.9	M
Seminole Tribe Immokalee Reservation	3	3	1	1	4	2.5	M
Marco Island	3	3	4	1	4	3.1	H
Naples	3	3	4	1	4	3.1	H
Unincorporated Collier County*	3	3	3	1	4	2.9	M

*Note: Unincorporated Collier County includes the following jurisdictions: Collier County Government, Collier County Public Schools, Collier Mosquito Control District, North Collier Fire Control District, Greater Naples Fire Rescue District, Immokalee Fire Control District, Naples Airport Authority, Port of the Isles, and South Florida Water Management District.

2.5.8 SINKHOLES

HAZARD BACKGROUND

Sinkholes are a natural and common geologic feature in areas with underlying limestone and other rock types that are soluble in natural water. Most limestone is porous, allowing the acidic water of rain to percolate through their strata, dissolving some limestone and carrying it away in solution. Over time, this persistent erosional process can create extensive underground voids and drainage systems in much of the carbonate rocks. Collapse of overlying sediments into the underground cavities produces sinkholes.

The three general types of sinkholes are: subsidence, solution, and collapse. Collapse sinkholes are most common in areas where the overburden (the sediments and water contained in the unsaturated zone, surficial aquifer system, and the confining layer above an aquifer) is thick, but the confining layer is breached or absent. Collapse sinkholes can form with little warning and leave behind a deep, steep sided hole. Subsidence sinkholes form gradually where the overburden is thin and only a veneer of sediments is overlying the limestone. Solution sinkholes form where no overburden is present, and the limestone is exposed at land surface. Figure 2.42 illustrates the rock formation in the United States. Salt and Gypsum underline about 40 percent of the contiguous in the United States, while Carbonate Karst landscapes constitutes about 40 percent of the United States east of Tulsa, Oklahoma.

Sinkholes occur in many shapes, from steep-walled holes to bowl or cone shaped depressions. Sinkholes are dramatic because the land generally stays intact for a while until the underground spaces get too big. If there is not enough support for the land above the spaces, then a collapse of the land surface can occur. Under natural conditions, sinkholes form slowly and expand gradually. However, human activities such as dredging, constructing reservoirs, diverting surface water, and pumping groundwater can accelerate the rate of sinkhole expansions, resulting in the abrupt formation of collapse sinkholes.

Although a sinkhole can form without warning, specific signs can signal potential development:

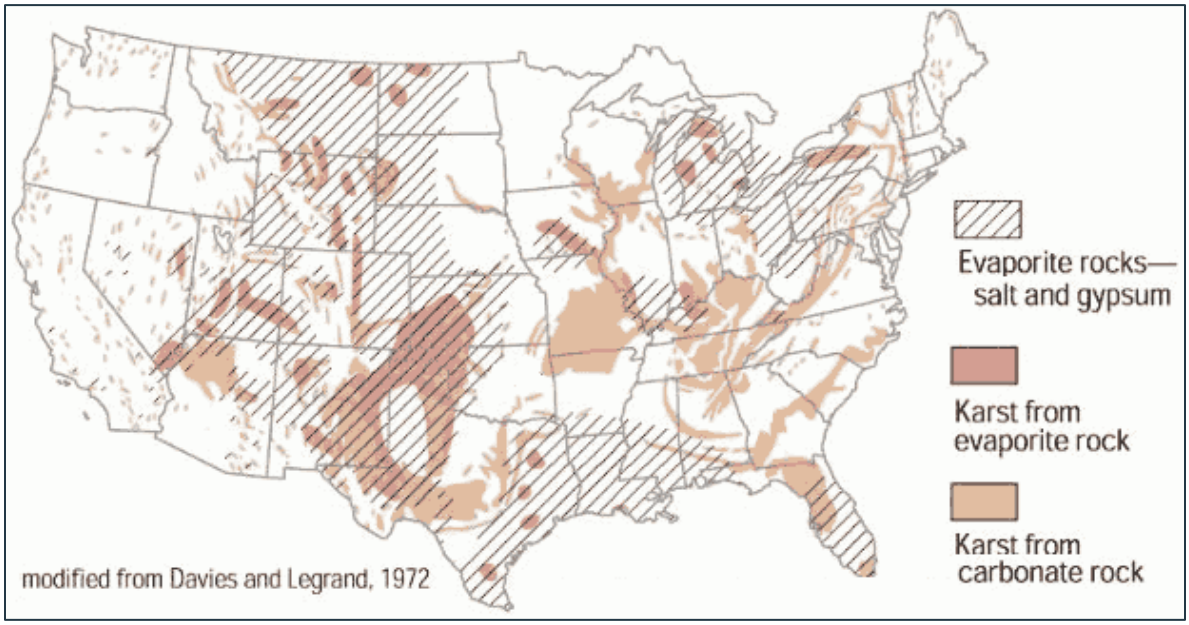
- Slumping or falling fenceposts, trees, or foundations.
- Sudden formation of small ponds;
- Wilting vegetation.
- Discolored well water; and/or
- Structural cracks in walls, floors.

Sinkhole formation is aggravated and accelerated by urbanization. Development increases water usage, alters drainage pathways, overloads the ground surface, and redistributes soil. According to FEMA, the number of human-induced sinkholes has doubled since 1930, insurance claims for damages as a result of sinkholes has increased 1,200 percent from 1987 to 1991, costing nearly $100 million.

- *Warning Time: 4 – Less than six hours*

- *Duration: 4 – More than 1 week*

Figure 2.42 – Rock Formations in the United States



Source: USGS Groundwater Information

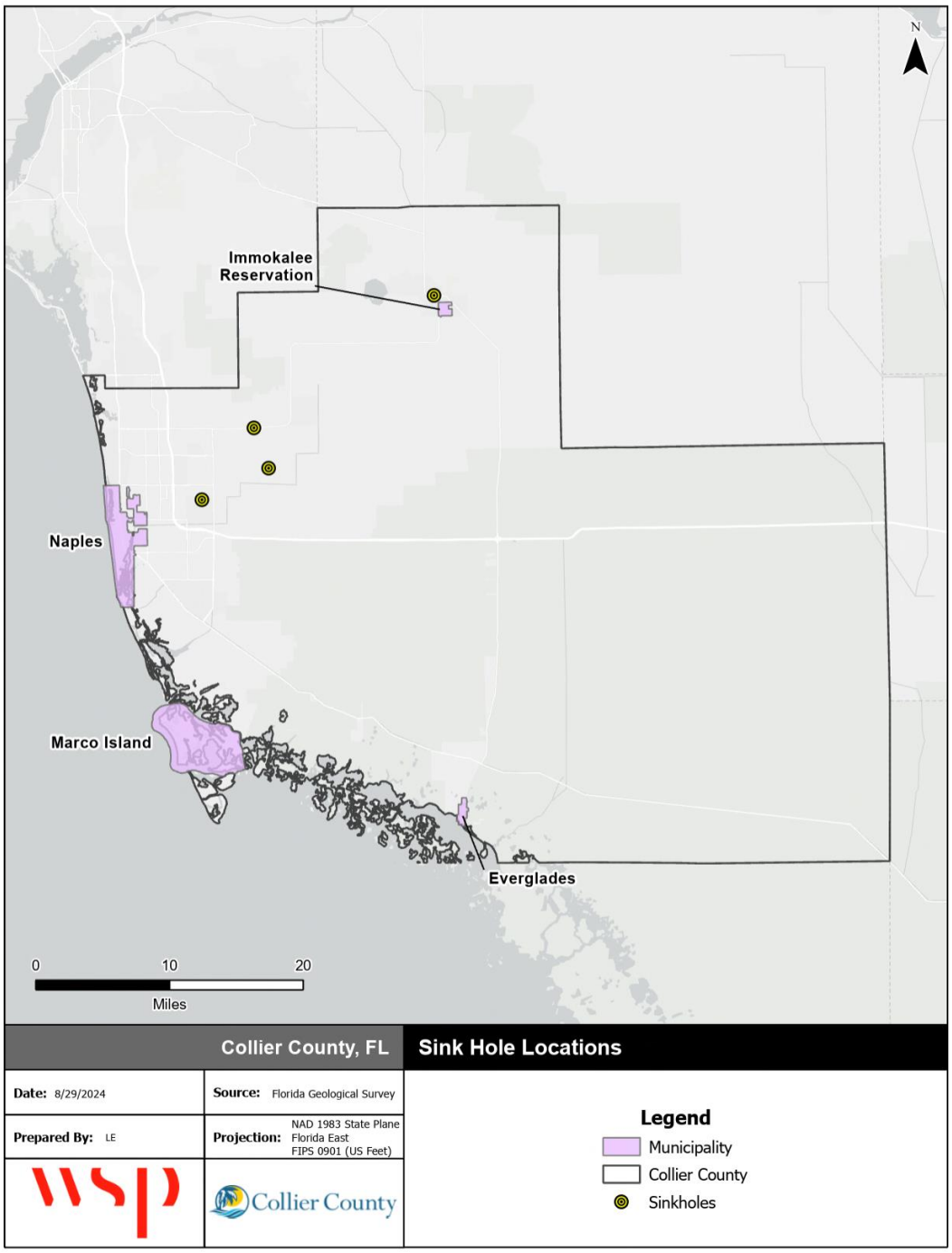
LOCATION

Collier County's existing soil types significantly contribute to the propensity for natural sinkhole formation. The area is characterized by a prevalent limestone bedrock, which is particularly susceptible to erosion due to its solubility in acidic water. This erosion can create voids underground that, when supported, may lead to sudden collapse of the surface, resulting in sinkholes. In addition to natural processes, human activities play a critical role in the potential for sinkhole development. Soil piping, a phenomenon where water erodes soil and creates channels underground, can be exacerbated by leakage from drainage systems, collapsed water mains, or sewer lines. Failed culverts and other infrastructure failures can further compromise soil stability, increasing the likelihood of erosion and sinkhole formation. Collier County and its jurisdictions are susceptible to sinkholes.

Although underlying geological risk is widespread, any individual sinkhole affects only a very small area relative to the planning area. The locations of past sinkhole events in the county are shown in Figure 2.43.

- *Spatial Extent: 1 – Negligible*

Figure 2.43 – Sinkhole Locations in Collier County



Source: Florida Geological Survey

EXTENT

Sinkholes are inherently unpredictable geological phenomena that can lead to significant consequences when they occur. Their size can vary dramatically, ranging from a few feet in diameter to expansive depressions that can cover hundreds of acres. In terms of depth, they can be as shallow as less than one foot or plunge deeper than 100 feet. The shape of sinkholes can also differ widely; some are broad and shallow, resembling bowls or saucers, while others exhibit steep, vertical walls that create a more cavernous appearance. In Florida, many sinkholes can fill with water, forming natural ponds that may become unique ecosystems.

Despite their potential severity, there is currently no formal scale for measuring the extent or impact of sinkholes, which complicates efforts to assess risk and respond effectively. The unpredictability of sinkholes poses a challenge in urban environments, where the presence of infrastructure such as roads, bridges, and buildings increases the potential for catastrophic damage. When a sinkhole forms beneath a structure, it can lead to sudden and extensive catastrophic damage resulting in hazardous conditions and significant repair costs.

Moreover, sinkholes can threaten local water resources by contaminating groundwater supplies as they connect surface water with deeper aquifers. They have been known to consume a variety of objects, including vehicles, swimming pools, sections of roadways, and even entire buildings, leading to both immediate physical dangers and long-term impacts on community infrastructure. In some cases, sinkholes in Florida have measured up to 35 feet in depth with similar widths.

The extent of sinkhole activity in the area is measured by the dimensions and/or frequency of these events. Per Florida Geological Survey records, the largest known sinkhole in Collier County was 12 feet deep, recorded in 2000. However specific details of its exact location is not readily available.

- *Impact: 2 – Limited*

PAST OCCURRENCES

There have been four recorded sinkholes in Collier County between 2000 and 2023. Past sinkhole incidents reported by the Florida Geological Survey for Collier County are recorded below in Table 2.77.

Table 2.77 – Sinkholes in Collier County, 2000-2023

Date	Location	Length	Width	Depth	Note
7/18/2000	Immokalee	4 ft	4 ft	12 ft	No structures threatened. Sinkhole appears to be stable.
2/23/2003	Collier County	5 ft	6 ft	4 ft	Sinkhole developed in roadway after a sprinkler system malfunction.
3/22/2017	Collier County	4 ft	4 ft	1 ft	Sinkhole is in swale maintained by the County.
9/3/2018	Collier County	1 ft	1 ft	0 ft	N/A

Source: Florida Geological Survey

While Collier County has experienced sinkhole activity in the past, these events are uncommon occurrences and very few have caused any reported property damages. In May 2000, there was an increase in sinkhole development which was believed to be caused by lowered groundwater as a result of the 1998 drought. Drought conditions exacerbate the natural processes that lead to sinkhole formation by reducing the water table, which decreases the pressure on underground limestone formations and allows for greater erosions.

The most recent reported sinkhole occurred in September 2018. While specific details regarding this incident were limited and it was classified as a small sinkhole, it serves as a reminder of the ongoing geological activity in the region. However, a more significant sinkhole event was reported in July 2018, triggered by a pipe burst. This particular incident caused a section of U.S. in East Naples to collapse, highlighting the potential for infrastructure vulnerabilities to exacerbate sinkholes risks.

Many underground pipes may be vulnerable to cracks and leaks due to age, increasing likelihood of cracks and leaks. Such failures can lead to localized erosion, subsidence, or even the formation of new sinkholes as water escapes and alters the stability of the surrounding soil. As the County continues to develop and urbanize, monitoring the integrity of underground utilities becomes increasingly important to mitigate risks associated with sinkholes.

Sinkholes are relatively rare in Collier County compared to other regions of Florida due to the county's geological characteristics, which differ significantly from areas prone to frequent sinkhole formation, such as Central Florida. The reasons for the rarity of sinkholes in Collier County include:

- **Geology and Soil Composition:**
    - Collier County primarily consists of sandy soils, limestone, and a deep layer of clay, which helps to prevent the rapid erosion of underground materials that typically lead to sinkhole formation.
    - The limestone in Collier County is generally more stable and less prone to dissolution compared to the highly porous limestone found in other parts of Florida, such as the central region.
- **Depth of the Limestone Bedrock:**
    - In Collier County, the limestone bedrock that could potentially dissolve is located much deeper beneath the surface compared to areas like Central Florida. The overlying layers of sand and clay provide a protective barrier, reducing the likelihood of void formation that could result in a sinkhole.
- **Water Table Stability:**
    - The region has a relatively stable and high-water table due to the presence of extensive wetlands, such as the Everglades, which helps to maintain hydrostatic pressure and prevent the collapse of underground cavities.

- **Hydrogeological Conditions:**
    - In areas where water flow is slow and steady, the dissolution of underlying carbonate rock happens over a longer period, reducing the likelihood of sudden collapses.
    - In contrast, areas with fluctuating groundwater levels (due to heavy withdrawals or drought conditions) experience a higher risk of sinkholes, which is less common in Collier County.
- **Land Use and Development Patterns:**
    - Collier County has experienced less intense urban development compared to areas like Tampa and Orlando, where human activities such as construction and groundwater pumping can accelerate sinkhole formation.
- **Lack of Aggressive Aquifer Pumping:**
    - Excessive groundwater withdrawal can lead to sinkhole formation by creating voids in the underlying rock. In Collier County, water management practices are generally more conservative due to the area's natural hydrology.

In summary, the combination of deeper limestone layers, stable groundwater levels, and the protective overburden of sand and clay makes sinkholes a rare occurrence in Collier County compared to other parts of Florida.

PROBABILITY OF FUTURE OCCURRENCE

Sinkholes remain a possibility in localized areas of Collier County and are caused by both human activity and as naturally occurring events. Based on previous events, sinkholes are not likely to occur in Collier County but are possible based on the substantial limestone formations and karst landscapes. Human activity such as construction and excavation can disrupt the natural stability of the ground, making sink holes more likely. Impacts from such events would likely cause minimal localized damage, though potentially significant service interruptions caused by infrastructure damage and road closures.

- *Probability: 1 – Unlikely*

CLIMATE CHANGE

Direct effects from global warming and climate change such as an increase in droughts, floods and hurricanes could contribute to an increase in sinkholes. Climate change raises the likelihood of extreme weather, meaning the torrential rain and flooding conditions which often lead to the exposure of sinkholes are likely to become increasingly common. Global warming is leading to more frequent and severe weather events. Including intense storms, hurricanes, and heavy rainfall. The extreme weather conditions can significant impact the hydrological cycle and exacerbate environmental factors contributing to sinkhole formation. Certain events such as a hurricane following a period of drought can trigger a sinkhole due to low levels of groundwater combined with a heavy influx of rain. As discussed in Sections 2.5.5 Drought, 2.5.1 Flood, and 0 Tropical Cyclones, potential

increases in these contributing events are possible. Therefore, an increase in the occurrence of sinkholes in the future is possible.

VULNERABILITY ASSESSMENT

PEOPLE

A person's vulnerability to sinkholes is closely tied to several factors, the most significant being the speed at which the sinkholes forms and whether the individual is directly situated above or near it when it occurs. The sudden and unpredictable nature of sinkholes can make it extremely dangerous for those in the immediate vicinity, especially if there is little to no warning. Historical records highlight numerous tragic incidents in which people have lost their lived due to sinkholes suddenly opening beneath their homes, trapping occupants. In such cases, the rapid collapse of the ground often leaves no time for evacuation or rescue. Similarly, motor vehicle fatalities can occur when driver, unaware of the hazard, were unable to stop in time and before authorities could establish protective barriers or warning signs. These scenarios underscore the severe risks sinkholes pose when they occur without notice, leaving individuals exposed to life-threatening dangers.

- **Population Patterns**:
    - Population growth in areas with limestone bedrock, particularly in inland neighborhoods.
    - Increased residential density near known sinkhole-prone zones increases the risk of displacement.
    - Vulnerable groups, such as low-income populations, may lack financial resources for repairs or relocation.
    - **Underserved Populations**: Residents of older housing developments may be more exposed to sinkhole risks due to outdated infrastructure and minimal maintenance.

PROPERTY

Like the vulnerability of individuals, the susceptibility of property to sinkhole-related damage is influenced by a wide range of factors, with the speed at which the sinkhole develops being a major determinant. The sudden formation of a sinkhole can lead to devastating consequences for structures and infrastructure located directly above or near the affected area. For properties situated above large sinkholes that collapse rapidly, the damage can be catastrophic, resulting in a variety of serious issues. These may include cracked or destabilized foundations, which can compromise the integrity of buildings, damage to roadways that can impede transportation and emergency access, and the destruction of vehicles or other personal property. In the worst cases, entire structures can be rendered uninhabitable or beyond repair, necessitating costly rebuilding or relocation efforts.

- **Land Use/Development Trends**:
    - Expansion of subdivisions in previously undeveloped areas with minimal geological surveys.
    - Increased groundwater extraction due to residential and commercial growth, contributing to sinkhole formation.
    - Development of critical infrastructure, such as roads and utilities, over potential sinkhole zones without adequate geotechnical assessments.

Despite the known risks, data on the potential property or critical facility losses associated with sinkholes is often lacking. Comprehensive estimates remain elusive due to the unpredictability of sinkhole occurrences, variations in regional geology, and the difficulties involved in assessing subterranean conditions before a collapse occurs. This absence of detailed information makes it challenging to fully grasp the economic impact of sinkholes, especially when it comes to damage prevention and mitigation efforts.

ENVIRONMENT

Sinkholes are predominantly naturally occurring geological events, and because of their origin in natural processes, their overall impact on the environment is typically minimal. While sinkholes can cause sudden and dramatic shifts in the landscape, the damage they inflict on natural areas is often localized and temporary. Ecosystems in affected regions tend to adapt and recover relatively quickly, as the surrounding environment is already accustomed to changes in the terrain and soil structure over time.

CONSEQUENCE ANALYSIS

Table 2.78 summarizes the potential negative consequences of sinkhole.

Table 2.78 – Consequence Analysis – Sinkhole

Category	Consequences
Public	Impacts are minimal to public at large. Individuals directly affected could be injured or experience anxiety or depression about economic and property losses.
Responders	First responders will be impacted similarly to other events that have no advance warning.
Continuity of Operations (including Continued Delivery of Services)	Continuity of operations is generally not disrupted by sinkholes.
Property, Facilities and Infrastructure	Although sinkhole extents are localized, buildings located on or adjacent to a sinkhole are susceptible to foundation damage or building collapse. In a worst case scenario, if a building is located close enough to a sinkhole it can be destroyed. Remediation costs can be high due to costly foundation shoring or cost of stabilization of the sinkhole itself.
Environment	Sinkholes are natural occurring process and local plants and animals adjust quickly. Many naturally occurring sinkholes fill with rainwater creating new aquatic habitat.
Economic Condition of the Jurisdiction	Sinkholes located in open areas or that impact only small numbers of buildings, while having a high impact to the local property owner, do not have substantial impacts to the economy. Sinkholes that open in major traffic thoroughfares can include significant impact to daily work traffic and flow of goods.

Category	Consequences
Public Confidence in the Jurisdiction's Governance	Sinkholes are relatively unpredictable, however if a sinkhole occurs due to infrastructure issues and causes harm to people or property, the public may lose confidence in the jurisdiction.

HAZARD SUMMARY BY JURISDICTION

The following table summarizes sinkhole hazard risk by jurisdiction. Sinkhole hazard risk does not vary substantially by jurisdiction.

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Everglades City	1	2	1	4	4	1.9	L
Seminole Tribe Immokalee Reservation	1	2	1	4	4	1.9	L
Marco Island	1	2	1	4	4	1.9	L
Naples	1	2	1	4	4	1.9	L
Unincorporated Collier County*	1	2	1	4	4	1.9	L

*Note: Unincorporated Collier County includes the following jurisdictions: Collier County Government, Collier County Public Schools, Collier Mosquito Control District, North Collier Fire Control District, Greater Naples Fire Rescue District, Immokalee Fire Control District, Naples Airport Authority, Port of the Isles, and South Florida Water Management District.

2.5.9 WINTER STORMS AND FREEZE

HAZARD DESCRIPTION

A winter storm can range from a moderate snow over a period of a few hours to blizzard conditions with blinding wind-driven snow that lasts for several days. Winter storm related hazards include snow, sleet, freezing rain, or a mix of these wintry forms of precipitation, as well as cold temperatures and freeze. Some winter storms might be large enough to affect several states, while others might affect only localized areas.

All winter storm events have the potential to present dangerous conditions to the affected area. A heavy snow event is defined by the NWS as an accumulation of 4 of more inches in 12 hours or less. Large snowfalls pose a greater risk, reducing visibility due to blowing snow and making driving conditions treacherous. A blizzard is the most severe form of winter storm. It combines low temperatures, heavy snow, and winds of 35 miles per hour or more, which reduces visibility to a quarter mile or less for at least 3 hours.

Ice storms are defined as storms with significant amounts of freezing rain. With warmer air above, falling precipitation in the form of snow melts, then becomes either super-cooled (liquid below the melting point of water) or re-freezes. In the former case, super-cooled droplets can freeze on impact (freezing rain), while in the latter case, the re-frozen water particles are ice pellets (or sleet). Sleet is defined as partially frozen raindrops or refrozen snowflakes that form into small ice pellets before reaching the ground. They typically bounce when they hit the ground. Sleet does not stick to the ground but can accumulate like snow, posing similar problems and has the potential to accumulate into

a layer of ice on surfaces. Freezing rain, conversely, usually sticks to the ground, creating a sheet of ice on the roadways and other surfaces.

All the winter storm elements – snow, low temperatures, sleet, and ice – have the potential to cause significant hazard to a community. Even small accumulations can down power lines and trees limbs and create hazardous driving conditions and disrupt communication and power for days. Freeze events are also particularly hazardous as they can create treacherous surfaces. Freezing temperatures can also affect crops and pasture. Many of these winter storm related hazards are not relevant to south Florida; however, extreme cold and freeze can affect the planning area.

Advancements in meteorology and forecasting usually allow for mostly accurate forecasting a few days in advance of an impending storm. Most winter storms have a duration of a few hours; however, cold temperatures and freeze can last longer periods.

- *Warning Time: 1 – More than 24 hours*
- *Duration: 3 – Less than 1 week*

LOCATION

Severe winter storms are usually a countywide or regional hazard, impacting the entire county at the same time. The risk of a severe winter storm occurring is uniform across Collier County. Collier County and its jurisdictions are vulnerable to winter storms and freezes.

- *Spatial Extent: 4 – Large*

EXTENT

NOAA uses the Regional Snowfall Index (RSI) to assess the societal impact of winter storms in the six easternmost regions in the United States. The index makes use of population and regional differences to assess the impact of snowfall. It is shown in

Table **2.79**. For example, areas which receive very little snowfall on average may be more adversely affected than other regions, resulting in a higher severity. For central and southern Florida, a Winter Storm Warning is issued when any snow or sleet amount to more than a half inch. However, amounts as small as 0.1 inch can significantly impact transportation and agriculture among other things. According to official NWS records, there has never been any snowfall or accumulation of snow in Collier County, Florida.

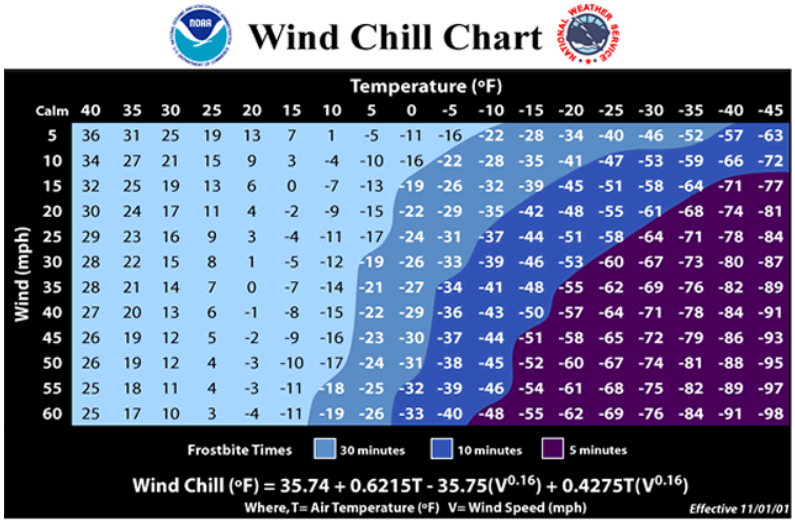
Table 2.79 – Regional Snowfall Index (RSI) Values

Category	RSI Value	Description
1	1-3	Notable
2	3-6	Significant
3	6-10	Major
4	10-18	Crippling
5	18+	Extreme

Source: NOAA

Severe winter storms often involve a mix of hazardous weather conditions. The magnitude of an event can be defined based on the severity of each of the involved factors, including precipitation type, precipitation accumulation amounts, temperature, and wind. The NWS Wind Chill Temperature Index, shown in Figure 2.44, provides a formula for calculating the dangers of winter winds and freezing temperatures.

Figure 2.44 – NWS Wind Chill Temperature Index



Source: http://www.nws.noaa.gov/om/winter/windchill.shtml

- *Impact: 2 – Limited*

The degree of exposure to winter storm and freeze typically depends on the normal expected severity of local winter weather. Collier County is not accustomed to severe winter weather conditions and often receives little to no winter weather during the winter months. Given the atmospheric nature of the hazard, the entire County has uniform exposure to a winter storm.

HISTORICAL OCCURRENCES

To get a full picture of the range of impacts of a severe winter storm, data for the following weather types tracked by NCEI were collected: Blizzard, Cold/Wind Chill, Extreme Cold/Wind Chill, Frost/Freeze, Heavy Snow, Ice Storm, Sleet, Winter Storm, and Winter Weather.

Only Extreme Cold/Wind Chill and Frost/Freeze events have been recorded in Collier County. These events are defined by the NWS as follows:

- Extreme Cold/Wind Chill – A period of extremely low temperatures or wind chill temperatures reaching or exceeding locally/regionally defined warning criteria, defined as wind chill -15°F or lower with wind speeds 10 mph (9 kt) or greater.
- Frost/Freeze – A surface air temperature of 32°F or lower, or the formation of ice crystals on the ground or other surfaces, for a period long enough to cause human or economic impact, during the locally defined growing season.

Table 2.80 summarizes the recorded severe winter storm events that have impacted Collier County according to the NCEI Storm Events Database for the 24-year period from 2000 through 2023. As reported in NCEI, severe winter weather did not cause any fatalities, injuries, or property damage, but did cause some crop damage. Some of these types of impacts may not have been reported and are possible in future events. Impacts in Collier County by incident are recorded in Table 2.81.

Table 2.80 – Total Severe Winter Storm Impacts in Collier County, 2000-2023

Event Type	Number of Recorded Incidents	Total Fatalities	Total Injuries	Total Property Damage	Total Crop Damage
Extreme Cold/ Wind Chill	7	0	0	$0	$34,030,000
Frost/Freeze	22	0	0	$0	$301,030,000
Total	29	0	0	$0	$335,060,000

Source: NCEI

Table 2.81 – Recorded Severe Winter Storm Impacts in Collier County, 2000-2023

Location	Date	Event Type	Fatalities/ Injuries	Property Damage	Crop Damage
Inland Collier (Zone)	12/21/2000	Extreme Cold/Wind Chill	0/0	$0	$0
Inland Collier (Zone)	12/31/2000	Extreme Cold/Wind Chill	0/0	$0	$0
Inland Collier (Zone)	1/1/2001	Extreme Cold/Wind Chill	0/0	$0	$30,000
Inland Collier (Zone)	1/5/2001	Extreme Cold/Wind Chill	0/0	$0	$34,000,000
Inland Collier (Zone)	1/10/2001	Extreme Cold/Wind Chill	0/0	$0	$0
Inland Collier (Zone)	12/27/2001	Extreme Cold/Wind Chill	0/0	$0	$0
Inland Collier (Zone)	1/9/2002	Extreme Cold/Wind Chill	0/0	$0	$0
Inland Collier (Zone)	1/19/2003	Frost/Freeze	0/0	$0	$0
Inland Collier (Zone)	1/24/2003	Frost/Freeze	0/0	$0	$0
Inland Collier (Zone)	12/21/2003	Frost/Freeze	0/0	$0	$0
Inland Collier (Zone)	1/24/2005	Frost/Freeze	0/0	$0	$0
Inland Collier (Zone)	2/12/2005	Frost/Freeze	0/0	$0	$0
Inland Collier (Zone)	1/8/2006	Frost/Freeze	0/0	$0	$0
Inland Collier (Zone)	2/14/2006	Frost/Freeze	0/0	$0	$0
Inland Collier (Zone)	2/17/2007	Frost/Freeze	0/0	$0	$0
Inland Collier (Zone)	2/19/2007	Frost/Freeze	0/0	$0	$0
Inland Collier (Zone)	1/3/2008	Frost/Freeze	0/0	$0	$20,000
Inland Collier (Zone)	1/22/2009	Frost/Freeze	0/0	$0	$50,000
Inland Collier (Zone)	2/5/2009	Frost/Freeze	0/0	$0	$0
Coastal Collier (Zone)	2/5/2009	Frost/Freeze	0/0	$0	$0
Inland Collier (Zone)	1/6/2010	Frost/Freeze	0/0	$0	$0
Inland Collier (Zone)	1/10/2010	Frost/Freeze	0/0	$0	$300,000,000
Coastal Collier (Zone)	1/10/2010	Frost/Freeze	0/0	$0	$0
Inland Collier (Zone)	12/7/2010	Frost/Freeze	0/0	$0	$0
Inland Collier (Zone)	12/14/2010	Frost/Freeze	0/0	$0	$0
Coastal Collier (Zone)	12/15/2010	Frost/Freeze	0/0	$0	$0
Inland Collier (Zone)	12/28/2010	Frost/Freeze	0/0	$0	$960,000
Coastal Collier (Zone)	12/28/2010	Frost/Freeze	0/0	$0	$0

Location	Date	Event Type	Fatalities/ Injuries	Property Damage	Crop Damage
Inland Collier (Zone)	1/3/2012	Frost/Freeze	0/0	$0	$0
Inland Collier (Zone)	2/4/2021	Frost/Freeze	0/0	$0	$0
Inland Collier (Zone)	1/30/2022	Frost/Freeze	0/0	$0	$0
Inland Collier (Zone)	1/31/2022	Frost/Freeze	0/0	$0	$0
		Total	0/0	$0	$335,060,000

Source: NCEI

According to NOAA, 2 people died from exposure to the cold in 2009 and 2 more in 2010 within the State of Florida. This does not include additional deaths related to carbon monoxide poisoning from using improper heating sources. A freeze in January 2010 led to agricultural losses of over $200 million. The USDA declared 59 out of 67 counties in a state of natural disaster for agricultural production during this freeze. Storm impacts from NCEI are summarized below:

January 5, 2001 – A freeze occurred throughout the interior sections of south Florida, causing damage to certain crops. Hardest hit were certain vegetable crops with 75% losses in Hendry and east Collier counties and 30% losses in the farming areas of south Miami-Dade County. Other crops that were damaged included newly planted sugar cane, ornamentals, and tropical fruits. A heavy frost occurred in the western suburbs of Miami-Dade, Broward and Palm Beach metropolitan areas. Several daily minimum temperature records were broken. Selected minimum temperatures included 27 degrees at Belle Glade, 29 degrees in the Homestead agricultural area, 31 degrees in Naples, 39 degrees at Miami International Airport and 43 degrees in Miami Beach.

January 22, 2009 – An arctic cold front moved through South Florida on January 20th. High pressure of arctic origin settled over the region behind the cold front, bringing freezing temperatures to much of South Florida on the mornings of January 21 and 22. Temperatures dropped to below freezing over most of interior South Florida on the morning of January 22. Temperatures bottomed out as low as the mid-20s over portions of Glades, Hendry and Collier counties. Readings in the upper 20s to around 30 were observed over inland sections of Palm Beach County, with near freezing temperatures of 30-32 degrees over inland sections of Broward and Miami-Dade counties. In addition to the freezing temperatures, widespread heavy frost formed over most of interior and northern sections of South Florida. Crop damage was extensive in some areas, with total losses to bean and corn crops in parts of western Palm Beach County. Losses to tomato and strawberry crops were also noted in Hendry and Collier counties.

December 28, 2010 – Temperatures across inland sections of Collier County fell into the upper 20s to low 30s with the coldest temperatures reported across far north and east sections on the morning of the 28th. The coldest temperatures during this period were: 26 degrees in The Florida Panther NWR, 27 degrees in Golden Gate Estates, and 29 degrees in Immokalee. Extensive damage to crops and frost were reported. Crop damage amount estimate of $0.96 million is for all of Collier County and represents the combined total of all three December freeze events.

Collier County has never received an emergency declaration for incidents related to severe winter storms. As a state, Florida has also never received any disaster declarations related to severe winter storms.

PROBABILITY OF FUTURE OCCURRENCE

NCEI records show 32 severe winter storm related events during the 24-year period from 2000 through 2023, which is an average of 1.33 events per year or about a 133 percent probability in any given year. Breaking up these events by type and intensity, it can be estimated that:

- A freeze may be expected in Collier County every one to two years.
- Severe freezes that lead to significant crop loss ($100,000+) can be expected about once every ten years in Collier County.
- Southern Florida is likely to experience between 2 and 4 days of winter weather annually.

- *Probability: 3 – Likely*

CLIMATE CHANGE

Climate change is not expected to increase the frequency or magnitude of winter storms and freezes in Florida. However, climate change does not mean that winter storms would not continue to occur in the State. Climate change could cause more variability in daily temperature and thus create a prolonged winter storm or freeze.

VULNERABILITY ASSESSMENT

PEOPLE

Winter storms are considered deceptive killers because most deaths are indirectly related to the storm event. The leading cause of death during winter storms is from automobile or other transportation accidents due to poor visibility and/or slippery roads. Additionally, exhaustion and heart attacks caused by overexertion may result from winter storms.

- **Population Patterns**:
    - Population growth in rural agricultural areas like Immokalee dependent on seasonal crop production.
    - Increased density of elderly residents in mobile home communities that are vulnerable to freezing temperatures.
    - Seasonal population influx from northern regions increasing heating demands during cold snaps.
    - **Underserved Populations**: Low-income families may face higher risks due to poorly insulated homes and limited access to heating systems. Migrant farmworkers may be exposed to extreme cold without adequate shelter or resources.

Power outages during very cold winter storm conditions can also create potentially dangerous situations. Elderly people account for the largest percentage of hypothermia

victims. In addition, if the power is out for an extended period, residents are forced to find alternative means to heat their homes. The danger arises from carbon monoxide released from improperly ventilated heating sources such as space or kerosene heaters, furnaces, and blocked chimneys. House fires also occur more frequently in the winter due to lack of proper safety precautions when using an alternative heating source.

PROPERTY

No property damage was reported in association with any winter weather events recorded by the NCEI between 2000 and 2023 for Collier County. Therefore, no annualized loss estimate could be calculated for this hazard. However, $335,060,000 in crop damage was reported over the 24-year period, which equates to an average annual loss estimate of $13,960,833.

- **Land Use/Development Trends**:
    - Expansion of commercial greenhouses and nurseries with limited temperature regulation systems.
    - Growth of new residential developments without winterized infrastructure (e.g., insulated pipes).
    - Limited adoption of frost-resistant landscaping in newly developed neighborhoods.

ENVIRONMENT

Winter storm events may include ice or snow accumulation on trees which can cause large limbs, or even whole trees, to snap and potentially fall on buildings, cars, or power lines. This potential for winter debris creates a dangerous environment to be outside in; significant injury or fatality may occur if a large limb snaps while a local resident is out driving or walking underneath it.

CONSEQUENCE ANALYSIS

Table 2.82 summarizes the potential negative consequences of severe winter storm.

Table 2.82 – Consequence Analysis – Severe Winter Storm

Category	Consequences
Public	Localized impact expected to be severe for affected areas and moderate to light for other less affected areas.
Responders	Adverse impact expected to be severe for unprotected personnel and moderate to light for trained, equipped, and protected personnel.
Continuity of Operations (including Continued Delivery of Services)	Localized disruption of roads and/or utilities caused by incident may postpone delivery of some services.
Property, Facilities and Infrastructure	Localized impact to facilities and infrastructure in the areas of the incident. Power lines and roads most adversely affected.
Environment	Environmental damage to trees, bushes, crops, etc.
Economic Condition of the Jurisdiction	Local economy and finances may be adversely affected, depending on damage.

Public Confidence in the Jurisdiction's Governance	Ability to respond and recover may be questioned and challenged if planning, response, and recovery not timely and effective.

HAZARD SUMMARY BY JURISDICTION

The following table summarizes severe winter storm and freeze risk by jurisdiction. Risk does not vary substantially by jurisdiction because these events are typically regional in nature.

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Everglades City	3	2	4	1	3	2.7	M
Seminole Tribe Immokalee Reservation	3	2	4	1	3	2.7	M
Marco Island	3	2	4	1	3	2.7	M
Naples	3	2	4	1	3	2.7	M
Unincorporated Collier County*	3	2	4	1	3	2.7	M

*Note: Unincorporated Collier County includes the following jurisdictions: Collier County Government, Collier County Public Schools, Collier Mosquito Control District, North Collier Fire Control District, Greater Naples Fire Rescue District, Immokalee Fire Control District, Naples Airport Authority, Port of the Isles, and South Florida Water Management District.

2.5.10 EARTHQUAKE

HAZARD DESCRIPTION

An earthquake is a movement or shaking of the ground. Most earthquakes are caused by the release of stresses accumulated as a result of the rupture of rocks along opposing fault planes in the Earth's outer crust. These fault planes are typically found along borders of the Earth's 10 tectonic plates. The areas of greatest tectonic instability occur at the perimeters of the slowly moving plates, as these locations are subjected to the greatest strains from plates traveling in opposite directions and at different speeds. Deformation along plate boundaries causes strain in the rock and the consequent buildup of stored energy. When the built-up stress exceeds the rocks' strength a rupture occurs. The rock on both sides of the fracture is snapped, releasing the stored energy and producing seismic waves, generating an earthquake.

- *Warning Time: 4 – Less than 6 hours*
- *Duration: 1 – Less than 6 hours*

LOCATION

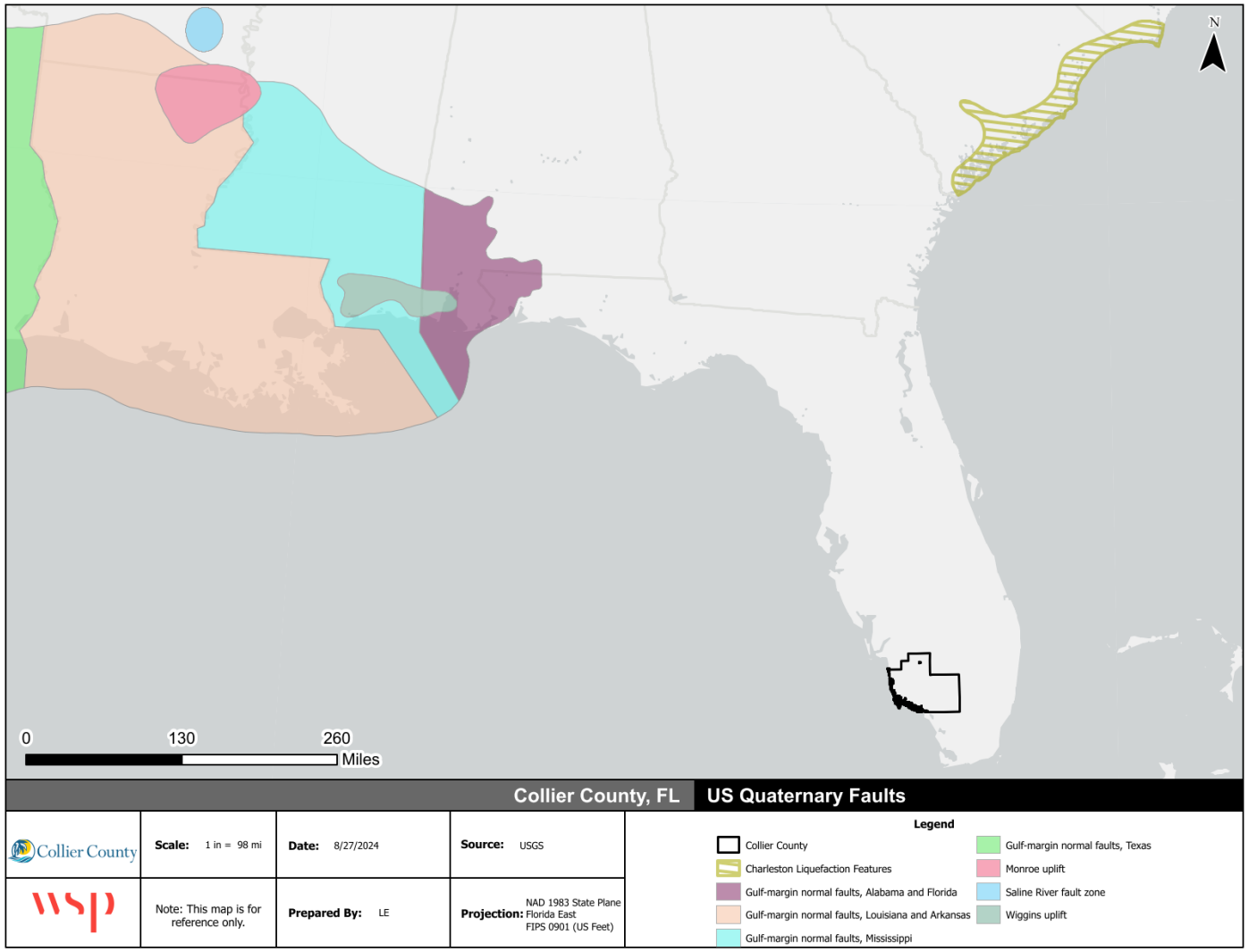
The United State Geological Survey's Quaternary faults database was consulted to define the location of potential earthquakes within range of Collier County. Quaternary faults are active faults recognized at the surface which have evidence of movement in the past 2.58 million years. The Gulf-Margin normal faults, the Charleston liquefaction feature, and the Wiggins uplift are the closest to Collier County and they are 450 miles, 415 miles, and 485 miles away respectively. These three fault areas could potentially produce an earthquake affecting Collier County. Figure 2.45 reflects the location of these three faults

in relation to Collier County based on data from the USGS Earthquake Hazards Program. Additionally, there is a fault about the same distance south of Florida on the Caribbean Plate. Collier County and its jurisdictions are susceptible to earthquakes.

All of Florida is subject to earthquakes, with the northwestern region most vulnerable to a damaging earthquake. The state is affected by the Charleston liquefaction feature in South Carolina, the Gulf-Margin normal faults stretching from the edge of Florida through Louisiana, and the Wiggins uplift in Alabama and Mississippi. The Charleston Liquefaction feature has generated an earthquake greater than 8.0 on the Richter Scale in the last 200 years.

- *Spatial Extent: 3 – Moderate*

Figure 2.45 – US Quaternary Faults



Source: USGS U.S. Quaternary Faults

EXTENT

Earthquakes are measured in terms of their magnitude and intensity. Magnitude is measured using the Richter Scale, an open-ended logarithmic scale that describes the energy release of an earthquake through a measure of shock wave amplitude. A detailed description of the Richter Scale is given in Table 2.83. Although the Richter scale is usually used by the news media when reporting the intensity of earthquakes and is the scale most familiar to the public, the scale currently used by the scientific community in the United States is called the Modified Mercalli Intensity (MMI) scale. The MMI scale is an arbitrary ranking based on observed effects. Table 2.84 shows descriptions for levels of earthquake intensity on the MMI scale. Seismic shaking is typically the greatest cause of losses to structures during earthquakes.

Table 2.83 – Richter Scale

Magnitude	Effects
Less than 3.5	Generally, not felt, but recorded.
3.5 – 5.4	Often felt, but rarely causes damage.
5.4 – 6.0	At most slight damage to well-designed buildings. Can cause major damage to poorly constructed buildings over small regions.
6.1 – 6.9	Can be destructive in areas up to 100 kilometers across where people live.
7.0 – 7.9	Major earthquake. Can cause serious damage over larger areas.
8.0 or greater	Great earthquake. Can cause serious damage in areas several hundred kilometers across.

Source: FEMA

Table 2.84 – Modified Mercalli Intensity (MMI) Scale

MMI	Shaking	Description/Damage
I	Not felt	Not felt except by a very few under especially favorable conditions.
II	Weak	Felt by a few persons at rest, especially on upper floors of buildings.
III	Weak	Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated.
IV	Light	Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
V	Moderate	Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.
VI	Strong	Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight.
VII	Very strong	Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.
VIII	Severe	Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned.
IX	Violent	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.

MMI	Shaking	Description/Damage
X	Extreme	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent.

Source: USGS Earthquake Hazards Program

The most severe earthquake to impact Florida measured a VIII on the Modified Mercalli Intensity Scale. However, per the USGS Earthquake Catalog, there are no records since 1800 of any earthquake impacts being felt in Collier County.

- *Impact: 1 – Minor*

HISTORICAL OCCURRENCES

The USGS Earthquake Hazards Program maintains a database of historical earthquakes of a magnitude 2.5 and greater from 1973 to 2024. Collier County has no history of earthquakes or damage from earthquakes. No earthquakes have had epicenters in Florida and there are no documented faults in the State.

The National Geophysical Data Center maintains a database of all earthquakes from 1638 to 1985 including the maximum intensity for each locality that felt the earthquake. Since 1985, no major earthquake events have impacted the planning area. The largest earthquake to be felt in Florida was the Charleston earthquake of 1886, which registered an MMI of VIII in Savannah. Table 2.85 shows historic seismic events felt in Florida. No earthquake epicenters have occurred in Collier County.

Table 2.85 – Historical Seismic Events Felt in Florida, 1886-2024

Date	Description
August 31, 1886	Known as the “great earthquake,” a severe earthquake hit Charleston, South Carolina. It was so powerful that shaking was felt in St. Augustine and Tampa. There were also several aftershocks in the months after the quake that were felt in Florida.
January 5, 1945	Shaking was felt in Volusia County. Windows in a De Land courthouse shook violently.
October 27, 1973	A shock was felt in Seminole, Volusia, Orange, and Brevard counties with a maximum intensity of MM V.
January 13, 1978	Two shocks were felt in Polk County, each lasting about 15 seconds and one minute apart. It rattled doors and windows, but there were no injuries or damages.
November 13, 1978	A shock was felt in northwest Florida. The seismic station estimated that it originated in the Atlantic Ocean.
September 10, 2006	A strong quake was felt in Florida and other Gulf Coast states. USGS determined it was magnitude 6 quake originating in the Gulf of Mexico, 250 miles southwest of the Apalachicola area.
July 16, 2016	Some felt small shakes in Florida and USGS rated it as a 3.7 magnitude. It was later discovered that the “quake” was actually an experimental explosion in the ocean by the US Navy.
March 7 & 24, 2019	Two weak tremors, intensity MM III, were felt in Jay and Century, Florida. No damage in Florida was reported.
January 2020	A 7.7 magnitude earthquake occurred in the Caribbean Sea between Jamaica and Cuba causing buildings in Miami to shake and evacuate.
September 3, 2020	Weak tremor was felt by few in Jay, FL; intensity MM II.

Date	Description
August 27, 2024	A magnitude 4.3 earthquake struck approximately 38 kilometers (23 miles) northwest of Wellington, at a depth of 5 kilometers (3.1 miles). Collier County did not experience any tremors.

Source: Florida Enhanced State Hazard Mitigation Plan, 2023

PROBABILITY OF FUTURE OCCURRENCE

Ground motion is the movement of the earth's surface due to earthquakes or explosions. It is produced by waves generated by a sudden slip on a fault or sudden pressure at the explosive source and travels through the earth and along its surface. Ground motion is amplified when surface waves of unconsolidated materials bounce off or are refracted by adjacent solid bedrock. The probability of ground motion is depicted in USGS earthquake hazard maps by showing, by contour values, the earthquake ground motions (of a frequency) that have a common given probability of being exceeded in 50 years.

Figure 2.46 reflects the seismic hazard for Collier County based on the national USGS map of peak acceleration with two percent probability of exceedance in 50 years. To produce these estimates, the ground motions being considered at a given location are those from all future possible earthquake magnitudes at all possible distances from that location. The ground motion coming from a particular magnitude and distance is assigned an annual probability equal to the annual probability of occurrence of the causative magnitude and distance. The method assumes a reasonable future catalog of earthquakes, based upon historical earthquake locations and geological information on the recurrence rate of fault ruptures. When all the possible earthquakes and magnitudes have been considered, a ground motion value is determined such that the annual rate of its being exceeded has a certain value.

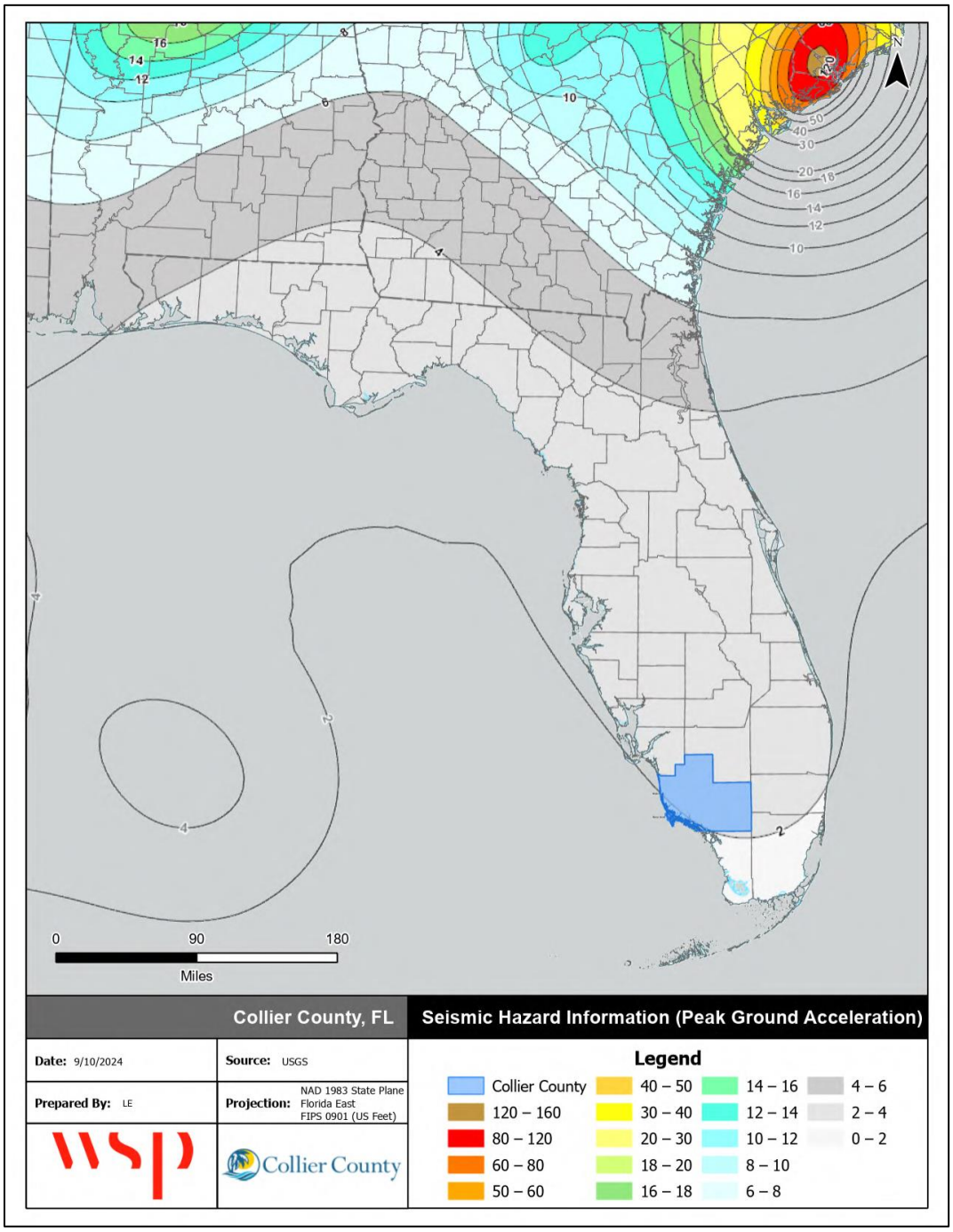
Therefore, for the given probability of exceedance, two percent, the locations shaken more frequently will have larger ground motions. All of Collier County is located within zones with peak acceleration of 0-2% g.

There have been no past occurrences of earthquakes in Collier County. Using past occurrence as an indicator of future probability, there is a low chance of an earthquake causing some building damage.

Based on this data, it can be reasonably assumed that an earthquake event affecting Collier County is possible but unlikely.

- *Probability: 1 – Unlikely*

Figure 2.46 – Seismic Hazard Information for Collier County



Source: USGS Earthquake Hazards Program

CLIMATE CHANGE

Scientists are beginning to believe there may be a connection between climate change and earthquakes. Changing ice caps and sea-level redistribute weight over fault lines, which could potentially have an influence on earthquake occurrences. However, currently

no studies quantify the relationship to a high level of detail, so recent earthquakes should not be linked with climate change. While not conclusive, early research suggest that more intense earthquakes and tsunamis may eventually be added to the adverse consequences that are caused by climate change.

VULNERABILITY ASSESSMENT

PEOPLE

Earthquake events in Collier County are unlikely to produce more than moderate ground shaking; injury is unlikely. Objects falling from shelves generally pose the greatest threat to safety.

A 2,500-year event was estimated using Hazus because a 2,500-year event is the "maximum considered earthquake" and is used for building codes. It has a 2-percent probability of being exceeded in 50 years.

Hazus estimates that the 2,500-year earthquake would result in 608 residential structures experiencing slight to complete damage. With these estimates, potential population at risk was calculated using the American Community Survey 2023 1-Year Estimates for average household size. The average household size for Collier County is 2.4, therefore there are an estimated 1,459 individuals are at moderate risk to the 2,500-year earthquake event.

- **Population Patterns**:
    - Growing population in inland areas with limited building codes for seismic activity.
    - Increased density in neighborhoods with older, non-retrofitted structures.
    - Vulnerable populations, such as elderly residents and those in multi-story apartments, may face greater difficulty in evacuation.
    - **Underserved Populations**: Low-income and minority communities living in older structures may lack the financial resources for retrofitting homes to meet seismic standards.

PROPERTY

In a severe earthquake event, buildings can be damaged by the shaking itself or by the ground beneath them settling to a different level than it was before the earthquake (subsidence). Buildings can even sink into the ground if soil liquefaction occurs. If a structure (a building, road, etc.) is built across a fault, the ground displacement during an earthquake could seriously damage that structure.

Earthquakes can also cause damages to infrastructure, resulting in secondary hazards. Damages to dams or levees could cause failures and subsequent flooding. Fires can be started by broken gas lines and power lines. Fires can be a serious problem, especially if the water lines that feed the fire hydrants have been damaged as well. Impacts of earthquakes also include debris clean-up and service disruption.

Collier County has not been impacted by an earthquake, so major damage to the built environment is unlikely. However, if an earthquake were to occur, there is potential for impacts to certain masonry buildings, as well as environmental damages with secondary impacts on structures.

- **Land Use/Development Trends**:
    - Continued construction of non-reinforced masonry buildings in low-seismic zones despite moderate earthquake potential.
    - Increased development of critical infrastructure, such as water towers and bridges, without updated seismic resilience measures.
    - Expansion of urban centers with high-rise buildings and multi-use developments requiring updated structural codes.

Table 2.86 details the estimated buildings impacted by 2,500-year earthquake event based on a Hazus level 1 analysis. Note that building value estimates are inherent to Hazus and do not necessarily reflect damages to the asset inventory provided by the County's parcel and building data.

Table 2.86 – Estimated Buildings Impacted by 2,500-Year Earthquake Event

Occupancy Type	Building Damage	Content Loss	Total Damage
Residential	$29,060,900	$2,508,800	$31,569,700
Commercial	$3,529,800	$1,018,200	$4,548,000
Industrial	$588,600	$275,700	$864,300
Other	$961,700	$324,100	$1,285,800
Total	$34,141,000	$4,126,800	$38,267,800

Source: Hazus

Table 2.87 provides the estimate of buildings damaged at varying levels of severity by occupancy type for the 2,500-year earthquake event. In this scenario, there would be 1,692 buildings with moderate damage, 205 buildings with extensive damage, and only 12 buildings with complete damage.

Table 2.87 - Estimated Building Damage

Occupancy	Estimated Count of Buildings Damaged				
	None	Slight	Moderate	Extensive	Complete
Agriculture	669.27	13.36	3.91	0.45	0.02
Commercial	9,522.96	226.15	69.53	7.98	0.37
Education	182.76	3.98	1.14	0.12	0.01
Government	211.34	5.01	1.48	0.15	0.01
Industrial	3,103.81	67.02	20.04	2.05	0.08
Other Residential	2,1414.20	488.83	118.82	1.13	0.02
Religion	462.85	11.29	3.40	0.43	0.03
Single Family	14,6214.48	4260.46	1473.31	193.14	11.62
Total	181,782	5,076	1,692	205	12

Source: Hazus

Table 2.88 details estimated property damages for annualized loss. Annualized losses are estimated at $78 million. Most damages would be sustained by residential property.

Table 2.88 – Estimated Property Damages from a 2,500-Year Earthquake Event

Area	Residential		Commercial	Industrial	Others	Total
	Single Family	Other				
Structural	$27,567,300	$1,493,600	$3,529,800	$588,600	$961,700	$34,141,000
Non-Structural	$30,026,100	$3,170,700	$4,315,000	$603,600	$1,387,300	$39,502,700
Content	$2,154,000	$354,800	$1,018,200	$275,700	$324,100	$4,126,800
Inventory	$0	$0	$238,900	$56,000	$33,100	$328,000
Total	$59,747,400	$5,019,100	$9,101,900	$1,523,900	$2,706,200	$78,098,500

Source: Hazus

ENVIRONMENT

An earthquake is unlikely to cause substantial impacts to the natural environment in Collier County. Impacts to the built environment (e.g. ruptured gas line) could damage the surrounding environment. However, this type damage is unlikely based on historical occurrences.

CONSEQUENCE ANALYSIS

Table 2.89 summarizes the potential negative consequences of earthquake.

Table 2.89 – Consequence Analysis - Earthquake

Category	Consequences
Public	The public may experience shaking and the greatest threat to health and well-being is often from objects falling from shelves.
Responders	Minimal expected impact on responders given only mild to moderate events. If a more severe incident occurs, responders may need to enter compromised structures or infrastructure.
Continuity of Operations (including Continued Delivery of Services)	There would likely be little disruption to services or operations due to a moderate earthquake. Any damage to transportation infrastructure, or critical facilities could interrupt access to some services.
Property, Facilities and Infrastructure	Damage to facilities and infrastructure is unlikely. Moderate ground shaking could cause objects to fall, resulting in minor damages.
Environment	No severe impacts expected, but damage to key infrastructure, utility systems, or facilities that house hazardous materials could harm the surrounding environment and may require remediation.
Economic Condition of the Jurisdiction	Economic loss is unexpected with moderate events, but could include property damage, business interruption costs, cost to repair public infrastructure, and debris removal costs.
Public Confidence in the Jurisdiction's Governance	Public confidence is unlikely to be affected from an earthquake event.

HAZARD SUMMARY BY JURISDICTION

The following table summarizes earthquake hazard risk by jurisdiction. Despite minor differences in peak acceleration probabilities, earthquake risk is uniform across the planning area.

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Everglades City	1	1	3	4	1	1.7	L
Seminole Tribe Immokalee Reservation	1	1	3	4	1	1.7	L
Marco Island	1	1	3	4	1	1.7	L
Naples	1	1	3	4	1	1.7	L
Unincorporated Collier County*	1	1	3	4	1	1.7	L

*Note: Unincorporated Collier County includes the following jurisdictions: Collier County Government, Collier County Public Schools, Collier Mosquito Control District, North Collier Fire Control District, Greater Naples Fire Rescue District, Immokalee Fire Control District, Naples Airport Authority, Port of the Isles, and South Florida Water Management District.

2.5.11 TSUNAMI

HAZARD DESCRIPTION

A tsunami is a series of large ocean waves formed as a result of an underwater disturbance such as an earthquake, landslide, volcanic eruption, or meteorite. Earthquakes are the most common cause of tsunamis. Tsunami waves radiate in all directions from the site of the disturbance, traveling as fast as 450 mph and slowing as they reach shallow waters. As the waves slow, they draw together and grow in height. The resulting phenomenon appears as a constant wall of water and can resemble hurricane storm surge when it reaches the shore.

There can be as many as 60 miles between peaks of each wave series and be as far as one hour apart. Tsunamis have a much smaller amplitude (wave height) offshore, and a very long wavelength (often hundreds of kilometers long), which is why they generally pass unnoticed at sea, forming only a passing "hump" in the ocean. The number of arrivals and the amplitudes of each wave will vary depending on the coastal properties, the exact travel direction, and other specifics of how the tsunami was generated. They will vary from place to place and event to event. In the largest tsunamis, surge can continue for many hours and more than a day. Tsunamis are typically caused by underwater tectonic activity, particularly along fault lines where large amounts of ocean floor can be displaced. This displacement causes the water above it to be pushed up or down, creating waves that spread outward in all directions.

Scientists cannot predict when and where the next tsunami will strike. However, since earthquakes are often a cause of tsunamis, an earthquake felt near a body of water may be considered an indication that a tsunami could shortly follow. Tsunami Warning Centers monitor which earthquakes are likely to generate tsunamis and can issue warning messages when a tsunami is possible. The National Tsunami Warning Center in Palmer,

Alaska, serves the continental United States, Alaska, Puerto Rico, and Virgin Islands and Canada.

As a tsunami approaches the coast, its speed decreased, but its height increases dramatically, this can result in catastrophic flooding and destruction of coastal areas. The first part of a tsunami to reach land is a trough rather than a crest of the wave. The water along the shoreline may recede dramatically, exposing areas that are normally submerged. This can serve as an advance warning of the approaching crest of the tsunami, although the crest typically arrives seconds to minutes later.

Tsunamis are sometimes mistakenly called tidal waves; however, this term is misleading and discouraged by oceanographers because tsunamis are not related or influenced by tidal patterns.

- *Warning Time: 3 – 6 to 12 hours*
- *Duration: 3 – Less than 1 week*

LOCATION

Tsunamis can impact any coastal area, but they are most commonly associated with the Pacific Coast due to the higher likelihood of occurrence in this region, which is characterized by numerous subduction zones and a significant risk of earthquakes. On the East Coast, tsunamis are more likely to be triggered by landslides or underwater slumping related to local earthquakes, though these events are relatively rare. The most vulnerable areas are those located less than 25 feet above sea level and within one mile of the coastline. According to the 2023 Florida State Hazard Mitigation Plan, the past 150 years of tsunami records indicate that the most frequent and destructive tsunamis in the U.S. have occurred along the coasts of California, Oregon, Washington, Alaska, and Hawaii.

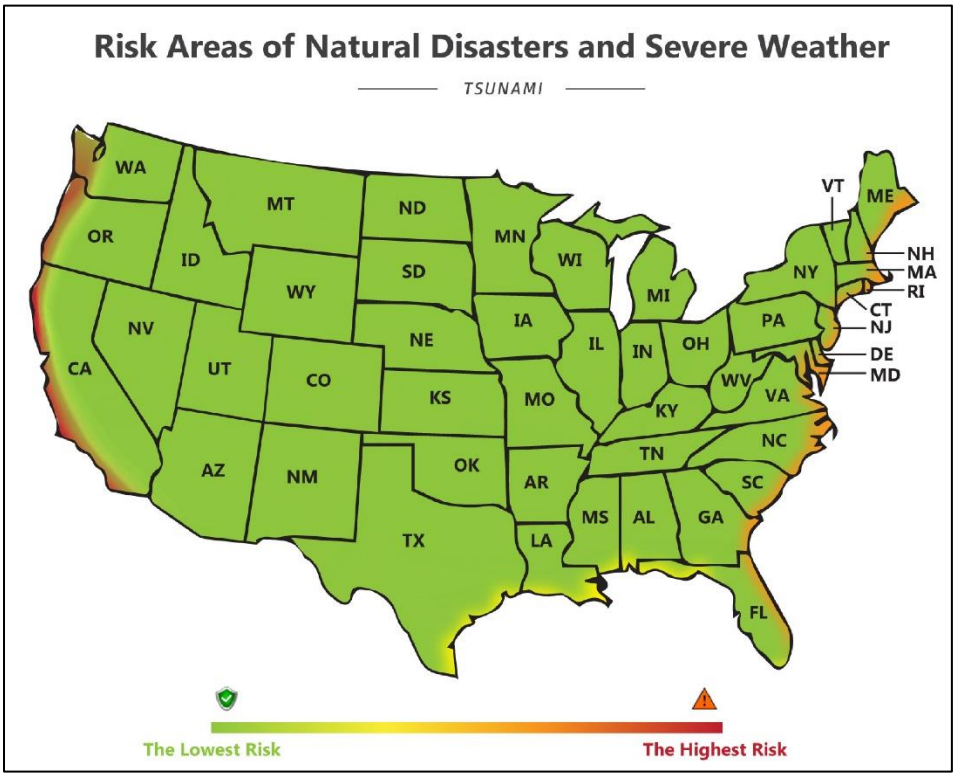
Earthquakes are frequently the cause for tsunami events. The 2023 Florida State Hazard Mitigation Plan reports that four tsunamis have occurred in Florida, all on the Atlantic Coast. Additionally, sediment deposits in the Gulf of Mexico may lead to underwater landslide activity.

Collier County's location along the Gulf of Mexico generally places it at a lower risk of tsunamis compared to other areas along Florida's west coast. However, being a coastal community, the potential for a tsunami cannot be entirely ruled out. Tsunamis affecting Collier County would likely be triggered by underwater landslides within the Gulf of Mexico or distant seismic events. Although such occurrences are rare, they could still generate localized tsunami impacts. Given the unpredictable nature of seismic activity, there remains a possibility of a tsunami affecting Collier County and its jurisdictions. Low-lying areas, including Naples, Marco Island, Everglades City, and unincorporated coastal regions, may be particularly vulnerable due to their flat topography and proximity to the shoreline. The gradual slope of the continental shelf further increases susceptibility in these areas, as well as Port of the Islands, making them more prone to potential tsunami-related impacts.

- *Spatial Extent: 3 – Moderate*

Figure 2.47 shows the at-risk areas for tsunamis in the United States.

Figure 2.47 – Tsunami Risk Areas in the United States



Source: Envista Forensics, National Weather Service

EXTENT

As previously mentioned, Collier County does not face the same high-risk tsunami threats as Pacific Coastal regions, tsunamis generated by submarine landslides in the Gulf of Mexico could pose a potential hazard. While these events are rare, they could affect areas of Collier County's coast, particularly low-lying areas like Naples, Marco Island, and other beachfront communities. The Regional Assessment of Tsunami Potential in the Gulf of Mexico report by Brink, et al. provides a comprehensive analysis of the potential for tsunami generation in the Gulf of Mexico. One of the primary findings of the report is that submarine landslides have already occurred in the region and, in some cases, were substantial enough in volume to trigger destructive tsunamis. These landslides, which originated from the Gulf's continental slope, have the capacity to displace significant amounts of water, creating dangerous waves capable of causing severe damage to coastal areas.

The report suggests that the sediment supply from the Mississippi River, one of the largest rivers in the world, plays a significant role in contributing to the possibility of further submarine landslide activity. The Mississippi River constantly deposits sediment into the Gulf, which over time can accumulate on the continental slope. This build of sediment can potentially destabilize the seabed, leading to future landslides.

FEMA's National Risk Index (NRI) Map shows tsunami risk as not applicable to Collier County. The 2023 Florida State Hazard Mitigation Plan rates overall tsunami vulnerability as low.

- *Impact: 2 – Limited*

HISTORICAL OCCURRENCES

Florida has experienced four recorded tsunami events, all of which occurred along its Atlantic Coast. Although Florida is generally considered a low-risk area for tsunamis compared to more seismically active regions, these events serve as a reminder that tsunamis can still reach the state's shores under certain conditions. The causes of these tsunamis are varied and highlight the potential for both local and distant seismic activity to generate waves that can impact the Florida coastline.

- One tsunami was cause by an earthquake along the Atlantic Coast.
- One was caused by an earthquake outside the Atlantic region.
- Two of the tsunamis were generate by earthquakes in the Caribbean.

While no known tsunamis have ever affected the Florida Gulf Coast, a tsunami in that location is unlikely but not impossible.

PROBABILITY OF FUTURE OCCURRENCE

Historical records indicate that Florida, particularly along its Gulf Coast, has experiences few, if any, significant tsunamis in the past. Most documented tsunami events have occurred on the Atlantic side, with no major incidents recorded in Collier County or elsewhere along the Gulf Coast. Based on the past occurrences and research, future tsunami events impacting the county is unlikely. The stable geological environment in the Gulf, combined with the absence of major historical tsunami activity, determines that future tsunami activity affecting Collier County remains minimal.

- *Probability: 1 – Unlikely*

CLIMATE CHANGE

Climate change is not anticipated to impact the frequency or occurrence of tsunamis in Collier County.

VULNERABILITY ASSESSMENT

PEOPLE

Many of the effects of tsunamis on people are the same as those for other types of coastal flooding, described in Sections 2.5.1 and 0. Certain groups within Collier County may be more vulnerable to a tsunami due to age, mobility issues, or socioeconomic factors. The county has a large elderly population, many of whom live in retirement communities near the coast. Older adults may face challenges with evacuation during an emergency, particularly in rapid response. Foremost, rescue missions may be life-threatening for rescuers if buildings are not structurally stable or if rescuing from waters of unknown depth.

- **Population Patterns**:
    - Increased seasonal population and tourists along beachfront communities during peak months.
    - Higher concentrations of vulnerable populations, such as seniors and families with young children, at popular beachfront parks.
    - New residential developments increasing population density in low-lying evacuation zones.
    - **Underserved Populations**: Coastal communities with limited transportation access may face evacuation challenges. Tourists unfamiliar with evacuation procedures may also contribute to congestion during a tsunami warning.

PROPERTY

Though highly unlikely, if a major tsunami were to impact Florida, the resulting damage to structure and critical infrastructure could be severe. Coastal communities in low-lying areas, such as those in Collier County, could experience widespread damage from the force of waters and from flooding, particularly where residential and commercial properties are located near the shoreline. Critical infrastructure, such as power plants, water treatment facilities, hospitals, and emergency services buildings, would also be at high risk. The force of the water could disrupt power grids, damage roads and bridges, and cause long-term interruptions to vital services, further complicating response and recovery efforts.

- **Land Use/Development Trends**:
    - Expansion of beachfront resorts, hotels, and residential complexes within potential tsunami inundation zones.
    - Development of critical evacuation routes through densely populated areas, increasing evacuation times.
    - Growth of recreational and commercial zones along the coast, potentially obstructing natural buffers such as dunes.

ENVIRONMENT

A major tsunami could lead to significant changes along the coast, affecting a wide range of coastal features and ecosystems. The impact would extend to both the immediate shoreline and the intra-coastal areas, leading to widespread alternatives in the landscape. For instance, tsunamis can reshape the coastline, leading the beaches eroding away, altering the natural contour of the shore and potentially causing the loss of valuable recreational and natural areas. Also, there’s a possibility of damage to vegetation. The force of a tsunami wave, combined with the debris carried by the water, could uproot or flatten vegetation. The restoration of damages vegetation and habitats require time and resources, and some ecosystems might not fully return to their pre-tsunami conditions. The alteration of coastal environments could have cascading efforts on local biodiversity and the ecological balance.

CONSEQUENCE ANALYSIS

The consequence analysis for tsunami hazards is shown in Table 2.90.

Table 2.90 – Consequence Analysis – Tsunami

Category	Consequences
Public	Vulnerable populations such as the elderly, are more susceptible to facing challenges in the event of a tsunami. Tsunamis are life threatening events.
Responders	Responders face similar risks as the general public but a heightened potential for life-threatening rescue missions if buildings are not structurally sound or if water depth is unknown.
Continuity of Operations (including Continued Delivery of Services)	Operations would likely be disrupted as a result of damages to buildings, roads, transportation infrastructure, communications infrastructure, utilities, and other key lifelines, making it difficult for emergency response efforts in the area.
Property, Facilities and Infrastructure	Many structures and critical infrastructure would be severely damaged from the force of the water and flooding effects.
Environment	The coast, beaches, mangroves, etc. could be altered.
Economic Condition of the Jurisdiction	Many businesses would be damaged and forced to close causing loss of revenue and loss of jobs.
Public Confidence in the Jurisdiction's Governance	As with other hazards, public confidence could be affected by the speed of response and recovery efforts.

HAZARD SUMMARY BY JURISDICTION

The following table summarizes tsunami hazard risk by jurisdiction. Tsunami hazard is not expected to change much by jurisdiction. Impact would be less severe further inland, therefore Seminole Tribe Immokalee Reservation was given a lower impact rating than the rest of the planning area.

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Everglades City	1	2	3	3	2	2.0	M
Seminole Tribe Immokalee Reservation	1	1	3	3	2	1.7	L
Marco Island	1	2	3	3	2	2.0	M
Naples	1	2	3	3	2	2.0	M
Unincorporated Collier County*	1	2	3	3	2	2.0	M

*Note: Unincorporated Collier County includes the following jurisdictions: Collier County Government, Collier County Public Schools, Collier Mosquito Control District, North Collier Fire Control District, Greater Naples Fire Rescue District, Immokalee Fire Control District, Naples Airport Authority, Port of the Isles, and South Florida Water Management District.

2.5.12 MAJOR TRANSPORTATION INCIDENTS

HAZARD BACKGROUND

Collier County depends on several key bridges, roads, and ferry crossings for access and services. This infrastructure is integral to the functioning of the communities in the planning area and would cause major disruptions should they become inaccessible.

Damage to any of this infrastructure could result from most of the natural and human-caused hazards described in this plan. In addition to a secondary or cascading impact from another primary hazard, infrastructure can fail as a result of faulty equipment, lack of maintenance, degradation over time, or accidental damage such as a barge colliding with a bridge support.

Building and construction standards along with regular inspection and maintenance can provide a degree of certainty as to the capacity of infrastructure to withstand some damages. However, accidental damage is unpredictable. Moreover, any damages that take a road or bridge out of service will likely require significant repairs that could take weeks or months to complete.

- *Warning Time: 4 – Less than six hours*
- *Duration: 4 – More than one week*

LOCATION

The primary transportation systems in the region are shown in Figure 2.48. The Florida Department of Transportation (FDOT) maintains a list of bridges in Florida. According to FDOT data as of June 2024, there are 392 bridges in Collier County, of which 223 were built in 1989 or prior. Of these, 83 were subsequently reconstructed; however, 43 reconstructions also occurred prior to 1989. All 183 bridges built or reconstructed in 1989 or prior are listed below in Table 2.91; bridges reconstructed after 1989 are omitted from this list. Bridges with a National Bridge Inventory (NBI) Rating of Structurally Deficient (SD) or Functionally Obsolete (FO) are indicated. Structurally deficient bridges are those with any component rated poor. Functionally obsolete bridges are those not built to standards that are used today. Based on their age or condition, the bridges listed here may be most likely to need maintenance, repair, or replacement now or in the near future. Aging infrastructure may also be more vulnerable to impacts from other natural or technological hazards. Collier County and its jurisdictions are susceptible to major transportation incidents.

Table 2.91 – Bridges Built in 1989 or Prior

Bridge Number	Structure Name	Year Built	Year Reconstructed	NBI Rating
30007	I-75 SB OVER FIREBIRD CANAL	1965	1989	
30019	SR-29 over Canal 019	1965		
30022	CR 850 OVER PRIVATE CANAL	1968		
30032	CR 837 / DEEP LAKE STRAND	1950		
30037	US-41 / DRAINAGE CANAL 037	1970		
30039	US-41 / DRAINAGE CANAL 039	1955		
30042	US-41 / DRAINAGE CANAL 042	1955		
30043	US-41/ DRAINAGE CANAL 043	1955		
30044	US-41 /DRAINAGE CANAL 044	1955		
30045	US-41 / DRAINAGE CANAL 045	1955		
30046	US-41/ DRAINAGE CANAL 046	1955		
30047	US-41 / DRAINAGE CANAL 047	1954		
30048	US-41/ DRAINAGE CANAL 048	1955		
30049	US-41/ DRAINAGE CANAL 049	1954		

Bridge Number	Structure Name	Year Built	Year Reconstructed	NBI Rating
30050	US-41 / DRAINAGE CANAL 041	1955		
30052	US-41/DRAINAGE CANAL 052	1955		
30054	US-41 / DRAINAGE CANAL 054	1955		
30055	US-41 / DRAINAGE CANAL 055	1955		
30057	US-41 over Canal 057	1955		
30058	US-41 over Canal 058	1955		
30059	US-41 over Canal 059	1954		
30060	US 41 over Canal 060	1950		
30061	US-41 OVER CANAL 061	1952		
30062	US-41 over Canal 062	1965		
30063	US-41 over Canal 063	1966		
30064	US-41 OVER CANAL 064	1966		
30065	US-41 over Canal 065	1952		
30066	US-41 over Canal 066	1952		
30067	US-41 over Canal 067	1952		
30068	US-41 over Canal 068	1952		
30069	US-41 OVER CANAL 069	1952		
30070	US-41 OVER CANAL 070	1952		
30071	US-41 over Canal 071	1953		
30072	US-41 over Canal 072	1952		
30073	US-41 OVER CANAL 073	1952		
30074	US-41 over Canal 074	1952		
30075	US-41 OVER CANAL 075	1952		
30076	US-41 OVER CANAL 076	1954		
30077	US 41 over Canal 077	1952	1965	
30078	US-41 OVER CANAL 078	1950	1965	
30079	US-41 over Canal 079	1949	1965	
30080	US-41 OVER CANAL 080	1955	1965	
30081	US-41 over Canal 081	1953	1965	
30082	US-41 over Canal 082	1954	1965	
30083	US-41 over Turner River	1949	1956	
30084	US-41 over Park Canal	1961		
30085	US-41 over Canal 085	1954	1965	
30086	US-41 over Canal 086	1955	1965	
30087	US-41 over Canal 087	1949	1957	
30088	US-41 over Canal 088	1949	1957	
30089	US-41 over Canal 089	1954		FO
30090	US-41 over Canal 090	1956		FO
30091	US-41 over Canal 091	1949	1956	
30092	US-41 over Canal 092	1941	1954	FO
30093	US-41 OVER K.S. STROUD CANAL	1949	1957	
30094	US-41/NEW RIVER STRAND CANAL	1949	1957	
30095	US-41 OVER BYPASS CANAL	1949	1957	
30097	US-41 over Canal 097	1949	1957	
30098	US-41 over Canal 098	1949	1956	
30099	US-41 over Canal 099	1949	1956	
30100	US-41 over Canal 100	1949	1956	

Bridge Number	Structure Name	Year Built	Year Reconstructed	NBI Rating
30101	US-41 over Canal 101	1949	1956	
30102	US-41 over Canal 102	1940	1956	
30103	US-41 over Canal 103	1949	1956	
30104	US-41 over Canal 104	1949	1956	
30105	US-41 over Canal 105	1949	1956	
30106	US-41 over Canal 106	1949	1956	
30107	US-41 over Canal 107	1949	1956	
30108	US-41 over Canal 108	1949	1956	
30109	US-41 over Canal 109	1949	1956	
30110	US-41 over Canal 110	1949	1956	
30111	US-41 over Canal 111	1950	1956	
30112	US-41 over Canal 112	1951	1956	
30113	US-41 over Canal 113	1951	1956	
30114	US-41 over Canal 114	1949	1956	
30115	US-41 over Canal 115	1949	1956	
30116	US-41 over Canal 116	1949	1956	
30117	US-41 over Canal 117	1949	1956	
30122	CR-29 OVER BARRON RIVER	1964		
30142	SR-82 over Canal 142	1950	1979	
30143	SR-82 over Canal 143	1950	1979	
30145	US41NB/FAKA UNION CANAL	1969		
30146	US-41 SB/FAHKA UNION CANAL	1969		
30147	CR-841 OVER HALFWAY CREEK	1971		
30148	JUDGE JOLLEY MEMORIAL	1969		
30149	BLUEBILL AVE / NAPLES PARK CANAL	1969		
30150	CR-858/FAKA UNION CANAL	1966		FO
30157	CR-837 OVER FAKAHATCHEE STRAND	1955		
30165	CR-837 / DEEP LAKE STRAND	1959		
30166	CR 839 / COPELAND PRAIRIE	1960		
30168	CR 839 / EAST HINSON MARSH	1962		
30169	CR 839 / EAST HINSON MARSH	1962		
30172	GOLDEN GATE PKWY/GORDON RIVER	1963		
30174	CR-951/BIG CYPRESS BASIN CANAL	1973	1984	
30181	US-41 OVER DUNRUSS CREEK	1974		
30184	GOODLAND BRIDGE/STAN GOBER MEMORIA	1975		
30185	AIRPORT PULLING ROAD/BIG CYPRESS BASI	1978		FO
30186	CR-31 OVER ROCK CREEK	1979		FO
30194	US-41 OVER GATOR HOLE	1976		
30195	I-75 NB OVER SR-951	1984		FO
30196	I-75 SB OVER SR-951	1984		FO
30207	N COLLIER BLVD OVER CLAM BAY	1979		
30210	W PLANTATION PKWY OVER EVERGLADES	1985		
30211	SR-29 over Canal 211	1986		
30212	SR-29 over Canal 212	1986		
30213	SR-29 over Canal 213	1986		
30221	I-75 SB/PENNINGTON CAMP	1989		
30222	I-75 NB/PENNINGTON CAMP	1989		

Bridge Number	Structure Name	Year Built	Year Reconstructed	NBI Rating
30223	I-75 NB OVER KOJAK CREEK	1989		
30224	I-75 SB OVER WEST HINTON	1989		
30225	I-75 NB OVER WEST HINTON	1989		
30226	I-75 SB/ FAKAHATCHE	1989		
30227	I-75 NB/FAKAHATCHEE STRA	1989		
30228	I-75 SB OVR SALT PRAIRIE	1989		
30229	I-75 NB OVR SALT PRAIRIE	1989		
30230	I-75 NB OVER NUNYA CREEK	1989		
30231	I-75 SB / SLOANS CROSS	1989		
30232	I-75NB / SLOANS CROSSING WC 10	1989		
30233	I-75 NB OVER FIREBIRD CANAL	1989		
30234	I-75SB / SHANNAS CROSSING WC 12	1989		
30235	I-75 NB/SHANNAS CROSSING WC 12	1989		
30290	SR-84 (DAVIS BLVD) OVER CANAL	1988		
30920	US-41 over Canal 920	1971		
30940	US-41 over Canal 940	1955		
30941	US-41 over Canal 941	1955		
30951	US-41 over Canal 951	1954		
34006	STEWART BLVD/PICAYUNE STRAND	1967		
34008	STEWART BLVD/DRAINAGE CANAL	1967		
34011	TROPICANA BLVD NB/TROPICANA CANAL	1978		SD
34012	SW 25TH AVE / CR-951 CANAL	1965		
34014	GREEN BLVD/GOLDEN GATE CANAL	1960		FO
34017	TROPICANA BLVD SB/TROPICANA CANAL	1978		
34019	32ND AVE SW OVER SHELL CANAL	1965		
34030	GOLDEN GATE BLVD/FAKA UNION CANAL	1965		
34032	WILSON BLVD/CYPRESS CANAL	1960		
34036	CYPRESS WAY / COCOHATCHEE CNL	1966		
34042	18TH AVE NE/GOLDEN GATE CANAL	1965		
34044	18TH AVE NE/GOLDEN GATE DRAIN CANAL	1965		
34048	RANDALL BLVD/GOLDEN GATE MAIN CANAL	1965		FO
34050	RANDALL BLVD/FAKA UNION CANAL	1965		
34052	43RD AV NE/FAKA UNION CANAL	1965		
34054	56TH AVE NE/CIA DRAIN CANAL	1965		
34102	CORONADO PKWY EB/CORONADO CANAL	1972		FO
34103	CORONADO PKWY WB/CORONADO CANAL	1967		FO
34105	SUNSHINE BLVD/GREEN CANAL	1967		
34106	20TH PLACE SW OVER HUNTER CANAL	1967		
34107	SUNSET RD/SUNSHINE CANAL	1980		
34108	18TH AVE SW OVER GREEN CANAL	1968		
34111	PALM DRIVE OVER CANAL	1962		
34112	CAXAMBAS COURT OVER ROBERTS BAY	1973		SD
34113	WINTERBERRY DRIVE OVER SMOKEHOUSE	1967		FO
34116	GOLDENROD AVE OVER SMOKEHOUSE BAY	1972		SD
34117	KENDALL DR OVER CLAM BAY	1972		
34118	HERNANDO DR OVER CLAM BAY	1972		
34119	BLACKMORE CT OVER CLAM BAY	1972		SD

Bridge Number	Structure Name	Year Built	Year Reconstructed	NBI Rating
34120	KENDALL DR OVER COLLIER BAY	1972		
34122	TED CURCIE RD OVER DRAINAGE CANAL	1967		
34126	SANDHILL ST OVER TIDAL CANAL	1986		SD
34127	SOUTH SEAS COURT OVER TIDAL	1986		SD
34133	CR-896 OVER GORDON CANAL	1983		
34135	TOWER RD OVER EAGLE CREEK	1983		
40004	CR-761 OVER PEACE RIVER	1959		FO
40005	BROWNVILLE RD OVER PEACE	1964		
40009	CUBITIS AVE OVER MARE BRANCH	1936		
40010	CR-760 OVER PEACE RIVER	1967		FO
40012	CR-763 OVER HOG BAY CRK	1955		
40013	CR-763 OVER ROCHELLE CREEK	1958		
40015	CR-763 OVER STREAM	1958	1989	
40022	CR-769 OVER HORSE CREEK	1959		FO
40024	SR-70 OVER WHIDDEN CREEK	1960		FO
40025	CR-761 OVER PEACE RIVER	1959		FO
40026	NW BROWNVILLE RD OVER PEACE RELIEF	1964		
40027	SR-70 OVER JOSHUA CREEK	1959		FO
40029	CR-760 OVER MUDDY CREEK	1967		FO
40030	CR-769 OVER DEBORAHS CR	1960		
40031	SR-70 OVER TIGER BAY	1959	1979	
40032	SR-70 OVER MOSSY GULLY	1959		
40033	SR-70 OVER DCI CANAL	1959		
40035	SR-31 OVER PIERCE WOOD CREEK	1956		
40036	SR-31 OVER HOG BAY CREEK	1970		
40037	SR-70 OVER LONG POINT MARSH	1959		
40043	CR-661A OVER MUELLER CREEK	1960		SD
40044	CR-661 OVER BUNKER CREEK	1979		SD
30007	I-75 SB OVER FIREBIRD CANAL	1965	1989	
30019	SR-29 over Canal 019	1965		
30022	CR 850 OVER PRIVATE CANAL	1968		
30032	CR 837 / DEEP LAKE STRAND	1950		
30037	US-41 / DRAINAGE CANAL 037	1970		
30039	US-41 / DRAINAGE CANAL 039	1955		
30042	US-41 / DRAINAGE CANAL 042	1955		
30043	US-41/ DRAINAGE CANAL 043	1955		
30044	US-41 /DRAINAGE CANAL 044	1955		
30045	US-41 / DRAINAGE CANAL 045	1955		

Source: Florida Department of Transportation, June 2024

Bridges rated as structurally deficient are listed in

Table **2.92** along with their current average daily traffic.

Table 2.92 – Structurally Deficient Bridges in Collier County

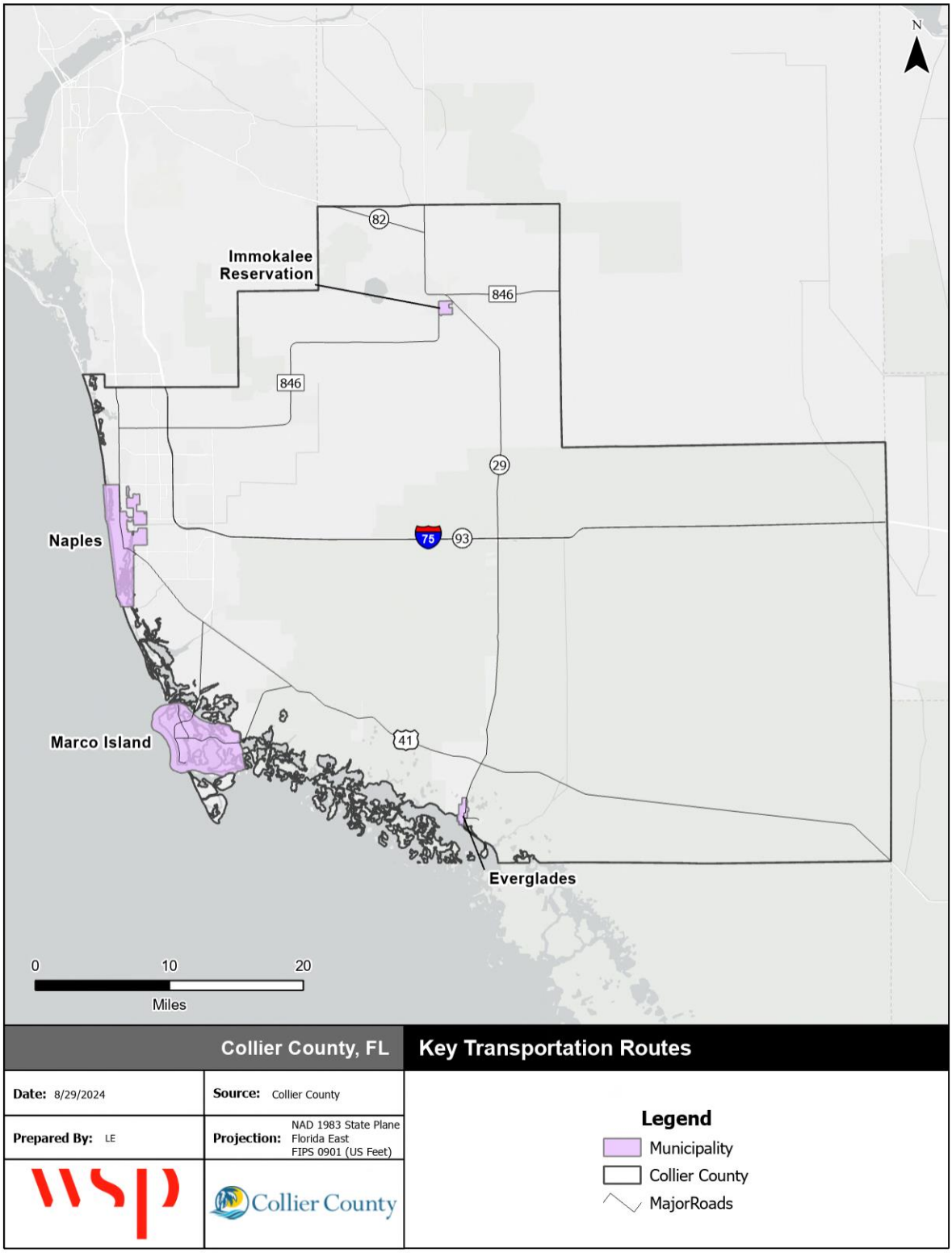
Bridge Number	Structure Name	Average Daily Traffic
34011	TROPICANA BLVD NB/TROPICANA CANAL	580
34112	CAXAMBAS COURT OVER ROBERTS BAY	380
34116	GOLDENROD AVE OVER SMOKEHOUSE BAY	640
34119	BLACKMORE CT OVER CLAM BAY	1,100
34126	SANDHILL ST OVER TIDAL CANAL	620
34127	SOUTH SEAS COURT OVER TIDAL	550
40043	CR-661A OVER MUELLER CREEK	1,070
40044	CR-661 OVER BUNKER CREEK	950

Source: Florida Department of Transportation, June 2024

Per the Bureau of Transportation Statistics, the number of bridges rated as being in “poor” or “good” condition has slightly decreased over the last decade, while the number of bridges in “fair” condition has risen. According to the American Society of Civil Engineers, more than half a million daily crossings occur over 400 bridges across Florida that have been categorized as structurally deficient. As of June 2022, data from the Federal Highway Administration indicates that there are 4 bridges in poor condition in Collier County and 74 bridges in fair condition.

Spatial Extent: 2 – Small

Figure 2.48 – Key Transportation Routes in the Planning Area



Source: Collier County

EXTENT

The significance of any transportation infrastructure failure will vary depending on the location and nature of the infrastructure itself. The loss of a local road may have only minor impacts limited to the immediate area. However, the loss of a major highway or key bridge could cause significant disruption across the Region. Depending on time of day and the onset of the failure, significant casualties are also possible: the 1967 Silver Bridge collapse between Point Pleasant, West Virginia and Gallipolis, Ohio and the 1980 Sunshine Skyway Bridge collapse outside St. Petersburg, Florida killed 46 and 35 people respectively. If a bridge or key route were closed or failed during a hurricane evacuation, it could put thousands of residents and visitors at risk.

According to a report published by The National Transportation Research Group known as TRIP, approximately $1.1 trillion worth of goods and commodities are shipped to and from the state of Florida every year. The majority of these goods are carried by trucks using the state's highway system. In addition to casualties, the conditions of highways and local roadways could impact the accessibility for goods to be transported by trucks that are deemed necessary for residents living in the region.

- *Impact: 3 – Critical*

HISTORICAL OCCURRENCES

A 2014 analysis of bridge failure rates by Dr. Wesley Cook of Utah State University found that an average of 128 bridges collapse every year in the U.S.; 53% of bridges that collapsed had been rated as structurally deficient prior to their collapse. Only 4% of bridge collapses resulted in loss of life.

In 2022, a review of statistical characteristics of bridge failures was conducted by a Highway Research Center at Chang'an University and found that design error, construction mistakes, hydraulic, collision, and overload are the top 5 leading causes of bridge failures.

PROBABILITY OF FUTURE OCCURRENCE

The likelihood of a major transportation infrastructure failure occurring in Collier County is difficult to quantify. The continuing age and deterioration of America's transportation infrastructure, coupled with increasing traffic and declining public investment in maintaining our infrastructure, indicate that road and bridge failures are likely to be more common in future decades than they have in the past.

The American Society of Civil Engineers (ASCE) released their most recent Report Card for America's Infrastructure in 2021 giving the U.S an overall grade of "C-" on infrastructure conditions. Meanwhile, the state of Florida received an overall grade of "C." As of May 2024, 32% of Florida's major roads are in poor or mediocre condition. Driving on deteriorated roads causes an extra $570 a year to each Floridian driver.

- *Probability: 2 – Possible*

CLIMATE CHANGE

Climate change could cause more major infrastructure incidents in some cases. As sea level rises, bridges may be more vulnerable to flooding or scour, roads could be flooded as well, and other types of transportation could be hindered.

VULNERABILITY ASSESSMENT

The impacts of transportation failures vary widely by the type of system, as well as the time of day and season of the failure.

METHODOLOGIES AND ASSUMPTIONS

Vulnerability to transportation infrastructure failures was assessed based on past occurrences nationally and internationally as well as publicly available information on infrastructure vulnerability.

PEOPLE

People can be injured or killed during transportation infrastructure failures. As noted above, the U.S. averages five fatality-causing bridge collapses per year, although data on the number of fatalities involved was not available. Numbers of non-fatal injuries was also not available.

Aside from direct injuries and fatalities, transportation failures can result in significant losses of time and money as individuals and commercial shipments are detoured or blocked. Disruption of transportation systems can limit the ability of emergency services and utility work crews to reach affected areas and can put some members of the public at severe risk if they are unable to reach needed medical services, such as dialysis patients. In extreme cases, a transportation failure could leave residents stranded without power, food, or other emergency supplies.

- **Population Patterns**:
    - Population growth near major roadways and transportation hubs increases risk exposure.
    - Higher population concentration in areas with limited public transportation options, increasing road traffic.
    - Vulnerable populations, such as schoolchildren and seniors, are more exposed during incidents near transit hubs.
    - **Underserved Populations**: Low-income residents relying on public transportation may be more affected by incidents causing service disruptions. Underserved communities living near major highways may also be more exposed to transportation-related accidents.

PROPERTY

The primary property damage from transportation infrastructure failures is to the infrastructure itself, as well as to privately-owned automobiles.

- **Land Use/Development Trends**:

- Growth in commercial and logistics hubs, increasing the volume of freight traffic.
- Development of new housing near transportation corridors without adequate buffer zones.
- Expansion of urban centers requiring new transit systems and emergency access routes.

ENVIRONMENT

Transportation infrastructure failures can result in oil spills or other hazardous materials releases that can severely impact the environment in the surrounding area.

CONSEQUENCE ANALYSIS

Table **2.93** summarizes the potential consequences of a transportation infrastructure failure.

Table 2.93 – Consequence Analysis – Transportation Infrastructure Failure

Category	Consequences
Public	Potential injuries and fatalities.
Responders	Potential injuries and fatalities, as well as potentially significant delays to response times.
Continuity of Operations (including Continued Delivery of Services)	Loss of key roads or bridges can affect delivery of services.
Property, Facilities and Infrastructure	In addition to the loss of transportation infrastructure itself, sustained road closure can impact supply chain deliveries to other critical facilities.
Environment	Potential for oil spills or other hazardous materials releases.
Economic Condition of the Jurisdiction	Delays in movement of commuters, as well as good and services
Public Confidence in the Jurisdiction's Governance	Can cause loss of confidence in government's ability to maintain other critical infrastructure

HAZARD SUMMARY BY JURISDICTION

The following table summarizes major transportation incident risk by jurisdiction. Risk does not vary substantially between jurisdictions.

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Everglades City	2	3	1	4	4	2.5	M
Seminole Tribe Immokalee Reservation	2	3	1	4	4	2.5	M
Marco Island	2	3	1	4	4	2.5	M
Naples	2	3	1	4	4	2.5	M
Unincorporated Collier County*	2	3	1	4	4	2.5	M

*Note: Unincorporated Collier County includes the following jurisdictions: Collier County Government, Collier County Public Schools, Collier Mosquito Control District, North Collier Fire Control District, Greater Naples Fire Rescue District, Immokalee Fire Control District, Naples Airport Authority, Port of the Isles, and South Florida Water Management District.

2.5.13 PANDEMIC OUTBREAK

HAZARD DESCRIPTION

Public health emergencies can take many forms—disease epidemics, large-scale incidents of food or water contamination, or extended periods without adequate water and sewer services. There can also be harmful exposure to chemical, radiological, or biological agents, and largescale infestations of disease-carrying insects or rodents. The first part of this section focuses on emerging public health concerns and potential pandemics, while the second part addresses natural and human-caused air and water pollution.

Public health emergencies can occur as primary events by themselves, or they may be secondary to another disaster or emergency, such as tornado, flood, or hazardous material incident. For more information on those particular incidents, see Sections 2.5.2 (Severe Storms and Tornadoes), 2.5.1 (Flood), and 2.5.14 (Hazardous Materials). The common characteristic of most public health emergencies is that they adversely impact, or have the potential to adversely impact, many people. Public health emergencies can be worldwide or localized in scope and magnitude.

The Florida Department of Health in Collier County has partnered with Collier Emergency Management and the local Red Cross chapter to plan and prepare for public health emergencies. The Department of Health provides resources and guidance in support of business, community, faith-based organization, health care provider, and individual preparedness.

The primary communicable, or infectious, disease addressed within this plan is influenza:

Influenza - Whether natural or manmade, health officials say the threat of a dangerous new strain of influenza (flu) virus in pandemic proportions is a very real possibility in the years ahead. Unlike most illnesses, the flu is especially dangerous because it is spread through the air. A classic definition of influenza is a respiratory infection with fever. Each year, flu infects humans and spreads around the globe. There are three types of influenza virus: Types A, B, and C. Type A is the most common, most severe, and the primary cause of flu epidemics. Type B cases occur sporadically and sometimes as regional or widespread epidemics. Type C cases are quite rare and hence sporadic, but localized outbreaks have occurred. Seasonal influenza usually is treatable, and the mortality rate remains low. Each year, scientists estimate which strain of flu is likely to spread, and they create a vaccine to combat it. A flu pandemic occurs when the virus suddenly changes or mutates and undergoes an —antigenic shift, permitting it to attach to a person's respiratory system and leave the body's immune system defenseless against the invader.

Additional diseases of public health concern include tuberculosis, Smallpox, St. Louis Encephalitis, Meningitis, Lyme disease, West Nile, SARS, Zika, and Ebola. These

communicable diseases are introduced within this plan, but full vulnerability analyses are not included at this time.

Tuberculosis - Tuberculosis, or TB, is the leading cause of infectious disease worldwide. It is caused by a bacteria called Mycobacterium tuberculosis that most often affects the lungs. TB is an airborne disease spread by coughing or sneezing from one person to another. The World Health Organization (WHO) estimates that one-third of the world's population, approximately two billion people, has latent TB, which means people have been infected by TB bacteria but are not yet ill with the disease and cannot transmit the disease. In 2022, an estimated 10.6 million people fell ill with TB and 1.3 million died from the disease (including 167,000 people with HIV). Over 80% of TB deaths occur in low- and middle- income countries.

Smallpox - Smallpox is a contagious, sometimes fatal, infectious disease. There is no specific treatment for smallpox disease, and the only prevention is vaccination. Smallpox is caused by the variola virus that emerged in human populations thousands of years ago. It is generally spread by face- to-face contact or by direct contact with infected bodily fluids or contaminated objects (such as bedding or clothing). A person with smallpox is sometimes contagious with onset of fever, but the person becomes most contagious with the onset of rash. The rash typically develops into sores that spread over all parts of the body. The infected person remains contagious until the last smallpox scab is gone. Smallpox outbreaks have occurred periodically for thousands of years, but the disease is now largely eradicated after a worldwide vaccination program was implemented. After the disease was eliminated, routine vaccination among the general public was stopped. The last case of smallpox in the United States was in 1949.

St. Louis Encephalitis - In the United States, the leading type of epidemic flaviviral Encephalitis is St. Louis encephalitis (SLE), which is transmitted by mosquitoes that become infected by feeding on birds infected with the virus. SLE is the most common mosquito-transmitted pathogen in the United States. There is no evidence to suggest that the virus can be spread from person to person.

Meningitis - Meningitis is an infection of fluid that surrounds a person’s spinal cord and brain. High fever, headache, and stiff neck are common symptoms of meningitis, which can develop between several hours to one to two days after exposure. Meningitis can be caused by either a viral or bacterial infection; however, a correct diagnosis is critically important, because treatments for the two varieties differ. Meningitis is transmitted through direct contact with respiratory secretions from an infected carrier. Primary risk groups include infants and young children, household contact with patients, and refugees. In the United States, periodic outbreaks continue to occur, particularly among adolescents and young adults. About 2,600 people in the United States get the disease each year. Generally, 10 to 14 percent of cases are fatal, and 11 to 19 percent of those who recover suffer from permanent hearing loss, mental retardation, loss of limbs, or other serious effects. Two vaccines are available in the United States.

Lyme Disease - Lyme disease was named after the town of Lyme, Connecticut, where an unusually large frequency of arthritis-like symptoms was observed in children in 1977. It was later found that the problem was caused by bacteria transmitted to humans by infected deer ticks, causing an estimated 300,000 new cases of Lyme disease in the

United States each year (however, the disease is greatly under-reported). Lyme disease bacteria are not transmitted from person to person. Following a tick bite, 80 percent of patients develop a red —bullseye rash accompanied by tiredness, fever, headache, stiff neck, muscle aches, and joint pain. If untreated, some patients may develop arthritis, neurological abnormalities, and cardiac problems, weeks to months later. Lyme disease is rarely fatal. During early stages of the disease, oral antibiotic treatment is generally effective, while intravenous treatment may be required in more severe cases.

West Nile Virus - West Nile virus is a flavivirus spread by infected mosquitoes and is commonly found in Africa, West Asia, and the Middle East. It was first documented in the United States in 1999. Although it is not known where the U.S. virus originated, it most closely resembles strains found in the Middle East. It is closely related to St. Louis encephalitis and can infect humans, birds, mosquitoes, horses, and other mammals.

Most people who become infected with West Nile virus will have either no symptoms or only mild effects. However, on rare occasions, the infection can result in severe and sometimes fatal illness. There is no evidence to suggest that the virus can be spread from person to person.

An abundance of dead birds in an area may indicate that West Nile virus is circulating between the birds and mosquitoes in that area. Although birds are particularly susceptible to the virus, most infected birds survive. The continued expansion of West Nile virus in the United States indicates that it is permanently established in the Western Hemisphere.

Coronaviruses – Coronaviruses are a large family of viruses found in both animals and humans and are known to cause illness ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS), Severe Acute Respiratory Syndrome (SARS), and Novel Coronavirus (COVID- 19). Coronaviruses can cause respiratory infections and can lead to serious illnesses, like pneumonia, and can be deadly. Typical coronavirus symptoms include fever, cough, headache, runny nose, and sore throat. MERS was first reported in 2012 in Saudi Arabia and spread to more than 25 countries. It produced symptoms that often progressed to pneumonia and 30-40 percent of cases were fatal. SARS emerged in 2002 and spread to more than two dozen countries. It caused acute respiratory distress and had a mortality rate of about 10 percent.

The most significant recent coronavirus, COVID-19, first emerged in Wuhan, China in 2019 and rapidly spread across the world. According to CDC data, as of February 2022, there had been over 78.5 million cases of COVID-19 reported in the United States. COVID-19 spreads when an infected person breathes out droplets and very small particles that contain the virus. These droplets and particles can be breathed in by other people or land on their eyes, noses, or mouth. Symptoms include fever, cough, shortness of breath, fatigue, loss of taste and smell, and more. Symptoms range from mild to severe illness and typically appear between 2-14 days after exposure to the virus.

Zika Virus - Discovered in the Zika forest of Uganda in 1947, the Zika virus is a member of the flavivirus family. It is transmitted to humans through the bite of an infected Aedes species mosquito (Ae. aegypti and Ae. albopictus). Zika virus can also be transmitted from an infected pregnant woman to her baby during pregnancy and can result in serious birth defects, including microcephaly. Less commonly, the virus can be spread through

intercourse or blood transfusion. However, most people infected with the Zika virus do not become sick.

Ebola - Previously known as Ebola hemorrhagic fever, is a rare and deadly disease caused by infection with one of the Ebola virus species. It was first discovered in 1976 near the Ebola River in what is now the Democratic Republic of the Congo. Since then, outbreaks have appeared sporadically in Africa.

- *Warning Time: 1 – More than 24 hours*
- *Duration: 4 – More than one week*

LOCATION

Infectious disease outbreaks can occur anywhere in the planning area, especially where there are groups of people in close quarters. Collier County and its jurisdictions are susceptible to pandemic outbreaks.

- *Spatial Extent: 3 – Moderate*

EXTENT

When on an epidemic scale, diseases can lead to high infection rates in the population causing isolation, quarantine, and potential mass fatalities. An especially severe influenza pandemic or other major disease outbreak could lead to high levels of illness, death, social disruption, and economic loss. Impacts could range from school and business closings to the interruption of basic services such as public transportation, health care, and the delivery of food and essential medicines.

Table 2.94 describes the World Health Organization's six main phases to a pandemic flu as part of their planning guidance.

Table 2.94 – World Health Organization's Pandemic Flu Phases

Phase	Description
1	No animal influenza virus circulating among animals have been reported to cause infection in humans.
2	An animal influenza virus circulating in domesticated or wild animals is known to have caused infection in humans and is therefore considered a specific potential pandemic threat.
3	An animal or human-animal influenza reassortant virus has caused sporadic cases or small clusters of disease in people but has not resulted in human-to-human transmission sufficient enough to sustain community-level breakouts.
4	Human-to-human transmission of an animal or human-animal influenza reassortant virus able to sustain community-level breakouts has been verified.
5	The same identified virus has caused sustained community-level outbreaks in two or more countries in one WHO region.
6	In addition to the criteria defined in Phase 5, the same virus has caused sustained community-level outbreaks in at least one other country in another WHO region.
Post-Peak Period	Levels of pandemic influenza in most countries with adequate surveillance have dropped below peak levels.
Post-Pandemic Period	Levels of influenza activity have returned to levels seen for seasonal influenza in most countries with adequate surveillance.

Source: World Health Organization

- *Impact: 3 – Critical*

HISTORICAL OCCURRENCES

PUBLIC HEALTH EMERGENCIES – INFLUENZA PANDEMICS

Since the early 1900s, five lethal pandemics have swept the globe: Spanish Flu of 1918-1919; Asian Flu of 1957-1958; Hong Kong Flu of 1968-1969; Swine Flu of 2009-2010; and COVID-19 of 2019 to present. The Spanish Flu was the most severe pandemic in recent history. The number of deaths was estimated to be 50-100 million worldwide and 675,000 in the United States. Its primary victims were mostly young, healthy adults. The 1957 Asian Flu pandemic killed about 70,000 people in the United States, mostly the elderly and chronically ill. The 1968 Hong Kong Flu pandemic killed 34,000 Americans. The 2009 Swine Flu caused 12,469 deaths in the United States. As of March 2022, the COVID – 19 pandemic has caused over 947,000 deaths in the U.S. and over 5.9 million death globally. These historic pandemics are further defined in the following paragraphs along with several “pandemic scares”.

SPANISH FLU (H1N1 VIRUS) OF 1918-1919

In 1918, when World War I was in its fourth year, another threat began that rivaled the war itself as the greatest killer in human history. The Spanish Flu swept the world in three waves during a two-year period, beginning in March 1918 with a relatively mild assault.

The first reported case occurred at Camp Funston (Fort Riley), Kansas, where 60,000 soldiers trained to be deployed overseas. Within four months, the virus traversed the globe, as American soldiers brought the virus to Europe. The first wave sickened thousands of people and caused many deaths (46 died at Camp Funston), but it was considered mild compared to what was to come. The second and deadliest wave struck in the autumn of 1918 and killed millions. At Camp Funston alone, there were 14,000 cases and 861 deaths reported during the first three weeks of October 1918.

Outbreaks caused by a new variant exploded almost simultaneously in many locations including France, Sierra Leone, Boston, and New York City, where more than 20,000 people died that fall. The flu gained its name from Spain, which was one of the hardest hit countries. From there, the flu went through the Middle East and around the world, eventually returning to the United States along with the troops.

Of the 57,000 Americans who died in World War I, 43,000 died as a result of the Spanish Flu. At one point, more than 10 percent of the American workforce was bedridden. By a conservative estimate, a fifth of humans suffered the fever and aches of influenza between 1918 and 1919 and 20 million people died. The Spanish Flu came to Tampa Bay, Florida at the end of September 1918, and within a month killed 2,712 Floridians. The state lost a total of 4,000 citizens that year while those who initially survived would die later from pneumonia as their bodies were weakened by the physical impacts of the Spanish Flu.

ASIAN FLU (H2N2 VIRUS) OF 1957-1958

This influenza pandemic was first identified in February 1957 in the Far East. Unlike the Spanish Flu, the 1957 virus was quickly identified, and vaccine production began in May 1957. Several small outbreaks occurred in the United States during the summer of 1957, with infection rates highest among school children, young adults, and pregnant women; however, the elderly had the highest rates of death. A second wave of infections occurred early the following year, which is typical of many pandemics.

HONG KONG FLU (H3N2 VIRUS) OF 1968-1969

This influenza pandemic was first detected in early 1968 in Hong Kong. The first cases in the United States were detected in September 1968, although widespread illness did not occur until December. This became the mildest pandemic of the twentieth century, with those over the age of 65 the most likely to die. People infected earlier by the Asian Flu virus may have developed some immunity against the Hong Kong Flu virus. Also, this pandemic peaked during school holidays in December, limiting student-related infections.

Pandemic Flu Threats: Swine Flu of 1976, Russian Flu of 1977, and Avian Flu of 1997 and 1999

Three notable flu scares occurred in the twentieth century. In 1976, a swine-type influenza virus appeared in a U.S. military barracks (Fort Dix, New Jersey). Scientists determined it was an antigenically drifted variant of the feared 1918 virus. Fortunately, a pandemic never materialized, although the news media made a significant argument about the need for a Swine Flu vaccine.

In May 1977, influenza viruses in northern China spread rapidly and caused epidemic disease in children and young adults. By January 1978, the virus, subsequently known as the Russian Flu, had spread around the world, including the United States. A vaccine was developed for the virus for the 1978–1979 flu season. Because illness occurred primarily in children, this was not considered a true pandemic.

In March 1997, scores of chickens in Hong Kong's rural New Territories began to die—6,800 on three farms alone. The Avian Flu virus was especially virulent and made an unusual jump from chickens to humans. At least 18 people were infected, and six died in the outbreak. Chinese authorities acted quickly to exterminate over one million chickens and successfully prevented further spread of the disease. In 1999, a new avian flu virus appeared. The new virus caused illness in two children in Hong Kong. Neither of these avian flu viruses started pandemics.

SWINE FLU (H1N1 VIRUS) OF 2009–2010

This influenza pandemic emerged from Mexico in 2009. The first U.S. case of H1N1, or Swine Flu, was diagnosed on April 15, 2009. The U.S. government declared H1N1 a public health emergency on April 26. By June, approximately 18,000 cases of H1N1 had been reported in the United States. A total of 74 countries were affected by the pandemic.

The CDC estimates that 43 million to 89 million people were infected with H1N1 between April 2009 and April 2010. There were an estimated 8,870 to 18,300 H1N1 related deaths.

On August 10, 2010, the World Health Organization (WHO) declared an end to the global H1N1 flu pandemic.

CORONAVIRUS DISEASE (COVID-19), 2019-2024

COVID-19 was caused by severe acute respiratory syndrome coronavirus 2 (SARS-Cov-2). First identified in Wuhan, China in December 2019, the virus quickly spread throughout China and then globally. In the United States, COVID-19 was first identified in late January in Washington State and rapidly spread throughout the Country, with large epicenters on both the east and west coasts. On March 13, 2020 the U.S. enters a nationwide emergency and by March 15, 2020 U.S. states begin to shut down to prevent the spread of COVID-19. Almost a year later the U.S. has administered over 100 million vaccinations. In June 2021 the first major variant, the Delta variant, becomes dominant in the U.S. which kicks off a third wave of infections during the summer of 2021. By December 20, 2021, Omicron, the second and most dominant variant in the U.S., had been detected in most U.S. states and territories. The Omicron variant spread more easily than the original virus that caused COVID-19 and the Delta variant.

According to the Johns Hopkins Coronavirus Resource Center, from the start of the pandemic to March 2023, there were over 103 million confirmed cases of COVID-19 in the U.S. resulting in over 1.1 million deaths. In Florida, there were over 7.5 million cases and 86,850 deaths due to COVID-19. Johns Hopkins stopped collecting data as of March 10, 2023. The COVID-19 virus has transitioned to endemic but maintains dual seasonality, with cases peaking twice a year.

PUBLIC HEALTH EMERGENCIES – OTHER PANDEMICS

ST. LOUIS ENCEPHALITIS, 1964-2005

Between 1964 and 2005, there were 4,651 confirmed cases of SLE in the United States. In 1990 alone, there were 223 cases in Florida. It should be noted, however, that less than 1 percent of SLE infections are clinically apparent, so most infections remain undiagnosed. Illnesses range from mild headaches and fever to convulsions, coma, and paralysis. The last major outbreak of SLE occurred in the Midwest from 1974 to 1977, when over 2,500 cases were reported in 35 states. The most recent outbreak of St. Louis encephalitis was in 1999 in New Orleans, Louisiana, with 20 reported cases. The disease is generally milder in children than in adults, with the elderly at highest risk for severe illness and death. Approximately 3 to 30 percent of cases are fatal; no vaccine against SLE exists. In 2014, two U.S. cases were reported and were the first human cases since 2002.

MENINGITIS, 1996-1997, 2005

During 1996 and 1997, 213,658 cases of meningitis were reported, along with 21,830 deaths, in Africa. Between 2005 and 2014, Florida reported 354 cases of meningitis. In 2022, 68 total cases were reported in Florida with 41 cases reported in 2023.

LYME DISEASE, 2015

In the United States, Lyme disease is mostly found in the northeastern, mid-Atlantic, and upper north-central regions, and in several counties in northwestern California. In 2019,

93-percent of confirmed Lyme Disease cases were reported from 14 states: Connecticut, Delaware, Maine, Maryland, Minnesota, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Virginia, West Virginia, and Wisconsin. Lyme disease is the most commonly reported vector-borne illness in the United States. According to the CDC, recent estimates based on insurance records suggest that approximately 476,000 Americans are diagnosed and treated with Lyme disease each year. This disease does not occur nationwide and is concentrated heavily in the northeast and upper Midwest. In 2022, Collier County had 3 probable cases of Lyme Disease and zero confirmed cases.

SEVERE ACUTE RESPIRATORY SYNDROME, 2003

During November 2002-July 2003, a total of 8,098 probable SARS cases were reported to the World Health Organization (WHO) from 29 countries. In the United States, only 8 cases had laboratory evidence of infection. There were no confirmed cases in Florida. Since July 2003, when SARS transmission was declared contained, active global surveillance for SARS disease has detected no person-to-person transmission. CDC has therefore archived the case report summaries for the 2003 outbreak.

ZIKA VIRUS, 2015

In May 2015, the Pan American Health Organization issued an alert noting the first confirmed case of a Zika virus infection in Brazil. Since that time, Brazil and other Central and South America countries and territories, as well as the Caribbean, Puerto Rico, and the U.S. Virgin Islands have experienced ongoing Zika virus transmission. In August 2016, the Centers for Disease Control and Prevention (CDC) issued guidance for people living in or traveling to a 1-square-mile area in Miami, Florida, identified by the Florida Department of Health as having mosquito-borne spread of Zika. In October 2016, the transmission area was expanded to include a 4.5-square-mile area of Miami Beach and a 1-squre mile area of Miami-Dade County. In addition, all Miami-Dade County was identified as a cautionary area with an unspecified level of risk. As of the end of 2018, the CDC reported 74 cases of Zika across the United States. As of September 2024, there are no current local transmission of Zika virus in the continental U.S. or territories. The last cases of local Zika transmission by mosquitos in the continental U.S. were in Florida and Texas in 2016-17 and no reported cases from U.S. territories since 2019.

EBOLA, 2014-2016

Most recently, in March 2014, West Africa experienced the largest outbreak of Ebola in history. Widespread transmission was found in Liberia, Sierra Leone, and Guinea with the number of cases totaling 28,616 and the number of deaths totaling 11,310. In the United States, four cases of Ebola were confirmed in 2014 including a medical aid worker returning to New York from Guinea, two healthcare workers at Texas Presbyterian Hospital who provided care for a diagnosed patient, and the diagnosed patient who traveled to Dallas, Texas from Liberia. All three healthcare workers recovered. The diagnosed patient passed away in October 2014. In March 2016, the WHO terminated the public health emergency for the Ebola outbreak in West Africa.

PROBABILITY OF FUTURE OCCURRENCE

It is impossible to predict when the next pandemic will occur or its impact. The CDC continually monitors and assesses pandemic threats and prepares for an influenza pandemic and other outbreaks. Because the CDC cannot predict how severe a future pandemic will be, advance planning is needed at the national, state and local level; this planning is done through public health partnerships at the national, state and local level.

Today, a much larger percentage of the world's population is clustered in cities, making them ideal breeding grounds for epidemics. Additionally, the explosive growth in air travel means the virus could literally be spread around the globe within hours. Under such conditions, there may be very little warning time. Most experts believe we will have just one to six months between the time that a dangerous new influenza strain is identified and the time that outbreaks begin to occur in the United States. Outbreaks are expected to occur simultaneously throughout much of the nation, preventing shifts in human and material resources that normally occur with other natural disasters. These and many other aspects make influenza pandemic unlike any other public health emergency or community disaster.

- *Probability: 2 – Possible*

CLIMATE CHANGE

According to the U.S. Global Change Research Program, the influences of climate change on public health are significant and varied. The influences range from the clear threats of temperature extremes and severe storms to less obvious connections related to insects. Climate and weather can also affect water and food quality in particular areas, with implications for public health.

Hot days can be unhealthy—even dangerous. High air temperatures can cause heat stroke and dehydration and affect people's cardiovascular and nervous systems. Florida is heavily influenced by tropical moisture since the state is surrounded by the Atlantic Ocean and the Gulf of Mexico. The heat index can get dangerously high, especially in the summer. In recent decades, severe heat waves have killed hundreds of people across the Southeast. Heat stress is expected to increase as climate change brings hotter summer temperatures and more humidity. Certain people are especially vulnerable, including children, the elderly, the sick, and the poor.

Higher temperatures and wetter conditions tend to increase mosquito and tick activity, leading to an increased risk of zoonotic diseases. Mosquitos are known to carry diseases such as West Nile virus (WNV), La Crosse/California encephalitis, Jamestown Canyon virus, St. Louis encephalitis, and Eastern equine encephalitis. The two major concerns associated with warmer and wetter conditions are that the mosquito species already found in Florida and the diseases that they carry will become more prevalent, and that new species carrying unfamiliar diseases will start to appear for the first time.

Warmer winters with fewer hard freezes in areas that already see WNV-carrying mosquitos are likely to observe both a higher incidence of WNV and a longer WNV season, ultimately leading to an increase in human cases. Non-native mosquito species

may move into Florida if the climate becomes more suitable for them, bringing with them diseases such as Jamestown Canyon virus, Chikungunya, and Dengue Fever.

Ticks are also well-known disease vectors in Florida, carrying pathogens such as Lyme disease, anaplasmosis, Ehrlichiosis, Powassan virus, and Babesiosis. Warmer, wetter weather can lead to an increase in algal blooms and declining beach health. An increase in flood events may also be associated with an increased incidence of mold problems in homes and businesses, as well as contamination of wells and surface waters due to sewer overflows and private septic system failures.

If these predictions come true, communities must contend with the human health impacts related to the increased prevalence of infectious diseases, heat waves, and changes in air and water quality. Public health officials will need to focus on spreading information and enacting pest and disease reduction. Flood prone communities will need to focus on continuously improving flood controls and mitigation strategies, including restricting building and chemical storage in floodplains, upgrading well and septic requirements, and providing water testing kits to residents.

VULNERABILITY ASSESSMENT

PEOPLE

Disease spread and mortality is affected by a variety of factors, including virulence, ease of spread, aggressiveness of the virus and its symptoms, resistance to known antibiotics and environmental factors. While every pathogen is different, diseases normally have the highest mortality rate among the very young, the elderly or those with compromised immune systems. As an example, the unusually deadly 1918 H1N1 influenza pandemic had a mortality rate of 20%. If an influenza pandemic does occur, it is likely that many age groups would be seriously affected. The greatest risks of hospitalization and death—as seen during the last three pandemics in 1957, 1968, and 2019 as well as during annual outbreaks of influenza—will be to infants, the elderly, and those with underlying health conditions. However, in the 1918 pandemic, most deaths occurred in young adults. Few people, if any, would have immunity to a new virus.

- **Population Patterns**:
    - Dense population centers, especially in Naples and Marco Island, increase vulnerability to disease spread.
    - Disproportionate impacts on elderly populations residing in long-term care facilities.
    - Growing seasonal population strains healthcare resources during peak flu and respiratory illness seasons.
    - **Underserved Populations**: Undocumented workers and low-income families may have limited access to healthcare services, vaccinations, and public health information.

Approximately twenty percent of people exposed to West Nile Virus through a mosquito bite develop symptoms related to the virus; it is not transmissible from one person to another. Preventive steps can be taken to reduce exposure to mosquitos carrying the

virus; these include insect repellent, covering exposed skin with clothing and avoiding the outdoors during twilight periods of dawn and dusk, or in the evening when the mosquitos are most active.

PROPERTY

For the most part, property itself would not be impacted by a human disease epidemic or pandemic. However, as concerns about contamination increase, property may be quarantined or destroyed as a precaution against spreading illness. Furthermore, staffing shortages could affect the function of critical facilities.

- **Land Use/Development Trends**:
  - Development of high-density housing complexes, increasing transmission risks in shared spaces like public shelters used during large scale emergencies.
  - Growth of healthcare facilities in areas prone to service disruptions (e.g., flood zones).
  - Expansion of tourism-related developments, such as hotels and resorts, bringing transient populations to the area.

ENVIRONMENT

A widespread pandemic would not have an impact on the natural environment unless the disease was transmissible between humans and animals. However, affected areas could result in denial or delays in the use of some areas, and may require remediation.

CONSEQUENCE ANALYSIS

Table 2.95 summarizes the potential consequences of infectious disease.

Table 2.95 – Consequence Analysis – Infectious Disease

Category	Consequences
Public	Adverse impact expected to be severe for unprotected personnel and moderate to light for protected personnel.
Responders	Adverse impact expected to be severe for unprotected personnel and uncertain for trained and protected personnel, depending on the nature of the incident.
Continuity of Operations (including Continued Delivery of Services)	Danger to personnel in the area of the incident may require relocation of operations and lines of succession execution. Disruption of lines of communication and destruction of facilities may extensively postpone delivery of services.
Property, Facilities and Infrastructure	Access to facilities and infrastructure in the area of the incident may be denied until decontamination completed.
Environment	Incident may cause denial or delays in the use of some areas. Remediation needed.
Economic Condition of the Jurisdiction	Local economy and finances adversely affected, possibly for an extended period.

Category	Consequences
Public Confidence in the Jurisdiction's Governance	Ability to respond and recover may be questioned and challenged if planning, response, and recovery not timely and effective.

HAZARD SUMMARY BY JURISDICTION

The following table summarizes pandemic outbreak risk by jurisdiction. This risk is not expected to change substantially between jurisdictions.

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Everglades City	2	3	3	1	4	2.6	M
Seminole Tribe Immokalee Reservation	2	3	3	1	4	2.6	M
Marco Island	2	3	3	1	4	2.6	M
Naples	2	3	3	1	4	2.6	M
Unincorporated Collier County*	2	3	3	1	4	2.6	M

*Note: Unincorporated Collier County includes the following jurisdictions: Collier County Government, Collier County Public Schools, Collier Mosquito Control District, North Collier Fire Control District, Greater Naples Fire Rescue District, Immokalee Fire Control District, Naples Airport Authority, Port of the Isles, and South Florida Water Management District.

2.5.14 HAZARDOUS MATERIALS

HAZARD DESCRIPTION

Generally, a hazardous material is a substance or combination of substances which, because of quantity, concentration, or physical, chemical, or infectious characteristics, may either cause or significantly contribute to an increase in mortality or serious illness. Hazardous materials may also pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed. Hazardous material incidents can occur while a hazardous substance is stored at a fixed facility, or while the substance is being transported along a road corridor or railroad line or via an enclosed pipeline or other linear infrastructure.

The U.S. Department of Transportation (DOT), U.S. Environmental Protection Agency (EPA) and the Occupational Safety and Health Administration (OSHA) all have responsibilities relating to the transportation, storage, and use of hazardous materials and waste. The Right to Know Network (RTK NET), maintained by the EPA's National Response Center (NRC), is a primary source of information on the use and storage of hazardous materials, as well as data regarding spills and releases.

Hazardous materials are typically divided into the following classes:

- Explosives
- Compressed gases: flammable, non-flammable compressed, poisonous

- Flammable or combustible liquids
- Flammable solids: spontaneously combustible, dangerous when wet
- Oxidizers and organic peroxides
- Toxic materials: poisonous material, infectious agents
- Radioactive material
- Corrosive material: destruction of human skin, corrodes steel

It is common to see hazardous materials releases as escalating incidents resulting from other hazards such as floods, wildfires, and earthquakes that may cause containment systems to fail or affect transportation infrastructure. The release of hazardous materials can greatly complicate or even eclipse the response to the natural hazards disaster that caused the spill.

FIXED HAZARDOUS MATERIALS INCIDENT

A fixed hazardous materials incident is the accidental release of chemical substances or mixtures during production or handling at a fixed facility. While these incidents can sometimes involve large quantities of materials, their locations can be more easily predicted and monitored.

TRANSPORTATION HAZARDOUS MATERIALS INCIDENT

A transportation hazardous materials incident is the accidental release of chemical substances or mixtures during transport. Transportation Hazardous Materials Incidents in Collier County can occur during highway or air transport. Highway accidents involving hazardous materials pose a great potential for public exposures. Both nearby populations and motorists can be impacted and become exposed by accidents and releases. If airplanes carrying hazardous cargo crash, or otherwise leak contaminated cargo, populations and the environment in the impacted area can become exposed.

PIPELINE INCIDENT

A pipeline transportation incident occurs when a break in a pipeline creates the potential for an explosion or leak of a dangerous substance (oil, gas, etc.) possibly requiring evacuation. An underground pipeline incident can be caused by environmental disruption, accidental damage, or sabotage. Incidents can range from a small, slow leak to a large rupture where an explosion is possible. Inspection and maintenance of the pipeline system along with marked gas line locations and an early warning and response procedure can lessen the risk to those near the pipelines.

- *Warning Time: 4 – Less than six hours*
- *Duration: 2 – Less than 24 hours*

LOCATION

The Toxics Release Inventory (TRI) Program run by the U.S. Environmental Protection Agency (EPA) maintains a database of industrial facilities across the country and the type and quantity of toxic chemicals they release. The program also tracks pollution prevention

activities and which facilities are reducing toxic releases. The Toxic Release Inventory reports 13 sites reporting hazardous materials in Collier County. These sites are shown in Figure 2.49 and detailed in Table 2.96. Collier County and all its jurisdictions are susceptible to hazardous materials releases.

Table 2.96 – Toxic Release Inventory Facilities

Facility Name	Facility Location
Allied-Signal Aerospace Co Bendix Engine Controls Division*	3581 Mercantile Ave Naples, FL 34104
Arthrex Manufacturing, Inc.*	6875 Arthrex Commerce Drive, Ave Maria, FL 34142
Cemex East Trail	15555 East Tamiami Trail, Naples, FL 34114
Cemex Prospect	3728 Prospect Avenue, Naples, FL 34103
Cemex Wiggins Pass	1425 Wiggins Pass Road East, Naples, FL 34110
Ellipsis Inc	1901 J & C Blvd Naples, FL 33942
Interiors Cultured Marble Inc.	1734 Trade Center Way Naples, FL 34109
Naples Marble Co Inc.	3963 Progress Avenue, Naples, FL 34104
Plant 157 Naples	4406 Progress Avenue, Naples, FL 34104
Preferred Immokalee	1111 E Main St Immokalee, FL 34142
Preferred-Naples Shirley RM	6300 Shirley St Naples, FL 34109
SMI Florida Fabricators Naples	3684 Enterprise Avenue, Naples, FL 34104
Titan Florida LLC Naples Concrete Batch Plant	3596 Shaw Blvd Naples, FL 34117

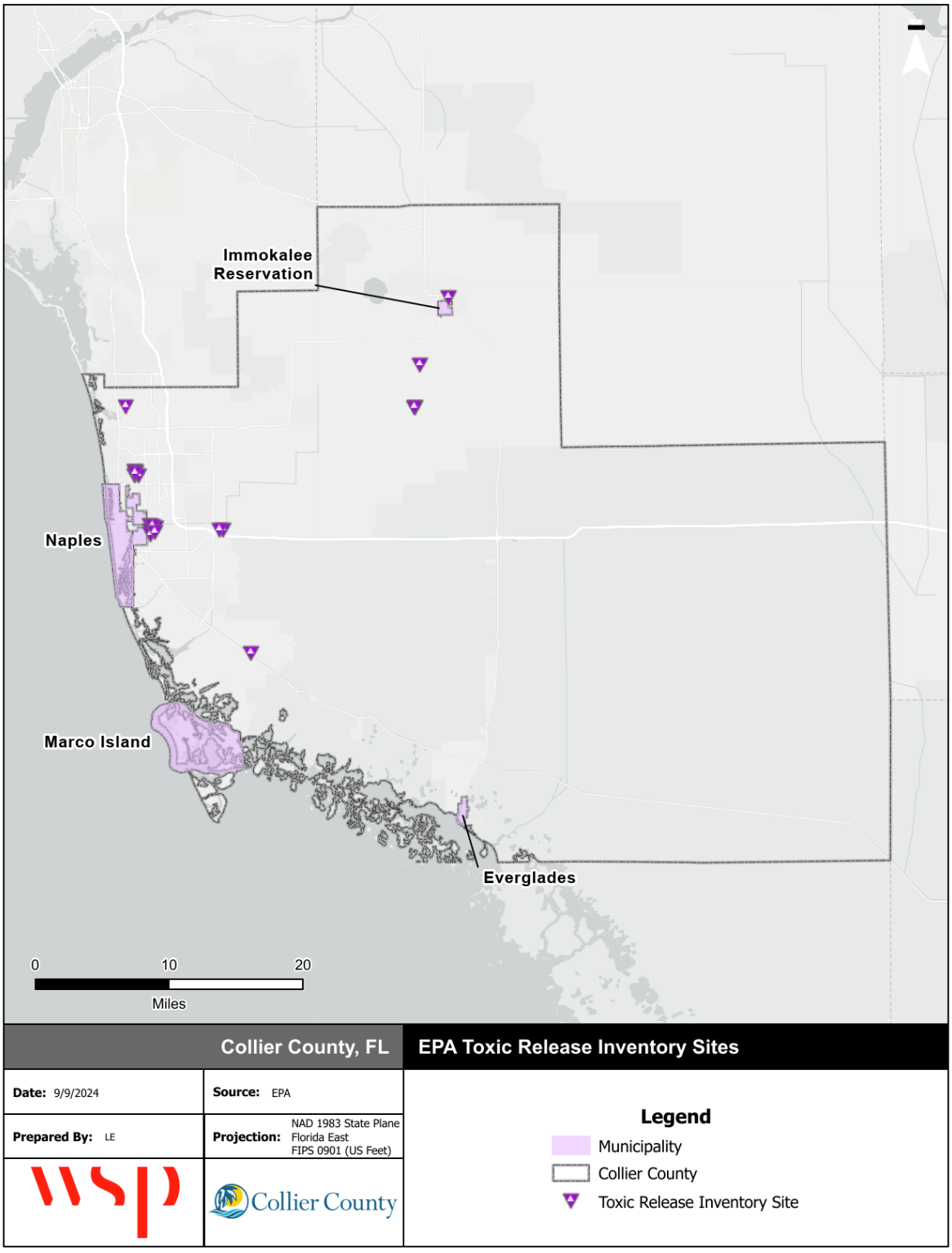
Source: U.S. EPA Toxics Release Inventory, 2024

* This facility is listed in the TRI for two types of chemicals.

The U.S. Department of Transportation (USDOT) Pipeline and Hazardous Materials Safety Administration (PHMSA) maintains an inventory of the location of all gas transmission and hazardous liquid pipelines as well as liquid natural gas plants and hazardous liquid breakout tanks. Collier County has no gas transmission pipelines or hazardous liquid pipelines as of September 2024 according to the public viewer of the National Pipeline Mapping System.

- *Spatial Extent: 1 – Negligible*

Figure 2.49 – Toxic Release Inventory Sites in Collier County



Source: EPA Toxic Release Inventory

EXTENT

The magnitude of a hazardous materials incident can be defined by the material type, the amount released, and the location of the release. The U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA), which records hazardous material incidents across the country, defines a "serious incident" as a hazardous materials incident that involves:

- A fatality or major injury caused by the release of a hazardous material
- The evacuation of 25 or more persons as a result of the release of a hazardous material or exposure to fire
- A release or exposure to fire which results in the closure of a major transportation artery
- The alteration of an aircraft flight plan or operation,
- The release of radioactive materials from Type B packaging
- The release of over 11.9 galls or 88.2 pounds of a severe marine pollutant
- The release of a bulk quantity (over 199 gallons or 882 pounds) of a hazardous material
- *Impact: 2 – Limited*

HISTORICAL OCCURRENCES

The USDOT's PHMSA maintains a database of reported hazardous materials incidents, which are summarized below in Table 2.97. According to PHMSA records, there were 69 recorded releases in Collier County in the 24-year period from 2000 through 2023. Of these events, 12 had serious impacts, including nine serious bulk releases; one event flagged for serious evacuation, two minor injuries, and four events resulting in the closure of major transportation arteries. In total, these events caused $1,701,569 in damages and have not caused any fatalities. Approximately, 90 percent of hazardous materials incidents within Collier County have occurred in Naples.

Table 2.97 - PHMSA Recorded Hazardous Materials Incidents, 2000-2023

Report Number	Date	Hazard Class	Mode of Transportation	Causes of Failure	Total Damages	Serious?
I-2000040974	4/11/2000	3	Air	Improper Preparation for Transportation	$0	No
I-2000060634	6/3/2000	3	Highway		$3	No
I-2001051660	10/2/2000	3	Highway	Fire, Temperature, or Heat	$29,000	Yes
I-2001010018	12/8/2000	8	Highway		$250	Yes
I-2002010449	10/2/2001	8	Highway		$510	No
I-2003010389	1/7/2002	8	Highway	Vehicular Crash or Accident Damage	$1,216	No
I-2003020222	12/20/2002	8	Highway		$300	No
I-2003020221	1/26/2003	3	Highway	Rollover Accident; Vehicular Crash or Accident Damage	$76,265	Yes

Report Number	Date	Hazard Class	Mode of Transportation	Causes of Failure	Total Damages	Serious?
I-2003040783	3/5/2003	3	Highway	Rollover Accident; Vehicular Crash or Accident Damage	$0	Yes
I-2003041335	3/26/2003	8	Highway		$0	No
I-2006081333	7/20/2006	3	Highway	Vehicular Crash or Accident Damage	$15,390	No
E-2007050023	4/2/2007	2	Highway	Overfilled	$0	No
I-2007060934	5/30/2007	3	Highway	Rollover Accident	$553,435	Yes
E-2009110112	11/9/2009	5.2	Highway	Too Much Weight on Package	$0	No
I-2010010556	1/15/2010	2.2	Highway	Dropped	$0	No
I-2011020189	1/10/2011	2.1	Highway	Vehicular Crash or Accident Damage	$750,040	Yes
I-2011030068	2/23/2011	3	Highway	Dropped	$0	No
I-2011040485	4/19/2011	5.1	Highway	Human Error	$0	No
I-2011070553	7/11/2011	3	Highway	Dropped	$0	No
E-2012050389	4/27/2012	8	Highway	Dropped	$614	No
I-2012100149	9/21/2012	3	Highway	Dropped	$0	No
I-2013070448	6/27/2013	8	Highway	Vehicular Crash or Accident Damage	$0	Yes
I-2013080337	7/30/2013	8	Highway	Too Much Weight on Package	$0	No
E-2013100521	9/29/2013	2.1	Highway	Human Error	$621	No
E-2014050339	4/28/2014	2.1	Highway	Over-pressurized	$0	Yes
I-2015060297	5/18/2015	9	Air		$0	No
I-2015100340	9/17/2015	8	Highway	Human Error	$229,000	Yes
I-2015120217	12/3/2015	9	Highway		$0	No
X-2016050606	5/4/2016	9	Highway		$0	No
X-2016050636	5/16/2016	8	Highway	Dropped	$0	No
I-2016100119	5/24/2016	8	Highway		$0	Yes
X-2016070545	7/18/2016	2.1	Highway		$0	No
X-2017070600	7/19/2017	8	Highway	Dropped	$0	No
X-2018050375	5/4/2018	3	Highway	Inadequate Preparation for Transportation	$0	No
X-2018060318	5/31/2018	8	Highway	Inadequate Preparation for Transportation	$0	No
E-2018120005	9/14/2018	3	Highway		$5,425	No
X-2018110413	11/9/2018	5.1	Highway	Inadequate Preparation for Transportation	$0	No
X-2018120361	11/28/2018	8	Highway	Improper Preparation for Transportation	$0	No
X-2019020264	1/14/2019	5.1	Highway	Loose Closure, Component, or Device	$0	Yes

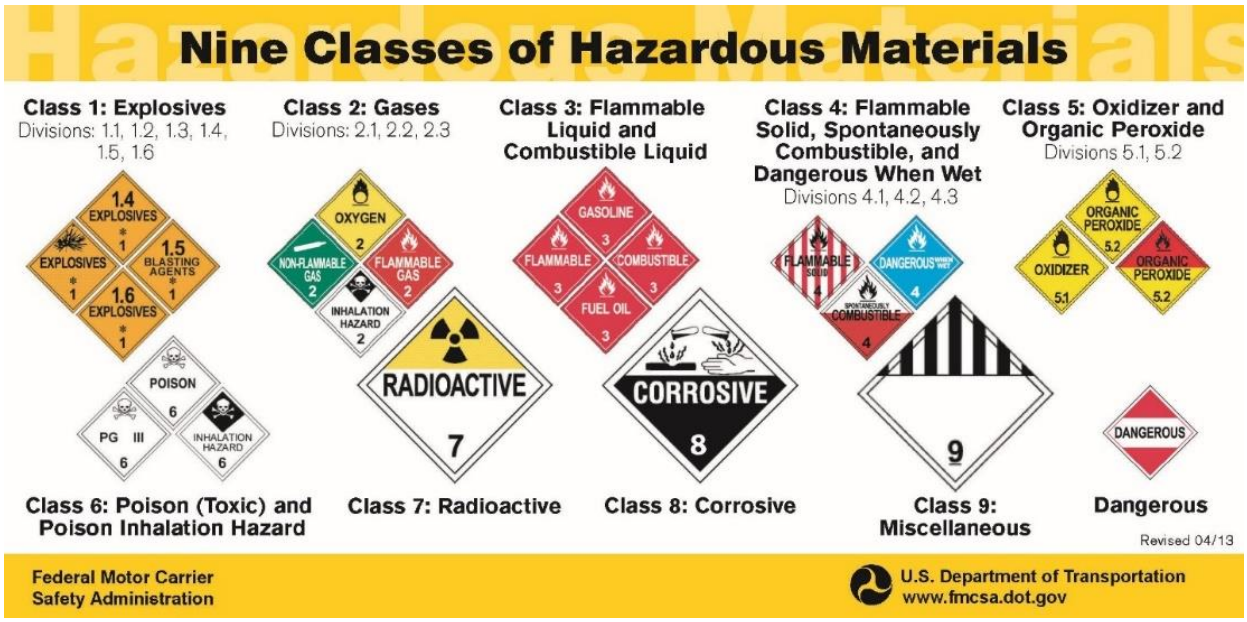
Report Number	Date	Hazard Class	Mode of Transportation	Causes of Failure	Total Damages	Serious?
I-2019020447	1/31/2019	3	Highway	Human Error; Misaligned Material, Component, or Device	$0	No
X-2019080015	7/13/2019	8	Highway	Improper Preparation for Transportation	$0	No
E-2019090630	7/27/2019	3	Highway		$10,000	No
I-2020020071	1/11/2020	3	Highway	Vehicular Crash or Accident Damage	$29,500	Yes
X-2020080296	7/24/2020	8	Highway	Human Error	$0	No
X-2020080619	8/17/2020	2.2	Highway		$0	No
X-2020120286	11/18/2020	5.1	Highway	Improper Preparation for Transportation	$0	No
X-2020120345	11/20/2020	3	Highway	Human Error	$0	No
X-2021010915	1/6/2021	2.1	Highway		$0	No
X-2021020108	1/28/2021	5.1	Highway	Human Error	$0	No
X-2021020557	2/19/2021	5.1	Highway	Inadequate Preparation for Transportation	$0	No
X-2021120683	12/14/2021	8	Highway	Improper Preparation for Transportation	$0	No
X-2022020570	2/7/2022	3	Highway	Dropped	$0	No
X-2022020912	2/17/2022	3	Highway	Improper Preparation for Transportation	$0	No
X-2022040072	3/28/2022	3	Highway	Improper Preparation for Transportation	$0	No
X-2022040071	3/28/2022	3	Highway	Improper Preparation for Transportation	$0	No
X-2022040081	3/30/2022	3	Highway	Dropped	$0	No
X-2022040291	4/5/2022	3	Highway	Improper Preparation for Transportation	$0	No
X-2022040538	4/11/2022	3	Highway	Improper Preparation for Transportation	$0	No
X-2022040587	4/13/2022	8	Highway	Defective Component or Device	$0	No
X-2022070853	7/11/2022	2.1	Highway	Dropped	$0	No
X-2022081126	8/15/2022	3	Highway	Improper Preparation for Transportation	$0	No
X-2022091403	9/22/2022	2.2	Highway	Inadequate Preparation for Transportation	$0	No
X-2022110152	10/27/2022	8	Highway	Improper Preparation for Transportation	$0	No
I-2022120357	11/2/2022	8	Highway		$0	No
X-2022111041	11/8/2022	8	Highway	Improper Preparation for Transportation	$0	No
X-2023020471	2/6/2023	2.2	Highway	Improper Preparation for Transportation	$0	No

Report Number	Date	Hazard Class	Mode of Transportation	Causes of Failure	Total Damages	Serious?
X-2023020473	2/6/2023	2.2	Highway	Improper Preparation for Transportation	$0	No
X-2023040020	3/27/2023	8	Highway	Human Error	$0	No
X-2023110394	11/7/2023	2.2	Highway	Improper Preparation for Transportation	$0	No

Source: PHMSA Incident Reports, Office of Hazardous Materials Safety, Incident Reports Database Search, data as of Sept 16, 2024.

The most common materials spilled in the planning area are Class 3 (Flammable and Combustible Liquids) and Class 8 (Corrosives). Figure 2.50 describes all nine hazard classes.

Figure 2.50 – Hazardous Materials Classes



Source: U.S. Department of Transportation

PROBABILITY OF FUTURE OCCURRENCE

Based on historical occurrences recorded by PHMSA, there have been 69 hazardous materials releases in the 24-year period from 2000 through 2023, 12 of which had serious impacts. Using historical occurrences as an indication of future probability, there is a 50 percent annual probability of a serious hazardous materials incident occurring.

- *Probability: 3 – Likely*

CLIMATE CHANGE

Climate change is not expected to impact hazardous materials incidents.

VULNERABILITY ASSESSMENT

PEOPLE

Hazardous materials incidents can cause injuries, hospitalizations, and even fatalities to people nearby. People living near hazardous facilities and along transportation routes may be at a higher risk of exposure, particularly those living or working downstream and downwind from such facilities. For example, a toxic spill or a release of an airborne chemical near a populated area can lead to significant evacuations and have a high potential for loss of life. Individuals working with or transporting hazardous materials are also at heightened risk.

In addition to the immediate health impacts of releases, a handful of studies have found long term health impacts such as increased incidence of certain cancers and birth defects among people living near certain chemical facilities. However there has not been enough research done on the subject to allow detailed analysis.

- **Population Patterns**:
    - Population increases near industrial zones and major transportation corridors.
    - Expansion of neighborhoods adjacent to hazardous material facilities and highways.
    - Schools, healthcare facilities, and residential communities at greater risk due to proximity to major routes.
    - **Underserved Populations**: Low-income communities near industrial zones may lack adequate emergency plans or transportation for timely evacuation. Migrant farm worker communities may be more exposed to hazardous materials because of the nature of their work in agriculture.

The primary economic impact of hazardous material incidents results from lost business, delayed deliveries, property damage, and potential contamination. Large and publicized hazardous material-related events can deter tourists and could potentially discourage residents and businesses. Economic effects from major transportation corridor closures can be significant.

PROPERTY

The impact of a fixed hazardous facility, such as a chemical processing facility is typically localized to the property where the incident occurs. The impact of a small spill (i.e. liquid spill) may also be limited to the extent of the spill and remediated if needed. While cleanup costs from major spills can be significant, they do not typically cause significant long-term impacts to property.

- **Land Use/Development Trends**:
    - Increased construction along highways that transport hazardous materials.
    - Lack of buffer zones between industrial areas and residential communities.

- New commercial and industrial developments adding to hazardous material transportation volume.
- Expansion of utility corridors and fuel storage facilities in growing areas

Impacts of hazardous material incidents on critical facilities are most often limited to the area or facility where they occurred, such as at a transit station, airport, fire station, hospital, or railroad. However, they can cause long-term traffic delays and road closures resulting in major delays in the movement of goods and services. These impacts can spread beyond the planning area to affect neighboring counties, or vice-versa. While cleanup costs from major spills can be significant, they do not typically cause significant long-term impacts to critical facilities.

ENVIRONMENT

Hazardous material incidents may affect a small area at a regulated facility or cover a large area outside such a facility. Widespread effects occur when hazards contaminate the groundwater and eventually the municipal water supply, or they migrate to a major waterway or aquifer. Impacts on wildlife and natural resources can also be significant.

CONSEQUENCE ANALYSIS

Table 2.98 summarizes the potential detrimental consequences of hazardous materials incident.

Table 2.98 – Consequence Analysis – Hazardous Materials Incident

Category	Consequences
Public	Contact with hazardous materials could cause serious illness or death. Those living and working closest to hazardous materials sites face the greatest risk of exposure. Exposure may also occur through contamination of food or water supplies.
Responders	Responders face similar risks as the general public but a heightened potential for exposure to hazardous materials.
Continuity of Operations (including Continued Delivery of Services)	A hazardous materials incident may cause temporary road closures or other localized impacts but is unlikely to affect continuity of operations.
Property, Facilities and Infrastructure	Some hazardous materials are flammable, explosive, and/or corrosive, which could result in structural damages to property. Impacts would be highly localized.
Environment	Consequences depend on the type of material released. Possible ecological impacts include loss of wildlife, loss of habitat, and degradation of air and/or water quality.
Economic Condition of the Jurisdiction	Clean up, remediation, and/or litigation costs may apply. Long-term economic damage is unlikely.
Public Confidence in the Jurisdiction's Governance	A hazardous materials incident may affect public confidence if the environmental or health impacts are enduring.

HAZARD SUMMARY BY JURISDICTION

The following table summarizes hazardous materials hazard risk by jurisdiction. Probability of future occurrence was based on records of past occurrences, with a greater incidence of releases in Naples. Other variables of hazard materials risk do not vary substantially between jurisdictions.

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Everglades City	2	2	1	4	2	2.0	M
Seminole Tribe Immokalee Reservation	2	2	1	4	2	2.0	M
Marco Island	2	2	1	4	2	2.0	M
Naples	3	2	1	4	2	2.3	M
Unincorporated Collier County*	2	2	1	4	2	2.0	M

*Note: Unincorporated Collier County includes the following jurisdictions: Collier County Government, Collier County Public Schools, Collier Mosquito Control District, North Collier Fire Control District, Greater Naples Fire Rescue District, Immokalee Fire Control District, Naples Airport Authority, Port of the Isles, and South Florida Water Management District.

2.5.15 COASTAL OIL SPILLS

HAZARD DESCRIPTION

As defined by Florida's 2023 Enhanced State Hazard Mitigation Plan, an oil spill is the release of crude oil, or liquid petroleum, into the environment due to human activity. Usually associated with marine spills, they are caused by the release of oil from offshore platforms, drilling rigs, tankers, ships that have sunk, and any vehicle used to transport crude oil, over the water or land. These spills have major effects including continual damage to the environment and a financial loss to communities affected.

The Gulf of Mexico is one of the world's most significant regions for oil and gas extraction due to its significant geological makeup and large oil and gas fields. Since offshore drilling began in 1942, more than 6,000 oil and gas extraction structures have been erected in the Gulf. According to NOAA, these structures range in size from single well caissons in 10 feet water depths to large complex facilities in water depths up to 10,000 feet. Hundreds of these structures have been deactivated and taken down over the years. As of October 2022, there are 13 operating rigs in the Gulf of Mexico, all drilling for crude oil. While there are currently no drilling rigs on the east coast of Florida, the U.S. Chamber of Commerce predicts that rigs could be seen in the future as exploration estimates roughly 4.72 billion barrels of recoverable oil and 37.51 trillion cubic feet of recoverable natural gas from Maine to Florida. In 2021, Florida produced about 1.49 million barrels of crude oil. It is estimated that the Gulf of Mexico offshore oil production makes up 15% of the total crude oil production of the United States.

An oil spill could have severe detrimental impacts on the natural environment, primarily impacting shorelines and beaches. Given Collier County's dependence on tourism, which relies heavily on beach access, an oil spill could have a catastrophic impact on the county's economy. In Collier County, tourism is the leading employer and the primary economic engine. The Collier County Tourism Development Council reported that in 2023, Collier County had over 2.3 million tourists visit the County, spending an estimated $2.1 billion, resulting in a total economic impact of over $3 billion to Collier County.

- *Warning Time: 3 – 6 to 12 hours*
- *Duration: 4 – More than 1 week*

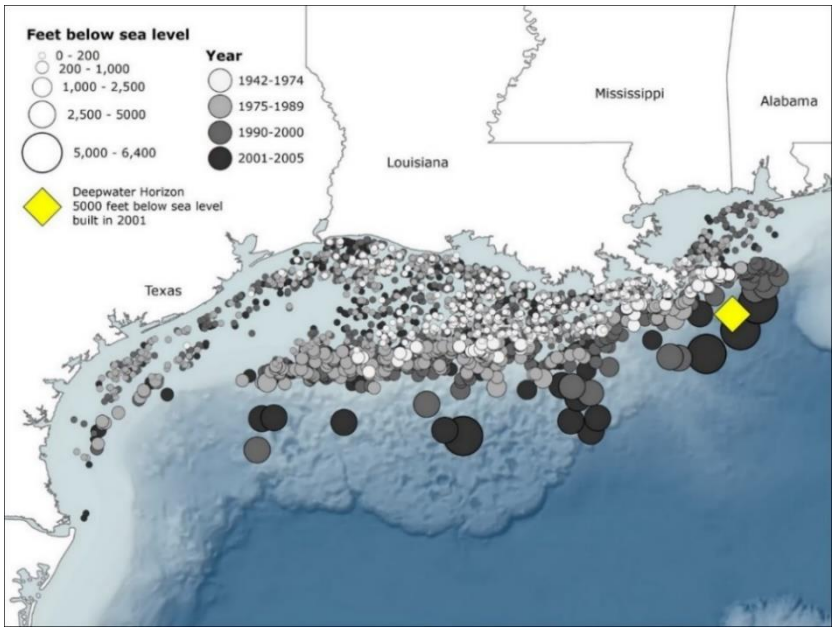
LOCATION

While there are no drilling rigs off the coast of Collier County, Figure 2.51 shows the location of oil drilling rigs in the Gulf of Mexico by feet below sea level and year. It also shows the location of the Deepwater Horizon accident. Figure 2.52 shows the extent of Deepwater Horizon accident, which was the most devastating oil spill in the Gulf of Mexico to date and is further detailed in the historical occurrences section below.

Oil spills have the potential to impact all coastal areas of Collier County, including its municipalities and unincorporated coastal regions. Collier County, along with its coastal jurisdictions (Naples, Marco Island, Everglades City), and other unincorporated coastal communities (Port of the Islands) are particularly susceptible to the effects of coastal oil spills, which can threaten local ecosystems, tourism, and economic activities.

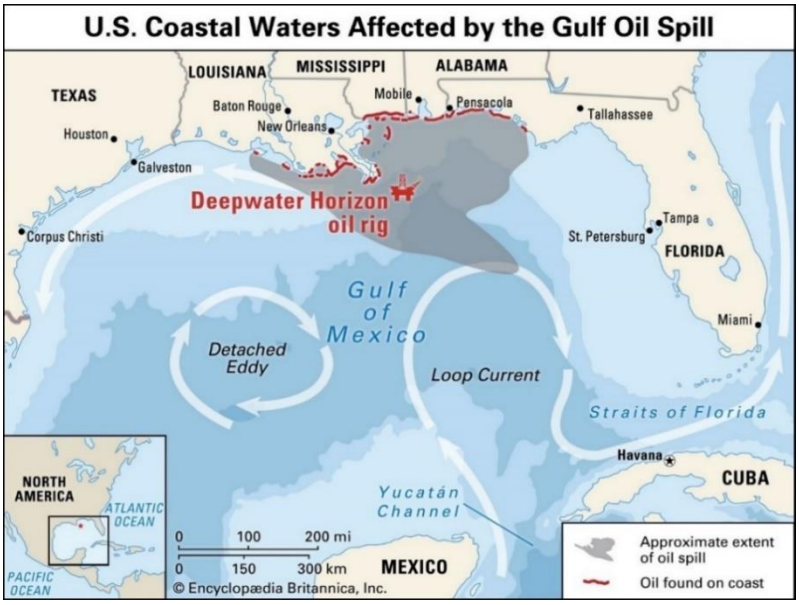
- *Spatial Extent: 2 – Small*

Figure 2.51 – Location of Oil Drilling Rigs in the Gulf of Mexico



Source: DeepSeaNews.com

Figure 2.52 – Extent of the Deepwater Oil Spill



Source: Encyclopedia Britannica

EXTENT

The extent of coastal oil spills can vary greatly. The NOAA Office of Response and Restoration responds to over 150 oil and chemical spills in U.S. waters every year. It is estimated that 1.3 million gallons of petroleum are spilled in U.S. waters every year. The Deepwater Horizon spill released 210 million gallons. The consequential extent, or the extent of organisms, mammals, and the environment that are negatively affected can be huge. However, given the lack of oil rigs off the coast of Collier County, current extent is limited. Oil spills could still result from tankers while oil is being transported.

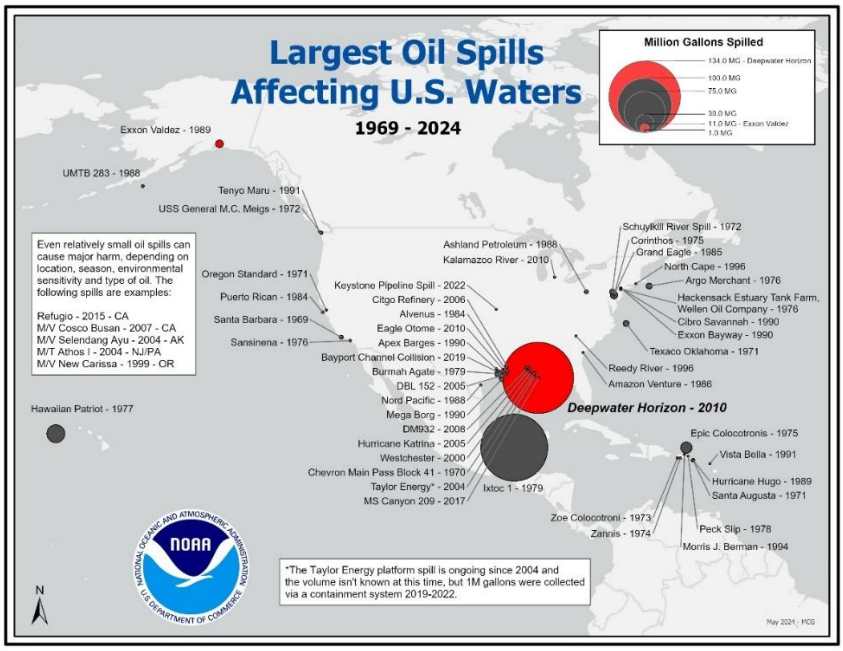
- *Impact: 2 – Limited*

HISTORICAL OCCURRENCES

NOAA's Office of Response and Restoration has categorized the largest oil spills within U.S. waters by spill volume as shown in Figure 2.53. However, it is important to remember that location, time of year, environmental sensitivity, and type of oil are also major factors in determining the overall significance of an oil spill. Additionally, NOAA reported a total of 222 incidents of potential oil spills off the coast of Florida with the earliest recorded incident occurring October 5th, 1978 in Tampa Bay, Florida. During this incident a dry bulk carrier discharged approximately 952 barrels of diesel into the Port Sutton Channel. The oil spread over approximately 20 miles and impacted 15 separate shorelines.

One of the closest oil spills to occur near Collier County happened on November 4th, 2013, when a 68-foot commercial shrimper sunk 32 miles offshore southwest of Naples. The vessel was reported to have 800 gallons of diesel fuel on board. The crew was rescued but the vessel was never located.

Figure 2.53 - Largest Oil Spills Affecting U.S. Waters (1969-2024)



Source: NOAA Office of Response and Restoration

The following information on the Deepwater Horizon spill was reported in the 2023 State Hazard Mitigation Plan:

In April 2010, an explosion occurred on BP's Macondo Prospect drilling rig in the Gulf of Mexico causing the largest marine oil spill in history. The blowout occurred at 1,500 meters deep and under pressures 150 times that at sea level. This was named the Deepwater Horizon oil spill. The Florida impacts of the 2010 Deepwater Horizon incident were mostly limited and contained, but the predictions at the time of potential impacts were severe. Moody's Analytics released a report which stated, should a significant amount of oil wash onto Florida's shores, the economic impact from tourism-related tax revenue and job losses could rival that of the ongoing recession and simulate a double dip recession. Following the lawsuits, Florida received over 200 million dollars in a settlement for lost tourism income.

In addition to economic impacts, an oil spill in Florida or off its shores could have severe consequences for wildlife, ecosystems, and the ecology. The Deepwater Horizon spill affected the wildlife populations of numerous species of turtles, birds, bottlenose dolphins, whales, and fish. Gulf states saw a decrease in bottlenose reproduction and a rise in deaths, the Kemp's Ridley Sea turtle, already endangered, saw a massive drop in numbers, and scientists estimate the habitats on the bottom of the Gulf could take anywhere from multiple decades to hundreds of years to fully recover. The spill lasted for five months but some reports say it had been leaking for so long, that it could have been a 14-year long oil spill. Eleven people were killed and seventeen were injured from the wellhead blowout that caused the leak.

As a result of the Deepwater Horizon spill, Florida began funding remediation projects with settlements from the spill, including with non-operating investors. There are 131

projects which include stormwater management, habitat restoration, unpaved roads and wetland initiatives, water quality improvements. Three of these projects are just north of Collier in Lee and Charlotte Counties. The website “floridadep.gov/wra/deepwater-horizon” details the Deepwater Horizon Program and links to a story map highlighting all the projects.

PROBABILITY OF FUTURE OCCURRENCE

Since the U.S. is reliant on fossil fuels such as oil, and accidents happen, it is highly likely that another oil spill in the Gulf of Mexico will occur again. However, the probability of an oil spill impacting the Collier County coast is lower.

- *Probability: 2 – Possible*

CLIMATE CHANGE

Climate change is not expected to impact coastal oil spills. Though climate change in addition to a coastal oil spill could be detrimental for environmental, animal, and human health.

VULNERABILITY ASSESSMENT

Oil spill damage is directly related to the amount of oil spilled, the location of the spill, and the movement of the currents.

PEOPLE

Some injuries but no human deaths have been recorded from an oil spill. However, there were a total of eleven deaths and seventeen injuries from the explosion that caused the Deepwater Horizon oil spill.

- **Population Patterns:**
    - Increasing population density along coastal areas, leading to greater exposure to potential oil spill impacts.
    - Tourism-driven expansion, with seasonal residents and tourists increasing the number of individuals affected by oil spills.
    - Aging population, with elderly residents facing heightened health risks from oil spill contaminants and response challenges.
    - Economic disparities, where wealthier communities may recover faster, while lower-income areas may struggle with prolonged impacts.
    - **Underserved Populations:** Low-income and minority communities often reside in areas with limited access to resources for oil spill response and recovery. Language and cultural barriers may hinder effective communication and emergency response efforts. Dependence on coastal resources for livelihood, such as fishing and tourism-related employment, exacerbating financial hardship during spills.

PROPERTY

Oil spills can cause severe property damage to oil rigs, pipeline infrastructure, and beaches and cost lots of money for clean-up.

- **Land Use/Development Trends:**
    - Coastal urbanization, with increasing residential and commercial development in high-risk coastal zones.
    - Expansion of industrial and port infrastructure, increasing the potential for spills from shipping, storage, and offshore drilling operations.
    - Environmental conservation efforts, including the protection of wetlands and mangroves that serve as natural barriers against oil contamination.
    - Increased waterfront development, with new marinas, resorts, and recreational facilities at risk of oil spill exposure.
    - Infrastructure vulnerabilities, as aging stormwater and wastewater systems may exacerbate oil spill contamination and complicate cleanup efforts.
    - Resilience planning initiatives aimed at improving preparedness, including zoning regulations and emergency response capabilities

ENVIRONMENT

Oil spills can be one of the most harmful hazards for the environment. Many aquatic ecosystems can be destroyed and take hundreds of years to replenish. There are often huge numbers of dead or sick aquatic life after oil spills. It is estimated that only 2% of the marine life carcasses from the Deepwater Horizon spill were found or washed up.

CONSEQUENCE ANALYSIS

Table 2.99 details the consequences of a coastal oil spill.

Table 2.99 – Consequence Analysis – Coastal Oil Spills

Category	Consequences
Public	Localized impact expected to be severe for affected areas and moderate to light for other less affected areas.
Responders	Adverse impact expected to be severe for unprotected personnel and moderate to light for trained, equipped, and protected personnel.
Continuity of Operations (including Continued Delivery of Services)	Localized disruption of trade or ferry routes and higher demand of petroleum, therefore creating a price increase) caused by incident may postpone delivery or use of some services.
Property, Facilities and Infrastructure	Localized impact to facilities and infrastructure in the areas of the incident. Beaches most adversely affected.
Environment	Environmental damage to beaches, marine life, aquatic ecosystems, and other life forms who get sustenance from the water.
Economic Condition of the Jurisdiction	Local economy and finances may be adversely affected, depending on damage. The tourism industry could take a large hit.

Public Confidence in the Jurisdiction's Governance	Ability to respond and recover may be questioned and challenged if planning, response, and recovery is not timely and effective.

HAZARD SUMMARY BY JURISDICTION

The following table summarizes coastal oil spill hazard risk by jurisdiction. Jurisdictions with shoreline at risk were assigned a probability of 2 (possible), an impact of 2 (limited), and a spatial extent of 2 (small). Jurisdictions with little to no shoreline at risk were assigned a probability score of 1 (unlikely), an impact of 1 (minor), and a spatial extent of 1 (negligible). Warning time and duration are inherent to the hazard and remain constant across jurisdictions.

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Everglades City	2	2	2	3	4	2.3	M
Seminole Tribe Immokalee Reservation	1	1	1	3	4	1.5	L
Marco Island	2	2	2	3	4	2.3	M
Naples	2	2	2	3	4	2.3	M
Unincorporated Collier County*	2	2	2	3	4	2.3	M

*Note: Unincorporated Collier County includes the following jurisdictions: Collier County Government, Collier County Public Schools, Collier Mosquito Control District, North Collier Fire Control District, Greater Naples Fire Rescue District, Immokalee Fire Control District, Naples Airport Authority, Port of the Isles, and South Florida Water Management District.

2.5.16 NUCLEAR POWER PLANT

HAZARD BACKGROUND

A radiological incident is an occurrence resulting in the release of radiological material at a fixed facility (such as power plants, hospitals, laboratories, etc.) or in transit.

Radiological incidents related to transportation are described as an incident resulting in a release of radioactive material during transportation. Transportation of radioactive materials through Florida over the interstate highway system is considered a radiological hazard. The transportation of radioactive material by any means of transport is licensed and regulated by the federal government. As a rule, there are two categories of radioactive materials that are shipped over the interstate highways:

- Low level waste consists primarily of materials that have been contaminated by low level radioactive substances but pose no serious threat except through long-term exposure. These materials are shipped in sealed drums within placarded trailers. The danger to the public is no more than a wide array of other hazardous materials.
- High level waste, usually in the form of spent fuel from nuclear power plants, is transported in specially constructed casks that are built to withstand a direct hit from a locomotive.

Radiological emergencies at nuclear power plants are divided into classifications. Table 2.100 shows these classifications, as well as descriptions of each.

Table 2.100 – Radiological Emergency Classifications

Emergency Classification	Description
Notification of Unusual Event (NOUE)	Events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.
Alert	Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life-threatening risk to site personnel or damage to site equipment because of hostile action. Any releases are expected to be limited to small fractions of the Environmental Protection Agency (EPA) Protective Action Guides (PAGs)
Site Area Emergency (SAE)	Events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public or hostile action that results in intentional damage or malicious acts; 1) toward site personnel or equipment that could lead to the likely failure of or; 2) that prevent effective access to, equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA PAG exposure levels beyond the site boundary.
General Emergency	Events are in progress or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or hostile action that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA PAG exposure levels offsite for more than the immediate site area.

- *Warning Time: 4 – Less than 6 hours*
- *Duration: 4 – More than one week*

LOCATION

Turkey Point Nuclear Generating Station, located in the south of Miami-Dade County and southeast of the planning area, is a twin reactor nuclear power station. It has three currently operating units including two 802-megawatt units (units 3 and 4) and one 1,150-megawatt unit (unit 5). There are two retired 404-megawatt units (units 1 and 2) still on-site. Commercial operation began in 1967 and the most recent unit was completed in 2007. Units 3 and 4 are pressurized water reactors and unit 5 is a combined-cycle gas-fired unit. As the sixth largest power plant in the United States and third largest in Florida, it serves all of southern Florida. The plant is operated with a very high level of security. This is the location from which the most catastrophic nuclear accident might occur and will be the focal point of the nuclear analysis in this plan. In December of 2019, units 3 and 4 at Turkey Point Nuclear Generating Station was granted the world's first 80-year operating license.

The Nuclear Regulatory Commission defines two emergency planning zones around nuclear plants:

- **Emergency Planning Zone (EPZ)** – The EPZ is a 10-mile radius around nuclear facilities, also called the Plume Exposure Pathway, where the risk of radioactive exposure is highest. The primary concern is inhalation and exposure to radioactive contamination. Predetermined action plans, including evacuation,

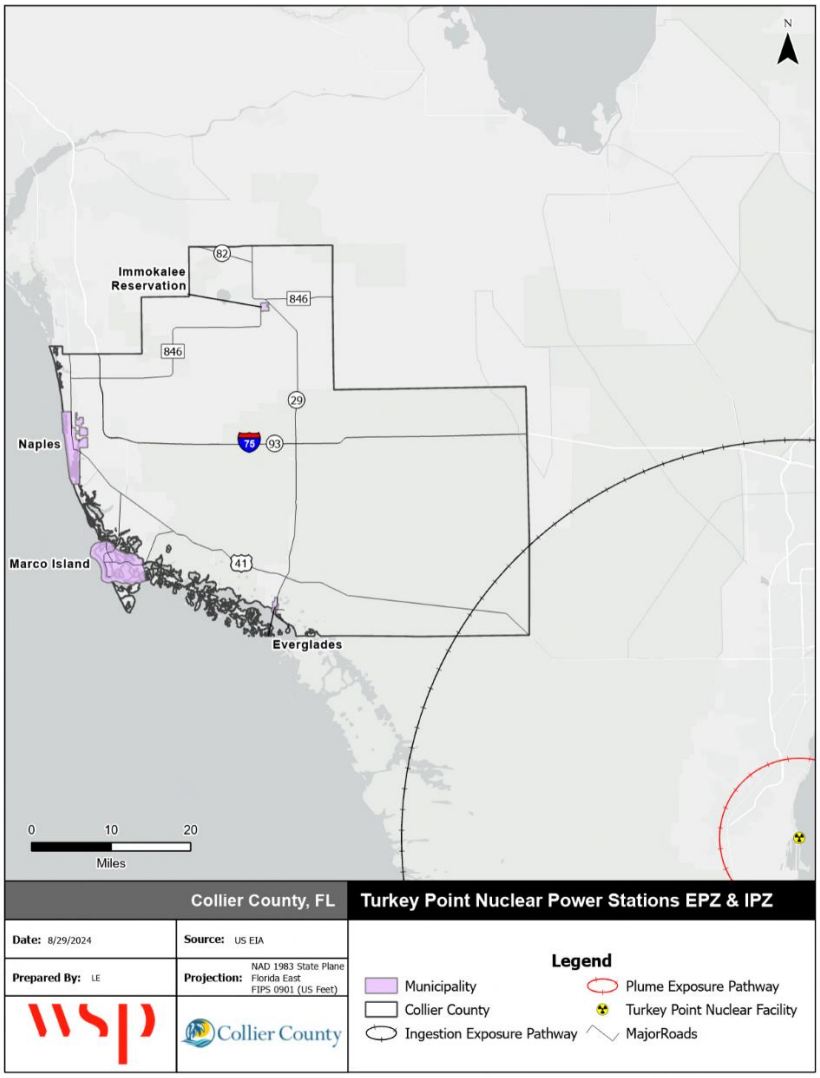
sheltering, and potassium-iodide use, aim to minimize exposure during a nuclear incident. Collier County and its jurisdictions are outside the EPZ.

- **Ingestion Pathway Zone (IPZ)** – The IPZ is a federally designated 50-mile radius around nuclear facilities, also known as the Ingestion Exposure Pathway. It is established to prevent contamination of the human food chain following a radiological incident at a nuclear power facility. Radionuclides can contaminate fresh produce, water supplies, and other food sources by settling on surfaces.

Figure 2.54 shows the location of Turkey Point Nuclear Generating Station and the approximate 10-mile Emergency Planning Zone (EPZ) buffer and 50-mile Ingestion Pathway Zone (IPZ) around the plant. While none of the planning area is within the 10-mile EPZ, the southeast corner of Collier County is within the 50-mile IPZ.

- *Spatial Extent: 2 – Small*

Figure 2.54 – Turkey Point Nuclear Generating Station Location in Relation to Planning Area

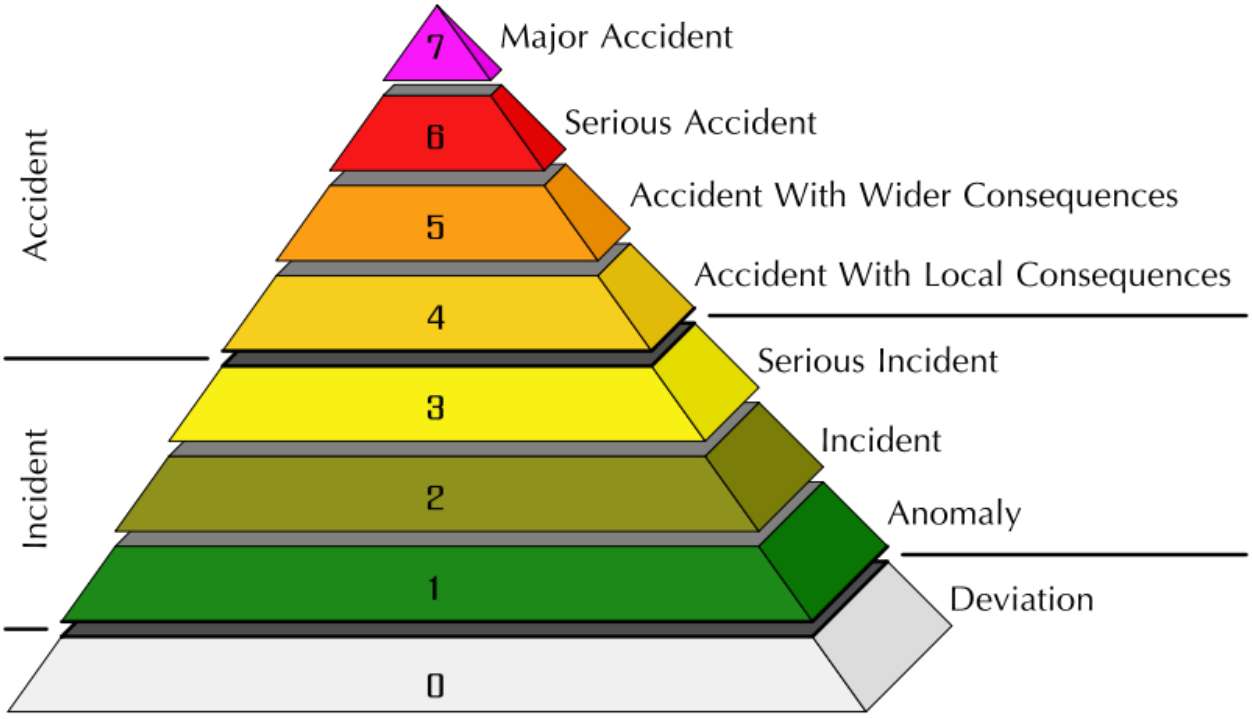


Source: U.S. Energy Information Administration

The Nuclear Regulatory Commission (NRC) defines two emergency planning zones around nuclear plants. The first, a 10-mile radius, is the highest-risk zone where exposure to and inhalation of radioactive contamination are the primary concerns. This area is also the designated evacuation zone recommended by the NRC. The second zone, extending 50 miles from the plant, focuses on the risk of ingesting contaminated food and water. Although only a small portion of Collier County falls within the 50-mile Ingestion Pathway Zone (IPZ), areas such as Everglades City and Port of the Islands are nearby. Additionally, a small section of the major transportation route US-41 lies within the IPZ, further increasing the potential for radiological exposure through the movement of food goods by truck. These factors position Collier County and its jurisdictions to be affected by a potential radiological release from the Turkey Point Nuclear Power Plant.

EXTENT

The International Atomic Energy Association (IAEA) developed the International Nuclear and Radiological Event Scale to quantify the magnitude of radiological events. This scale is logarithmic, meaning each increasing level represents a 10-fold increase in severity compared to the previous level.



Source: International Atomic Energy Association

- *Impact: 4 – Catastrophic*

HISTORICAL OCCURRENCES

May 8, 1974 – During a routine test, it was discovered that two of the three Emergency Feedwater pumps which served unit 3 failed due to overtightened packing. The third

pump also failed but was caused by a malfunction in the turbine. These failures, had they not been found and corrected, could have led to a nuclear disaster if other failures had occurred simultaneously.

August 24, 1992 – Category 5 Hurricane Andrew hit Turkey Point causing damage to many systems. The fire protection systems were partly disabled, two raw water tanks were destroyed, a third was drained, and the smokestack on unit 1 cracked. Offsite power was lost so onsite generators had to be operated for numerous days.

February 26, 2008 – The loss of offsite power prompted both reactors to shut down which led to a widespread power outage affecting 700,000 customers and a total of 2.5 million people. The originating event was an overheated voltage switch that caught fire in a substation 23 miles away from Turkey Point. Power was restored within 5 hours of the blackout. Large commercial locations such as Walt Disney World, Orlando International Airport, and Miami International Airport were affected.

March 18, 2017 – An electrical fault happened in unit 3 causing the loss of a safety system and a reactor trip. This fault caused an arc flash which minorly burned one plant worker. All other safety systems were operational so there was no threat to the community or environment.

August 17, 2020 – Over a four-day period Turkey point experienced three different unplanned shutdowns in a row. On August 17th, Turkey Point operators manually shut down the reactor due to rising steam generator water levels. On August 19th, the plant's protection system automatically shut down the reactor during startup when an instrument sensed higher-than-expected neutron activity in the reactor core. On August 20th, operators manually shut down the reactor after the loss of a steam generator feed water pump. Experiencing frequent shutdowns in a short amount of time is uncommon and ultimately required a special inspection from the NRC to ensure safety protocols were being met.

As of January 2025, there have been no publicly reported significant deviations, anomalies, incidents, or accidents at Turkey Point beyond those previously mentioned. The plant continues to operate under the enhanced oversight imposed by the NRC following the 2020 events.

PROBABILITY OF FUTURE OCCURRENCE

Radiological hazards are highly unpredictable. Nuclear reactors present the possibility of catastrophic damages, yet the industry is highly regulated and historical precedence suggests an incident is unlikely.

- *Probability: 1 – Unlikely*

CLIMATE CHANGE

Climate change is not projected to have any impact on a potential nuclear power plant incident.

VULNERABILITY ASSESSMENT

PEOPLE

People within the 50-mile EPZ are at risk of exposure through ingestion of contaminated food and water. Low levels of radiation are not considered harmful, but a high exposure to radiation can cause serious illness or death.

- **Population Patterns**:
    - Increased population in southeastern Collier County near the Turkey Point Nuclear Power Facility's ingestion pathway.
    - Higher seasonal population levels during the winter months may affect emergency evacuation capacity.
    - Vulnerable populations, such as children and individuals with disabilities, may require specialized transportation and sheltering.
    - **Underserved Populations**: Low-income families may lack the resources to evacuate or afford temporary relocation during an incident. Non-English-speaking communities may face communication barriers regarding nuclear hazard protocols.

PROPERTY

A radiological incident could cause severe damage to the power station itself but would not cause direct property damage outside the station, especially with the distance between the reactor and the planning area. However, property values could drop substantially if a radiological incident resulted in contamination of nearby areas.

- **Land Use/Development Trends**:
    - Expansion of residential and commercial developments within the potential impact zone.
    - Development of critical infrastructure, such as water and energy systems, within potential radiation exposure zones.
    - Growth of evacuation-sensitive developments, such as schools and hospitals, in areas lacking alternative access routes.

ENVIRONMENT

A radiological incident could result in the spread of radioactive material into the environment, which could contaminate water and food sources and harm animal and plant life. These impacts are lessened the further an area is to the plant site.

CONSEQUENCE ANALYSIS

Table 2.101 summarizes the potential detrimental consequences of radiological incident.

Table 2.101 – Consequence Analysis – Radiological Incident

Category	Consequences
Public	High levels of radiation could cause serious illness or death. Those living and working closest to the nuclear plant would face the greatest risk of exposure.
Responders	Responders face potential for heightened exposure to radiation, which could cause severe chronic illness and death.
Continuity of Operations (including Continued Delivery of Services)	An incident at the nuclear plant could interrupt power generation and cause power shortages. Regular operations would likely be affected by the response effort an event would require.
Property, Facilities and Infrastructure	The plant itself could be damaged by a radiological incident. Nearby property and facilities could be affected by contamination.
Environment	Water supplies, food crops, and livestock within 50 miles of the nuclear plant could be contaminated by radioactive material in the event of a major incident.
Economic Condition of the Jurisdiction	The local economy could be affected if a radiological incident caused contamination of nearby areas. Property values and economic activity could decline as a result.
Public Confidence in the Jurisdiction's Governance	A radiological incident would likely cause severe loss of public confidence given that the hazard is human-caused and highly regulated. Public confidence can also be affected by false alarms.

HAZARD SUMMARY BY JURISDICTION

The following table summarizes nuclear power plant risk by jurisdiction. Jurisdictions overlapping the Ingestion Pathway Zone of the closest nuclear power plant were given an impact of 4 (catastrophic) and a spatial extent of 2 (small). Jurisdictions further away from the IPZ were given an impact of 3 (critical) and a spatial extent of 1 (negligible). Probability, warning time, and duration are uniform across jurisdictions.

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Everglades City	1	3	1	4	4	2.2	M
Seminole Tribe Immokalee Reservation	1	3	1	4	4	2.2	M
Marco Island	1	3	1	4	4	2.2	M
Naples	1	3	1	4	4	2.2	M
Unincorporated Collier County*	1	4	2	4	4	2.7	M

*Note: Unincorporated Collier County includes the following jurisdictions: Collier County Government, Collier County Public Schools, Collier Mosquito Control District, North Collier Fire Control District, Greater Naples Fire Rescue District, Immokalee Fire Control District, Naples Airport Authority, Port of the Isles, and South Florida Water Management District.

2.5.17 TERRORISM

HAZARD DESCRIPTION

There is no universal globally agreed-upon definition of terrorism. In a broad sense, terrorism is the use of violence and threats to intimidate or coerce, especially against civilians, in the pursuit of political aims. Terrorism is defined in the United States by the Code of Federal Regulations as "the unlawful use of force or violence against persons or property to intimidate or coerce a government, civilian population, or any segment thereof, in furtherance of political or social objectives."

For this analysis, this hazard encompasses the following sub-hazards: enemy attack, biological terrorism, chemical terrorism, conventional terrorism, and radiological terrorism. These hazards can occur anywhere and demonstrate unlawful force, violence, and/or threat against persons or property causing intentional harm for purposes of intimidation, coercion or ransom in violation of the criminal laws of the United States. These actions may cause massive destruction and/or extensive casualties. The threat of terrorism, both international and domestic, is ever present, and an attack can occur when least expected.

Enemy attack is an incident that could cause massive destruction and extensive casualties throughout the world. Some areas could experience direct weapons' effects: blast and heat; others could experience indirect weapons' effect. International political and military activities of other nations are closely monitored by the federal government and the State of Florida would be notified of any escalating military threats.

The use of biological agents against persons or property in violation of the criminal laws of the United States for purposes of intimidation, coercion or ransom can be described as biological terrorism. Liquid or solid contaminants can be dispersed using sprayers/aerosol generators or by point of line sources such as munitions, covert deposits and moving sprayers. Biological agents vary in the amount of time they pose a threat. They can be a threat for hours to years depending upon the agent and the conditions in which it exists.

Chemical terrorism involves the use or threat of chemical agents against persons or property in violation of the criminal laws of the United States for purposes of intimidation, coercion or ransom. Effects of chemical contaminants are like those of biological agents.

Use of conventional weapons and explosives against persons or property in violation of the criminal laws of the United States for purposes of intimidations, coercion, or ransom is conventional terrorism. Hazard effects are instantaneous; additional secondary devices may be used, lengthening the time duration of the hazard until the attack site is determined to be clear. The extent of damage is determined by the type and quantity of explosive. Effects are generally static other than cascading consequences and incremental structural failures. Conventional terrorism can also include tactical assault or sniping from remote locations.

Radiological terrorism is the use of radiological materials against persons or property in violation of the criminal laws of the United States for purposes of intimidation, coercion or ransom. Radioactive contaminants can be dispersed using sprayers/aerosol generators, or by point of line sources such as munitions, covert deposits and moving sprayers or by

the detonation of a nuclear device underground, at the surface, in the air or at high altitude.

Electronic attack using one computer system against another in order to intimidate people or disrupt other systems is a cyber-attack. All governments, businesses and citizens that conduct business utilizing computers face these threats. Cyber-security and critical infrastructure protection are among the most important national security issues facing our country today. The Florida Department of Law Enforcement Computer Crime Center helps law enforcement across the State solve sophisticated crimes involving digital evidence. Cyber attack is discussed in greater detail in Section 2.5.20.

Mass demonstrations, or direct conflict by large groups of citizens, as in riots and non-peaceful strikes, are examples of public disorder. These are assembling of people together in a manner to substantially interfere with public peace to constitute a threat, and with use of unlawful force or violence against another person, or causing property damage or attempting to interfere with, disrupting, or destroying the government, political subdivision, or group of people. Labor strikes and work stoppages are not considered in this hazard unless they escalate into a threat to the community. Vandalism is usually initiated by a small number of individuals and limited to a small target or institution. Most events are within the capacity of local law enforcement. Civil disturbance is discussed in greater detail in Section 2.5.19.

The Southern Poverty Law Center (SPLC) reports115 active hate groups in Florida, shown in Table 2.102. The SPLC defines a hate group as any group with “beliefs or practices that attack or malign an entire class of people – particularly when the characteristics being maligned are immutable.” It is important to note that inclusion on the SPLC list is not meant to imply that a group advocates or engages in violence or other criminal activity.

Table 2.102 - Hate Groups Active in Florida

Group Description	Type	Location
Organization for Population Concerns	Anti-Immigrant	Ventura
Local Immigration Enforcement Network	Anti-Immigrant	Pompano Beach
Medical Group Advocating Family Values	Anti-LGBTQ	Gainesville
Religious Broadcasting Ministry	Anti-LGBTQ	Fort Lauderdale
Statewide Family Policy Council	Anti-LGBTQ	Orlando
Legal Group Advocating Family Rights	Anti-LGBTQ	Orlando
Faith-Based Legal Defense Organization	Anti-LGBTQ	Miami
Local Baptist Congregation	Anti-LGBTQ	Clermont
Faith-Based Community Church	Anti-LGBTQ	Orange Park
National Security Advocacy Group	Anti-Muslim	Lake Worth
Cultural Context and Advocacy Project	Anti-Muslim	Ave Maria
Family Advocacy Organization	Anti-Muslim	Tampa
National Security Awareness Group	Anti-Muslim	Lake Worth Beach
Community Action Group	Antigovernment General	Jacksonville

Group Description	Type	Location
Local Family Advocacy Coalition	Antigovernment General	Brevard County
Freedom Defense Group	Antigovernment General	Mulberry
Regional Freedom Defense - Brevard	Antigovernment General	Brevard County
Regional Freedom Defense - Duval	Antigovernment General	Duval County
Regional Freedom Defense - Hillsborough	Antigovernment General	Hillsborough County
Regional Freedom Defense - Miami-Dade	Antigovernment General	Miami-Dade County
Regional Freedom Defense - Nassau	Antigovernment General	Nassau County
Regional Freedom Defense - Osceola	Antigovernment General	Osceola County
Regional Freedom Defense - Polk	Antigovernment General	Polk County
Statewide Family Advocacy Group	Antigovernment General	Winter Haven
Parental Education Network	Antigovernment General	
Freedom Advocacy Legal Organization	Antigovernment General	Spring Hill
Firearm Ownership Advocacy Group	Antigovernment General	
Liberty Education Advocate	Antigovernment General	Wellborn
Constitutional Rights Educational Group	Antigovernment General	Wellborn
Local Parental Advocacy Chapter	Antigovernment General	Alachua County
Local Parental Advocacy Chapter	Antigovernment General	Bay County
Local Parental Advocacy Chapter	Antigovernment General	Brevard County
Local Parental Advocacy Chapter	Antigovernment General	Broward County
Local Parental Advocacy Chapter	Antigovernment General	Citrus County
Local Parental Advocacy Chapter	Antigovernment General	Clay County
Local Parental Advocacy Chapter	Antigovernment General	Collier County
Local Parental Advocacy Chapter	Antigovernment General	Flagler County
Local Parental Advocacy Chapter	Antigovernment General	Hernando County
Local Parental Advocacy Chapter	Antigovernment General	Highlands County
Local Parental Advocacy Chapter	Antigovernment General	Hillsborough County
Local Parental Advocacy Chapter	Antigovernment General	Indian River County
Local Parental Advocacy Chapter	Antigovernment General	Leon County
Local Parental Advocacy Chapter	Antigovernment General	Martin County
Local Parental Advocacy Chapter	Antigovernment General	Miami-Dade County
Local Parental Advocacy Chapter	Antigovernment General	Monroe County
Local Parental Advocacy Chapter	Antigovernment General	Okaloosa County
Local Parental Advocacy Chapter	Antigovernment General	Orange County
Local Parental Advocacy Chapter	Antigovernment General	Osceola County
Local Parental Advocacy Chapter	Antigovernment General	Palm Beach County
Local Parental Advocacy Chapter	Antigovernment General	Pasco County
Local Parental Advocacy Chapter	Antigovernment General	Pinellas County
Local Parental Advocacy Chapter	Antigovernment General	Polk County
Local Parental Advocacy Chapter	Antigovernment General	Putnam County

Group Description	Type	Location
Local Parental Advocacy Chapter	Antigovernment General	Santa Rosa County
Local Parental Advocacy Chapter	Antigovernment General	Sarasota County
Local Parental Advocacy Chapter	Antigovernment General	Seminole County
Local Parental Advocacy Chapter	Antigovernment General	St. Johns County
Local Parental Advocacy Chapter	Antigovernment General	St. Lucie County
Local Parental Advocacy Chapter	Antigovernment General	Volusia County
Local Parental Advocacy Chapter	Antigovernment General	Walton County
Education Reform Group - Florida Chapter	Antigovernment General	Tallahassee
Regional Moms Organization - Palm Beach	Antigovernment General	Palm Beach County
Regional Moms Organization - Polk County	Antigovernment General	Winter Haven
Regional Moms Organization - Sarasota	Antigovernment General	Venice
Local Patriots Network	Antigovernment General	Sarasota
Advocacy for Freedom Group	Antigovernment General	Sarasota
Civic Engagement Network	Antigovernment General	Escambia County
Local Change Advocates	Antigovernment General	Orlando
Local Change Advocates	Antigovernment General	Tampa
Online Patriot Network	Antigovernment General	South Daytona
Anti-Semitism Awareness Group	Antisemitism	Crystal River
Publishing Group	Antisemitism	Crestview
National Religious Organization	Antisemitism	Miami
Identity-Based Advocacy	Christian Identity	Panama City Beach
Conspiracy Theory Media	Conspiracy Propagandists	Auburndale
Faithful Militia Network	Militia Movement	
Historical Preservation Network	Neo-Confederate	
Nationalist Crew	Neo-Nazi	
Organization for Population Concerns	Anti-Immigrant	Ventura
Local Immigration Enforcement Network	Anti-Immigrant	Pompano Beach
Medical Group Advocating Family Values	Anti-LGBTQ	Gainesville
Religious Broadcasting Ministry	Anti-LGBTQ	Fort Lauderdale
Statewide Family Policy Council	Anti-LGBTQ	Orlando
Legal Group Advocating Family Rights	Anti-LGBTQ	Orlando
Faith-Based Legal Defense Organization	Anti-LGBTQ	Miami
Local Baptist Congregation	Anti-LGBTQ	Clermont
Faith-Based Community Church	Anti-LGBTQ	Orange Park
National Security Advocacy Group	Anti-Muslim	Lake Worth
Cultural Context and Advocacy Project	Anti-Muslim	Ave Maria
Family Advocacy Organization	Anti-Muslim	Tampa
National Security Awareness Group	Anti-Muslim	Lake Worth Beach
Community Action Group	Antigovernment General	Jacksonville

Group Description	Type	Location
Local Family Advocacy Coalition	Antigovernment General	Brevard County
Freedom Defense Group	Antigovernment General	Mulberry
Regional Freedom Defense - Brevard	Antigovernment General	Brevard County
Regional Freedom Defense - Duval	Antigovernment General	Duval County
Regional Freedom Defense - Hillsborough	Antigovernment General	Hillsborough County
Regional Freedom Defense - Miami-Dade	Antigovernment General	Miami-Dade County
Regional Freedom Defense - Nassau	Antigovernment General	Nassau County
Regional Freedom Defense - Osceola	Antigovernment General	Osceola County
Regional Freedom Defense - Polk	Antigovernment General	Polk County
Statewide Family Advocacy Group	Antigovernment General	Winter Haven
Parental Education Network	Antigovernment General	
Freedom Advocacy Legal Organization	Antigovernment General	Spring Hill
Firearm Ownership Advocacy Group	Antigovernment General	
Liberty Education Advocate	Antigovernment General	Wellborn
Constitutional Rights Educational Group	Antigovernment General	Wellborn
Local Parental Advocacy Chapter	Antigovernment General	Alachua County
Local Parental Advocacy Chapter	Antigovernment General	Bay County
Local Parental Advocacy Chapter	Antigovernment General	Brevard County
Local Parental Advocacy Chapter	Antigovernment General	Broward County
Local Parental Advocacy Chapter	Antigovernment General	Citrus County
Local Parental Advocacy Chapter	Antigovernment General	Clay County
Local Parental Advocacy Chapter	Antigovernment General	Collier County
Local Parental Advocacy Chapter	Antigovernment General	Flagler County

Source: Southern Poverty Law Center, 2023, https://www.splcenter.org/hate-map

One group identified by the SPLC as active in Collier County promotes opposition to certain government policies and educational practices.

- *Warning Time: 4 – Less than 6 hours*
- *Duration: 1 – Less than 6 hours*

Generally, no warning is given for specific acts of terrorism. Duration is dependent on the vehicle used during the terrorist attack. This score considers a prolonged scenario with continuous impacts.

LOCATION

A terrorist threat could occur anywhere in Collier County, but it is more likely to target highly populated areas, critical infrastructure, or symbolic locations. Collier County and its jurisdictions remain vulnerable to such threats, with any of the critical facilities identified by the LMS Working Group being potential targets.

- *Spatial Extent: 1 – Negligible*

EXTENT

The extent of a terrorist incident is tied to many factors, including the attack vector, location, time of day, and other circumstances; for this reason, it is difficult to put assess a single definition or conclusion of the extent of "terrorism." As a general rule, terrorism incidents are targeted to where they can do the most damage and have the maximum impact possible, though this impact is tempered by the weapon used in the attack itself.

- *Impact: 4 – Catastrophic*

HISTORICAL OCCURRENCES

As noted in the previous Collier County Local Mitigation Strategy, there have been no major terror events in the County, thus the hazard risk had not previously been analyzed. There is still, however, some possibility that one could occur in the future given the incidents that have occurred in the United States in the past and the facilities and locations in the county that could be potential targets.

PROBABILITY OF FUTURE OCCURRENCE

While difficult to estimate when a deliberate act like terrorism may occur, it can be inferred that the probability of a terrorist attack in any one area in the County is very low at any given time. When identified, credible threats may increase the probability of an incident; these threats are generally tracked by law enforcement.

- *Probability: 1 – Unlikely*

CLIMATE CHANGE

Climate change is not expected to influence terrorism. However, climate change could cause more protests, gatherings, or votes which could be targets for terrorism.

VULNERABILITY ASSESSMENT

PEOPLE

People can suffer death or illness as a result of a terrorist attack. Symptoms of illness from a biological or chemical attack may go undetected for days or even weeks. Local healthcare workers may observe a pattern of unusual illness or early warning monitoring systems may detect airborne pathogens. People will face increased risk if a biological or chemical agent is released indoors, as this may result in exposure to a higher concentration of pathogens, whereas agents that are released outdoors would disperse in the direction of the wind. Physical harm from a weapons attack or explosive device is not dependent on location, but risk is greater in areas where higher numbers of people may gather. People could also be affected by an attack on food and water supply. In addition to impacts on physical health, any terrorist attack could cause significant stress and anxiety.

- **Population Patterns**:
    - Growing population near key government and public facilities.
    - Increased public gatherings during large-scale events and seasonal festivities.

- Vulnerable populations, such as schoolchildren and event attendees, concentrated in high-profile venues.
- **Underserved Populations**: Minority communities may be disproportionately affected during certain targeted attacks. Residents with limited transportation options may face difficulties evacuating from large public venues.

PROPERTY

The potential for damage to property is highly dependent on the type of attack. Buildings and infrastructure may be damaged by an explosive device or by contamination from a biological or chemical attack. Impacts are generally highly localized to the target of the attack.

- **Land Use/Development Trends**:
  - Expansion of large venues, convention centers, and tourism hubs that could be potential targets.
  - Development of transportation hubs with limited physical security measures.
  - Increased commercial activity in urban centers, creating high-density zones with critical infrastructure.

ENVIRONMENT

Environmental impacts are also dependent on the type of attack. Impacts could be negligible or could require major clean-up and remediation.

CONSEQUENCE ANALYSIS

Table 2.103 summarizes the potential detrimental consequences of a terror threat.

Table 2.103 – Consequence Analysis – Terrorism

Category	Consequences
Public	Illness, injury, or fatality are possible; these impacts would be highly localized to the attack. Widespread stress and psychological suffering may occur.
Responders	Responders face increased risks during an effort to stop an attack or rescue others while an attack is underway.
Continuity of Operations (including Continued Delivery of Services)	Critical infrastructure may be targeted by an attack; therefore, continuity of operations may be affected. Long-term issues may arise if transportation or utility infrastructure is severely damaged.
Property, Facilities and Infrastructure	Impacts depend of the type of attack. Buildings and infrastructure could be unaffected or completely destroyed.
Environment	Water and food supply could be contaminated by a biological or chemical attack. Remediation could be required.
Economic Condition of the Jurisdiction	The local economy could be disrupted, depending on the location and scale of an attack.

Category	Consequences
Public Confidence in the Jurisdiction's Governance	Loss of public confidence likely should an attack be carried out; additional loss of confidence and trust may result if response and recovery are not swift and effective

HAZARD SUMMARY BY JURISDICTION

The following table summarizes terrorism hazard risk by jurisdiction. This risk is not expected to vary substantially between jurisdictions.

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Everglades City	1	4	1	4	1	2.2	M
Seminole Tribe Immokalee Reservation	1	4	1	4	1	2.2	M
Marco Island	1	4	1	4	1	2.2	M
Naples	1	4	1	4	1	2.2	M
Unincorporated Collier County*	1	4	1	4	1	2.2	M

*Note: Unincorporated Collier County includes the following jurisdictions: Collier County Government, Collier County Public Schools, Collier Mosquito Control District, North Collier Fire Control District, Greater Naples Fire Rescue District, Immokalee Fire Control District, Naples Airport Authority, Port of the Isles, and South Florida Water Management District.

2.5.18 MASS MIGRATION INCIDENT

HAZARD DESCRIPTION

Collier County's position on the Gulf Coast at the southern tip of the Florida peninsula makes it a potential entry point for large numbers of immigrants and refugees seeking to enter the United States. In Florida, immigrants and refugees primarily come from the Caribbean, Mexico, and South America. Their arrival may pose risks to public health, safety, and welfare, both for local residents and for the immigrants themselves, particularly if they are detained for extended periods. To address this the State of Florida has collaborated with the federal government to develop a Mass Immigration Annex, which bridges the gap between the federal Mass Immigration Plan and the National Response Framework. While enforcing immigration laws remains a federal responsibility, Collier County officials may need to work closely with state and federal agencies to manage a mass migration event.

MASS MIGRATION

According to FEMA, mass migration is defined as "the sudden and large-scale movement of people across boarders, typically as a result of political instability, natural disasters, or economic hardship". A continuous and high-volume influx of migrants over an extended period could overwhelm the usual capacity of local United States Coast Guard and Customs and Boarder Protection offices. Undocumented individuals may struggle to assimilate without further straining local economies and already burdened infrastructure.

UNACCOMPANIED MINORS

FEMA defines an unaccompanied minor as a child who has no lawful immigration status in the United States. An unaccompanied child is under the age of 18 and has either no parent or legal guardian in the United States or legal guardian in the United States available to provide care and physical custody.

These children often leave their home countries to reunite with family members already in the U.S. They migrate for various reasons such as search of employment or educational opportunities in the United States. If an unaccompanied child is detained by immigration authorities, they are placed under the care and protection of the Office of Refugee Resettlement (ORR). Federal law mandates that ORR provide food, shelter, and medical care for these children until they can be safely released to sponsors, usually family members, while awaiting their immigration proceedings. According to the U.S. Department of Health & Human Services, Collier County had a total of 405 unaccompanied minors released to sponsors in 2024 through July.

MASS IMMIGRATION

Mass Immigration is defined as a significant influx of people from different countries settling into a new country to live. Immigration is the process by which individuals move to a country where they are not native or citizens, intending to live there. According to U.S. Code, an immigrant is defined as either someone applying for entry into the United States at a port-of-entry or a person intercepted in international or U.S. waters and brought into the country by any means at any location.

Migration or immigration was the primary source of Florida's population growth in 2015 with 86% of the growth due to net migration and immigration. A significant of immigrants to Collier County place strain on the local economy and infrastructure.

- *Warning Time: 3 – 6 to 12 hours*
- *Duration: 4 – More than 1 week*

LOCATION

Collier County and its jurisdictions, including the coastal communities of Naples, Marco Island, and Everglades City, are vulnerable to mass migration incidents, with the most likely points of entry along the coastline. Everglades City, located within Big Cypress National Park and home to the 10,000 Islands, presents unique challenges due to its remote and extensive coastal geography. The county's proximity to islands such as Cuba, Puerto Rico, the Dominican Republic, and Haiti, as well as the nearby Gulf Coast of Mexico, increases the likelihood of large-scale maritime migration during periods of political instability, economic crises, or natural disasters in these regions. Additionally, domestic mass migration may occur as large groups evacuate to Collier County due to hazards like hurricanes or wildfires in other parts of Florida or neighboring states. A sudden influx of people could place significant strain on local resources, including housing, healthcare, transportation, and emergency services, underscoring the need for comprehensive preparedness and response strategies.

- *Spatial Extent: 3 – Moderate*

EXTENT

A mass migration events could impact all of Collier County, though migrants are more likely to settle in areas where established communities of their same origin already exist. These areas often offer familiar cultural and social support networks, making it easier for newcomers to integrate and access resources. For instance, neighborhoods with significant populations of Latin American or Caribbean origin may see a larger influx due to shared language, culture, and existing familial or social ties. This clustering specific healthcare, and community-based organizations, which cater to the unique needs of these groups. Additionally, the concentration of new arrivals in these in these areas could create challenges, such as overcrowding, higher competition for housing and employment, and greater pressure on local infrastructure and public services. The broader effects, however, would still reverberate throughout the entire county as increased population density and changing demographics influence from public policy and resource allocation to economic and social dynamics.

- *Impact: 3 – Critical*

HISTORICAL OCCURRENCES

There have been several migration waves over the years in Collier County. In the 1980's-1990's there was an increase in migrants from Hatiti and Cuba. The increase in population contributed to the planning areas demographic changes. Hurricane Andrew in 1992 also caused mass displacement throughout the county. People moved from surrounding areas to seek new homes and job opportunities more inland. These immigration events can result in an increase in migration events over the years. As previously mentioned, there have been approximately 775,000 unauthorized immigrants in the State of Florida since 2016.

PROBABILITY OF FUTURE OCCURRENCE

Mass migration events are inherently challenging to predict, primarily because they often arise suddenly due to unforeseen circumstances. While it is difficult to forecast specific incidents, Collier County's coastal location suggests a higher probability of experiencing such events in the future. The region's proximity to the Caribbean and Latin American, areas prone to political instability, economic hardship, and natural disasters, makes it particularly vulnerable.

Economic crisis in countries like Cuba, Haiti, or Mexico could serve as early warning signs for potential mass migration. Historically, these nations have contributed significantly to the immigration population in Collier County. The existing communities from these regions may act as pull factors, making Collier County an attractive destination for future migrants seeking safety, stability, or reunification with family members.

Additionally, environmental factors such as hurricanes, rising sea levels, and other climate-related events could also prompt sudden and large-scale migrants to this part of Florida. Collier County is likely to continue to be a significant destination for those displaces by future crises, whether political, economic, or environmental.

- *Probability: 2 – Possible*

CLIMATE CHANGE

Climate change has the possibility to influence mass migration, primarily through indirect effects such as intensification of severe storms, rising sea levels, prolonged drought, and an increase in natural disasters like earthquakes. These environmental changes could render certain regions uninhabitable, forcing people to leave their homes in search of safer, more sustainable environments.

VULNERABILITY ASSESSMENT

PEOPLE

A mass migration event can lead to significant risks, including potential loss of life and injury for those involved. There are populations that are more vulnerable to a mass migration incident, such as children and the elderly. Undocumented individuals may be hesitant to seek help or evacuate during emergencies due to fear of interacting with law enforcement. If they do evacuate, the sudden increase in population could overwhelm shelters, leading to congestion and overcrowding.

- **Population Patterns**:
    - Population pressures from surges of displaced individuals seeking shelter or resources.
    - Expansion of immigrant communities in vulnerable coastal areas.
    - Increased demands on temporary shelter facilities during mass migration events.
    - **Underserved Populations**: Migrant and refugee populations may lack access to stable housing, employment, and emergency support services during large-scale displacements.

Additionally, migrants may face challenges in accessing essential resources such as food, education, clean water, employment, translators, and housing. The influx of people can strain public safety resources, potentially depleting them and causing broader issues within the community. Mass migration incidents exacerbate the vulnerabilities of affected populations by exposing them to a wide range of physical, economic, social, and psychological challenges.

PROPERTY

A mass migration incident can place significant strain on various local resources and services, particularly if authorities intervene and detain a large number of individuals. Detention facilities may quickly become overcrowded, leading to inadequate conditions and increased challenges in managing and processing the influx of cases.

- **Land Use/Development Trends**:
    - Development of agricultural and low-income housing in rural areas that may serve as initial entry points.
    - Limited planning for emergency housing within new developments.

- Increased need for community infrastructure to accommodate growing populations.

Social service services, including healthcare, housing, and welfare programs, may also be overwhelmed as they attempt to meet the needs of incoming immigrants and migrants. Unaccompanied children, who are particularly vulnerable, require specialized care and support, adding further strain to child welfare systems. These services might find themselves under-resources and overburdened, leading to delays in assistance, reduced service quality, and challenges in ensuring the safety and well-being of those in need.

ENVIRONMENT

The environmental effects of mass migration incident are influenced by the scale of the migration, the location, and the capacity of the area to support an influx of people. For instance, an increase in population can mean an increase demand on water supply. Overpopulated communities place a strain on public utilities and mass transit. Increased pressure on natural resources, pollution, habitat construction, and the strain on protected areas all contribute to the vulnerability of the environment.

CONSEQUENCE ANALYSIS

Table 2.104 shows the consequences of a mass migration incident.

Table 2.104 – Consequence Analysis – Mass Migration Incident

Category	Consequences
Public	Risk of loss of life and injury among migrants, exacerbated by limited access to essential resources such as food, water, and shelter. These shortages can lead to severe health crises among the affected populations.
Responders	Responders may experience moderate and light impacts. The safety and effectiveness of response efforts depend heavily on the preparedness and protection of responders.
Continuity of Operations (including Continued Delivery of Services)	The influx of large numbers of migrants can overwhelm public safety resources and public services leading to localized disruptions. The lack of adequate resources to manage the situation may hinder the continued delivery of essential services.
Property, Facilities and Infrastructure	Localized impact to facilities and infrastructure in the areas of migration. Lack of housing available.
Environment	Environmental damage to locations seeing large impacts from migration.
Economic Condition of the Jurisdiction	Local economy and finances may be affected, depending on number of migrants.
Public Confidence in the Jurisdiction's Governance	Ability to respond and recover may be questioned and challenged if planning, response, and recovery not timely and effective.

HAZARD SUMMARY BY JURISDICTION

The following table summarizes mass migration incident hazard risk by jurisdiction. This risk is not expected to change substantially between jurisdictions.

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Everglades City	2	3	3	3	4	2.8	M
Seminole Tribe Immokalee Reservation	2	3	3	3	4	2.8	M
Marco Island	2	3	3	3	4	2.8	M
Naples	2	3	3	3	4	2.8	M
Unincorporated Collier County*	2	3	3	3	4	2.8	M

*Note: Unincorporated Collier County includes the following jurisdictions: Collier County Government, Collier County Public Schools, Collier Mosquito Control District, North Collier Fire Control District, Greater Naples Fire Rescue District, Immokalee Fire Control District, Naples Airport Authority, Port of the Isles, and South Florida Water Management District.

2.5.19 CIVIL DISTURBANCE

HAZARD BACKGROUND

Civil disorder is a term that generally refers to groups of people purposely choosing not to observe a law, regulation, or rule, usually in order to bring attention to a cause, concern, or agenda. Civil disorder can take the form of small gatherings or large groups blocking or impeding access to a building or disrupting normal activities by generating noise and intimidating people. They can range from a peaceful sit-in to a full-scale riot in which a mob burns or otherwise destroys property and terrorizes individuals. Even in its more passive forms, a group that blocks roadways, sidewalks, or buildings interferes with public order. In the 1990s abortion clinics, for example, were targets for these disruptive-type activities.

Throughout this country's history, incidents that disrupted the public peace have figured prominently. The constitutional guarantees allow for ample expression of protest and dissent, and in many cases collide with the preamble's requirement of the government "to ensure domestic tranquility." Typical examples of such conflicting ideology include the protest movements for civil rights in the late 1960s and the Vietnam War protest demonstrations in the early 1970s. The balance between an individual's and group's legitimate expression of dissent and the right of the populace to live in domestic tranquility requires the diligent efforts of everyone to avoid such confrontations in the future.

In modern society, laws have evolved that govern the interaction of its members to peacefully resolve conflict. In the United States, a crowd itself is constitutionally protected under "the right of the people to peacefully assemble." However, assemblies that are not peaceable are not protected, and this is generally the dividing line between crowds and mobs. The laws that deal with disruptive conduct are generally grouped into offenses that disturb the public peace. They range from misdemeanors, such as blocking sidewalks or challenging another to fight, to felonies, such as looting and rioting.

It is important to note that civil unrest is not synonymous with peaceful assembly or peaceful protest; Americans are guaranteed a right to assemble peacefully under the First Amendment to the Constitution.

TYPES OF CROWDS

A crowd may be defined as a casual, temporary collection of people without a strong, cohesive relationship. Crowds can be classified into four general categories:

Casual Crowd — A casual crowd is merely a group of people who happen to be in the same place at the same time. Examples of this type include shoppers and sightseers. The likelihood of violent conduct is all but nonexistent.

Cohesive Crowd — A cohesive crowd consists of members who are involved in some type of unified behavior. Members of this group are involved in some type of common activity, such as worshiping, dancing, or watching a sporting event. Although they may have intense internal discipline (e.g., rooting for a team), they require substantial provocation to arouse to action.

Expressive Crowd — An expressive crowd is one held together by a common commitment or purpose. Although they may not be formally organized, they are assembled as an expression of common sentiment or frustration. Members wish to be seen as a formidable influence. One of the best examples of this type is a group assembled to protest something.

Aggressive Crowd — An aggressive crowd is made up of individuals who have assembled for a specific purpose. This crowd often has leaders who attempt to arouse the members or motivate them to action. Members are noisy and threatening and will taunt authorities. They tend to be impulsive and highly emotional and require only minimal stimulation to arouse them to violence. Examples of this type of crowd include demonstrations and strikers.

TYPES OF MOBS

A mob can be defined as a large disorderly crowd or throng. Mobs are usually emotional, loud, tumultuous, violent, and lawless. Like crowds, mobs have different levels of commitment and can be classified into four categories:

Aggressive Mob—An aggressive mob is one that attacks, riots, and terrorizes. The object of violence may be a person, property, or both. An aggressive mob is distinguished from an aggressive crowd only by lawless activity. Examples of aggressive mobs are the inmate mobs in prisons and jails, mobs that act out their frustrations after political defeat, or violent mobs at political protests or rallies.

Escape Mob—An escape mob is attempting to flee from something such as a fire, bomb, flood, or other catastrophe. Members of escape mobs have lost their capacity to reason and are generally impossible to control. They are characterized by unreasonable terror.

Acquisitive Mob—An acquisitive mob is one motivated by a desire to acquire something. Riots caused by other factors often turn into looting sprees. This mob exploits a lack of control by authorities in safeguarding property. Examples of acquisitive mobs would include the looting in South Central Los Angeles in 1992, or food riots in other countries.

Expressive Mob—An expressive mob is one that expresses fervor or revelry following some sporting event, religious activity, or celebration. Members experience a release of pent-up emotions in highly charged situations. Examples of this type of mob include the

June 1994 riots in Canada following the Stanley Cup professional hockey championship, European soccer riots, and those occurring after other sporting events in many countries, including the United States.

Although members of mobs have differing levels of commitment, as a group they are far more committed than members of a crowd. As such, a "mob mentality" sets in, which creates a cohesiveness and sense of purpose that is lacking in crowds. Thus, any strategy that causes individual members to contemplate their personal actions will tend to be more effective than treating an entire mob as a single entity.

- *Warning Time: 4 – Less than six hours*
- *Duration: 3 – Less than one week*

LOCATION

Collier County and its jurisdictions are vulnerable to civil disorder, which can arise from various causes and may occur spontaneously or as a result of escalating tensions. While civil disorder can erupt anywhere, it is more likely in areas with large population gatherings, such as Naples, Marco Island, and Everglades City. Locations that attract political or public rallies, such as government buildings, parks, and public spaces, are potential focal points for disturbances. Additionally, arenas, stadiums, public festivals, and sporting events present opportunities for civil unrest due to high attendance and heightened emotions. Civil disorder may also occur near locations where a "trigger event" has taken place, further emphasizing the need for preparedness throughout all jurisdictions within Collier County.

- *Spatial Extent: 2 – Small*

EXTENT

The ultimate extent of any civil disorder incident will depend on the magnitude of that event and its location. The more widespread an incident is, the greater the likelihood of excessive injury, loss of life and property damage; additional factors, such as the ability of law enforcement to contain the event, are also critical in minimizing damages.

- *Impact: 2 – Limited*

HISTORICAL OCCURRENCES

There are documented events that indicate that Florida and the southern peninsula region are not immune to riots, protests, and social upheaval. Some brief examples of civil unrest near Collier County are provided below.

The Miami Riot of 1968 occurred at the Vote Power building in the Liberty City neighborhood in August. A group of black organizations called for this rally in order to make known the unfair systems at play throughout the nation. This date overlapped with the Republican National Convention in Miami Beach. Things got aggressive once a white reporter was forcibly kicked out and the police showed up. One passer-by had his car stoned and multiple bottles thrown at him for having a republican political sticker on his car. He fled his car which was then overturned and set on fire. The following day, the police responded to what they thought was sniper fire as the rioters were terrorizing

shops. The police killed three residents and left a bullet wound in a fourth only to find no weapons close by. The riot ended when the Florida National Guard responded, imposed a curfew, and heavy rains kept people inside.

The 1980 Miami riots were race riots that began on May 18, 1980. The event that triggered the riots was the clearing of four Dade County Public Safety Department officers. They had previously been tried for the manslaughter of Arthur McDuffie, a black salesman who passed away from wounds suffered during a high-speed chase in which these four white officers were involved. The riot broke out in the Liberty City and Overtown neighborhoods. After filing a civil lawsuit against County officials, McDuffie's family received a settlement of $1.1 million from Dade County. These were the deadliest riots between the 1960s and the 1992 Los Angeles riots.

The 1990 Wynwood riot began in the Wynwood neighborhood in Miami after six officers had been acquitted for the death of Leonardo Mercado. Mercado was a Puerto Rican and suspected drug dealer. Puerto Ricans were unhappy during this time since they felt they had no representation in any positions of authority. Six undercover officers in the Street Narcotics Unit of the Miami Police Department met with Mercado outside of his apartment in 1988. After forcing him back inside, they beat him to death. They were charged with conspiracy and three counts of civil rights violations. After their acquittal, a mob became violent for about three hours causing $3 million in property damage before order was restored by 200 patrolmen.

The 1996 St. Petersburg riots began after the death of an unarmed black, male teenage driver which occurred during a police traffic stop. There were two other people at the scene, one was the shooting policeman's partner, and the other was the passenger in the teenage male's car. Additionally, there were multiple witnesses, and everyone had a slightly different story of what happened. Immediately following the shooting, a crowd gathered and became frustrated when police didn't release any information. The crowd began throwing rocks and bottles at police officers. The riot continued through other areas of the city resulting in 20 people arrested, 28 arson fires, 11 injured, and multiple stores were looted. After the two original responding police officers were cleared of any charges a few weeks later, more rioting occurred.

Since 2010, civil unrest has again trended toward race relations as a cause. From controversial shootings of African American men by white police officers to the resulting Black Lives Matter movement, these trends may continue as the country finds ways to improve race relations. Florida has experienced specific incidents of racial unrest and violence as part of this trend and may continue to see these types of incidents in the future.

Specific incidents occurring in a single jurisdiction can cause civil unrest nationally; the Michael Brown shooting incident in Ferguson, MO is an example of this. On November 25, 2014, CNN reported that thousands of people in more than 170 U.S. cities rallied to protest the grand jury decision not to indict the officer involved.

Another recent trend is the destruction, defacement, and/or removal of statues and other memorials dedicated to the Confederacy during the Civil War. Areas near Collier County have experienced incidents of this nature, including the vandalization and subsequent

removal of a confederate monument in West Palm Beach in August 2017, the removal and renaming of streets in Hollywood in April 2018, and the removal of the Robert E. Lee's bust in Fort Meyers in March 2019. As the country continues to debate whether monuments to the Confederacy are appropriate, these types of incidents may continue to occur.

PROBABILITY OF FUTURE OCCURRENCE

In their article on "Understanding Riots" published in the Cato Journal (Vol. 14, No 1), David D. Haddock and Daniel D. Polsby note that a large crowd itself is not an incipient riot merely because it assembles a great many people. Haddock and Polsby explain that "starting signals" must occur for civil disorder to erupt; these starting signals include certain kinds of high-profile events. With any conventional triggering event, such as news of an assassination or unpopular jury verdict, crowds form spontaneously in various places as word of the incident spreads, without any one person having to recruit them. But since not every crowd threatens to evolve into a riot, the authors reason that a significant number of people must expect and desire that the crowd will become riotous. In addition, "someone has to serve as a catalyst" The authors conclude that once someone has taken a risk to get things started, the rioting will begin and spread until civil authorities muster enough force to make rioters believe they face a realistic prospect of arrest.

Collier County will likely experience future episodes of marches, protests, demonstrations, and gatherings that could lead to some type of disruptive civil disorder. However, based on the general history of civil disturbance and the various human factors noted above, the probability that such incidents will develop into full-scale, widespread riots is considered low.

Should the planning area experience future incidents of disruptive civil disorder or rioting, the severity of a given event could range from low to high, depending on many factors. Civil disturbances may result in arrests, damage to property (police vehicles with broken windows, etc.), injuries, fatalities and manpower/overtime costs for police, fire, and other response services.

- *Probability: 2 – Possible*

CLIMATE CHANGE

As a human-caused hazard, any changes in climate would not have a direct impact on civil disorder. Far more relevant, though, could be the implications of future climate change as a cause for civil disorder. Climate change impact forecasts include increasingly extreme weather patterns that exacerbate issues of drought, flooding, severe weather and other weather hazards globally that could affect whole ecosystems. Incidents of civil disobedience could be a secondary result related to societal unrest because of other climate-impacted hazards.

VULNERABILITY ASSESSMENT

As discussed above, the impacts from civil disorder vary greatly depending on the nature, severity, and success of the attack.

When rioting does break out, it generally proves extremely difficult for first-responder law enforcement authorities to quell the mob promptly. The rules of constitutional law set stringent limits on how police officers can behave toward the people they try to arrest. Restraint also plays a crucial part in avoiding any action that "fans the flames." Initial police presence is often undermined because forces may be staffed below the peak loads needed to bring things back under control. As a result, the riot may continue until enough state police or National Guard units arrive to bolster the arrest process and subsequently restore order. In many cases, damage to life and property may already be extensive.

PEOPLE

Injuries and fatalities can occur during civil unrest.

- **Population Patterns**:
    - Increased population density in urban areas, particularly around government buildings and public spaces.
    - Vulnerable populations, such as older adults and those with mobility challenges, may face difficulties during civil unrest.
    - Growing seasonal and tourism population adding to potential crowd sizes in public events and demonstrations.
    - **Underserved Populations**: Residents in low-income or minority communities may have less trust in authorities, leading to reduced participation in safety measures during civil disturbances.

PROPERTY

Should a large gathering of people turn violent, damage to property and infrastructure can result, as well as looting of property.

- **Land Use/Development Trends**:
    - Expansion of large venues, civic centers, and event spaces, increasing the risk of crowd-related incidents.
    - Development of mixed-use urban centers attracting large gatherings in small areas.
    - Increased residential housing near commercial zones and public spaces, exposing more residents to potential disruptions.

ENVIRONMENT

Environmental impacts could occur if the civil unrest occurs in an outdoor or environmentally sensitive area. These impacts would be tied to the parameters of the incident.

CONSEQUENCE ANALYSIS

Table 2.105 summarizes the potential consequences of civil unrest.

Table 2.105 – Consequence Analysis – Civil Unrest

Category	Consequences
Public	Possible injuries and fatalities can occur during civil unrest. The location of the unrest will be inaccessible to those who live or work in that area.
Responders	Localized impact expected to be severe for unprotected personnel and moderate to light for protected personnel.
Continuity of Operations (including Continued Delivery of Services)	Damage to facilities/personnel in the area of the incident may require temporary relocation of operations; localized disruption of lines of communication and destruction of facilities may postpone delivery of some services.
Property, Facilities and Infrastructure	Localized impact to facilities and infrastructure in the area of the incident. Some severe damage possible.
Environment	May cause extensive damage in isolated cases and some denial or delays in the use of some areas. Remediation needed.
Economic Condition of the Jurisdiction	Local economy and finances adversely affected, possibly for an extended period, depending on damage.
Public Confidence in the Jurisdiction's Governance	Ability to respond and recover may be questioned and challenged if planning, response, and recovery not timely and effective.

HAZARD SUMMARY BY JURISDICTION

The following table summarizes civil disturbance risk by jurisdiction. Risk is not expected to change substantially between jurisdictions.

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Everglades City	2	2	2	4	3	2.3	M
Seminole Tribe Immokalee Reservation	2	2	2	4	3	2.3	M
Marco Island	2	2	2	4	3	2.3	M
Naples	2	2	2	4	3	2.3	M
Unincorporated Collier County*	2	2	2	4	3	2.3	M

*Note: Unincorporated Collier County includes the following jurisdictions: Collier County Government, Collier County Public Schools, Collier Mosquito Control District, North Collier Fire Control District, Greater Naples Fire Rescue District, Immokalee Fire Control District, Naples Airport Authority, Port of the Isles, and South Florida Water Management District.

2.5.20 CRITICAL INFRASTRUCTURE DISRUPTION

HAZARD BACKGROUND

This hazard is primarily focused on critical infrastructure disruptions that result from cyber incidents or cyber-attacks. Cyber-attacks are commonly defined as "deliberate attacks on information technology systems in an attempt to gain illegal access to a computer, or

purposely cause damage." Cyber-attacks use malicious code to alter computer operations or data. The vulnerability of computer systems to attacks is a growing concern as people and institutions become more dependent upon networked technologies. The Federal Bureau of Investigation (FBI) reports that "cyber intrusions are becoming more commonplace, more dangerous, and more sophisticated," with implications for private- and public-sector networks.

There are many types of cyber-attacks. Among the most common is a direct denial of service, or DDoS attack. This is when a server or website will be queried or pinged rapidly with information requests, overloading the system and causing it to crash.

Malware, or malicious software, can cause numerous problems once on a computer or network, from taking control of users' machines to discreetly sending out confidential information. Ransomware is a specific type of malware that blocks access to digital files and demands a payment to release them. Hospitals, school districts, state and local governments, law enforcement agencies, businesses, and even individuals can be targeted by ransomware.

Cyber spying or espionage is the act of illicitly obtaining intellectual property, government secrets, or other confidential digital information, and often is associated with attacks carried out by professional agents working on behalf of a foreign government or corporation. According to cybersecurity firm Symantec, in 2016 "…the world of cyber espionage experienced a notable shift towards more overt activity, designed to destabilize and disrupt targeted organizations and countries."

Major data breaches - when hackers gain access to large amounts of personal, sensitive, or confidential information - have become increasingly common. The Symantec report says more than seven billion identities have been exposed in data breaches over the last eight years. In addition to networked systems, data breaches can occur due to the mishandling of external drives, as has been the case with losses of some state employee data.

Cybercrime can refer to any of the above incidents when motivated primarily by financial gain or other criminal intent.

The most severe type of attack is cyber terrorism, which aims to disrupt or damage systems in order to cause fear, injury, and loss to advance a political agenda.

- *Warning Time: 4 – Less than six hours*
- *Duration: 3 – Less than one week*

LOCATION

Collier County and its jurisdictions are highly interconnected and reliant on digital systems, making them vulnerable to cyber disruption events. These incidents can occur at any location where computing devices are used, affecting a single site or multiple areas across the county. Cyber disruptions can have widespread impacts, extending beyond the targeted system and affecting residents, businesses, and institutions throughout the region. Even disruptions originating outside Collier County can have significant consequences locally. A cyber-attack could potentially impact critical infrastructure, such

as public utilities, emergency services, healthcare systems, and financial institutions, disrupting essential services across the county and its municipal jurisdictions. As such, Collier County and its jurisdictions must remain vigilant and prepared for potential cyber threats.

- *Spatial Extent: 4 – Large*

EXTENT

The extent or magnitude/severity of a cyber disruption event is variable depending on the nature of the event. A disruption affecting a small, isolated system could impact only a few functions/processes. Disruptions of large, integrated systems and especially systems related to the functionality of critical facilities could impact many functions/processes, as well as many individuals that rely on those systems.

There is no universally accepted scale to quantify the severity of cyber-attacks. The strength of a DDoS attack is sometimes explained in terms of a data transmission rate. One of the largest DDoS disruptions ever, which brought down some of the internet's most popular sites on October 21, 2016, peaked at 1.2 terabytes per second. Data breaches are often described in terms of the number of records or identities exposed.

- *Impact: 3 – Critical*

HISTORICAL OCCURRENCES

The Privacy Rights Clearinghouse, a nonprofit organization based in San Diego, maintains an estimated timeline of 17,552 unique data breaches, of which at least 7,130 were acts of computer hacking, in the United States from 2005-2023. The database lists 700 total data breaches, including 330 hacking events in Florida, totaling over 19.6 million records breached since 2005. One attack was recorded in Naples, and others almost certainly included information on individuals who live in the region. Similarly, some residents in the region were likely affected by national and international data breaches. Media reports indicate an uptick in cyber-attacks across the state.

In 2018, Collier County was scammed out of $184,000 according to local news reports. Money from County offices was wire transferred to a fraudulent contractor unknowingly. The fraud originated abroad. Money was recovered from insurance carriers and the correct contractor was paid in full.

PROBABILITY OF FUTURE OCCURRENCE

Cyber-attacks occur daily, but most have negligible impacts at the local or regional level. The possibility of a larger disruption affecting systems within the area is a constant threat, but it is difficult to quantify the exact probability due to such highly variable factors as the type of attack and intent of the attacker. Minor attacks against business and government systems have become a commonplace occurrence but are usually stopped with minimal impact. Similarly, data breaches impacting the information of residents of the Collier County area are almost certain to happen in coming years. Major attacks or breaches specifically targeting systems in the area are less likely but cannot be ruled out.

- *Probability: 2 – Possible*

CLIMATE CHANGE

Climate change is not expected to affect critical infrastructure disruption.

VULNERABILITY ASSESSMENT

As discussed above, the impacts from a cyber-attack vary greatly depending on the nature, severity, and success of the attack.

PEOPLE

Cyber-attacks can have a significant cumulative economic impact. According to the Internet Crime Complaint Center run by the Federal Bureau of Investigation, the U.S. experienced a loss of $27.6 billion between the years 2018 to 2022. A major cyber-attack has the potential to undermine public confidence and build doubt in their government's ability to protect them from harm.

- **Population Patterns**:
    - Growing reliance on critical infrastructure to support residential and commercial growth.
    - Vulnerable populations, such as elderly residents and medically dependent individuals, relying on power-dependent medical devices.
    - Increased density in urban centers, intensifying the impacts of infrastructure failures.
    - **Underserved Populations**: Low-income households may be disproportionately affected by prolonged power outages due to limited backup resources and access to alternative shelter.

Injuries or fatalities from cyber-attacks would generally only be possible from a major cyber terrorist attack against critical infrastructure.

PROPERTY

Short of a major cyber terrorist attack against critical infrastructure, property damage from cyber-attacks is typically limited to computer systems.

- **Land Use/Development Trends**:
    - Expansion of residential and commercial developments, increasing the demand on energy and water systems.
    - Development of new commercial hubs that require cybersecurity and grid resilience enhancements.
    - Limited redundancy in power and water infrastructure in new housing areas.

ENVIRONMENT

Short of a major cyber terrorist attack against critical infrastructure, property damage from cyber-attacks is typically limited to computer systems. A major cyber terrorism attack could potentially impact the environment by triggering a release of a hazardous materials,

or by causing an accident involving hazardous materials by disrupting traffic-control devices.

CONSEQUENCE ANALYSIS

Table 2.106 summarizes the potential consequences of a cyber threat.

Table 2.106 – Consequence Analysis – Cyber Threat

Category	Consequences
Public	Cyber-attacks can impact personal data and accounts. Injuries or fatalities could potentially result from a major cyber terrorist attack against critical infrastructure.
Responders	Injuries or fatalities could potentially result from a major cyber terrorist attack against critical infrastructure.
Continuity of Operations (including Continued Delivery of Services)	Agencies that rely on electronic backup of critical files are vulnerable. The delivery of services can be impacted since governments rely, to a great extent, upon electronic delivery of services.
Property, Facilities and Infrastructure	Rare. Most attacks affect only data and computer systems. Sabotage of utilities and infrastructure from a major cyber terrorist attacks could potentially result in system failures that damage property on a scale equal with natural disasters. Facilities and infrastructure may become unusable as a result of a cyber-attack.
Environment	Rare. A major attack could theoretically result in a hazardous materials release.
Economic Condition of the Jurisdiction	Could greatly affect the economy. In an electronic-based commerce society, any disruption to daily activities can have disastrous impacts to the economy. It is difficult to measure the true extent of the impact.
Public Confidence in the Jurisdiction's Governance	The government's inability to protect critical systems or confidential personal data could impact public confidence. An attack could raise questions regarding the security of using electronic systems for government services.

HAZARD SUMMARY BY JURISDICTION

The following table summarizes critical infrastructure disruption risk by jurisdiction. Risk is not expected to change substantially between jurisdictions.

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Everglades City	2	3	4	4	3	3.0	H
Seminole Tribe Immokalee Reservation	2	3	4	4	3	3.0	H
Marco Island	2	3	4	4	3	3.0	H
Naples	2	3	4	4	3	3.0	H
Unincorporated Collier County*	2	3	4	4	3	3.0	H

*Note: Unincorporated Collier County includes the following jurisdictions: Collier County Government, Collier County Public Schools, Collier Mosquito Control District, North Collier Fire Control District, Greater Naples Fire Rescue District, Immokalee Fire Control District, Naples Airport Authority, Port of the Isles, and South Florida Water Management District.

2.5.21 SPECIAL EVENTS

HAZARD DESCRIPTION

Special events are defined as events of national significance or important visitors. Important visitors can include dignitaries among others. Many issues can arise because of these events including civil disturbance, terrorism, and criminal activity.

The U.S. Department of Homeland Security deem events that could be potential targets for terrorism or other criminal activity National Special Security Events (NSSE). These events can include but are not limited to summits of world leaders, meetings of international organizations, presidential nominating conversations, and presidential nominations. These events mostly occur in a specific location for a specific amount of time.

In order to determine what qualifies as a special event or an NSSE, there are several factors to consider.

Table **2.107** below shows some common factors that would cause an event to be a special or NSSE event.

Table 2.107 – Special Event Factors to Consider

Factor	Description
Dignitary Attendance	Events attended by U.S. officials or foreign dignitaries may cause federal interest to guarantee the event occurs without incident, or at least that resources are available in the case that an incident occurs.
Size	More attendees and participants in an event cause more security measures to be needed. Larger events typically attract more attention of terrorists or criminals and may see weapons of mass destruction.
Significance	An event that has historical, political, cultural, or symbolic significance may attract criminal or terrorist activity.
Duration	If an even lasts several days or weeks, it is unlikely local and state law enforcement alone will be able to control the security of said event. Federal assistance may be required.
Availability of State and Local Resources	If state and local jurisdictions don't have the expertise, experience, or manpower to ensure protection of those at an event, federal assistance may be required.
Number of Jurisdictions	Multiple jurisdictions are sometimes required to coordinate law enforcement and public safety agencies. It could be helpful to include an agency to oversee the coordination.
Threat Assessments	When there is anticipated terrorism or criminal activity.

Source: U.S. Department of Homeland Security, National Special Security Event (NSSE)

Though these events are typically planned, issues could pop up at any moment giving little forewarning. Mobs or other types of civil disturbance can easily occur at or in response to special events.

- *Warning Time: 4 – Less than 6 Hours*
- *Duration: 2 – Less than 24 Hours*

LOCATION

While special events could take place anywhere, they are most likely to occur at locations that attract large crowds, such as public spaces, entertainment venues, and hotels, golf courses and transportation corridors. Collier County and its jurisdictions host numerous annual events that draw significant attendance and require careful planning to ensure public safety and emergency preparedness. Some of the major recurring events in the county include, but are not limited to:

- **Naples Winter Wine Festival (January)** – A world-renowned charity event that attracts high-profile attendees and large crowds.
- **Marco Island Seafood and Music Festival (March)** – A popular event featuring food, music, and vendors, drawing both residents and tourists.
- **Everglades Seafood Festival (February)** – A major community gathering in Everglades City that attracts thousands of visitors.
- **Swamp Buggy Races (January & November)** – A signature Collier County event that draws large crowds to the Florida Sports Park.
- **Naples International Film Festival (October)** – An event that brings filmmakers and audiences from around the country.
- **Stone Crab Festival (October)** – A celebration of the region's seafood industry, held along Naples' waterfront areas.
- **Farmers Markets and Art Shows (Seasonal, October – April)** – Regular seasonal events that draw significant foot traffic throughout the county.
- **Sports Tournaments and Marathons (Year-Round)** – Including golf tournaments, triathlons, and charity runs that bring participants from various locations.
- **Fourth of July Fireworks and Parades (July 4th)** – Large-scale holiday celebrations that occur across the county.
- **Naples Christmas Parade and Holiday Events (December)** – Annual festivities that attract families and visitors to downtown Naples and other locations.

Collier County and its jurisdictions are susceptible to incidents that may occur during these and other special events. Large gatherings present potential challenges related to public safety, crowd control, traffic management, and emergency response. As such, it is essential for Collier County and all participating jurisdictions to implement

comprehensive preparedness and response strategies to mitigate potential risks associated with these events.

- *Spatial Extent: 1 – Negligible*

EXTENT

Special events tend to be in a small area which will be most impacted. In some cases, road closures may be expected for high volume traffic purposes.

- *Impact: 1 – Minor*

HISTORICAL OCCURRENCES

As detailed in the Civil Disturbance hazard in Section 2.5.19, the Miami Riot of 1968 occurred because of the Republican National Convention, a special event being held in Miami. While not in Collier County, it was nearby in Miami-Dade County.

PROBABILITY OF FUTURE OCCURRENCE

Collier County's beaches and proximity to Big Cypress National Preserve and Everglades National Park make it a popular destination for several special events. Therefore, it is likely that more special events will occur in the county in the future.

- *Probability: 3 – Likely*

CLIMATE CHANGE

Climate change is not expected to impact special event hazards. However, there could be more climate change summits or perhaps politically charged protests in the future which would require special security and preparation.

VULNERABILITY ASSESSMENT

PEOPLE

Special events by nature will congregate a group of people together, however large. Having a group of people in the same space can cause logistical problems. This leads to the possibility of injury or death, though death is unlikely unless there is a concurrent hazard such as terrorism, civil disturbance, or a natural disaster.

- **Population Patterns**:
    - Population surges during major sporting events, festivals, and dignitary visits.
    - Temporary increases in transient populations (e.g., tourists, vendors) concentrated in small areas.
    - Vulnerable populations, such as children and elderly attendees, may require special planning during mass gatherings.

- **Underserved Populations**: Low-income residents in nearby neighborhoods may experience disruptions to public services and increased traffic congestion during large events.

PROPERTY

Any damages to property are likely to be localized to the event space. Anytime people gather in the same space, there is a possibility of property damage.

- **Land Use/Development Trends**:
  - Development of new sports complexes, parks, and civic centers, increasing the frequency of large events.
  - Growth of downtown areas with mixed-use developments that host multiple public events.
  - Limited parking and emergency access routes in newly developed event venues.

ENVIRONMENT

Any damages to the environment are likely to be localized around an event. There is a low possibility of environmental damage without a simultaneous natural or human caused disaster.

CONSEQUENCE ANALYSIS

Table 2.108 shows the consequences for special events.

Table 2.108 – Consequence Analysis – Special Events

Category	Consequences
Public	Localized impact expected to be moderate for affected areas and moderate to light for other less affected areas without a concurrent hazard or disaster.
Responders	Adverse impact expected to be moderate for unprotected personnel and moderate to light for trained, equipped, and protected personnel.
Continuity of Operations (including Continued Delivery of Services)	Localized disruption of roads caused by incidents may postpone delivery of some services.
Property, Facilities and Infrastructure	Localized impact to facilities and infrastructure in the areas of the incident. Roads most adversely affected.
Environment	Environmental damage to trees, bushes, beaches, etc. possible but unlikely.
Economic Condition of the Jurisdiction	Local economy and finances may be adversely affected, depending on damage.
Public Confidence in the Jurisdiction's Governance	Ability to respond and recover may be questioned and challenged if planning, response, and recovery not timely and effective.

HAZARD SUMMARY BY JURISDICTION

The following table summarizes special event hazard risk by jurisdiction. Risks associated with this hazard do not vary substantially between jurisdictions.

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Everglades City	3	1	1	4	2	2.0	M
Seminole Tribe Immokalee Reservation	3	1	1	4	2	2.0	M
Marco Island	3	1	1	4	2	2.0	M
Naples	3	1	1	4	2	2.0	M
Unincorporated Collier County*	3	1	1	4	2	2.0	M

*Note: Unincorporated Collier County includes the following jurisdictions: Collier County Government, Collier County Public Schools, Collier Mosquito Control District, North Collier Fire Control District, Greater Naples Fire Rescue District, Immokalee Fire Control District, Naples Airport Authority, Port of the Isles, and South Florida Water Management District.

2.5.22 RED TIDE / ALGAE BLOOM

HAZARD DESCRIPTION

Red tide is a harmful type of algal bloom which are caused by colonies of algae growing out of control in aquatic environments. The name can be misleading since the blooms can be red, brown, blue, green, or yellow. Algae colonies themselves are not harmful until they are in excess. When they're out of control, they produce toxins that can harm humans, fish, shellfish, marine mammals, and birds. Algae have a seasonal growth cycle causing them to grow more in the spring and summer months, and they can often disappear in the winter months. Temperature, day length, and rainfall also affect their growth. The red tide organism, which is most commonly causing issues in Florida, Karenia brevis, is monitored by the Florida Fish and Wildlife Conservation Commission (FWC). They take daily samples in multiple locations to determine the level of red tide at any time.

The FWC measures the number of Karenia brevis cells in sample locations to determine the level of red tide present in each area. Table 2.109 below shows the measurement categories and possible effects of K. brevis.

Table 2.109 – Measurement and Effects of *Karenia Brevis*

Description	*K. brevis* abundance	Possible effects
Not present-background	Background levels of 1,000 cells or less	No effects anticipated
Very low	Greater than 1,000 to 10,000 cells per liter	Possible respiratory irritation Shellfish harvesting closures when cell abundance equals or exceeds 5,000 cells per liter
Low	Greater than 10,000 to 100,000 cells per liter	Respiratory irritation Shellfish harvesting closures

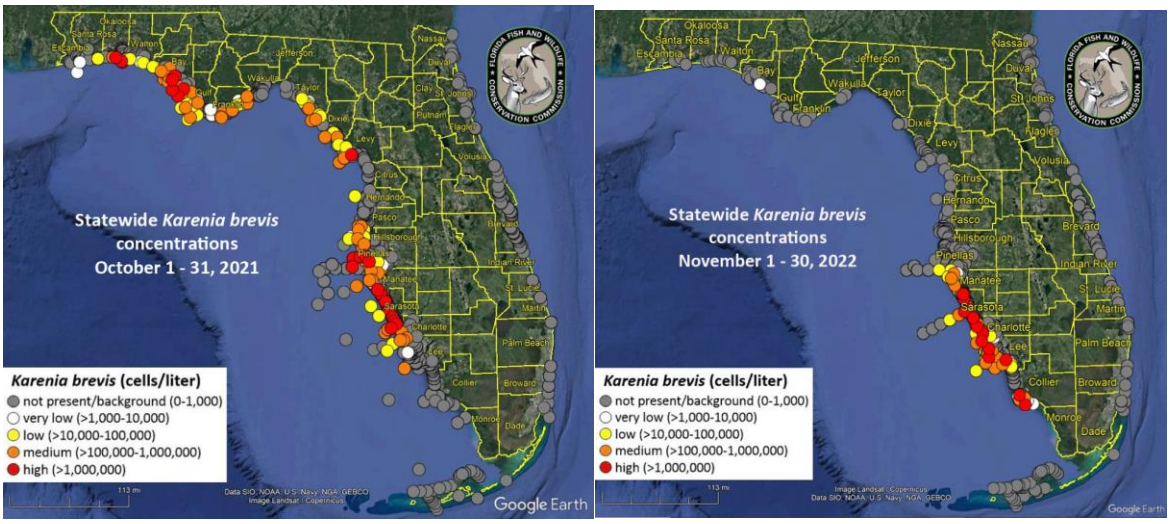
Description	*K. brevis* abundance	Possible effects
		Possible fish kills Probable detection of chlorophyll by satellites at upper range of cell abundance
Medium	Greater than 100,000 to 1,000,000 cells per liter	Respiratory irritation Shellfish harvesting closures Probable fish kills Detection of surface chlorophyll by satellites
High	Greater than 1,000,000 cells per liter	Respiratory irritation Shellfish harvesting closures Probable fish kills Detection of surface chlorophyll by satellites Water discoloration

Source: Florida Fish and Wildlife Conservation Commission

The measurement system above is the legend key for Figure 2.55 and Figure 2.56 which show Florida K. brevis concentrations in October 2021, November 2022, and December 2023 respectively. Over this period the concentration of the organism decreased to a "not present" measurement on the west coast of Florida.

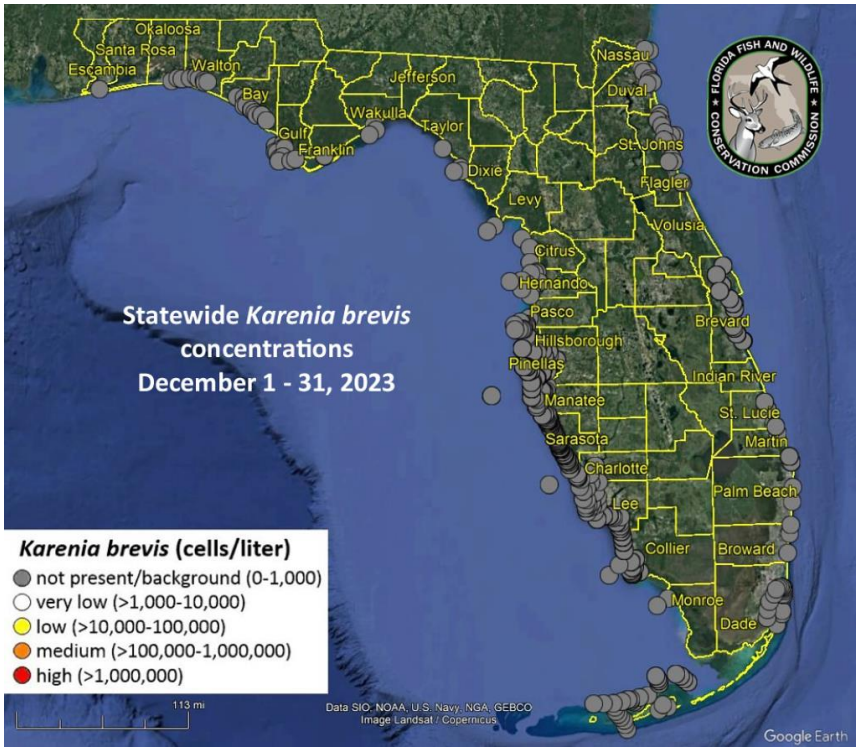
- *Warning Time: 1 – More than 24 hours*
- *Duration: 4 – More than 1 week*

Figure 2.55 – Red Tide Status Map, 2021-2022



Source: Florida Fish and Wildlife Conservation Commission

Figure 2.56 – Red Tide Status Map, December 2023



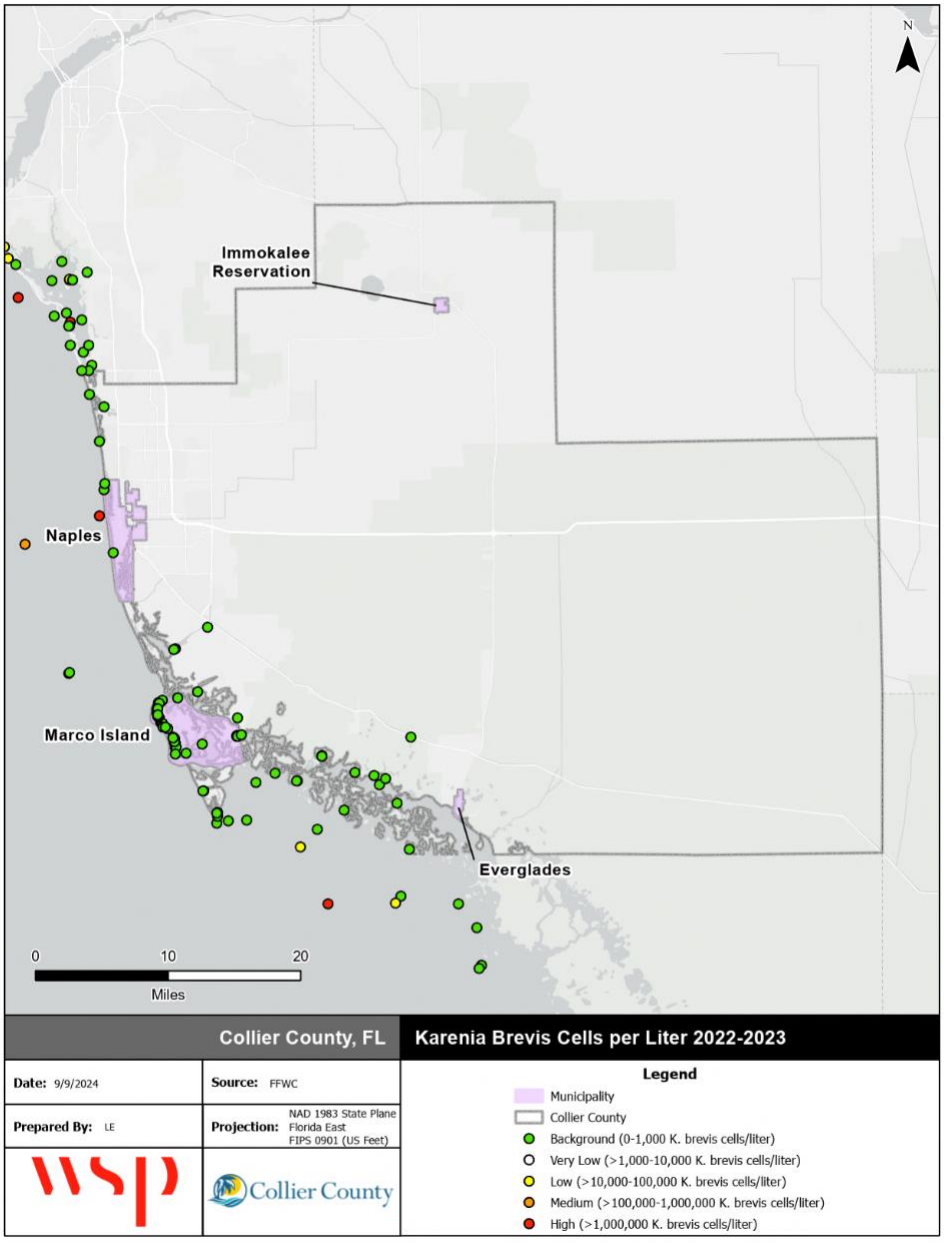
Source: Florida Fish and Wildlife Conservation Commission

LOCATION

As of September 2024, scientists and researchers have reported little to no red tide presence around Florida. However, since *Karenia brevis*, the organism responsible for red tide, occurs naturally in the Gulf of Mexico, it is unlikely that red tide is permanently eliminated. Collier County and its jurisdictions remain vulnerable to red tide and other harmful algal blooms, particularly in coastal areas such as Naples, Marco Island, and Everglades City. These blooms can occur along the county's beaches, in estuaries, and within inland waterways connected to the Gulf, such as the Ten Thousand Islands and the estuarine systems of Rookery Bay and the Cocohatchee River. The potential impacts of red tide include fish kills, respiratory irritation, and economic effects on tourism and fisheries, making ongoing monitoring and mitigation efforts crucial for the region.

Figure 2.57 shows where red tide was found close to Collier County between 2022 and 2023.

Figure 2.57 - Karenia Brevis Cells per Liter, 2022-2023



Source: Florida Fish and Wildlife Conservation Commission

Most of the sampling locations in late November 2023 showed little to no (less than 1,000) K. brevis cells in southern Florida. The highest concentration was located just north of the coastline of Collier County and was rated as “very low,” between 1,000 and 10,000 cells.

EXTENT

Karenia brevis is native to the Gulf of Mexico and is therefore found in the Gulf, often close to shorelines. Most of the red tide found in or off the coast of Florida occur on the western coast. However, red tide is also found on the eastern coast. This is due to the Florida Current which carries organisms from the Gulf of Mexico around the southern edge of Florida to the Atlantic Ocean. The Florida Current then joins with the Antilles Current to become the Gulf Stream.

Red tide can get as large as 10,000 square miles anywhere throughout the water column. This makes it very impractical to irradiate. Additionally, any current method of removing the toxins from the blooms or water could cause irreversible damage to ecosystems.

- *Impact: 2 – Limited*
- *Spatial Extent: 3 – Moderate*

HISTORICAL OCCURRENCES

The first accounts of red tide in Florida came from the Spanish explorers thousands of years ago and the first sufficiently documented account came from 1844. It has only become well-known and studied in the past 60 years. A grant program called the Red Tide Control and Mitigation Program began in 2007 with the goal of finding new ways to control or mitigate the effects of red tide. It funded 12 projects that included outreach and public information.

September 2022, just before the arrival of Hurricane Ian. After a period of the state reporting no observations of K. brevis, Florida Fish and Wildlife reported concentrations had been found in a sample taken 15 miles offshore of Collier County. Researchers believed that this bloom was enhanced due to runoff left over by Hurricane Ian. Even though blooms have only been monitored since 1954, few blooms have lasted longer than the one that occurred between 2017-2019 as it killed millions of pounds of marine life and shut down tourism, real estate, and recreational fishing in much of Lee, Collier, and Charlotte Counties.

January 23, 2025, red tide is present offshore of Collier County, with respiratory irritation reported in these areas. However, recent beach samples from locations such as Barefoot Beach, Vanderbilt Beach, Seagate Beach, Naples Pier, and South Marco Beach have shown no presence of red tide. Despite this, respiratory irritation may still occur at all Collier County beaches, especially during onshore winds. Individuals with chronic respiratory conditions should exercise caution when visiting these areas.

The Florida Fish and Wildlife Conservation Commission (FWC) has detected bloom concentrations of the red tide organism *Karenia brevis* in samples from nearby counties, including Manatee, Sarasota, Charlotte, and Lee. Satellite imagery indicates chlorophyll patches offshore of Lee, Collier, and Monroe counties, suggesting the presence of red tide in these areas.

PROBABILITY OF FUTURE OCCURRENCE

Considering that blooms and varying concentrations of K. brevis are occurring annually and for extended periods of time, it is safe to say that red tides will likely occur in the future. Scientists and researchers are working on ways to control and mitigate it. It is expected that there will be another great bloom in the future.

- *Probability: 3 – Likely*

CLIMATE CHANGE

Climate change is expected to severely affect our ability to control blooms. Algal blooms thrive in higher air and ocean temperatures. In combination with fertilizer runoff which is nitrogen-rich, red tide has gotten harder to control even in recent years. It could become impossible to control in the future. K. brevis tends to thrive in water temperatures of 83 degrees Fahrenheit but can grow faster in hotter temperatures if there is more carbon dioxide. Atmospheric carbon dioxide has been on the rise for a long time and that trend will continue if society continues to burn fossil fuel.

VULNERABILITY ASSESSMENT

PEOPLE

K. brevis puts off brevotoxins which can cause respiratory issues and irritation of the throat or skin in humans. Exposure can also occur through contamination of food or water supply. Seafood from a contaminated area may be unsafe to eat.

- **Population Patterns**:
    - Growing coastal population and tourists exposed to harmful airborne toxins during red tide events.
    - Increased risk to vulnerable populations, such as individuals with asthma and other respiratory conditions.
    - Higher population concentrations at popular beaches and waterfronts during tourist seasons.
    - **Underserved Populations**: Coastal workers, such as fishers and hospitality staff, may face economic impacts and health challenges due to prolonged red tide events.

PROPERTY

Toxins could seep into land close to the ocean or other affected areas. Damages to property are highly unlikely.

- **Land Use/Development Trends**:
    - Expansion of residential and commercial developments near waterways, increasing nutrient runoff into the ocean.

- Growth in agricultural activities contributing to nutrient loading in coastal waters.
- Increased development of waterfront dining, marinas, and tourism hubs that suffer economic losses during bloom events.

ENVIRONMENT

The environment is likely to be affected because red tide is so toxic. There could be loss of life including birds, fish, shellfish, and aquatic animals. Additionally, water quality could be negatively affected.

CONSEQUENCE ANALYSIS

Table 2.110 summarizes the potential consequences of red tide.

Table 2.110 – Consequence Analysis – Red Tide / Algae Bloom

Category	Consequences
Public	Exposure to brevetoxins can cause respiratory issues and irritation. Those who encounter water with high *K. brevis* concentrations may have skin and eye irritation or rashes. Those living and working closest to sites with *K. brevis* face the greatest risk of exposure. Exposure may also occur through contamination of food or water supplies.
Responders	Responders face similar risks as the general public but a heightened potential for exposure to toxins.
Continuity of Operations (including Continued Delivery of Services)	A red tide incident may cause temporary localized impacts but is unlikely to affect continuity of operations.
Property, Facilities and Infrastructure	Damages to property are highly unlikely other than for ocean-side beaches. Impacts would be highly localized.
Environment	Possible ecological impacts include loss of wild and aquatic life, loss of habitat, and degradation of water quality.
Economic Condition of the Jurisdiction	Annual tourist, sales, health, and clean-up costs. Red tides are estimated to cost $20 million in tourist-related losses in Florida each year. Clean-up costs are around $163,000 annually.
Public Confidence in the Jurisdiction's Governance	A red tide incident may affect public confidence if the environmental or health impacts are enduring.

HAZARD SUMMARY BY JURISDICTION

The following table summarizes red tide algae bloom hazard risk by jurisdiction. Risk is not expected to change substantially between jurisdictions. Jurisdictions with shoreline at risk were assigned a probability of 3 (likely), an impact of 2 (limited), and a spatial extent of 2 (small). Jurisdictions with little to no shoreline at risk were assigned a probability score of 1 (unlikely), an impact of 1 (minor), and a spatial extent of 1 (negligible). Warning time and duration are inherent to the hazard and remain constant across jurisdictions.

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Everglades City	3	2	2	1	4	2.4	M
Seminole Tribe Immokalee Reservation	1	1	1	1	4	1.3	L
Marco Island	3	2	2	1	4	2.4	M
Naples	3	2	2	1	4	2.4	M
Unincorporated Collier County*	3	2	2	1	4	2.4	M

*Note: Unincorporated Collier County includes the following jurisdictions: Collier County Government, Collier County Public Schools, Collier Mosquito Control District, North Collier Fire Control District, Greater Naples Fire Rescue District, Immokalee Fire Control District, Naples Airport Authority, Port of the Isles, and South Florida Water Management District.

2.6 CONCLUSIONS ON HAZARD RISK

PRIORITY RISK INDEX

As discussed in Section 2.2 Hazard Identification, the Priority Risk Index was used to rate each hazard on a set of risk criteria and determine an overall standardized score for each hazard. The conclusions drawn from this process are summarized below.

Table **2.111** summarizes the degree of risk assigned to each identified hazard using the PRI method.

Table 2.111 – Summary of PRI Results

Hazard	Probability	Impact	Location	Spatial Extent	Warning Time	Duration	PRI Score
Natural Hazards							
Flood	Highly Likely	Critical	All County & Jurisdictions	Large	6 to 12 hours	Less than 1 week	3.5
Tropical Cyclones	Likely	Catastrophic	All County & Jurisdictions	Large	More than 24 hrs	Less than 1 week	3.3
Severe Storms[1, 2] (Thunderstorm)	Highly Likely	Limited	All County & Jurisdictions	Large	Less than 6 hrs	Less than 6 hrs	3.1
Severe Storms[1] (Lightning)	Highly Likely	Minor	All County & Jurisdictions	Negligible	Less than 6 hrs	Less than 6 hrs	2.2
Severe Storms[1] (Hail)	Highly Likely	Minor	All County & Jurisdictions	Small	Less than 6 hrs	Less than 6 hrs	2.4
Severe Storms[1, 2] (Tornado)	Highly Likely	Critical	All County & Jurisdictions	Small	Less than 6 hrs	Less than 6 hrs	3.0
Wildfire[2]	Likely	Critical	All County & Jurisdictions	Moderate	Less than 6 hrs	Less than 1 week	3.1
Coastal Erosion[2]	Likely	Limited	All County & Jurisdictions	Small	More than 24 hrs	Less than 1 week	2.3
Drought	Likely	Minor	All County & Jurisdictions	Large	More than 24 hrs	More than 1 week	2.5

Hazard	Probability	Impact	Location	Spatial Extent	Warning Time	Duration	PRI Score
Extreme Heat	Highly Likely	Limited	All County & Jurisdictions	Large	More than 24 hrs	Less than 1 week	3.0
Sea Level Rise and other Climate Change Characteristics[2]	Likely	Critical	All County & Jurisdictions	Large	More than 24 hrs	More than 1 week	3.1
Sinkholes	Unlikely	Limited	All County & Jurisdictions	Negligible	Less than 6 hrs	More than 1 week	1.9
Winter Storms and Freeze	Likely	Limited	All County & Jurisdictions	Large	More than 24 hrs	Less than 1 week	2.7
Earthquake	Unlikely	Minor	All County & Jurisdictions	Moderate	Less than 6 hrs	Less than 6 hrs	1.7
Tsunami[2]	Unlikely	Limited	All County & Jurisdictions	Moderate	6 to 12 hrs	Less than 24 hrs	2.0
Technological and Human-Caused Hazards & Threats							
Major Transportation Incidents	Possible	Critical	All County & Jurisdictions	Negligible	Less than 6 hrs	More than 1 week	2.5
Pandemic Outbreak	Possible	Critical	All County & Jurisdictions	Moderate	More than 24 hrs	More than 1 week	2.6
Hazardous Materials	Likely	Limited	All County & Jurisdictions	Negligible	Less than 6 hrs	Less than 24 hrs	2.3
Coastal Oil Spills[2]	Possible	Limited	All County & Jurisdictions	Small	6 to 12 hrs	More than 1 week	2.3
Nuclear Power Plant[2]	Unlikely	Catastrophic	All County & Jurisdictions	Small	Less than 6 hours	More than 1 week	2.7
Terrorism	Unlikely	Catastrophic	All County & Jurisdictions	Negligible	Less than 6 hrs	Less than 6 hrs	2.2
Mass Migration Incident	Possible	Critical	All County & Jurisdictions	Moderate	6 to 12 hrs	More than 1 week	2.8
Civil Disturbance	Possible	Limited	All County & Jurisdictions	Small	Less than 6 hrs	Less than 1 week	2.3
Critical Infrastructure Disruption	Possible	Critical	All County & Jurisdictions	Large	Less than 6 hrs	Less than 1 week	3.0
Special Events	Likely	Minor	All County & Jurisdictions	Negligible	Less than 6 hrs	Less than 24 hrs	2.0
Red Tide/Algae Bloom[2]	Likely	Limited	All County & Jurisdictions	Small	More than 24 hrs	More than 1 week	2.4

[1]Severe Storms and Tornadoes hazards average to a score of 2.76 and are therefore considered together as a moderate-risk hazard.

[2]Note: These risks varied by jurisdiction, so the most severe score is shown.

The results from the PRI have been classified into three categories based on the assigned risk value which are summarized in Table 2.112:

- High Risk – Widespread potential impact. This ranking carries a high threat to the general population and/or built environment. The potential for damage is widespread.
- Medium Risk – Moderate potential impact. This ranking carries a moderate threat level to the general population and/or built environment. Here the potential damage is more isolated and less costly than a more widespread disaster.
- Low Risk – Minimal potential impact. The occurrence and potential cost of damage to life and property is minimal. This is not a priority hazard.

Table 2.112 – Summary of Hazard Risk Classification

High Risk (≥ 3.0)	Flood Tropical Cyclones Wildfire Sea Level Rise Extreme Heat Civil Infrastructure Disruption
Moderate Risk (2.0 – 2.9)	Severe Storms (Thunderstorm, Lightning, Hail, Tornado) Drought Coastal Erosion Winter Storms and Freeze Tsunami Mass Migration Incident Nuclear Power Plant Pandemic Outbreak Major Transportation Incidents Red Tide/Algae Bloom Hazardous Materials Coastal Oil Spills Civil Disturbance Terrorism Special Events
Low Risk (< 2.0)	Sinkholes Earthquake

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3

Mitigation Strategy Goals & Objectives

3.0 LOCAL MITIGATION STRATEGY GOALS AND OBJECTIVES

The Local Mitigation Strategy Working Group (LMSWG) established these goals and objectives by drawing from the comprehensive plans and codes of their respective communities. These goals, adopted as the official Local Mitigation Strategy (LMS) goals, are reviewed annually and may be modified based on a quorum vote of LMSWG members.

Note: Refer to Annex I of this LMS for the Collier County Floodplain Management Plan. Paragraph 7.8 (Setting Goals) provides a detailed list of goals established by the Floodplain Management Planning Committee to specifically address flood hazard reduction in the county.

Since the 2015 LMS approval, the primary priorities and goals have remained consistent. However, the LMSWG recently expanded the scope to include cyber threats and sea level rise as emerging areas of concern. While the current goals and objectives have largely stayed the same, they will be updated during the next plan review cycle to reflect these evolving priorities.

DEFINITION: *In this section, "Collier County" refers to all cities, participating jurisdictions, and certain eligible private non-profit agencies under the oversight of the Board of County Commissioners (BCC).*

GOAL 1

Collier County shall pursue efforts to reduce the vulnerability and exposure of its residents and guests by protecting lives and property from the effects of natural, man-made and technological disasters.

Objective 1.1: Maximize the protection of the public's health, safety and welfare from natural, manmade and technological disasters.

- Hazard Mitigated: All Hazards

Objective 1.2: Reduce the potential loss of personal and public property caused by natural, manmade and technological disasters.

- Hazard Mitigated: All Hazards

Objective 1.2.1: Collier County BCC and the municipalities shall pursue efforts to reduce the number of repetitive loss properties within its boundary.

- Hazard Mitigated: Flood, Tropical Cyclone, Sea Level Rise

Objective 1.2.1.1: Acquire the repetitive loss properties through funding structured for such purposes.

- Hazard Mitigated: Flood, Tropical Cyclone, Sea Level Rise

Objective 1.2.1.2: Elevate the repetitive loss properties through financial incentive programs that are developed for such purposes.

- Hazard Mitigated: Flood, Tropical Cyclone, Sea Level Rise

Objective 1.3: Protect natural resources (such as environmentally sensitive lands and aquifers) to maximize their survivability and to safeguard them from damages caused by natural, manmade or technological disasters.

- Hazard Mitigated: All Hazards

Objective 1.4: Ensure the Land Development Codes and Ordinances are enough to protect public safety and property.

- Hazard Mitigated: All Hazards

Objective 1.5: Develop and maintain evacuation plans for the safe evacuation of residents from coastal storm surges, inland flooding, terrorist acts, hazardous material incidents and wildland fires.

- Hazard Mitigated: All Hazards

Objective 1.6: Protect dune systems and coastal/marine resources from the adverse effects of coastal development.

- Hazard Mitigated: Tropical Cyclone, Sea Level Rise

Objective 1.7: Ensure that mitigation measures are adequately addressed in the comprehensive system of coordinated planning, management and land acquisition.

- Hazard Mitigated: All Hazards

Objective 1.8: Encourage land and water uses which are compatible with the protection of environmentally sensitive lands and coastal resources.

- Hazard Mitigated: Flood, Tropical Cyclone, Sea Level Rise

Objective 1.9: Prohibit development and other activities which negatively impact coastal dune systems and promote the restoration of dune systems that have been damaged.

- Hazard Mitigated: Tropical Cyclone, Sea Level Rise

Objective 1.10: Expand shelter spaces for the growing number of People with Special Needs (PSN) population. The shelters for the PSN community should include hardened facilities equipped with generator(s) sufficiently sized to meet the electrical needs to power the PSN's medical devices, facility air conditioning as well as provide power to the sewage lift-stations.

- Hazard Mitigated: All Hazards

GOAL 2

The Collier County Emergency Management Division will take a pro-active role in ensuring intra-governmental coordination within Collier County Government and inter-governmental coordination with other government agencies to enhance hazard mitigation planning activities.

Objective 2.1: Coordinate state and federal disaster training programs with all government agencies in Collier County.

- Hazard Mitigated: All Hazards

Objective 2.2: Coordinate the essential flow of information before, during and after a disaster.

- Hazard Mitigated: All Hazards

Objective 2.3: Encourage cooperation and participation of all public and private agencies in mitigation planning.

- Hazard Mitigated: All Hazards

Objective 2.4: Ensure that the Collier County Hazard Mitigation Annex to the Comprehensive Emergency Management Plan incorporates appropriate mitigation measures as reflected in each agency's Emergency Support Function Annex or Standard Operating Procedures.

- Hazard Mitigated: All Hazards

Objective 2.5: Adopt and use the National Incident Management System (NIMS) of Incident Command and the Florida Incident Command System for disaster management.

- Hazard Mitigated: All Hazards

GOAL 3

Reduce the vulnerability of critical and public facilities from the effects of terrorism, natural, man made and technological disasters.

Objective 3.1: Encourage designing and installing wind and/or water proofing components and target hardening for all designated critical facilities.

- Hazard Mitigated: Flood, Tropical Cyclone

Objective 3.2: Develop and maintain fuel, energy, communications and preparedness plans that will be both practical and effective during periods of disrupted energy and communication events.

- Hazard Mitigated: Flood, Tropical Cyclone, Cyber Attack

Objective 3.3: Incorporate hazard mitigation measures such as wind/flood proofing and target hardening during any rehabilitation of existing public facilities.

- Hazard Mitigated: Flood, Tropical Cyclone

Objective 3.4: Harden shelter facilities (proposed and existing), from the hazards they are vulnerable to as well as tying the sewage lift stations to generator backup power.

- Hazard Mitigated: All Hazards

Objective 3.5: Continue to install backup power to all community sewage lift stations.

- Hazard Mitigated: All Hazards

Objective 3.6: Support all governmental and quasi-governmental initiatives to assure Continuity of Government (COG) through enhancing individual agency Continuity of Operations Planning (COOP).

- Hazard Mitigated: All Hazards

GOAL 4

Strengthen Post-Disaster, Recovery and Mitigation Plans.

Objective 4.1: Annually, analyze, review and update Post-Disaster, Recovery, and Mitigation Plans and Ordinances.

- Hazard Mitigated: All Hazards

Objective 4.2: Work with other federal, state and local government agencies to strengthen post-disaster, recovery, mitigation plans and ordinances.

- Hazard Mitigated: All Hazards

Objective 4.3: Work with other federal, state and local government agencies in both pre- and post-disaster recovery establishing contracts to facilitate timely restoration of public and private infrastructure

- Hazard Mitigated: All Hazards

GOAL 5

Improve coordination of disaster preparedness information through the broadcast, social and print media to increase public awareness and participation in preparedness, response, recovery and mitigation activities.

Objective 5.1: Develop and maintain a comprehensive multi-media, multi-lingual public education program of disaster preparedness, response, recovery and mitigation.

- Hazard Mitigated: All Hazards

Objective 5.2: Conduct educational programs and research to meet local, state, regional planning, growth management and hazard mitigation needs or concerns.

- Hazard Mitigated: All Hazards

Objective 5.3: Work with media representatives to establish a standardized format for use in dissemination of information to the media during all phases of a disaster.

- Hazard Mitigated: All Hazards

Objective 5.4: Develop and maintain intergovernmental/coordinated information and uniform procedures for public information offices during periods of potential disaster situations.

- Hazard Mitigated: All Hazards

GOAL 6

Collier County and local Municipalities shall make every reasonable effort to protect water resources, unique natural habitats and ecologically sensitive areas such as wetlands, waterways and hardwood hammocks, and restore, to the maximum extent feasible, degraded natural systems to their original state.

Objective 6.1: Conserve and protect wetlands and coastal natural features to maintain their economic, aesthetic and recreational values.

- Hazard Mitigated: All Hazards

Objective 6.2: Acquire, retain, manage and inventory public lands to provide conservation and related public benefits.

- Hazard Mitigated: Flood & Tropical Cyclone

Objective 6.3: Promote the use of agricultural and horticultural practices which are compatible with the protection of natural systems.

- Hazard Mitigated: Flood, Tropical Cyclone

Objective 6.4: Protect and restore the ecological functions of wetland systems to ensure their long-term environmental, economic and recreational values.

- Hazard Mitigated: Flood, Tropical Cyclone

Objective 6.5: Protect and enhance water sources, public utilities, wetlands, natural habitats from potential natural (wildfire and weather), manmade and terrorist acts.

- Hazard Mitigated: Flood, Tropical Cyclone

4

Procedures for Prioritizing Hazard Mitigation Initiatives

4.0 Procedures for Prioritizing Hazard Mitigation Initiatives

4.1 SCORING

4.1.1 Changes Since the Last LMS Update

Since the approval of the 2015 LMS, the main change to priorities has been in how the working group establishes project priorities for each new Hazard Mitigation Grant Program (HMGP) opportunity. Details on the prioritization process are provided in Section 4.1.3.1, explaining the methods used to ensure fair consideration for all participating jurisdictions.

4.1.2 Project and Action Item Listing (Annex E)

Annex E contains a list of projects and action items identified by participating jurisdictions within Collier County as necessary for effective hazard mitigation. Any initiatives submitted by a participating jurisdiction are added to the prioritized project/initiative list in Annex E (LMS link). Placement on this list is determined by the score each project receives on the "Mitigation Initiatives Evaluation Score Sheet" found in Annex H.

Each jurisdiction or agency submits initiatives designed to address identified hazards specific to their area. Upon submission, each initiative is scored according to criteria established by the LMSWG to best reflect the mitigation needs of Collier County. Scoring includes three key criteria required by FEMA: cost-effectiveness (represented by the benefit-cost ratio), technical feasibility, and environmental soundness.

4.1.3 Initiative Submission and Review Process

When submitting initiatives, each jurisdiction or agency is responsible for scoring their project and completing a “simplified benefit-cost analysis (BCA)” before submitting it electronically in MS Word format to the LMSWG via the Collier County Emergency Management Office. The simplified BCA should use realistic estimates of potential losses, rather than relying solely on the total replacement cost of facilities and equipment.

Additionally, the submitting entity must present their project to the LMSWG, providing details on the project’s impact and supporting the presentation with graphics and/or maps to show the project location. The LMSWG reviews both the initiative and its recommended score, and, following review, the initiative is added to the Prioritized Listing of Mitigation Action Items (Annex E).

4.1.3.1 Special Rules for Prioritizing Hazard Mitigation Grant Program (HMGP) Projects

Following each disaster in the State of Florida, FEMA provides hazard mitigation funding through the Hazard Mitigation Grant Program (HMGP). For each HMGP opportunity, the Local Mitigation Strategy Working Group (LMSWG) establishes a project priority list to guide funding decisions.

Process

1. **Notification and Intent to Apply:** After each disaster, the LMSWG Chair notifies all agencies with projects listed in Annex E (Prioritized Listing of Mitigation Action Items) to determine their intent to apply for HMGP funding. Once the “Notification of Funds Availability” (NOFA) is received, the Chair will issue a formal notice to project sponsors

in Annex E, giving them 30 days from the NOFA date to confirm their intent to apply for funding.

2. **Project Prioritization by Jurisdictions:** Agencies that do not intend to apply for HMGP funding are not required to take further action. Agencies intending to apply must prioritize their projects for submission to FEMA. Once each jurisdiction has established its project priorities, jurisdictions will be listed alphabetically (e.g., A, B, C) according to an LMSWG-approved method. In this order, each jurisdiction's top-priority project is added sequentially to the State/FEMA priority list: the first project from "A" is prioritized first, the first project from "B" is second, and so forth. This sequence continues until all intended projects are prioritized.

3. **Late Submissions:** Project score sheets received after the official project prioritizing date will be added to the end of the prioritized list in the order they are received by the Emergency Management Office. **Note:** While not all HMGP projects may be funded, applications must be submitted by the NOFA closing date to be considered for funding as it becomes available.

4. **Documentation of Local Share Commitment:** Applicants must provide the LMSWG Chair with documentation of the commitment to local share funding, approved by their governing body. The Chair will issue a letter to each applicant to include with their grant application package, indicating that the project aligns with the county's mitigation strategy and showing its position on the priority list.

4.1.4 Preliminary Benefit-Cost Analysis (BCA) Requirement

For each project submitted to the Local Mitigation Strategy Working Group (LMSWG), jurisdictions must conduct a preliminary Benefit-Cost Analysis (BCA). A more detailed BCA, following FEMA guidelines, will be required if the project proceeds to a federal grant application.

Note: A BCA is mandatory for all mitigation projects. However, a BCA is not required for planning activities and some acquisition projects. The Florida Division of Emergency Management (FDEM) Mitigation staff will perform the official FEMA BCA for all hazard mitigation projects. Applicants may conduct a preliminary BCA themselves to assess project eligibility and identify necessary documentation for the state's mitigation project officer. Projects with a benefit-cost ratio below 1.0 will not qualify for FEMA hazard mitigation grants.

Applicants and sub-applicants are strongly encouraged to use FEMA's BCA software, available free from FEMA by contacting the BCA hotline at 1-866-222-3580. While applicants may use alternative programs or methods to calculate the benefit-cost ratio, any methodology must be consistent with FEMA's benefit-cost model and receive FEMA's prior approval. Additional information on FEMA's BCA program and guidelines is available at https://www.fema.gov/benefit-cost-analysis.

4.1.5 RULE FOR INITIATIVES THAT CAN NOT BE SCORED, BUT ACHIEVES A GOAL OF THE LMS

Some initiatives, by their nature, cannot be scored or quantified effectively—for example, projects like road elevation to improve evacuation routes or conducting community hurricane preparedness seminars. While these initiatives may not lend themselves to a measurable score, they still contribute to the goals of the Local Mitigation Strategy (LMS).

In such cases, if applicants wish to include these initiatives on the priority listing, they will be placed at the end of the list, in the order received and approved. If a project that was initially unscored later receives a full score based on the established criteria, its position on the priority chart may be adjusted accordingly.

Parameter	Weighting Factor	Percent	Points
Suitability	25%	100%	25
Risk Reduction	50%	100%	50
Cost	25%	100%	25
Totals	**100%**		**100**

4.1.6 PROJECT & INITIATIVE VALIDATION

To keep the priority listing up to date, the LMSWG Chair may annually contact the agencies responsible for each project or initiative to confirm their continued relevance and validity.

4.1.7 APPLICANT'S PROJECT WORKSHEET WEIGHTING

The following score weighting for each element of the project worksheet is designed to ensure neutrality and objectivity in project scoring.

Local Mitigation Strategy (LMS) Prioritization Matrix

Suitability 25%					
#	**Parameter**	**Weight**	**Scoring Criteria** (Select only 1 score option per parameter)	**Score**	**Points**
1	Appropriateness of the Measure	40%	(5) High: Reduces vulnerability and aligns with LMS goals and future growth plans.	5	200
			(3) Medium: Needed but doesn't directly address identified vulnerabilities.	3	120
			(1) Low: Inconsistent with LMS goals or growth plans.	1	40
2	Community Acceptance	15%	(5) High: Endorsed by most communities.	5	75
			(3) Medium: Generally accepted but may cause burdens.	3	45
			(1) Low: Not likely to gain community support.	1	15
3	Environmental Impact	15%	(5) Positive Environmental Impact	5	75
			(3) No Environmental Impact	3	45
			(1) Negative Environmental Impact	1	15
4	Legislation	15%	(5) High: Consistent with current laws and regulations.	5	75
			(3) Medium: New legislation or policy changes may be needed.	3	45
			(1) Low: Conflicts with existing laws and regulations.	1	15
5	Consistency with Plans / Priorities	15%	(5) High: Fully consistent with existing plans.	5	75
			(3) Medium: Some alignment with plans.	3	45
			(1) Low: Conflicts with current plans.	1	15
Max Weight Factor		100%	Suitability Subtotal: Sum of Suitability Points (Max = 500)		
Suitability Score		**Sum of Suitability Points ÷ (Max possible 500) x (weight 100)**			%

Risk 50%					
#	**Parameter**	**Weight**	**Scoring Criteria** (Select only 1 score option per parameter)	**Score**	**Points**
1	Scope of Benefits	15%	(5) High: Benefits all municipalities and/or unincorporated areas.	5	75
			(3) Medium: Benefits half or more of municipalities and/or unincorporated areas.	3	45
			(1) Low: Benefits fewer than half of municipalities and/or unincorporated areas.	1	15
2	Potential to Protect Lives	35%	(5) High: Potential to protect more than 1,000 lives.	5	175
			(3) Medium: Potential to protect up to 1,000 lives.	3	105
			(0) Low: No lifesaving potential.	0	0
3	Importance of Benefits	15%	(5) High: Essential services need.	5	75
			(3) Medium: Necessary services.	3	45
			(1) Low: Limited benefit or impact	1	15
4	Inconvenience of problem correction	10%	(5) None: No inconvenience caused.	5	50
			(3) Moderate: Causes minimal inconvenience (e.g., traffic, power loss).	3	30
			(1) Significant: Causes extensive inconvenience.	1	10
5	Economic Impact	10%	(5) Minimal: Limited economic impact.	5	50
			(3) Moderate: Some economic loss/disruption.	3	30
			(1) Significant: High economic loss (e.g., business closures, job loss).	1	10
6	Population Impact	15%	(5) High: Benefits over 20,000 people.	5	75
			(3) Medium: Benefits 4,000 to 20,000 people.	3	45
			(1) Low: Benefits fewer than 4,000 people.	1	15
Max Weight Factor		100%	Risk Subtotal: Sum of Risk Points (Max = 500)		
Risk Score		**Sum of Risk Points ÷ (Max possible 500) x (weight 100)**			%

Cost 25%					
#	**Parameter**	**Weight**	**Scoring Criteria** (Select only 1 score option for each parameter)	**Score**	**Points**
1	Initial Cost	15%	(5) Low: $0 to $250,000	5	75
			(3) Moderate: $251,000 to $1 million	3	45
			(1) High: More than $1 million	1	15
2	Maintenance / Operational Costs	5%	(5) Low: Less than 5% per year of the initial cost.	5	25
			(3) Moderate: 5%-10% per year of initial cost.	3	15
			(1) High: More than 10% per year of initial cost	1	5
3	Environmental Cost Impact	40%	(5) Positive Environmental Impact	5	200
			(3) No Environmental Impact	3	120
			(1) Negative Environmental Impact	1	40
4	Financing Availability	10%	(5) Good: Grants and/or matching funds available.	5	50
			(3) Moderate: Limited matching funds available.	3	30
			(1) Poor: No funding sources or matching funds	1	10
5	Repetitive Flood Damage	30%	(5) High: Resolves repetitive loss	5	150
			(3) Low: Minimal effect on repetitive loss.	3	90
			(1) Poor: No funding sources or matching funds	1	30
			(0) Not and NFIP - Insured Structure	0	0
Max Weight Factor		100%	Suitability Subtotal: Sum of Cost Points (Max = 500)		
Cost Score		**Sum of Parameter Points ÷ (Max possible 500) x (weight 100)**			%

Benefit to Cost Ratio multiplied by the Final Score on the Project Score Sheet will provide the final score for the Project Priority Listing.

5

Application Process & Funding Sources

5.0 APPLICATION PROCESS & FUNDING SOURCES

5.1 PURPOSE

This section outlines the process for securing funding for disaster mitigation projects and the steps to include projects on the County's LMS Project Priority Listing in Annex E.

5.2 THE PROCESS

5.2.1 Identification and Submission of Mitigation Projects

Once a "ready-to-go" mitigation project is identified, the responsible entity should present the project and its potential funding sources (if not listed in Annex D: Potential Grant Funding Sources) to the LMS Working Group (LMSWG). This can be done by bringing the project to a scheduled LMSWG meeting or by submitting it to the Collier County Emergency Management Division, which will add it to an upcoming LMS meeting agenda. Each submission should include:

- A project summary
- Estimated costs
- A benefit-cost analysis
- Identified matching funds (if available)
- Potential funding sources (See Annex D for potential funding sources)
- A completed project scoring sheet (see Annex H)

5.2.2 Project Evaluation

The LMSWG will evaluate each project using the scoring sheet in Annex H. This evaluation considers project readiness, funding source compatibility, and special procedures noted in Annex H. Reviews may occur via email, phone, or in person, depending on time and availability. Additional or alternative funding sources may be recommended as needed.

5.2.3 Applicant Responsibilities

The project applicant is ultimately responsible for project implementation, management, and progress reporting.

6

Plan Maintenance

6.0 Monitoring, Evaluating & Updating the Plan and Incorporation of Local Mitigation Strategy into Existing Plans

6.1.1 Monitoring and Maintaining the Local Mitigation Strategy (LMS)

The Collier County Local Mitigation Strategy (LMS) is recognized as a "living document," requiring ongoing monitoring, review, and updates to address evolving risks, changing community needs, and emerging mitigation priorities. The Planning Coordinator within the Collier County Emergency Management Division is responsible for tracking the plan's progress and ensuring its continuous evaluation. The LMS Working Group (LMSWG) follows a structured process, in coordination with the Planning Coordinator, to ensure the plan remains current and effective.

A. Annual Review Process:

1. **Quarterly Review:** During the fourth quarter of each year, the LMS Chair formally urges LMSWG members to conduct a comprehensive review and evaluation of the LMS. This process allows the group to assess project priorities, address any changes in risks, and propose necessary updates.

2. **State Submission:** The annual review concludes with a vote by the LMSWG to approve any updates, which are then submitted to the Florida Division of Emergency Management by the end of January each year to remain in compliance with state requirements.

B. Ongoing Plan Evaluation:

1. **Continuous Monitoring and Feedback:** LMSWG members, voting representatives, and the public are encouraged to actively monitor the plan's effectiveness throughout the year. At any time, members may recommend changes to the LMS, especially in response to shifting risks or new information impacting prioritized projects.

2. **Ad Hoc Committees:** The LMS Chair may convene ad hoc committees as needed to review specific recommendations and report findings to the LMSWG for consideration and/or a formal vote.

C. Identification and Resolution of Gaps and Limitations:

As part of the ongoing evaluation of the Collier County Local Mitigation Strategy (LMS), the LMS Working Group (LMSWG) continuously identifies gaps and limitations that may hinder effective hazard mitigation across all jurisdictions and hazard types. These challenges may include:

1. **Limited Financial Resources:** Insufficient funding for critical infrastructure improvements, mitigation projects, and emergency response capabilities.

2. **Staffing Constraints:** A shortage of personnel dedicated to mitigation planning, emergency response, and recovery efforts across various agencies and jurisdictions.

3. **Aging Infrastructure:** Existing infrastructure that may not meet current hazard

mitigation standards, increasing vulnerability to hazards such as flooding, hurricanes, and wildfires.

4. **Public Awareness and Outreach:** Challenges in effectively communicating hazard risks, mitigation strategies, and available resources to the public and stakeholders.

5. **Inter-Jurisdictional Coordination:** Ensuring alignment of mitigation efforts across multiple agencies and jurisdictions, addressing regulatory inconsistencies and enhancing collaboration.

6. **Technological Advancements:** The need for improved data collection, monitoring tools, and predictive modeling to better understand and mitigate risks.

7. **Changing Hazard Profiles:** Emerging threats such as climate change, sea-level rise, and evolving technological hazards that require adaptive planning and response strategies.

D. Strategies to Overcome Gaps:

To address these challenges, the LMSWG will implement a series of strategies to enhance the county's mitigation capabilities, including:

1. **Securing Additional Funding:** Actively pursuing federal and state grants, such as FEMA's Building Resilient Infrastructure and Communities (BRIC) and Hazard Mitigation Grant Program (HMGP), to support mitigation initiatives.

2. **Capacity Building:** Providing ongoing training and professional development opportunities for staff involved in mitigation planning and emergency management.

3. **Infrastructure Modernization:** Prioritizing the upgrade and replacement of critical infrastructure to meet current hazard-resistant standards.

4. **Enhanced Public Engagement:** Expanding outreach efforts through workshops, social media, and partnerships with community organizations to increase awareness and participation.

5. **Strengthening Collaboration:** Fostering partnerships with regional, state, and federal agencies to improve resource sharing and coordination.

6. **Technology Integration:** Leveraging advanced tools such as GIS, remote sensing, and predictive analytics to enhance risk assessment and decision-making processes.

7. **Adaptive Planning:** Regularly reviewing and updating mitigation strategies to address emerging risks and ensure alignment with evolving hazard profiles.

The LMSWG will incorporate identified gaps and proposed solutions into the annual review process and quarterly meetings to ensure continuous improvement and adaptation of the LMS to meet Collier County's evolving needs.

E. Public Involvement:

1. **Floodplain Management Meetings:** During annual public outreach meetings for the Floodplain Management Plan, the public is reminded of the LMSWG's role, Collier County's Local Mitigation Strategy, and the value of their input and participation in the plan's ongoing development.

Document Accessibility:
The latest electronic version of the LMS is maintained at the offices of the Floodplain Managers (City of Naples, Marco Island, and Unincorporated Collier County), the Emergency Management Office, and the Office of the Mayor of Everglades City. The document is also accessible online at bit.ly/2nU3zO9 and can be requested in electronic form from the Emergency Management Office at 8075 Lely Cultural Parkway, Naples, FL 34113.

6.1.2 Quarterly LMS Working Group (LMSWG) Meetings

The Local Mitigation Strategy Working Group (LMSWG) holds quarterly meetings to continuously monitor and evaluate the effectiveness of the Local Mitigation Strategy (LMS). These meetings ensure that the LMS is regularly updated to reflect current needs and that ongoing projects are on track.

Meeting Structure and Project Review:

- **Presentation of New Initiatives:** During each quarterly meeting, participating local governments and agencies present any new mitigation initiatives they have identified. These initiatives are reviewed and evaluated using the Mitigation Initiatives Evaluation Scoring Sheet, ensuring each project aligns with the LMS's goals and meets established prioritization criteria.

- **Incorporation of Initiatives:** Once evaluated, initiatives that meet prioritization standards are incorporated into the LMS. Initiatives that are successfully completed are moved to the "Success" section of the LMS to document their impact, while those that remain incomplete are re-evaluated to determine if they should be retained or adjusted for future consideration.

Post-Disaster Integration:
After any significant disaster event, the LMSWG reviews lessons learned, or insights gained from post-event interagency hazard mitigation reports. Relevant findings are then incorporated into the LMS to improve future preparedness and mitigation efforts.

Ongoing Document Review:
In addition to project evaluations, the LMSWG regularly reviews and comments on the effectiveness of related documents that impact mitigation activities, ensuring consistency with the LMS's goals. This includes ongoing evaluation of:

- **Relevant Ordinances:** Review of ordinances under consideration or revision that impact hazard mitigation.
- **Collier County Growth Management Plan (GMP):** Alignment checks between the LMS and the GMP, particularly the following elements:
    - Conservation & Coastal Management Element
    - Drainage Sub-Element

- Solid Waste Sub-Element
- Housing Element
- Future Land Use Element, including Urban Future Land Use Designation, Urban Coastal Fringe Sub-District, Density Rating System, Affordable Housing Residential In-Fill, Transfer of Development Rights, and the Bayshore Gateway Triangle Redevelopment Overlay
- Golden Gate Area Master Plan Element

This process allows the LMSWG to maintain a robust, coordinated approach to hazard mitigation, ensuring that both the LMS and associated documents are current, comprehensive, and effective in addressing Collier County's evolving risk landscape.

6.1.3 Annual Reporting to the Citizen Corps Advisory Committee

Beginning in January 2005 and continuing each January, the Chair of the Collier County Local Mitigation Strategy Working Group (LMSWG) reports annually to the Collier County Citizen Corps Advisory Committee. This report provides an assessment of the Local Mitigation Strategy's (LMS) effectiveness in meeting the county's hazard and disaster mitigation needs.

Report Contents:

- **Evaluation of Effectiveness:** An overview of the LMS's impact on hazard mitigation efforts, highlighting how the strategy has addressed priority risks and needs within Collier County.
- **Updates and Revisions:** A summary of any revisions made to the LMS, including updates to mitigation initiatives and adjustments in response to changing risks or new data. This section ensures that the Citizen Corps Advisory Committee is informed of any modifications that enhance the LMS's relevance and effectiveness.

This annual report promotes transparency, keeps key stakeholders informed, and ensures the LMS is continually refined to serve the county's evolving needs in hazard mitigation.

6.1.4 Public Involvement

The Collier County Emergency Management Department is responsible for scheduling all Local Mitigation Strategy Working Group (LMSWG) meetings and providing reasonable advance notice to ensure public participation.

Meeting Notifications:

- **Notice Distribution:** Notices for all LMSWG meetings are coordinated through the Collier County Communications and Customer Relations Department. This includes the distribution of information via news releases and posting on the county's website calendar to reach a broad audience.

- **Special Meetings:** Any LMS committee member may call special meetings if significant events alter or necessitate revisions to the Local Mitigation Strategy (LMS). These meetings will also follow the standard process of advance public notification to allow community involvement.

Annual Public Outreach:
At least once annually, public outreach sessions are conducted in alignment with the Floodplain Management Plan's outreach efforts. These sessions are strategically located throughout the county to maximize accessibility for residents. During these events, the LMSWG Chair will invite attendees to LMSWG meetings, provide an overview of the LMS's purpose and objectives, and encourage public input on hazard mitigation priorities.

By maintaining a proactive approach to public involvement, the LMSWG ensures that community members have meaningful opportunities to contribute to Collier County's mitigation planning and are kept informed of the strategy's goals and initiatives.

6.1.5 Updating the Plan

The Collier County Local Mitigation Strategy (LMS) undergoes a comprehensive update every five years. This formal review process ensures that the LMS continues to effectively address Collier County's evolving hazard mitigation needs and aligns with the latest FEMA requirements. Collier County's

Five-Year Review Timeline:

- **Completion Deadline:** The LMS review process is to be completed six months before the five-year anniversary of the FEMA approval letter.
- **Sub-Committee Review:** The Local Mitigation Strategy Working Group (LMSWG) may appoint a sub-committee to conduct an in-depth audit of the LMS. This sub-committee will assess the current plan's effectiveness and identify any necessary revisions to meet the county's hazard mitigation needs.
- **Responsible Party:** The Planning Coordinator from the Collier County Emergency Management Division is responsible for overseeing the five-year LMS review process, ensuring that all required updates and revisions are completed in accordance with FEMA guidelines and local priorities.

Progress Reporting and Member Involvement:

- **Quarterly Updates:** Throughout the five-year review cycle, portions of each quarterly LMSWG meeting are dedicated to progress updates. The LMS Working Group (LMSWG), in coordination with the Planning Coordinator from the Collier County Emergency Management Division, evaluates specific sections of the LMS, assesses their effectiveness, and recommends necessary changes to ensure the plan remains relevant and effective.
- **Final Reporting:** Upon completion of the review process, the LMSWG, with oversight from the Planning Coordinator, presents the updated LMS to the Collier County Citizen Corps Advisory Committee. A summary of the evaluation process and results is also provided to elected officials of participating local governments through their LMSWG representatives for further review and feedback.

FEMA-Recommended Review Criteria:
In conducting the five-year review, the following six criteria, as recommended by FEMA, are

considered:

- **Alignment with Current Conditions:** Ensuring that LMS goals and objectives address present and anticipated conditions.
- **Risk Analysis:** Verifying if changes in the nature or magnitude of risks require updates.
- **Resource Adequacy:** Assessing whether existing resources are sufficient for implementing the LMS.
- **Implementation Challenges:** Identifying any technical, political, legal, or coordination issues affecting the LMS's implementation.
- **Outcome Verification:** Evaluating if outcomes have aligned with initial expectations.
- **Partner Participation:** Reviewing the participation and contributions of agencies and partners as outlined in the LMS.

This five-year update cycle ensures that the LMS remains an effective and responsive tool for hazard mitigation in Collier County, adapting to both emerging challenges and community needs.

ITEM REVIEWED/APPROVED	LMSWG Approved mm/dd/yy
The LMSWG approved the sections when indicated. All meetings were advertised for public participation & comment. The Collier County Citizens Corps, parent advisory group for the LMSWG and at a publicly advertised meeting, approved the LMS and directed the LMSWG Chair to have the LMS presented to the Collier County Board of County Commissioners (BCC) for adoption at the April 13, 2020 BCC meeting with the understanding that the State and FEMA may require editorial adjustments later which will be made upon approval of the LMSWG.	
Executive Summary	18 Oct 2019
Sec. 1 – Purpose, Organization & Outreach	18 Oct 2019
Sec. 2 – Hazard Identification & Vulnerability Analysis	
Sec. 3 – LMS Goals & Objectives	18 Oct 2019
Sec. 4 – Procedures for Prioritizing Hazard Mitigation Initiatives	18 Oct 2019
Sec. 5 – Application Process & Funding Sources	18 Oct 2019
Sec. 6 – Monitoring, Evaluating & Updating the Plan and Incorporation of the Local Mitigation Strategy into Existing Plans	18 Oct 2019
Annex A – Risk Assessments & Hazards Analyses	
Annex B – Maps	18 Oct 2019
Annex C – Resolutions	Added as received
Annex D – Procedures to Assure Public Involvement	18 Oct 2019
Annex E – Potential Grant Funding Sources	18 Oct 2019
Annex F – Prioritized Listing of Mitigation Action Items	18 Oct 2019
Annex G – Meeting Minutes	18 Oct 2019
Annex H – LMS Membership	18 Oct 2019
Annex I – Initiative Scoring Criteria	18 Oct 2019
Annex J – Collier County's Floodplain Plans	18 Oct 2019

6.1.6 Submission and Adoption Process for the Five-Year Update

Prior to the five-year anniversary of the Local Mitigation Strategy's (LMS) adoption, the Local Mitigation Strategy Working Group (LMSWG) will review and approve the draft update of the LMS. The approved draft will then be transmitted to the Collier County Citizen Corps Advisory Committee, which will forward it to the State Hazard Mitigation Officer at the Florida Division of Emergency Management.

Review and Revisions:

- **State Review:** Once submitted, the draft LMS update will undergo review by the State Hazard Mitigation Officer. Any comments or required revisions from the state will be incorporated into the document by the LMSWG.

- **Final Submission to County Commissioners:** After revisions are complete, the updated LMS will be submitted to the Collier County Board of County Commissioners through the Citizen Corps Advisory Committee.

- **Board Adoption:** The Board of County Commissioners will review the updated LMS and, following any necessary discussions, vote to adopt the revisions recommended by

the LMSWG. Upon adoption, the updated LMS will continue to serve as the county's primary hazard mitigation planning document.

6.1.7 Quarterly Review and Endorsement of the LMS Update

In the quarter following the submission of the LMS draft update to the Collier County Board of County Commissioners, the Local Mitigation Strategy Working Group (LMSWG) will convene to review, endorse, and, if necessary, revise the report.

Consideration of Feedback:

During this meeting, the LMSWG will carefully consider feedback from participating local governments, agencies, and other stakeholders. Any relevant comments or recommendations from these entities will be assessed to ensure that the LMS reflects broad input and addresses community-wide mitigation needs.

This collaborative review process ensures that the LMS remains comprehensive and aligns with the needs and insights of all involved jurisdictions and partners.

6.1.8 Amendments Following Major Disasters or Hazard Events

In addition to the scheduled five-year update, the Local Mitigation Strategy (LMS) may be amended as needed following a major disaster or significant hazard event. If such an event necessitates substantial revisions, the Local Mitigation Strategy Working Group (LMSWG) may vote to submit the amended LMS to the Collier County Board of County Commissioners and participating City/Town Councils/Commissions for approval.

This process ensures that the LMS remains responsive and adaptable, incorporating lessons learned and addressing newly identified risks to enhance resilience across Collier County.

6.2 Incorporation of the Local Mitigation Strategy into Existing Plans

To ensure comprehensive implementation of the Collier County Local Mitigation Strategy (LMS), all participating local governments strive to integrate LMS goals and objectives into their respective comprehensive plans and other foundational documents whenever possible. This integration strengthens the county's collective commitment to becoming a more disaster-resilient community.

The Collier County Planning Department has facilitated this alignment by inviting LMSWG input during the review of various plans and ordinances over the years. By seizing these opportunities, Collier County has embedded mitigation principles across key policy documents, including the Growth Management (Comprehensive) Plan, the Post-Disaster Ordinance, and the Comprehensive Emergency Management Plan.

Attachment 1 to this section provides specific examples of how mitigation activities have been incorporated into these and other guiding documents, ensuring that disaster resilience remains a core component of Collier County's planning framework.

6.2.1 Future Process for Incorporating the Local Mitigation Strategy

Each jurisdiction within Collier County has outlined the following processes to ensure the Local

Mitigation Strategy (LMS) is consistently integrated into their respective plans and ordinances:

6.2.1.1 Unincorporated Collier County

Coordinators in the Emergency Management Office, the Floodplain Manager, and members of the Comprehensive Planning Section will review the goals and objectives of the LMS in alignment with each plan and ordinance during its scheduled review. The Local Mitigation Strategy Working Group (LMSWG) will specifically assess Goal 12 in the Conservation and Coastal Management Element (CCME) of the Growth Management Plan (GMP), including Policy 12.1.9, which references the Hazard Mitigation Plan. This assessment will help determine if any modifications are necessary to meet current mitigation requirements. Where opportunities arise, the responsible agency will seek LMSWG support in amending the appropriate documents.

6.2.1.2 The City of Naples

The Floodplain Coordinator and Planning Department staff are currently working to incorporate the LMS into the City's Comprehensive Plan. The staff will continue to emphasize hazard mitigation across government and community development sectors. The City's Comprehensive Emergency Management Plan (adopted on September 4, 2013, under Resolution 13-13325) and the Flood Damage Prevention Ordinance (adopted on June 13, 2012, under Resolution 12-13138) have been reviewed to ensure LMS alignment, with further amendments to be made as necessary.

6.2.1.3 The City of Marco Island

The Growth Management Director, Chief Building Official, Floodplain Coordinator (CFM), and staff from the Growth Management Planning Division are actively amending the City's Comprehensive Plan to incorporate various LMS initiatives. Staff will emphasize the goals and objectives of the LMS in all governmental areas, particularly in the regulation and development of both floodplain and non-floodplain areas. Attachment 2 provides examples of how the City may integrate the LMS into existing plans.

6.2.1.4 The City of Everglades

The Mayor and City Council, representing Everglades City residents, will act as the Everglades City Local Mitigation Strategy Working Group (ECLMSWG) and will be responsible for supporting grant applications to fund mitigation initiatives. The Mayor and Council will assist applicants in submitting a Mitigation Initiative Evaluation Score Sheet to the Collier County Local Mitigation Strategy Working Group (CCLMSWG) for review at regular CCLMSWG meetings.

- **6.2.1.4.1 Mitigation Initiative Evaluation Score Sheet Process**
    - **6.2.1.4.1.1** The Mitigation Initiative Evaluation Score Sheet will outline the project's impact and value to the community, supported by a Benefit-Cost Analysis (BCA) completed by the applicant.
    - **6.2.1.4.1.2** The ECLMSWG will assist in preparing a presentation of Everglades City's mitigation initiatives for the CCLMSWG at an upcoming scheduled meeting.

- **6.2.1.4.1.3** An ECLMSWG representative will attend regular or special CCLMSWG meetings to represent the City and report back to the Mayor and the Office of the City Clerk.

- **6.2.1.4.1.4 Goal Achieved:** This process provides a structured mechanism for helping City residents and businesses acquire professional assistance and funding to address documented hazards effectively.

6.3 Other Plan References

The Collier County Local Mitigation Strategy (LMS) aligns closely with other local and regional plans to create a unified and effective hazard mitigation framework. This integration ensures that hazard mitigation principles are embedded across planning processes, addressing FEMA's criteria for plan coordination and promoting a resilient community.

6.3.1. Incorporation into Comprehensive Plans

The LMS references and integrates elements from the Collier County Comprehensive Plan, including its Future Land Use Element, Conservation and Coastal Management Element, and Capital Improvements Element. Specific policies and objectives related to hazard mitigation are reviewed and incorporated to ensure:

- Land use decisions are consistent with reducing hazard vulnerability.
- Development density within Coastal High Hazard Areas (CHHAs) is controlled, reducing risks to life and property.
- Evacuation capabilities and sheltering needs are accounted for in planning decisions.

Collier County Comprehensive Plan (Growth Management Plan) (Last Updated April 26, 2022, Ordinance Number 2022-14):

- **Future Land Use Element:** This element guides land use decisions to reduce hazard vulnerability.
  - Future Land Use Element
- **Conservation and Coastal Management Element:** Focuses on protecting natural resources and managing coastal development.
  - Conservation and Coastal Management Element
- **Capital Improvement Element:** Outlines infrastructure projects that support hazard mitigation.
  - Capital Improvement Element

6.3.2. Alignment with Emergency Management Plans

The LMS is closely aligned with the Collier County Comprehensive Emergency Management Plan (CEMP). This alignment ensures that:

- Hazard mitigation strategies are integrated into preparedness, response, and recovery efforts.
- Lessons learned from post-disaster recovery inform future mitigation initiatives.

Collier County Comprehensive Emergency Management Plan (CEMP) (Last Updated February 28, 2021, Ordinance Number 2021-77):

- Details preparedness, response, and recovery strategies, ensuring alignment with

hazard mitigation efforts.
- Comprehensive Emergency Management Plan

6.3.3. Integration into Land Development Codes

The LMS is incorporated into Collier County's Land Development Code to regulate building practices and promote resilient construction. This includes:
- Strengthening building codes to mitigate flood, wind, and wildfire risks.
- Limiting development in high-risk areas such as CHHAs and wetland preservation zones.

Collier County Land Development Code (Updated on March 26, 2024 Ordinance Number 2024-11; February 27, 2024 Ordinance Number 2024-05; and November 14, 2023 Ordinance Number 2023-63) :
- Regulates building practices and land use to promote resilience against hazards.
  - Land Development Code

6.3.4. Coordination with the Capital Improvement Plan (CIP)

Mitigation initiatives identified in the LMS are prioritized in the Collier County Capital Improvement Plan to:
- Secure funding and resources for critical infrastructure projects.
- Ensure public facilities and utilities are designed to withstand natural hazards.

Collier County Capital Improvement Plan (CIP):
- Prioritizes funding for infrastructure projects that enhance hazard resilience.
  - Capital Improvement Plan

6.3.5. Leveraging Regional and State Plans

The LMS incorporates data and strategies from regional and state-level plans, such as the Southwest Florida Regional Hurricane Evacuation Study and the Florida Coastal Management Program, to ensure consistency and enhance collaboration.

Southwest Florida Regional Hurricane Evacuation Study:
- Provides data and strategies for effective evacuation planning.
  - Southwest Florida Regional Hurricane Evacuation Study

Florida Coastal Management Program:
- Offers guidelines for managing coastal resources and mitigating related hazards.
  - Florida Coastal Management Program

6.3.6. Ongoing Evaluation and Updates

To maintain relevance and compliance with FEMA’s criteria, the LMS incorporates a formal process to review and integrate updates from other plans:
- Changes to the Comprehensive Plan, CEMP, or CIP are regularly evaluated for their impact on mitigation efforts.
- Relevant stakeholders are engaged to align updates across plans.

Benefits of Integration

By embedding hazard mitigation strategies into other plans, Collier County ensures:

1. A coordinated approach to reducing risk across all sectors.
2. Efficient use of resources by aligning goals and initiatives.
3. Compliance with FEMA's requirement to integrate hazard mitigation into local planning mechanisms.

Attachment 1 to Section 6

PART I
COLLIER COUNTY COMPREHENSIVE PLAN EXCERPTS PERTAINING TO HAZARD MITIGATION

(NOTE: These excerpts are examples of hazard mitigation. Should you need to cite one of these examples or need further information related to any of these, go to the cited URL, open the referenced PDF document and then use the "Control – F" to search for all current and related information for your search.)

FUTURE LAND USE ELEMENT
https://www.colliercountyfl.gov/home/showpublisheddocument/106446/638465425078400000

C. UNDERLYING CONCEPTS

Management of Coastal Development

Two major coastal development issues in Collier County are the protection of natural resources and the balancing of risk in natural hazard areas.

Extensive populated areas in Collier County are vulnerable to periodic salt-water inundation from tropical storms or hurricanes. It is extremely important that an acceptable balance between at-risk population and evacuation capability be achieved. In addition, public and private investment in such vulnerable areas must be carefully considered.

This issue is addressed here and in the Conservation and Coastal Management Element through several measures. A Coastal High Hazard Area is identified on the Future Land Use Map essentially as all lands seaward of US 41. This line is based on the close fit to the storm Category 1 SLOSH area (potential for saltwater flooding from 1 storm in 12 years) and evacuation planning areas. Within the Coastal High Hazard Area maximum permissible residential density is limited in recognition of the level of risk, the existing deficiency of evacuation shelter space and existing patterns of density. The Coastal High Hazard Area is also identified in the Conservation and Coastal Management Element and policies are provided therein. Finally, coastal natural hazards are addressed through Land Development Regulations already in effect relating to coastal building standards, per Chapter 161, Florida Statutes, and protection of structures from floods, per County participation in the FEMA Flood Insurance Program.

OBJECTIVE 1: Unless otherwise permitted in this Growth Management Plan, new or revised uses of land shall be consistent with designations outlined on the Future Land Use Map. The Future Land Use Map and companion Future Land Use Designations, Districts and Sub-districts shall be binding on all Development Orders effective with the adoption of this Growth Management Plan. Standards and permitted uses for each Future Land Use District and Subdistrict are identified in the Designation Description Section. Through the magnitude, location and configuration of its components, the Future Land Use Map is designed to coordinate land use with the natural environment including topography, soil and other resources; promote a sound economy; coordinate coastal population densities with the Regional Hurricane Evacuation Plan; and discourage unacceptable levels of urban sprawl.

FUTURE LAND USE DESIGNATION DESCRIPTION SECTION

The following section describes the land use designations shown on the Future Land Use Map. These designations generally indicate the types of land uses for which zoning may be requested. However, these land use designations do not guarantee that a zoning request will be approved. Requests may be denied by the Board of County Commissioners based on criteria in the Land Development Code or on special studies completed for the County.

I. URBAN DESIGNATION

Urban Designated Areas on the Future Land Use Map include two general portions of Collier County: areas with the greatest residential densities, and areas in close proximity, which have or are projected to receive future urban support facilities and services. It is intended that Urban Designated Areas accommodate the majority of population growth and that new intensive land uses be located within them. Accordingly, the Urban Area will accommodate residential uses and a variety of non-residential uses. The Urban Designated Area, which includes Immokalee and Marco Island, represents less than 10% of Collier County's land area.

The boundaries of the Urban Designated Areas have been established based on several factors, including: patterns of existing development; patterns of approved, but unbuilt, development; natural resources; water management; hurricane risk; existing and proposed public facilities; population projections and the land needed to accommodate the projected population growth.

*** *** **TEXT BREAK** *** ***

(IV)(XI)(XV)(XXI) 3. Urban Coastal Fringe Subdistrict:
The purpose of this Subdistrict is to provide transitional densities between the Conservation designated area (primarily located to the south of the Subdistrict) and the remainder of the Urban designated area (primarily located to the north of the Subdistrict). The Subdistrict comprises those Urban areas south of US 41, generally east of the City of Naples, and generally west of the Rural Fringe Mixed Use District Neutral Lands, but excludes Section 13, Township 51 South, Range 26 East, and comprises approximately 11,354 acres and 10% of the Urban Mixed Use District. The entire Subdistrict is located seaward of the Coastal High Hazard Area Boundary. In order to facilitate hurricane evacuation and to protect the adjacent environmentally sensitive Conservation designated area, residential densities within the Subdistrict shall not exceed a maximum of 4 dwelling units per acre, except as allowed in the Density Rating System to exceed 4 units per acre through provision of Affordable Housing and Transfers of Development Rights, and except as allowed by certain FLUE Policies under Objective 5, and except as provided in the Bayshore Gateway Triangle Redevelopment Overlay. New rezones to permit mobile home development within this Subdistrict are prohibited. Rezones are recommended to be in the form of a Planned Unit Development.

*** *** **TEXT BREAK** *** ***

(IX) B. Rural Fringe Mixed Use District
The Rural Fringe Mixed Use District is identified on Future Land Use Map. This District consists of approximately 93,600 acres, or 7% of Collier County's total land area. Significant portions of this District are adjacent to the Urban area or to the semi-rural, rapidly developing, large-lot North Golden Gate Estates platted lands. Agricultural land uses within the Rural Fringe Mixed Use District do not represent a significant portion of the County's active agricultural lands. As of the date of adoption of this Plan Amendment, the Rural Fringe Mixed Use District consists of more than 5,550 tax parcels, and includes at least 3,835 separate and distinct property owners. Alternative land use strategies have been developed for the Rural Fringe Mixed Use District, in part, to consider these existing conditions.

The Rural Fringe Mixed Use District provides a transition between the Urban and Estates Designated lands and between the Urban and Agricultural/Rural and Conservation designated lands farther to the east. The Rural Fringe Mixed Use District employs a balanced approach, including both regulations and incentives, to protect natural resources and private property rights, providing for large areas of open space, and allowing, in designated areas, appropriate types, density and intensity of development. The Rural Fringe Mixed Use District allows for a mixture of urban and rural levels of service, including limited extension of central water and sewer, schools, recreational facilities, commercial uses and essential services deemed necessary to serve the residents of the District. In order to preserve existing natural resources, including habitat for listed species, to retain a rural, pastoral, or park-like appearance from the major public rights-of-way within this area, and to protect private property rights, the following innovative planning and development techniques are required and/or encouraged within the District.

(IX)1. Transfer of Development Rights (TDR), and Sending, Neutral, and Receiving Designations: The primary purpose of the TDR process within the Rural Fringe Mixed Use District is to establish an equitable method of protecting and conserving the most valuable environmental lands, including large connected wetland systems and significant areas of habitat for listed species, while allowing property owners of such lands to recoup lost value and development potential through an economically viable process of transferring such rights to other more suitable lands. Within the Rural Fringe Mixed Use District, residential density may be transferred from lands designated as Sending Lands to lands designated as Receiving Lands on the Future Land Use Map, subject to the provisions below. Residential density may not be transferred either from or into areas designated as Neutral Lands through the TDR process.

IX) A) Receiving Lands: Receiving Lands are those lands within the Rural Fringe Mixed Use District that have been identified as being most appropriate for development and to which residential development units may be transferred from areas designated as Sending Lands. Based on the evaluation of available data, these lands have a lesser degree of environmental or listed species habitat value than areas designated as Sending and generally have been disturbed through development, or previous or existing agricultural operations. Various incentives are employed to direct development into Receiving Lands and away from Sending Lands, thereby maximizing native vegetation and habitat preservation and restoration. Such incentives include, but are not limited to: the TDR process; clustered development; density bonus incentives; and, provisions for central sewer and water. Within Receiving Lands, the following standards shall apply, except for those modifications that are identified in the North Belle Meade Overlay:

4. Emergency Preparedness:

a) In order to reduce the likelihood of threat to life and property from a tropical storm or hurricane event, community facilities, schools, or other public buildings shall be designed to serve as storm shelters if located outside of areas that are likely to be inundated during storm events, as indicated on the Sea, Lake, and Overland Surge from Hurricane Map for Collier County. Impacts on evacuation routes, if any, must be considered as well. Applicants for new residential or mixed use developments proposed for Receiving Lands shall work with the Collier County Emergency Management staff to develop an Emergency Preparedness Plan to include provisions for storm shelter space, a plan for emergency evacuation, and other provisions that may be deemed appropriate and necessary to mitigate against a potential disaster.
b) Applicants for new developments proposed for Receiving Lands shall work with the Florida Division of Forestry, Collier County Emergency Management staff, and the Managers of any adjacent or nearby public lands, to develop a Wildfire Prevention and Mitigation Plan that will reduce the likelihood of threat to life and property from wildfires. This plan will address, at a minimum: project structural design; the use of materials and location of structures so as to reduce wildfire threat; firebreaks and buffers; water features; and, the impacts of prescribed burning on adjacent or nearby lands.

V. OVERLAYS AND SPECIAL FEATURES

(XV) A. Area of Critical State Concern Overlay
The Big Cypress Area of Critical State Concern (ACSC) was established by the 1974 Florida Legislature. The Critical Area is displayed on the Future Land Use Map as an overlay area. The Critical Area encompasses lands designated Conservation, Agricultural/Rural, Estates and Urban (Port of the Islands, Plantation Island and Copeland). The ACSC regulations notwithstanding, there is an existing Development Agreement between Port of the Islands, Inc. and the State of Florida Department of Community Affairs, approved in July 1985, which regulates land uses in the Port of the Islands Urban area; and, there is an Agreement between the Board of County Commissioners and the Florida Department of Community Affairs, approved in April 2005, pertaining to development in Plantation Island. Chocoloskee is excluded from the Big Cypress Area of Critical State Concern. All Development Orders within the Critical Area shall comply with Chapter 28-25, Florida Administrative Code, "Boundary and Regulations for the Big Cypress Area of Critical State Concern". Those regulations include the following:

1. Site Alteration
b. Any non-permeable surface greater than 20,000 square feet shall provide for release of surface run off, collected or uncollected, in a manner approximating the natural surface water flow regime of the area.
e. Fill areas and related dredge or borrow ponds shall be aligned substantially in the direction of local surface water flows and shall be separated from other fill areas and ponds by unaltered areas of vegetation of comparable size. Dredge or borrow ponds shall provide for the release of storm water as sheet flow from their downstream end into unaltered areas of vegetation. Access roads to and between fill areas shall provide for the passage of water in a manner approximating the natural flow regime and designed to accommodate the 50-year storm. Fill areas and related ponds shall not substantially retain or divert the total flow in or to a slough or strand or significantly impeded tidal action in any portion of the estuarine zone.

2. Drainage

a. Existing drainage facilities shall not be modified so as to discharge water to any coastal waters, either directly or through existing drainage facilities. Existing drainage facilities shall not be expanded in capacity or length except in conformance with paragraph (2) below; however, modifications may be made to existing facilities that will raise the ground water table or limit saltwater intrusion.

b. New drainage facilities shall release water in a manner approximating the natural local surface flow regime, through a spreader pond or performance equivalent structure or system, either on site or to a natural retention, or natural filtration and flow area. New drainage facilities shall also maintain a ground water level enough to protect wetland vegetation through the use of weirs or performance equivalent structures or systems. Said facilities shall not retain, divert, or otherwise block or channel the naturally occurring flows in a strand, slough or estuarine area.

c. New drainage facilities shall not discharge water into any coastal waters either directly or through existing drainage facilities.

d. This rule shall not apply to drainage facilities modified or constructed in order to use land for agricultural purposes or to convert land to such use.

3. Transportation

a. Transportation facilities which would retain, divert or otherwise block surface water flows shall provide for the re-establishment of sheet flow through the use of interceptor spreader systems or performance equivalent structures and shall provide for passage of stream, strand, or slough water through the use of bridges, culverts, piling construction or performance equivalent structures or systems.

b. Transportation facilities shall be constructed substantially parallel to the local surface flow, and shall maintain a historic ground water level sufficient to protect wetland vegetation through the use of weirs or performance equivalent structures or systems and as feasible, the flows in such works shall be released to natural retention filtration and flow areas.

c. Transportation facility construction sites shall provide for siltation and run-off control through the use of settling ponds, soil fixing or performance equivalent structures or systems.

4. Structure Installation

a. Placement of structures shall be accomplished in a manner that will not adversely affect surface water flow or tidal action.

b. Minimum lowest floor elevation permitted for structures shall be at or above the 100-year flood level, as established by the Administrator of the Federal Flood Insurance Administration. The construction of any structure shall meet additional Federal Flood Insurance Land Management and Use Criteria (24 CFR 1910), as administered by the appropriate local agency.

(VII) Policy 5.6

For those lands that are not voluntarily included in the Rural Lands Stewardship program, Collier County shall direct non-agricultural land uses away from high functioning wetlands by limiting direct impacts within wetlands. A direct impact is hereby defined as the dredging or filling of a wetland or adversely changing the hydroperiod of a wetland. This policy shall be implemented as follows:

1. There are two (2) major wetlands systems within the RLSA, Camp Keais, Strand and the Okaloacoochee Slough. These two systems have been mapped and are designated as FSA"s. Policy 5.1 prohibits certain uses within the FSA"s, thus preserving and protecting the wetlands functions within those wetland systems.

2. The other significant wetlands within the RLSA are WRA"s as described in Policy 3.3. These areas are protected by existing SFWMD wetlands permits for each area.

3. FSAs, HSAs and WRAs, as provided in Policy 5.3, and the ACSC have stringent site clearing and alteration limitations, nonpermeable surface limitations, and requirements addressing surface water flows which protect

wetland functions within the wetlands in those areas. Other wetlands within the RLSA are isolated or seasonal wetlands. These wetlands will be protected based upon the wetland functionality assessment described below, and the final permitting requirements of the South Florida Water Management District.

g . Wetland preservation, buffer areas, and mitigation areas shall be identified or platted as separate tracts. In the case of a Planned Unit Development (PUD), these areas shall also be depicted on the PUD Master Plan. These areas shall be maintained free from trash and debris and from Category I invasive exotic plants, as defined by the Florida Exotic Pest Plant Council. Land uses allowed in these areas shall be limited to those listed above (3.e.iv.) and shall not include any other activities that are detrimental to drainage, flood, control, water conservation, erosion control or fish and wildlife habitat conservation and preservation.

TRANSPORTATION ELEMENT
(https://www.colliercountyfl.gov/home/showpublisheddocument/106788/638481833028770000)

(VI) OBJECTIVE 5:
The County shall coordinate the Transportation System development process with the Future Land Use Map.

(IV)(VI) Policy 5.8:
Should the TIS for a proposed development reflect that it will impact either a constrained roadway link and/or a deficient roadway link within a TCMA by more than a de minimis amount (more than 1% of the maximum service volume at the adopted LOS), yet continue to maintain the established percentage of lanes miles indicated in Policy 5.7 of this Element, a congestion mitigation payment shall be required as follows:

(VI) d. No impact will be de minimis if it exceeds the adopted LOS standard of any affected designated hurricane evacuation routes within a TCMA. Hurricane routes in Collier County are shown on Map TR7. Any impact to a hurricane evacuation route within a TCMA shall require a congestion mitigation payment provided the remaining LOS requirements of the TCMA are maintained.

VI) OBJECTIVE 10:
The County shall encourage safe and efficient mobility for the rural public.

(VI) Policy 10.1:
The County shall examine the maintenance and operational needs of the rural roadway system, addressing the mobility needs of rural residents to include the availability of roads for rural-to-urban travel, travel within the rural area, and for emergency evacuation purposes.

CONSERVATION AND COASTAL ZONE MANAGEMENT ELEMENT

(https://www.colliercountyfl.gov/home/showpublisheddocument/104600/638291703589230000

(II) OBJECTIVE 1.3:
Pursuant to Administration Commission Final Order AC-99-002 dated June 22, 1999, the County has completed the phased delineation, data gathering, management guidelines and implementation of the Natural Resource Protection Area (NRPA) program as part of the required Collier County Rural and Agricultural Assessment. Through this Assessment, the County has determined that the NRPA program is not the only mechanism to protect significant environmental systems. Accordingly, within the Rural Lands Stewardship Area Overlay in the Future Land Use Element, the County has delineated Stewardship Sending Areas that will function to protect large environmental systems. Pursuant to the following policies, the County shall protect identified environmental systems through the NRPA and Rural Lands Stewardship programs.

(II) Policy 1.3.3:
Continue with management guidelines as defined within the County LDC that provide for the management and conservation of the habitats, species, natural shoreline and dune systems for the undeveloped coastal barrier and estuarine natural resources protection area.

(VI) Objective 2.1:

By January 2008, the County shall complete the prioritization and begin the process of preparing Watershed Management Plans, which contain appropriate mechanisms to protect the County's estuarine and wetland systems…

(VI) Policy 2.1.4:
All Watershed Management Plans shall address the following concepts:
g. The effects on natural flood plains, stream channels, native vegetative communities and natural protective barriers which are involved in the accommodation of flood waters;

OBJECTIVE 2.3:
All estuaries shall meet all applicable federal, state and local water quality standards.

Policy 2.3.5:
Continue to have staff coordinate with the City of Naples staff regarding coordinated and cooperative planning, management, and funding programs for limiting specific and cumulative impacts on Naples Bay and its watershed. At a minimum, this agreement includes the following:
a. Insure adequate sites for water dependent uses,
b. Prevent estuarine pollution,
c. Control run-off,
d. Protect living marine resources,
e. Reduce exposure to natural hazards,
f. Ensure public access,
g. Provide a continuing monitoring program.

(II)(III)(VI) Objective 6.1:
The County shall protect native vegetative communities through the application of minimum preservation requirements. The following policies provide criteria to make this objective measurable. These policies shall apply to all of Collier County except for that portion of the County which is identified on the Countywide Future Land Use Map (FLUM) as the Rural Lands Stewardship Area Overlay.

(II)(III)(VI) Policy 6.1.1:
For the County's ***Urban Designated Area, Estates Designated Area, Conservation Designated Area, and Agricultural/Rural Mixed Use District, Rural-Industrial District and Rural-Settlement Area District*** as designated on the FLUM, native vegetation shall be preserved through the application of the following preservation and vegetation retention standards and criteria, unless the development occurs within the Area of Critical State Concern (ACSC) where the ACSC standards referenced in the Future Land Use Element shall apply. Notwithstanding the ACSC requirements, this policy shall apply to all non-agricultural development except for single-family dwelling units situated on individual parcels that are not located within a watershed management conservation area identified in a Watershed Management Plan developed pursuant to policies supporting Objective 2.1 of this Element.

	Coastal High Hazard Area	Non-Coastal High Hazard Area
Residential and Mixed Use Development	Less than 2.5 acres 10% Equal to or greater than 2.5 acres 25%	Less than 5 acres. 10% Equal to or greater than 5 acres and less than 20 acres. 15% Equal to or greater than 20 ac. 25%
Golf Course	35%	35%
Commercial and Industrial Development	Less than 5 acres. 10% Equal to or greater than 5 acres. 15%	Less than 5 acres. 10% Equal to or greater than 5 acres. 15%
Industrial Development (Rural-Industrial District only)	50%, not to exceed 25% of the project site.	50%, not to exceed 25% of the project site.

(II)(III)(VI) Policy 6.1.2:
For the ***County's Rural Fringe Mixed Use District***, as designated on the FLUM, native vegetation shall be preserved on site through the application of the following preservation and vegetation retention standards and criteria:
Preservation and Native Vegetation Retention Standards:

f**.** In order to ensure reasonable use and to protect the private property rights of owners of smaller parcels of land within lands designated Rural Fringe Mixed Use District on the Future Land Use Map, including nonconforming lots of record which existed on or before June 22, 1999, for lots, parcels or fractional units of land or water equal to or less than five (5) acres in size, native vegetation clearing shall be allowed, at 20% or 25,000 square feet of the lot or parcel or fractional unit, whichever is greater, exclusive of any clearing necessary to provide for a 15-foot wide access drive up to 660 feet in length. For lots and parcels greater than 5 acres but less than 10 acres, up to 20% of the parcel may be cleared. This allowance shall not be considered a maximum clearing allowance where other provisions of this Plan allow for greater clearing amounts. These clearing limitations shall not prohibit the clearing of brush or under-story vegetation within 200 feet of structures in order to minimize wildfire fuel sources.
(6) A management plan shall be submitted for all preserve areas identified by specific criteria in the land development regulations to identify actions that must be taken to ensure that the preserved areas will function as proposed. The plan shall include methods to address control and treatment of invasive exotic species, fire management, stormwater management (if applicable), and maintenance of permitted facilities**.** If applicable, a listed species monitoring program shall be submitted pursuant to Policy 7.1.2 (2)(i).

(II)(III)(VI) Policy 6.1.8: ***[re-numbered to reflect merger of Ordinance No. 2002-32 and 2002-54]***
An Environmental Impact Statement (EIS), or submittal of appropriate environmental data as specified in the County's land development regulations, is required, to provide a method to objectively evaluate the impact of a proposed development, site alteration, or project upon the resources and environmental quality of the project area and the community and to insure that planning and zoning decisions are made with a complete understanding of the impact of such decisions upon the environment, to encourage projects and developments that will protect, conserve and enhance, but not degrade, the environmental quality and resources of the particular project or development site, the general area and the greater community. The County's land development regulations shall establish the criteria for determining the type of proposed development requiring an EIS, including the size and nature of the proposed development, the location of the proposed development in relation to existing environmental characteristics, the degree of site alterations, and other pertinent information.

(II)(III)(VI) Objective 6.2:
The County shall protect and conserve wetlands and the natural functions of wetlands pursuant to the appropriate policies under Goal 6. The following policies provide criteria to make this objective measurable. The County's wetland protection policies and strategies shall be coordinated with the Watershed Management Plans as required by Objective 2.1 of this Element.

(II)(III)(VI) Policy 6.2.6: ***[re-numbered to reflect merger of Ordinance No. 2002-32 and 2002-54]***
Within the ***Urban Designation and the Rural Fringe Mixed Use District,*** required wetland preservation areas, buffer areas, and mitigation areas shall be dedicated as conservation and common areas in the form of conservation easements and shall be identified or platted as separate tracts; and, in the case of a Planned Unit Development (PUD), these areas shall also be depicted on the PUD Master Plan. These areas shall be maintained free from trash and debris and from Category I invasive exotic plants, as defined by the Florida Exotic Pest Plant Council. Land uses allowed in these areas shall be limited to those listed in Policy 6.2.5(5)d of this element and shall not include any other activities that are detrimental to drainage, flood control, water conservation, erosion control or fish and wildlife habitat conservation and preservation.

(IV) OBJECTIVE 10.1:
Priorities for shoreline land use shall be given to water dependent uses over water related land uses and shall be based on type of water-dependent use, adjacent land use, and surrounding marine and upland habitat considerations. The Collier County Manatee Protection Plan (NR-SP-93-01) May 1995 restricts the location of marinas and may limit the number of wet slips, the construction of dry storage facilities, and boat ramps, based upon the Plan's marina siting criteria.

(VI) Policy 10.1.6:
All new marinas, water-dependent and water-related uses that propose to destroy viable, naturally functioning marine wetlands shall be required to perform a fiscal analysis in order to demonstrate the public benefit and financial feasibility of the proposed development.

OBJECTIVE 10.3:
Undeveloped coastal barriers shall be maintained predominantly in their natural state and their natural function shall be protected, maintained and enhanced.

(VI) Policy 10.3.6:
Prohibit construction of structures seaward of the Coastal Construction Setback Line on undeveloped coastal barriers. Exception shall be for passive recreational structures, access crossovers, and where enforcement would not allow any reasonable economic utilization of such property. In the latter event, require construction that minimizes interference with natural function of such coastal barrier system.

Policy 10.3.7:
Participate in and encourage Regional and State programs to acquire naturally functioning, undeveloped coastal barrier systems to insure the preservation of their natural function.

(VI) Policy 10.3.13:
Substantial alteration of the natural grade on undeveloped coastal barriers, through filling or excavation shall be prohibited except as part of an approved dune and/or beach restoration program, or as part of an approved public development plan for one or more of the uses allowed by Policy 10.3.4, above.

OBJECTIVE 10.4:
Developed coastal barriers and developed shorelines shall be continued to be restored and then maintained, when appropriate by establishing mechanisms or projects which limit the effects of development and which help in the restoration of the natural functions of coastal barriers and affected beaches and dunes.

Policy 10.4.1:
Promote environmentally acceptable and economically feasible restoration of the developed coastal barriers and the urban beach and dune systems.

Policy 10.4.2:
Prohibit further shore hardening projects except where necessary to protect existing structures, considering the total beach system and adjacent properties.

(VI) Policy 10.4.3:
Collier County shall prohibit activities which would result in man-induced shoreline erosion beyond the natural beach erosion cycle or that would deteriorate the beach and dune system. Implementation of this policy will be based upon available scientific/coastal engineering literature/studies that have established benchmarks for natural rates of beach erosion.

Policy 10.4.4:
Require dune stabilization and restoration improvements in land development projects along beach areas.

Policy 10.4.5:
Initiate and support beach and dune restoration and preservation programs where appropriate.

Policy 10.4.6:
Require native vegetation as landscaping in development activities in developed coastal barrier systems and on the beach and dune systems.

(VI) Policy 10.4.7:
Collier County shall prohibit construction seaward of the Coastal Construction Setback Line except where such

construction would be permitted pursuant to the provisions of the Florida Coastal Zone Protection Act of 1985, where such prohibition would result in no reasonable economic utilization of the property in question, or for safety reasons. In such cases, construction will be as far landward as is practicable and effects on the beach and dune system and the natural functions of the coastal barrier system shall be minimized.

(VI) Policy 10.4.8:
Collier County shall allow construction seaward of the Coastal Construction Setback Line for public access and protection and activities related to restoration of beach resources. Such construction shall not interfere with sea turtle nesting, will utilize native vegetation for dune stabilization, will maintain the natural beach profile, will minimize interference with natural beach dynamics, and, where appropriate, will restore the historical dunes with native vegetation.

(VI) Policy 10.4.9:
Collier County shall prohibit seawall construction on properties fronting the Gulf of Mexico except in instances where erosion poses an imminent threat to existing buildings.

(VI) Policy 10.4.10:
The County shall prohibit vehicles on beaches and dunes except for the following:

1. Emergency vehicles responding to incidents.
2. Vehicles associated with environmental maintenance, environmental monitoring, or conservation purposes.
3. Vehicles limited to set-up and removal of equipment of permitted events, in conjunction with permanent concession facilities, or permitted uses of commercial hotels.
4. Beach raking or beach cleaning.
5. Vehicles needed for beach nourishment or inlet maintenance
6. Vehicles necessary for construction that cannot otherwise access a site from an upland area.

Policy 10.4.12: In permitting the repair and/or reconstruction of shore parallel engineered stabilization structures, require, where appropriate, at a minimum:
a. All damaged seawalls will be replaced with, or fronted by, b. Where appropriate, repaired structures will be redesigned

Policy 10.4.13: Development and redevelopment proposals shall consider the implications of potential rise in sea level.

OBJECTIVE 10.5:
For undeveloped shorelines, provide improved opportunities for recreational, educational, scientific, and esthetic enjoyment of coastal resources by protecting beaches and dunes and by utilizing or where necessary establishing construction standards, which will minimize the impact of manmade structures on the beach and dune systems.

Policy 10.5.1:
Recreation that is compatible with the natural functions of beaches and dunes is the highest and best land use.

Policy 10.5.2:
Prioritize acquisition efforts in order to meet the projected need for additional public beaches.

Policy 10.5.3:
Prohibit activities which would result in man induced shoreline erosion beyond the natural beach erosion cycle or that would deteriorate the beach dune system.

(VI) Policy 10.5.4:
Prohibit construction of any structure seaward of the Coastal Construction Setback Line. Exception shall be for passive recreational structures, access crossovers, and where enforcement would not allow any reasonable economic utilization of such property. In the latter event, require construction that minimizes interference with natural function of such beaches and dunes.

(VI) Policy 10.5.5:
The County shall prohibit vehicles on the beaches and dunes except for emergency, environmental monitoring and environmental maintenance purposes.

Policy 10.5.6:
Regulate activities so that they will not threaten the stability of the dunes or the beach itself.

Policy 10.5.7:
Pursue the acquisition of undeveloped beaches and dunes as the first alternative to development.

Policy 10.5.8:
Prohibit shoreline armoring processes and encourage non-structural methods for stabilizing beaches and dunes.

(VI) Policy 10.5.9:
Prohibit construction seaward of the Coastal Construction Setback Line except as follows:

a. Construction will be allowed for public access;

b. For protection and restoration of beach resources;

c. In cases of demonstrated land use related hardship or safety concerns as specified in The 1985 Florida Coastal Zone Protection Act, there shall be no shore armoring allowed except in cases of public safety.

Policy 10.5.10:
Construction activities shall not interfere with the sea turtle nesting, shall preserve or replace any native vegetation on the site, and shall maintain the natural beach profile and minimize interference with the natural beach dynamics and function.

(VI) Policy 10.5.11:
The County will waive all other non-safety related setback requirements and site planning requirements before allowing construction seaward of the Coastal Construction Setback Line.

Policy 10.5.12:
For all beach front land development related projects require dune stabilization and restoration improvements, the removal of exotic vegetation, and replacement with native vegetation, as appropriate.

(I) OBJECTIVE 10.6:
The County shall conserve the habitats, species, natural shoreline and dune systems contained within the County's coastal zone.

(I)(VI) Policy 10.6.1:
In addition to those applicable policies supporting Objectives 10.1, 10.2, 10.3, 10.4, and 10.5, development within the County's coastal zone shall also meet the following criteria:

1. Densities on the following undeveloped coastal barriers shall not exceed 1 unit per 5 acres;
    a. Wiggins Pass Unit FL-65P,
    b. Clam Pass Unit FL-64P,
    c. Keywaydin Island Unit P-16,
    d. Cape Romano Unit P-15.
2. Site alterations shall be concentrated in disturbed habitats thus avoiding undisturbed pristine habitats (Reference Policy 10.1.4).
3. Beachfront developments shall restore dune vegetation.
4. Projects on coastal barriers shall be landscaped with native Southern Floridian species.
5. Boathouses, boat shelters and dock facilities shall be located and aligned to stay at least 10 feet from any existing seagrass beds except where a continuous bed of seagrass exists off of the shore of the property, in which case facility heights shall be at least 3.5 feet NGVD, terminal platforms shall be less than 160 square feet and access docks shall not exceed a width of four (4) feet.
6. The requirements of this policy identify the guidelines and performance standards for undeveloped coastal barriers and estuarine areas that are contained within the County's coastal barrier and estuarine area Natural Resource Protection Area (NRPA – reference CCME Policy 1.3.1). These guidelines and standards therefore

satisfy the requirements of CCME Policy 1.3.1.

(I)(VI) OBJECTIVE 12.1:
The County will maintain hurricane evacuation clearance times as required by state law. An evacuation clearance time shall be defined as having residents and visitors in an appropriate refuge away from storm surge prior to the arrival of sustained Tropical Storm force winds, i.e., winds equal to or greater than 39 mph. To further these objectives, for future mobile home developments located outside of the storm surge zone, such development shall include on-site sheltering or retro-fitting of an adjacent facility. The Collier County Emergency Management Department shall seek opportunities to increase shelter facilities and associated capacities under the direction of the Department of the Florida Division of Emergency Management.

(VI) Policy 12.1.1:
Collier County will develop and maintain a comprehensive public awareness program. The program will be publicized prior to May 30th of each year. Evacuation zones, public shelters and evacuation routes shall be printed in each local newspaper, displayed on the Collier County Emergency Management website, and the availability of this information will be discussed on local television newscasts. This information shall also be made readily available to all hotel/motel guests.

(I) Policy 12.1.2:
Land use plan amendments in the Category 1 hurricane vulnerability zone shall only be considered if such increases in densities provide appropriate mitigation to reduce the impacts of hurricane evacuation times.

(VI) Policy 12.1.3:
The County shall continue to identify and maintain shelter space for 32,000 persons by 2006 and 45,000 by 2010. Shelter space capacity will be determined at the rate of 20 square feet per person.

(VI) Policy 12.1.4:
The County shall continue to maintain hurricane shelter requirements and standards for all new mobile home parks and mobile home subdivisions, or existing mobile home parks and mobile home subdivisions in the process of expanding, which accommodate or contain 26 units or more. Such mobile home parks or mobile home subdivisions shall be required to provide emergency shelter space on-site, or to provide funding to enhance one or more existing public shelters off-site. The building which provides the on-site shelter space (if this option is chosen) will be of such a size as to provide shelter to park or subdivision residents at the rate of 20 square feet per person. For the purposes of this policy, the size of the on-site shelter structure shall be determined by estimating the park or subdivision population during the June-November time frame, based upon methodologies utilized by the Collier County Emergency Management Department.

(VI) Policy 12.1.5:
On-site shelters within mobile home parks or mobile home subdivisions shall be elevated to a minimum height equal to or above the worst case Category 3 hurricane flooding level, based upon the most current National Oceanic and Atmospheric Administration's storm surge model, known as Sea, Lake, and Overland Surges from Hurricanes (SLOSH). The wind load criteria for buildings and structures designated as "essential facilities" in the latest Florida Building Code, shall guide the design and construction of the required shelters. Shelters shall be constructed with emergency electrical power and potable water supplies; shall provide glass protection by shutters or other approved material/device; and shall provide for ventilation, sanitary facilities and first aid equipment. A telephone, automatic external defibrillator (AED) and battery operated radio are also required within the shelter.

(VI) Policy 12.1.6:
The Directors of the Transportation Planning and Emergency Management Departments will review, at least annually, evacuation route road improvement needs to ensure that necessary improvements are reflected within Table A, the Five-Year Schedule of Capital Improvements, as contained within the Capital Improvement Element of this Growth Management Plan.

(VI) Policy 12.1.7:
The County shall update the hurricane evacuation portion of the Collier County Comprehensive Emergency Management Plan prior to June 1st of each year by integrating all appropriate regional and State emergency plans in

the identification of emergency evacuation routes.

(VI) Policy 12.1.8:
The County's land development regulations include mitigation policies addressing flood plains, beach and dune alteration and storm water management.

(I)(VI) Policy 12.1.9:
Collier County shall annually update its approved Hazard Mitigation Plan, formerly known as the "Local Hazard Mitigation Strategy" through the identification of new or ongoing local hazard mitigation projects and appropriate funding sources for such projects.

(I)(VI) Policy 12.1.10:
All new Public Safety facilities in Collier County will be flood-resistant and designed to meet 155 mph wind load requirements and shall have provisions for back-up generator power.

(I)(VI) Policy 12.1.11:
The County will continue to coordinate with Collier County Public Schools to ensure that all new public schools outside of the Coastal High Hazard Area are designed and constructed to meet the Public Shelter Design Criteria, as contained in "State Requirements for Educational Facilities" (1999).

(I)(VI) Policy 12.1.12:
The County will continue to work with the Board of Regents of the State University System to ensure that all new facilities in the State University System that are located outside of the Coastal High Hazard Area are designed and constructed to meet the Public Shelter Design Criteria, as contained in "State Requirements for Educational Facilities" (1999) and the Florida Building Code.

(I)(VI) Policy 12.1.13:
The County will continue to mitigate previously identified shelter deficiencies through mitigation from Developments of Regional Impact, Emergency Management Preparedness and Enhancement grants, Hazard Mitigation and Pre-disaster Mitigation Grant Programs funding, and from funds identified in the State's annual shelter deficit studies.

(VI) Policy 12.1.14:
Prior to adoption of the 2007 Annual Update and Inventory Report (A.U.I.R.), Collier County shall evaluate whether to include hurricane shelters in the 5-year schedule of Capital Improvements.

(I)(VI) Policy 12.1.15:
All new nursing homes and assisted living facilities that are licensed for more than 15 clients will have a core area to shelter residents and staff on site. The core area will be constructed to meet the Public Shelter Design Criteria that is required for new public schools and public community colleges and universities ("State Requirements for Educational Facilities," 1999). Additionally this area shall be capable of ventilation or air conditioning provided by back-up generator for a period of no less than 48 hours.

(I)(VI) Policy 12.1.16:
The County will coordinate with the Florida Department of Transportation on its plans to one-way evacuation routes on State maintained roads that are primary evacuation routes for vulnerable populations.

(VI) Policy 12.1.17:
Collier County is conducting a Hurricane Evacuation Study. If warranted by the results of that study, further restriction on development may be proposed.

(VI) OBJECTIVE 12.2:
The County shall ensure that publicly funded buildings and publicly funded development activities are carried out in a manner that demonstrates best practice to minimize the loss of life, property, and re-building cost from the affects from hurricanes, flooding, natural and technological disaster events. Best practice efforts may include, but are not limited to:

a. Construction above the flood plain;
b. maintaining a protective zone for wildfire mitigation;
c. installation of on-site permanent generators or temporary generator emergency connection points;
d. beach and dune restoration, re-nourishment, or emergency protective actions to minimize the loss of structures from future events;
e. emergency road repairs;
f. repair and/or replacement of publicly owned docking facilities, parking areas, and sea walls, etc.

(VI) Policy 12.2.1:
The Hazard Mitigation section of the Collier County Comprehensive Emergency Management Plan (CEMP) shall continue to be reviewed and updated every four (4) years beginning in 2005. This periodic update of the CEMP shall include a review and update (as may be necessary) of the County's hurricane evacuation and sheltering procedures.

(VI) Policy 12.2.2:
Within the coastal high hazard area, the calculated needs for public facilities, as represented in the Annual Update and Inventory Report (A.U.I.R.) and Five-Year Schedule of Capital Improvements, will be based on the County's adopted level of service standards and projections of future growth allowed by the Future Land Use Element.

Policy 12.2.3:
The County shall participate in the National Flood Insurance Program (NFIP).

(VI) Policy 12.2.4:
The County shall maintain requirements for structural wind resistance as stated in the latest edition of the Florida Building Code.

(I)(VI) Policy 12.2.5:
The County shall consider the Coastal High Hazard Area as a geographical area lying within the Category 1 storm surge zone as presently defined in the 2001 Southwest Florida Regional Planning Council's Hurricane Evacuation Study, or subsequently authorized storm surge or evacuation planning studies coordinated by the Collier County Emergency Management Department and approved by the Board of County Commissioners.

Policy 12.2.6:
The County shall require that all new sanitary sewer facilities in the coastal high-hazard flood area be flood proofed, be designed to reduce leakage of raw sewage during flood events to the maximum extent practicable and new septic tanks shall be fitted with back-flow preventers.

(VI) Policy 12.2.7:
The County shall continue to assess all undeveloped property within the coastal high hazard area and make recommendations on appropriate land use.

OBJECTIVE 12.3:
The County shall develop and maintain a task force that will plan and guide a unified County response to post-hurricane disasters.

Policy 12.3.1:
The Comprehensive Emergency Management Plan shall comply with the policies under this objective, and shall contain step-by-step details for post disaster recovery.

Policy 12.3.2:
After a hurricane that necessitated an evacuation, the Board of County Commissioners shall meet to hear preliminary damage assessments. This will be done prior to re-entry of the population. At that time, the Commission will activate the recovery task force and consider a temporary moratorium on building activities not necessary for the public health, safety and welfare.

(VI) Policy 12.3.3:
The Recovery Task Force shall include the Sheriff of Collier County, the Community Development and

Environmental Services Division Administrator, the Comprehensive Planning Director, the Zoning and Land Development Review Director, the Emergency Management Director and other members as directed by the Board of County Commissioners. The Board should also include representatives from municipalities within Collier County that have received damage from the storm to become members of the Recovery Task Force.

(VI) Policy 12.3.4:
The Collier County Recovery Task Force responsibilities shall be identified in the Code of Laws and Ordinances.

Policy 12.3.5:
Immediate repair and clean-up actions needed to protect the public health and safety include repairs to potable water, wastewater, and power facilities, debris removal, stabilization or removal of structures that are in danger of collapsing, and minimal repairs to make dwellings habitable. These actions shall receive first priority in permitting decisions.

Policy 12.3.6:
Structures in the coastal high-hazard area which have suffered damage to pilings, foundations, or load-bearing walls on one or more occasion shall be required to rebuild landward of their current location or to modify the structure to mitigate any recurrence of repeated damage.

(VI) Policy 12.3.7:
The County has developed, adopted and maintains a Post-disaster Recovery, Reconstruction and Mitigation Ordinance, for the purpose of evaluating options for damaged public facilities including abandonment (demolition), repair in place, relocation, and reconstruction with structural modifications. The process described within the Ordinance considers these options in light of factors such as cost to construct, cost to maintain, recurring damage, impacts on land use, impacts on the environment and public safety.

Policy 12.3.8:
Within 30 days of a hurricane resulting in disaster the County shall identify non-public structures in the coastal high-hazard area, inventory their assessed value, judge the utility of the land for public access and make recommendations for acquisition during post-disaster recovery.

(VI) OBJECTIVE 12.4:
The County shall make every reasonable effort to meet the emergency preparedness requirements of people with special needs such as the elderly, handicapped, the infirmed and those requiring transportation from a threatened area. In the event of a countywide emergency, such as a hurricane or other large-scale disaster, the County Emergency Management Department shall open and operate one or more refuges for persons listed on the County's Special Needs Registry and their caregivers. Medical and support equipment at such refuges will include, but not necessarily be limited to, respirators, oxygen tanks, first aid equipment, disaster cots and blankets, and defibrillators.

Policy 12.4.1:
All new hospitals, nursing homes, and adult congregate living facilities shall prepare an emergency preparedness plan for approval by the Emergency Management Department prior to receiving a final development order.

Policy 12.4.2:
The County, in cooperation with other public agencies and public service groups, shall make a reasonable effort to provide for the emergency transportation needs of people having limited mobility that do not reside in licensed institutions serving people with special needs.

Policy 12.4.3:
The County, in cooperation with the Collier County Health Department and other public service groups shall make a reasonable effort to provide basic medical services in selected shelters designated as special needs shelters.

CAPITAL IMPROVEMENTS ELEMENT

https://www.colliercountyfl.gov/home/showpublisheddocument/90085/637097662477270000

(VIII) **Policy 1.2:**
The quantity of public facilities that is needed to eliminate existing deficiencies and to meet the needs of future growth shall be determined for each public facility by the following calculation:

Q = (S x D) - I.
Where: "Q" is the quantity of public facility needed,
"S" is the standard for level of service,
"D" is the demand, such as the population, and
"I" is the inventory of existing facilities.

A. The calculation will be used for existing demand in order to determine existing deficiencies. The calculation will be used for projected demand in order to determine needs of future growth. The estimates of projected demand will account for demand that is likely to occur from previously issued development orders as well as future growth. Management and Future Land Use Elements of this Growth Management Plan.

(VIII)(X) **OBJECTIVE 3** *(PUBLIC EXPENDITURES: COASTAL HIGH HAZARD AREA)***:**
Effective with plan implementation, limit public expenditures in the coastal high hazard area to those facilities, as described in Policy 1.1 above, needed to support new development to the extent permitted in the Future Land Use Element.

(VIII)(X) **Policy 3.1:**
The County shall continue to expend funds within the coastal high hazard area for the replacement and maintenance of public facilities identified in the Conservation and Coastal Management Element including, but not limited to arterial and collector roads, sanitary sewer service - wastewater treatment systems, potable water supply systems, surface water – stormwater management systems, solid waste collection and disposal systems, natural groundwater aquifer recharge areas, and park and recreation facilities.

(VIII) **Policy 3.2:**
Within the coastal high hazard area, the calculated needs for public facilities, as represented in the Schedule of Capital Improvements, will be based on the County's adopted level of service standards and projections of future growth allowed by the Future Land Use Element.

(III)(VIII)(X) **Policy 3.3:**
The County shall continue to support public access to beaches, shores and waterways. Such support shall include public expenditures for the maintenance of existing public facilities and beach renourishment, and may include public expenditure for beach, shore and waterway access.

(VIII) **Policy 4.7:**
The County shall ensure that publicly funded buildings and publicly funded development activities are carried out in a manner that demonstrates best practice to minimize the loss of life, property, and re-building cost from the effects from hurricanes, flooding, natural and technological disaster events. Best practice efforts may include, but are not be limited to:

a. Construction above the flood plain;
b. Maintaining a protective zone for wildfire mitigation;
c. Installation of on-site permanent generators or temporary generator emergency connection points;
d. Beach and dune restoration, re-nourishment, or emergency protective actions to minimize the loss of structures from future events;
e. Emergency road repairs; and,
f. Repair and/or replacement of publicly owned docking facilities, parking areas, and sea walls.

HOUSING ELEMENT
https://www.colliercountyfl.gov/home/showpublisheddocument/63316/635913815454370000

(II) OBJECTIVE 4:
Collier County and the City of Naples will conduct a comprehensive housing survey, every three years or sooner, for the purpose of identifying substandard dwelling units. Through continued enforcement of County housing codes, and the provision of housing rehabilitation or replacement programs, the number of substandard units (associated with a lack of plumbing and/or kitchen facilities) throughout the County shall be reduced by 5% per year through rehabilitation or demolition.

JOINT CITY/COUNTY POLICIES
(II) Policy 4.4:
In the event of a natural disaster, replacement housing shall comply with all applicable federal, state and local codes and shall consider factors such as, but not limited to, commercial accessibility, public facilities, places of employment, and housing income.

(II) OBJECTIVE 7:
Although mobile home developments currently exist within the coastal areas of Collier County, as a result of the coastal community's susceptibility to flooding and storm surges, no new rezone to permit mobile home development will be allowed within the Coastal High Hazard Area, as depicted on the countywide Future Land Use Map.

CITY POLICIES
*** Policy 7.2:**
Additional mobile home developments will not be permitted in the city limits due to the City's low elevation, susceptibility to flooding, storm surges and high winds in hurricane and tropical storms and that mobile homes are particularly vulnerable to damage.

COUNTY POLICIES
(II) * Policy 7.3:
The County has numerous sites where mobile homes are a permitted use and these sites will continue to be available for mobile home developments. However, due to the low lying elevations, susceptibility to flooding, storm surges and high winds from hurricanes and tropical storms, and that mobile homes are particularly vulnerable to damage, no additional sites will be zoned for mobile home development within the Coastal High Hazard Area, as depicted on the countywide Future Land Use Map.

GOLDEN GATE AREA MASTER PLAN
https://www.colliercountyfl.gov/home/showpublisheddocument/91413/637190036620030000

(VIII) OBJECTIVE 6.3:
In planning and constructing road improvements within Golden Gate Estates and Golden Gate City, Collier County shall coordinate with local emergency services officials to ensure that the access needs of fire department, police and emergency management personnel and vehicles are met.

(VIII) Policy 6.3.1:
Beginning in 2005, the Collier County Transportation Planning Department shall hold at least one annual public meeting with Golden Gate Area emergency services providers and the local civic association in order to ensure that emergency needs are addressed during the acquisition of right-of-way for design and construction of road improvements.

(VIII) Policy 6.3.2:
Beginning in 2005, the Collier County Transportation Planning Department shall coordinate with Golden Gate Area emergency services providers to prioritize necessary road improvements related to emergency evacuation needs.

(VIII) GOAL 7:
THE LIVES AND PROPERTY OF THE RESIDENTS OF THE GREATER GOLDEN GATE AREA, AS WELL AS THE HEALTH OF THE NATURAL ENVIRONMENT, WILL BE PROTECTED THROUGH

THE PROVISION OF EMERGENCY SERVICES THAT PREPARE FOR, MITIGATE, AND RESPOND TO, NATURAL AND MANMADE DISASTERS.

(VIII) OBJECTIVE 7.1:
The Collier County Bureau of Emergency Services, Collier County Sheriff‟s Department, Golden Gate Fire Control and Rescue District, and other appropriate agencies, will continue to maintain and implement public information programs to inform residents and visitors of the Greater Golden Gate Area regarding the means to prevent, prepare for, and cope with, disaster situations.

(VIII) Policy 7.1.1:
The County, fire districts that serve the Golden Gate area, and other appropriate agencies, shall embark on an education program to assist residents in knowing and understanding the value and need for prescribed burning on public lands in high risk fire areas.

(VIII) Policy 7.1.2:
The Golden Gate Fire Control and Rescue District and Collier County Bureau of Emergency Services shall actively promote the Firewise Communities Program through public education in Golden Gate Estates.

(VIII) Policy 7.1.3:
By 2005, the Collier County Community Development and Environmental Services Division shall evaluate the Land Development Code for Golden Gate Estates and shall eliminate any requirements that are found to be inconsistent with acceptable fire prevention standards. This evaluation process shall be coordinated with the Golden Gate Fire Control and Rescue District and the Collier County Bureau of Emergency Services.

(VIII) Policy 7.1.4:
The Golden Gate Fire Control and Rescue District and the Collier County Bureau of Emergency Services shall hold one or more annual “open house” presentations in the Golden Gate Area emphasizing issues related to wildfires, flooding, emergency access and general emergency management.

(VIII) OBJECTIVE 7.2:
Capital improvement projects within the Golden Gate Area shall be coordinated with all applicable emergency services providers to ensure that the needs of these entities are included in the overall public project design.

(VIII) Policy 7.2.1:
Preparation of Collier County‟s annual Schedule of Capital Improvements for projects within the Golden Gate Area shall be coordinated with the Fire Districts, public and private utilities, Emergency Medical Services Department and the Collier County Sheriff‟s Department to ensure that public project designs are consistent with the needs of these agencies.

(VIII) Policy 7.2.2:
The Golden Gate Fire Control and Rescue District, Collier County Emergency Medical Services Department and the Collier County Sheriff‟s Department shall receive copies of pre-construction plans for capital improvement projects in the Golden Gate Area and shall be invited to review and comment on plans for the public projects.

(VIII) OBJECTIVE 7.3:
While the County Transportation Planning Department is in the process of developing strategies for the enhancement of roadway interconnection within Golden Gate City and the Estates Area, interim measures to assure interconnection shall be developed.

(VIII) Policy 7.3.1:
By 2006, the Collier County Bureau of Emergency Services, the Collier County Transportation Division, Golden Gate Fire Control and Rescue District, and other appropriate Federal, State or local agencies, shall begin establishing one or more of the following routes for emergency evacuation purposes:

a. An I-75 Interchange at Everglades Boulevard.
b. Improved emergency access from Everglades Boulevard to I-75.

c. Construction of a north-south bridge on 23rd Street, SW, between White Boulevard and Golden Gate Boulevard.

(VIII) Policy 7.3.2:
All new residential structures shall comply with NFPA (National Fire Protection Association, Incorporated) 299 Standard for Protection of Life and Property from Wildfire, 1997 Edition, as adopted by reference in the Florida Fire Code or the most recent edition.

(VIII) Policy 7.3.3:
Modified portions of existing structures shall meet NFPA Standards through the adoption of appropriate regulations in the County Building Codes.

(VIII) Policy 7.3.4:
Beginning in 2006, County-owned property within Golden Gate Estates shall be subject to an active, on-going management plan to reduce the damage caused by wildfires originating from County-owned properties.

(X) LAND USE DESIGNATION DESCRIPTION SECTION
The following section describes the three land use designations shown on the Golden Gate Area Future Land Use Map. These designations generally indicate the types of land uses for which zoning may be requested. However, these land use designations do not guarantee that a zoning request will be approved. Requests may be denied by the Board of County Commissioners based on criteria in the Land Development Code or in special studies completed for the County.

(X) 1. URBAN DESIGNATION: URBAN MIXED USE DISTRICT AND URBAN COMMERCIAL DISTRICT
Urban Designated Areas on the Future Land Use Map include two general portions of Collier County: areas with the greatest residential densities and areas in close proximity, which have or are projected to receive future urban support facilities and services. It is intended that Urban Designated areas accommodate the majority of population growth and that new intensive land uses be located within them. The boundaries of the Urban Designated areas have been established based on several factors including:

patterns of existing development,
patterns of approved but unbuilt development,
natural resources, water management, and hurricane risk,
existing and proposed public facilities,
population projections, and
land needed to accommodate growth.

PART II
CODE OF LAWS & ORDINANCES (EXCERPTS)
(http://www.municode.com/library/clientCodePage.aspx?clientID=5149)

Chapter 38 – Civil Emergencies

Article I – Post- Disaster Recovery

Sec. 38-4. - Establishment of the post-disaster recovery task force.

The post-disaster recovery task force (task force) is hereby established as a post-disaster response management team consisting of community organizations and county and municipal personnel to provide an efficient recovery response to catastrophic disasters as provided for in Chapter 252, Florida Statutes. Upon direction of the Collier County Board of County Commissioners (BCC), the county manager shall schedule meetings to discuss specific roles and responsibilities of the task force in accordance with this article, and relative issues associated with recovery, emergency temporary repairs, and reconstruction processes following a disaster.

(1) The membership of the task force shall be composed of the following:
a. The county manager, or designee.

b. The community development and environmental services administrator, or designee.
c. The City Manager, or designee, for the City of Naples.
d. The City Manager, or designee, for the City of Marco Island.
e. The Mayor, or designee, for Everglades City.
f. The county transportation administrator, or designee.
g. The county public utilities administrator, or designee.
h. The county public services administrator, or designee.
i. The county health department director, or designee.
j. The county emergency management director, or designee.
k. The county human services director, or designee.
l. The county fire code official, or designee.
m. The county emergency medical services director, or designee.
n. The county communications and customer relations director, or designee.
o. A representative from the American Red Cross.
p. A representative from the school district of the county.
q. A representative from the Collier Building Industry Association, Inc.
r. A representative from the American Specialty Contractors of Florida, Inc.
s. A representative from the county sheriff's office.
t. A representative from the clerk of the circuit court.
u. A representative from the county's property appraiser's office.
v. Chair, or vice chair, of the local mitigation strategy working group.
w. The County Solid and Hazardous Waste or Director or Designee

(2) Duties of the post-disaster recovery task force shall include, but shall not be limited to the following:

a. Review all planning associated with the recovery and reconstruction process as described in the Collier County Comprehensive Emergency Management Plan (CEMP) and associated plans dealing with implementation of post-disaster moratoria and build-back policies;
b. Provide recommendations to the BCC for direction on recovery priorities and goals, and to coordinate and prioritize the recovery and reconstruction process with the construction industry;
c. Initiate recommendations to the BCC for the enactment, repeal or extension of emergency ordinances, resolutions and proclamations for its consideration;
d. Recommend to the BCC the imposition of any building moratoria that may be warranted as a result of the disaster;
e. Review the nature of damages, identify and evaluate alternate program objectives for repairs and reconstruction, and formulate recommendations to guide the community in its recovery;
f. Coordinate and implement strategies for temporary housing efforts if recommended by the U.S. Department of Homeland Security of the Federal Emergency Management Agency, U.S. Department of Housing and Urban Development and the state emergency response team;
g. Receive and review damage reports and other analysis of post-disaster circumstances, and to compare these circumstances with mitigation opportunities identified prior to the disaster to determine appropriate areas for post-disaster change and innovation; and, where needed, the task force may review alternative mechanisms to bring about such changes and recommend the coordination of internal and external resources for achieving these ends including consultant or contract labor;
h. Recommend to the BCC land areas and land use types that will receive priority in recovery;
i. Recommend to the BCC blanket reductions in non-vital zoning regulations and development standards (e.g., buffering, open space, side setbacks, etc.) to minimize the need for individual variances or compliance determinations prior to reconstruction; and
j. Evaluate damaged public facilities and formulate alternative mitigation options (i.e., repair, replacement, modification or relocation).
Sec. 38-5. - Establishment of emergency review board.

(2) The duties and authority of the emergency review board include, but are not limited to: Decisions rendered by the emergency review board may be appealed to the board through the normal administrative appeals process provided for in subsection 10.02.02.F.5.b. of the LDC.
a. Serve as an advisory committee to the task force;

b. Review all planning activities associated with the recovery and reconstruction process as described in the comprehensive emergency plan and associated plans dealing with post-disaster moratoria, build-back policies, emergency permitting and zoning, condemnation of buildings for structural and electrical deficiencies, enforcement and application of the LDC affecting setbacks, parking, buffering, open space, temporary signage, use of recreational vehicles for temporary living purposes, and other associated land development regulations;
c. Establish and define criteria for emergency repairs, determine the duration of the build-back period for build-back permitting activities and implement emergency permitting policies and procedures;
d. Supervise preliminary damage and detailed assessments; and
e. Consider grants of administrative variances, waivers or deviations to effectuate the buildback policy.
f. Assist in the implementation of local mitigation plans.

PART III

COLLIER COUNTY COMPREHENSIVE EMERGENCY MANAGEMENT PLAN (CEMP)

(HTTPS://WWW.COLLIERCOUNTYFL.GOV/GOVERNMENT/COUNTY-MANAGER-OPERATIONS/DIVISIONS/EMERGENCY-MANAGEMENT/LIBRARY-CMTE-REFERENCE/2021-CEMP

Mitigation is discussed throughout the CEMP. When you open the "Basic Plan" pdf document, plug in the word "mitigation" into the "Ctrl –F" Find-function. Section G of the Basic Plan is devoted to the mitigation activities.

Attachment 2 to Section 6
Marco Island's Comprehensive Plan
https://www.cityofmarcoisland.com/media/24536

Section I (Future Land Use Element)

Objective 1.2: The Future Land Uses depicted on the Future Land Use Map shall be compatible and coordinated with existing topographic, soil, base flood, and infrastructure services.

Policy 1.2.1: Proposed changes to the Future land Use Map will be thoroughly reviewed for compatibility and coordination with underlying topographic, soil, flooding probability, and existing infrastructure services to ensure the development envisioned in the proposed change can be accommodated without adverse impacts or severe limitations due to topographic, soil, or infrastructure services.

Measurement: Number of Map changes approved after thorough analysis of the above mentioned site characteristics.

Objective 1.3: The City shall refrain from approving any project or development that would exceed prescribed densities or the overall desire to maintain a maximum net density of less than four (4) units per acre if such project or development could negatively impact hurricane evacuation plans, routes, or shelter facilities.

Policy 1.3.1: Any request to change the Future Land Use Map shall be thoroughly reviewed, and denied if such change would negatively impact hurricane evacuation plans, routes, or shelter facilities.

Measurement: Number of desired Map changes denied due to hurricane evacuation factors.

Policy 1.3.3: The City shall continue to implement and update the approved post-disaster redevelopment ordinance pursuant to Policies 3.3.1 and 3.3.2 of the Conservation and Coastal Management Element.

Objective 1.4: Upon receipt of a valid hazard mitigation report from an authorized agency, the City shall review and eliminate or reduce such uses consistent with the hazard threat identified in the report.
Policy 1.4.1: Should the City receive a valid hazard mitigation report from an authorized agency, the City shall review such report and take prudent action toward the elimination or reduction of such uses consistent with the threat identified in the report.

Measurement: Consideration of the elimination or reduction of uses identified in a valid hazard mitigation report, when and ifsuch report is issued,

Section IV (INFRASTRUCTURE ELEMENT)
Objective 1.4: The City will ensure thoughtful, thorough, pre- and post-storm planning to ensure minimal disruption in service to customers
.
Measurement: Development by potable water service provider of detailed hurricane/emergency operation and recovery plan.

Policy 1.4.1: To provide the public with essential information concerning plans in the event of a storm event, the Public Works Department will prepare a detailed hurricane and/or emergency operation plan.

Measurement: Plan presentation, approval, and public distribution.

Policy 1.4.2: The City will seek full recovery of service within two (2) weeks of any category 3 hurricane for 80% of their customers on Marco Island.

Measurement: Progress toward the goal of two-week recovery from any category 3 hurricane.

Section V (coastal management element) talks about our post disaster redevelopment program.

GOAL 3: TO MINIMIZE HUMAN AND PROPERTY LOSS DUE TO TROPICAL STORMS AND HURRICANES,

Objective 3.1: Reduce the threat of loss of life and property resulting from tropical storms and hurricanes through diligent, cooperative preparation planning, improved evacuation and sheltering facilities, and public education.

Policy 3.1.0.5: As virtually the entire Island is an evacuation zone for a Category One hurricane future development and redevelopment shall be limited to and not exceed the densities and/or intensities identified on the Future Land Use Map. This policy shall not preclude reconstruction of structures as authorized under Policy 3.3.3 or the subsequent Post-Disaster Redevelopment Plan.

Measurement: Issuance of development orders for new projects consistent with the densities prescribed on the Future Land Use Map.

Policy 3.1.1: The City shall maintain and enforce building codes at least as stringent as required by Florida law to limit the potential damage of structures from hurricanes and tropical storms. These codes shall include wind-resistance commensurate with the risk of a coastal environment and building elevation requirements that conform with federal laws and Flood Insurance Rate Maps.

Measurement: The City shall adopt the new Florida Building Code pursuant to the prescribed implementation schedule.

****Policy 3.1.2: The City will continue to actively participate and interact with the County's Local
Emergency Management Planning (LEMP) organization to foster enhanced
emergency planning with special emphasis on maintaining or reducing hurricane
evacuation times from Marco Island.****

****Measurement: City representatives will actively participate in LEMP meetings.****

Policy 3.1.3: The City will develop a local hurricane plan, which will be annually reviewed and revised before June 1st.

Measurement: Annual review of local hurricane plans

Policy 3.1.5: The City will work through the County staff to ensure that hurricane evacuation shelters meet or exceed Red Cross standards, and that facilities are provided to
meet the needs of elderly and disabled persons.

Policy 3.1.6: Upon plan adoption the City will conduct at least one public hurricane preparation meeting before hurricane season, and seek the assistance of local groups and
associations to distribute pertinent materials on hurricane preparation and
evacuation.

Measurement: Annual public hurricane preparation information meeting

Section VII (INTERGOVERNMENTAL COORDINATION ELEMENT)

Objective 1.1: The City of Marco Island will provide opportunities for planning
partners and affected entities to review and comment on the
Comprehensive Plan prior to formal adoption or amendment.

A

ANNEX A: Maps

ANNEX A

Maps

Collier County Maps:

Source: Collier County Growth Mgt. Plan (https://bit.ly/3Lt4hrl)

Current Collier County Land Use - 1
Future Collier County Land Use - 2 (Updated)

City of Naples Maps

Source: City of Naples Comprehensive Plan (https://www.naplesgov.com/planning)

Naples Current Land Use – 3
Naples Future Land Use – 4
Historic District of Naples – 4a

Everglades City Maps

Source: Everglades City Planning & Zoning Cmte. (https://bit.ly/3Lt4hrl)

Everglades City (EGC) Future Land Use Map Index - 5
(EGC Maps # - 1 through # - 12 follows)
Everglades City Land Use Map – 5a

City of Marco Island Maps

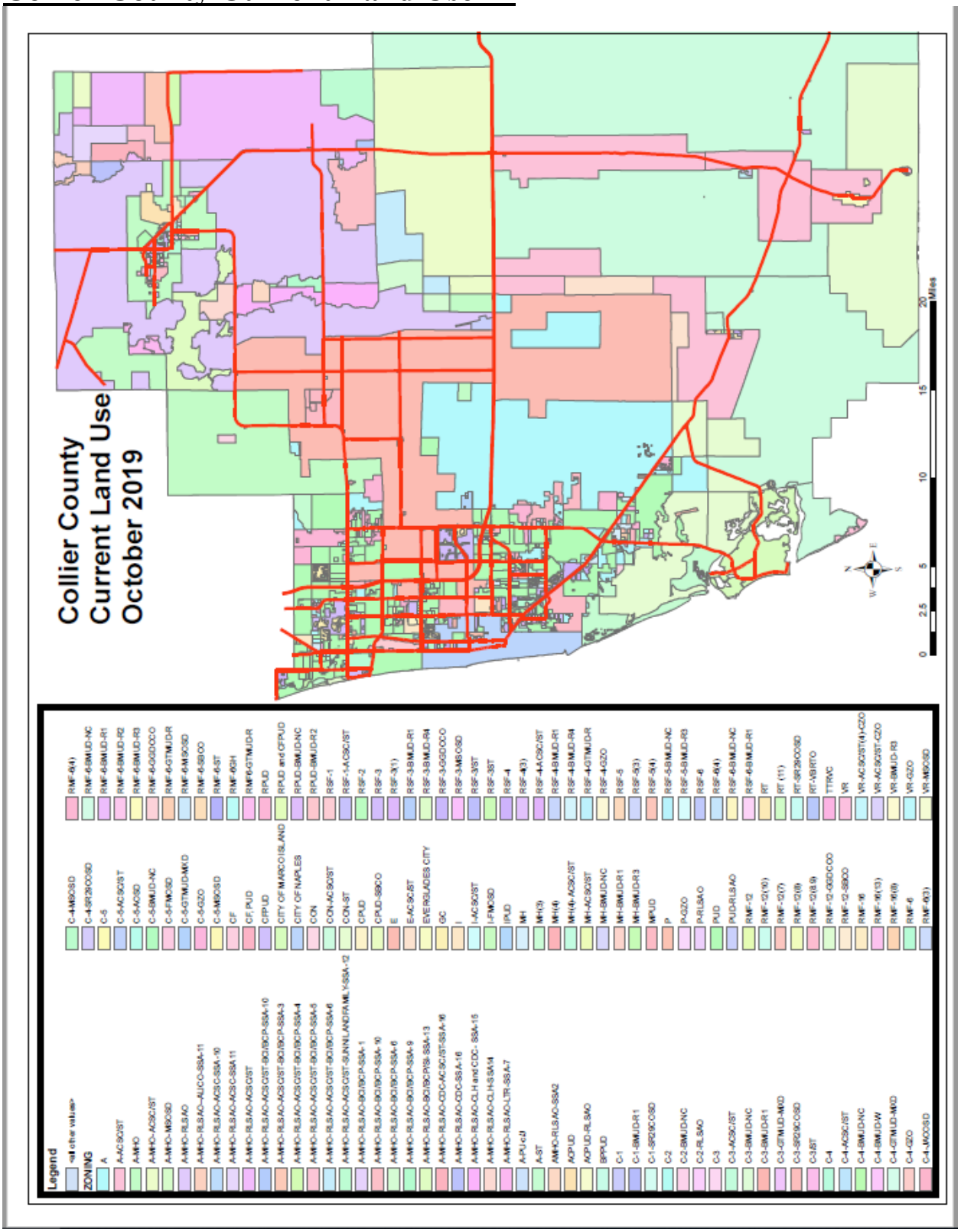
Source: City Comprehensive Plan (https://bit.ly/3Lt4hrl)

Marco Island Current Land Use - 6
Marco Island Future Land Use – 7

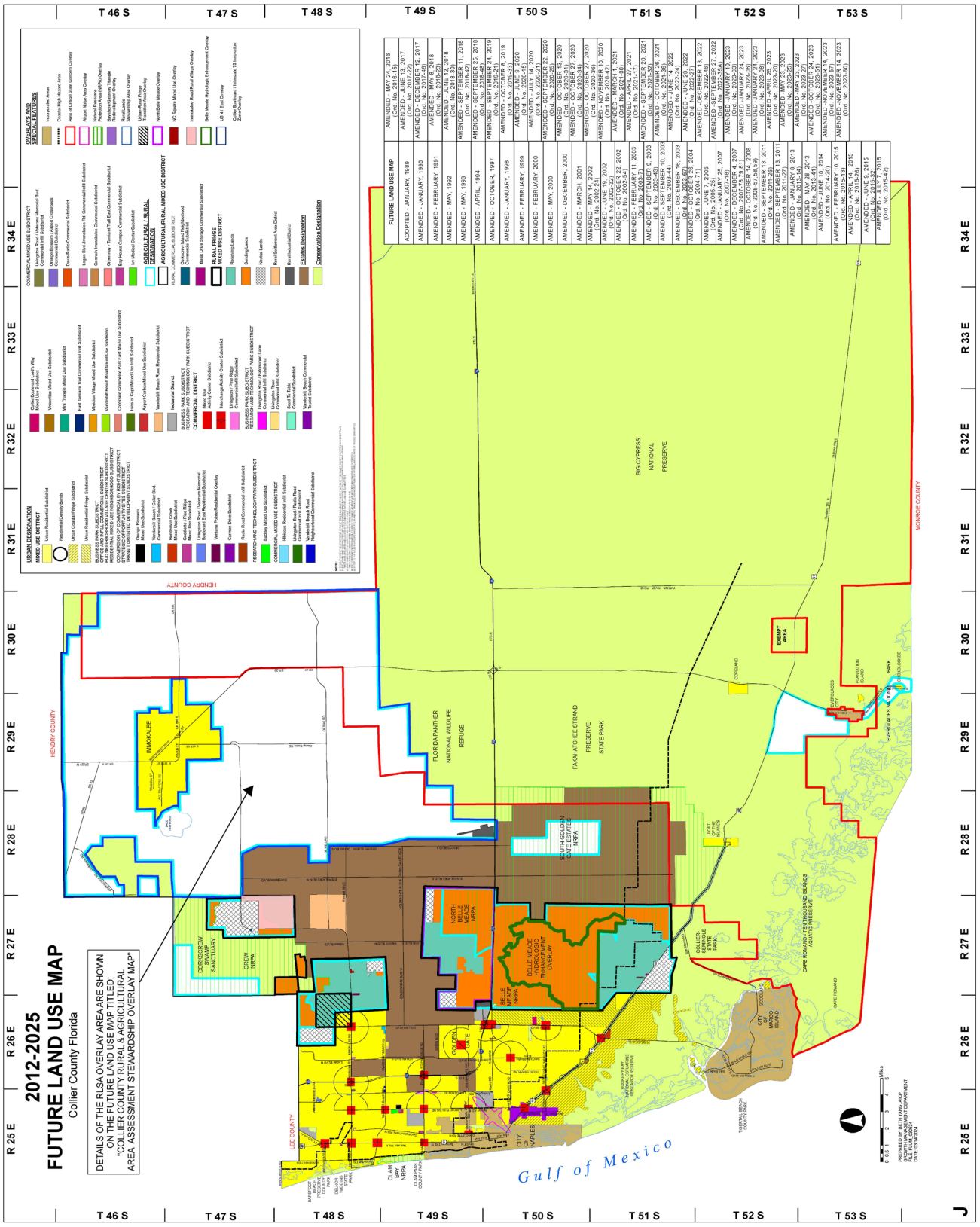
Other Maps

Collier County Storm Surge Map – 8 **(from Hurricane Ctr SLOSH model)**
Collier County Flood Map - 9 (**from CC Growth Mgmt. Dept.) (Updated 2024)**
Historical Structures Map – 10 **(from State Historic Office)**
Emergency Facilities Map – 11 **(from Critical Facility listing)**
Key Utilities Map – 12 **(from Critical Facility listing)**
Manufactured Home and RV Map – 13 **(from CC Growth Mgmt. Dept.)**
Hazardous Materials Map – 14 **(from the Local Emergency Plng Cmte)**
Assisted Living, Nursing & Care Facilities – 15 **(from Critical Facility listing)**

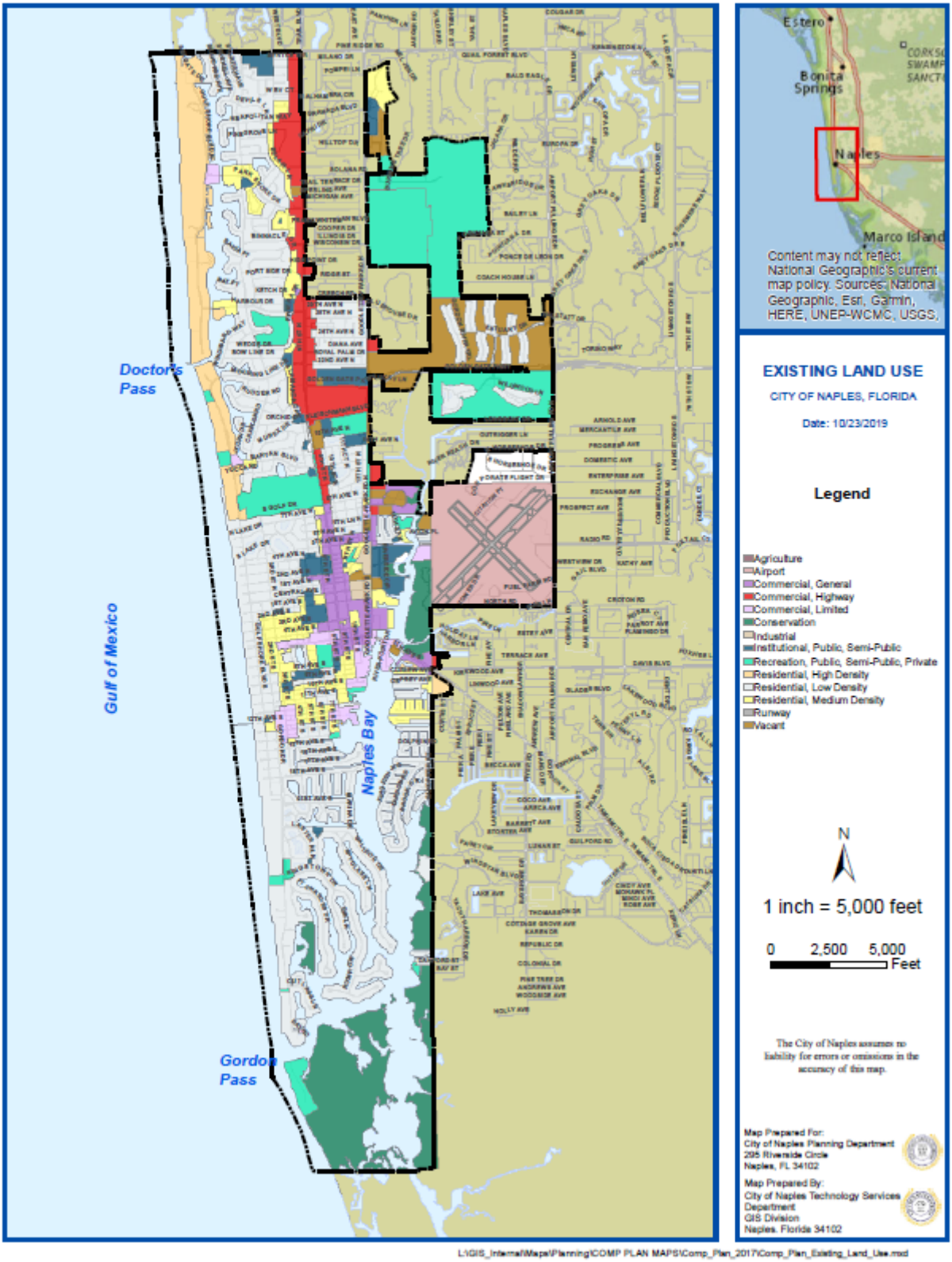
Collier County Current Land Use #1



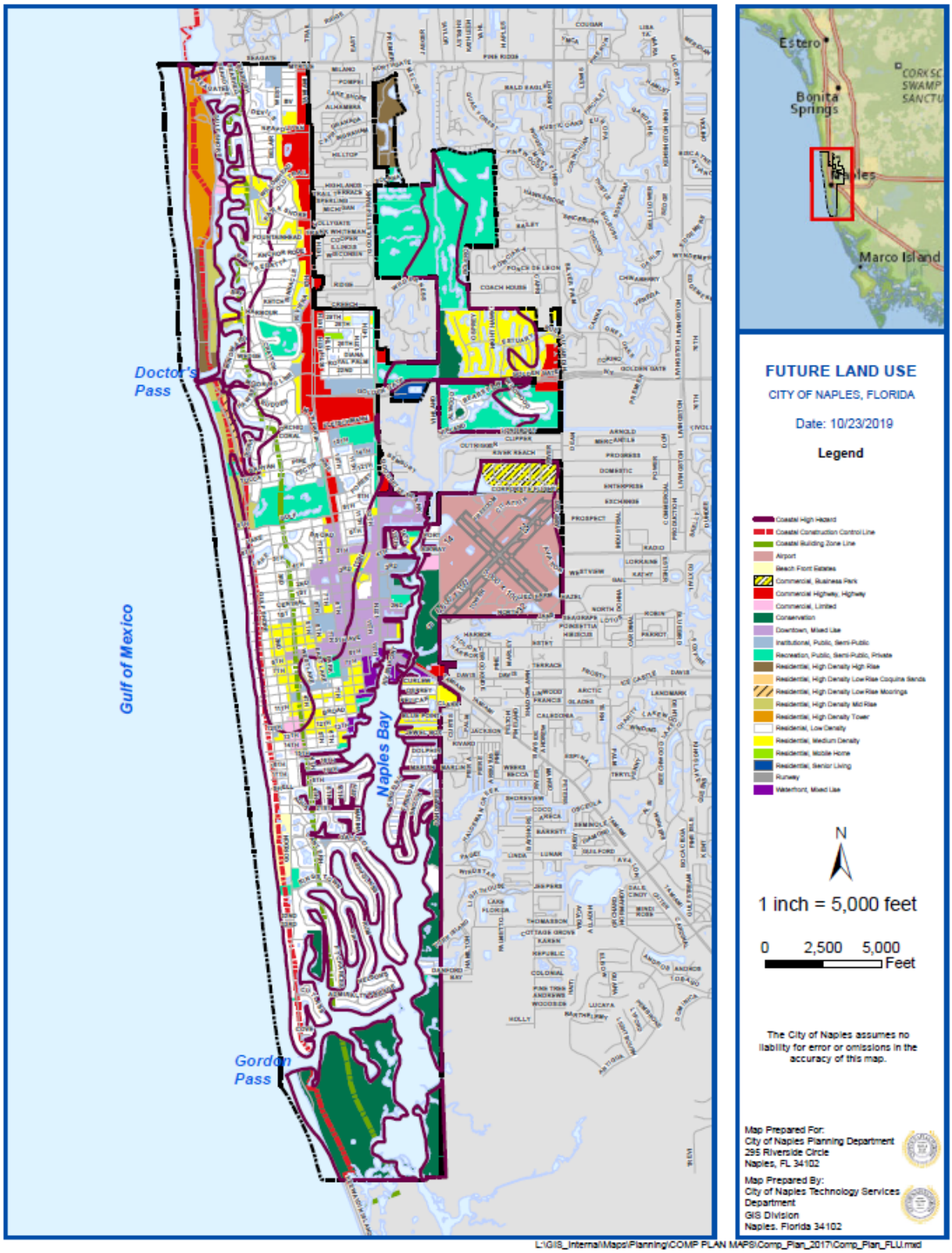
Collier County Future Land Use #2



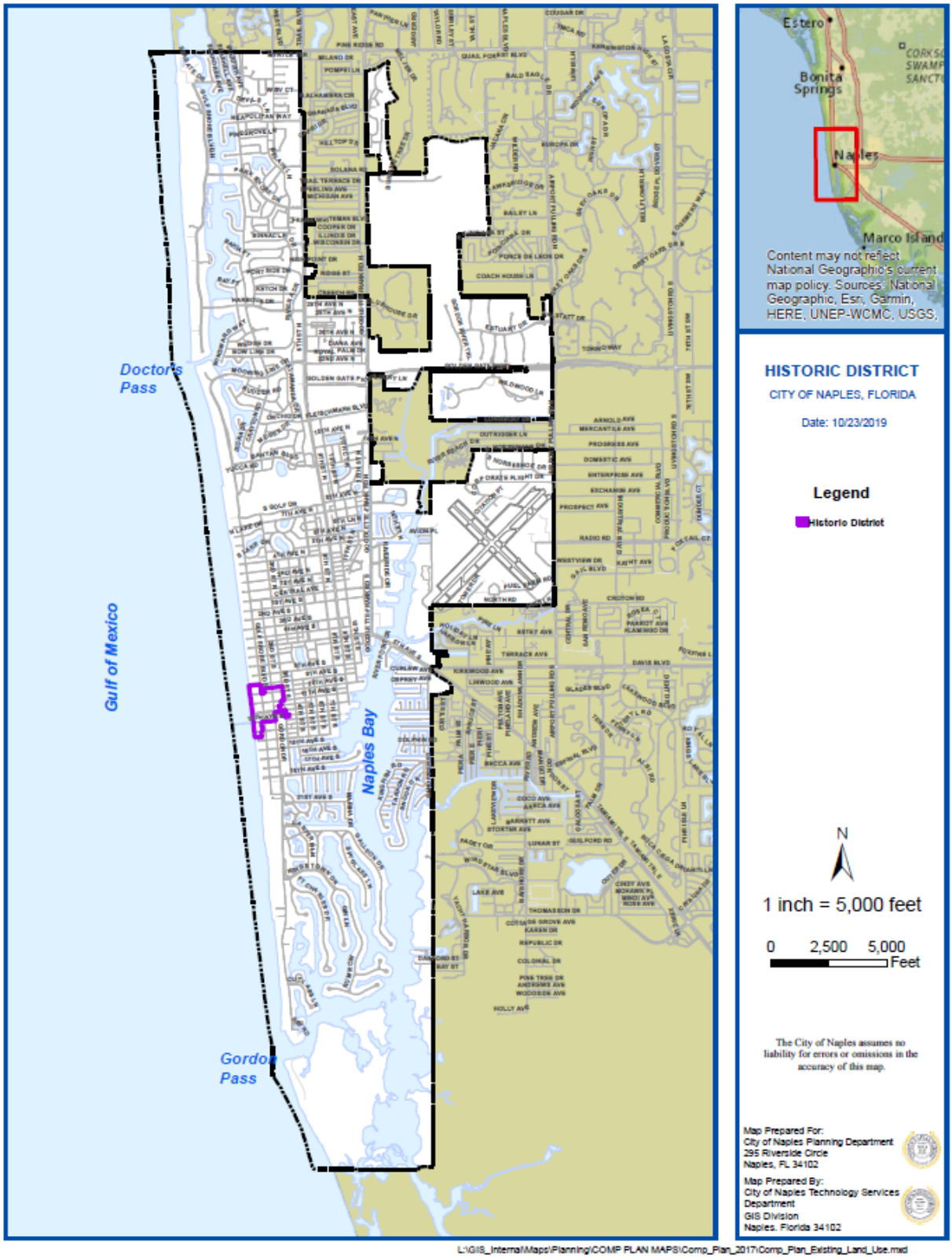
Naples Current Land Use - 3



Naples Future Land Use - 4



Historic District of Naples - 4a



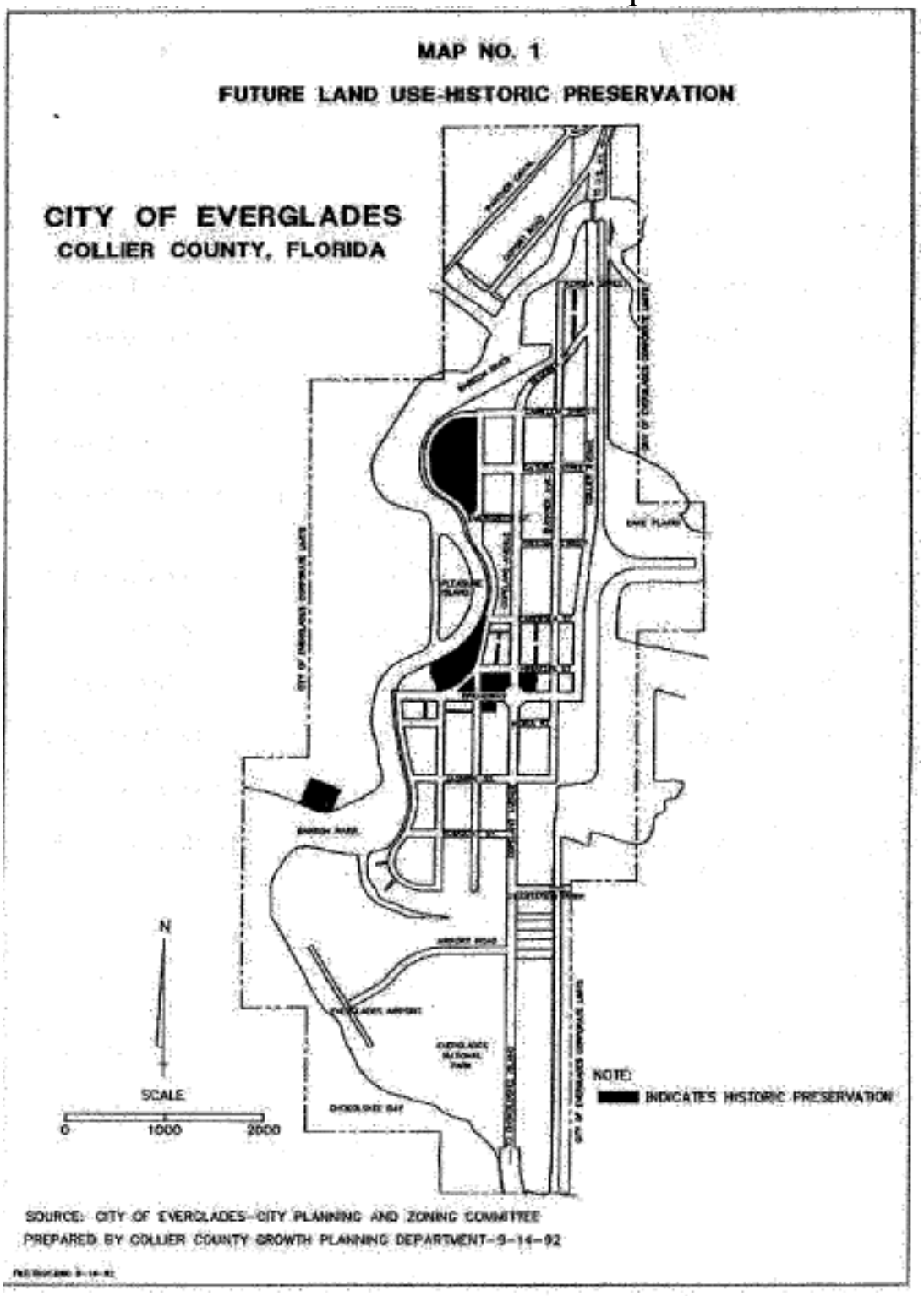
L:\GIS_Internal\Maps\Planning\COMP PLAN MAPS\Comp_Plan_2017\Comp_Plan_Existing_Land_Use.mxd

Everglades City (EGC) Future Land Use – 5

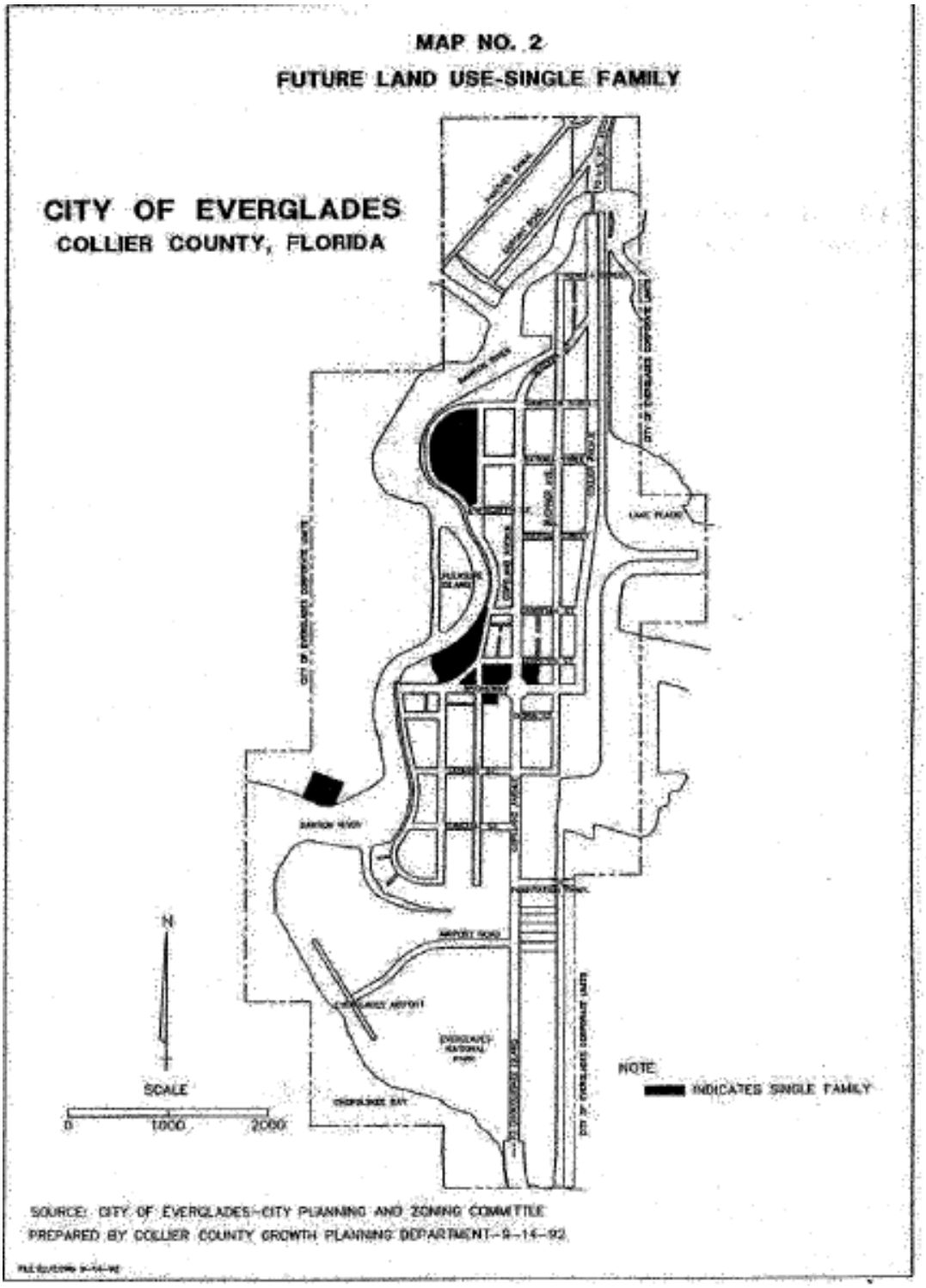
MAPS

Map No. 1	Future Land Use – Historic Preservation	ELU1.DWG 9-14-92
Map No. 2	Future Land Use – Single Family	ELU2.DWG 9-14-92
Map No. 3	Future Land Use – Multi-Family	ELU3.DWG 9-14-92
Map No. 4	Future Land Use – Residential Tourist	ELU4.DWG 9-14-92
Map No. 4A	Future Land Use – Residential Tourist	ELU4A.DWG 9-14-92
Map No. 5	Future Land Use – Mobile Home Rental Park	ELU5.DWG 9-14-92
Map No. 6	Future Land Use – Travel Trailer Recreational Park (Now Recreational Vehicle/Mobile Home Park)	ELU6.DWG 9-16-92
Map No. 7	Future Land Use – Village Commercial	ELU7.DWG 9-14-92
Map No. 8	Future Land Use – Condensed Commercial	ELU8.DWG 9-14-92
Map No. 9	Future Land Use – Commercial Fishing	ELU9.DWG 9-14-92
Map No. 10	Future Land Use – Mandatory Preservation	ELU10.DWG 9-14-92
Map No. 11	Future Land Use – Big Cypress Acquisition	ELU11.DWG 9-14-92
Map No. 12	Coastal Management: Existing Water Dependent and Water Related Land Uses	ELU12.DWG 9-29-92

Future Land Use – EGC Map 5-1

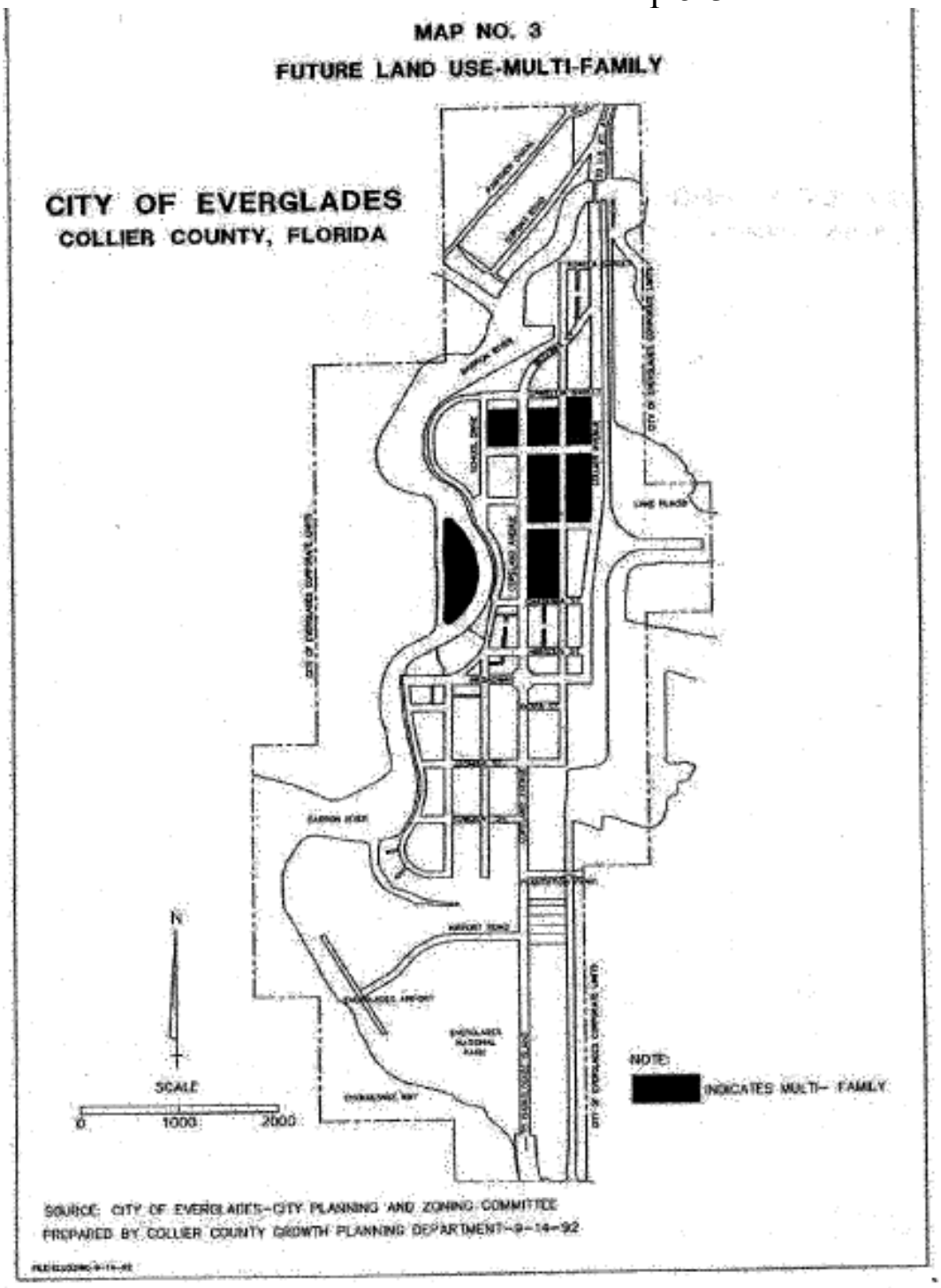


Future Land Use – EGC Map 5-2



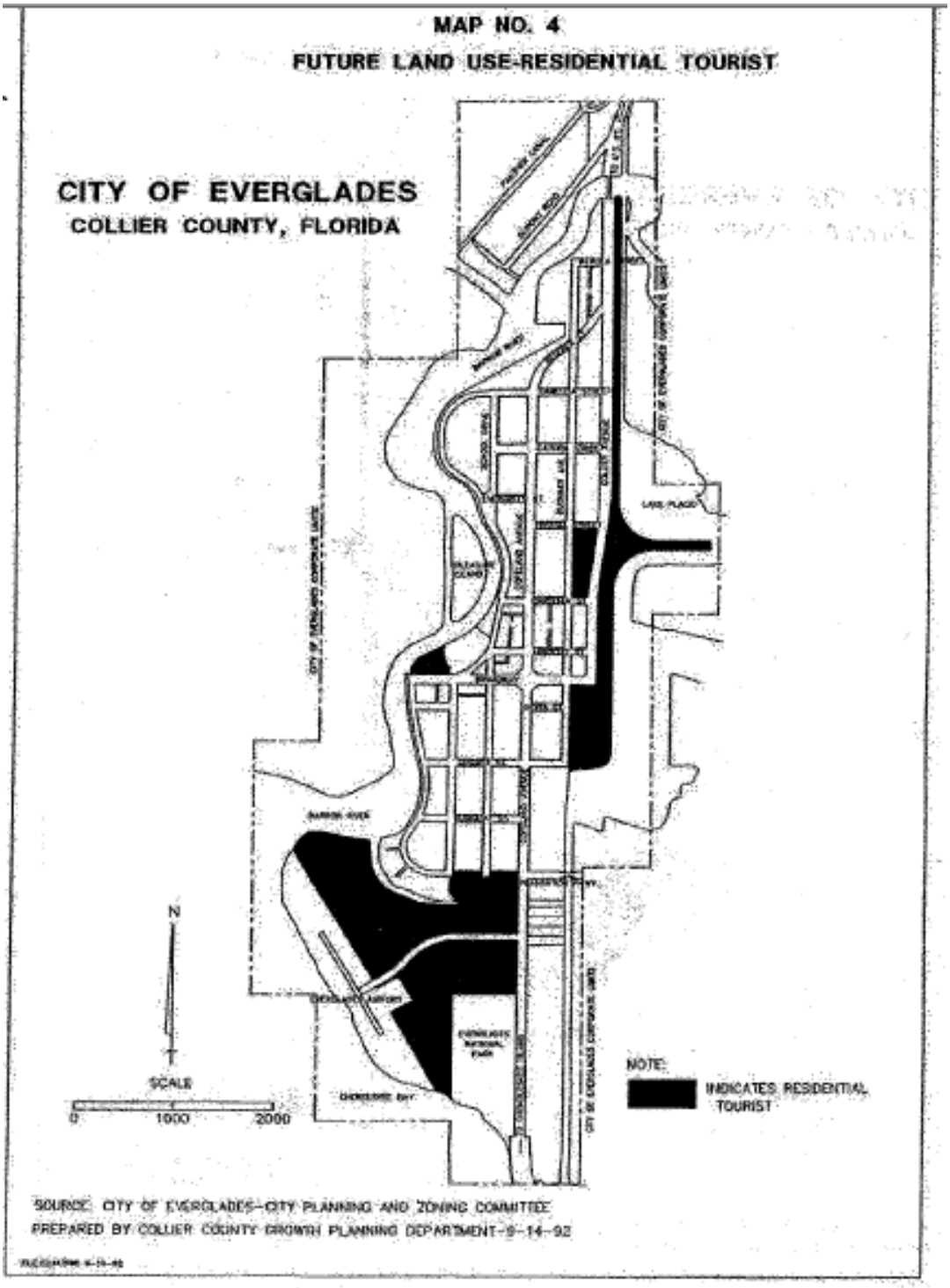
ANNEX - A

Future Land Use – EGC Map 5-3



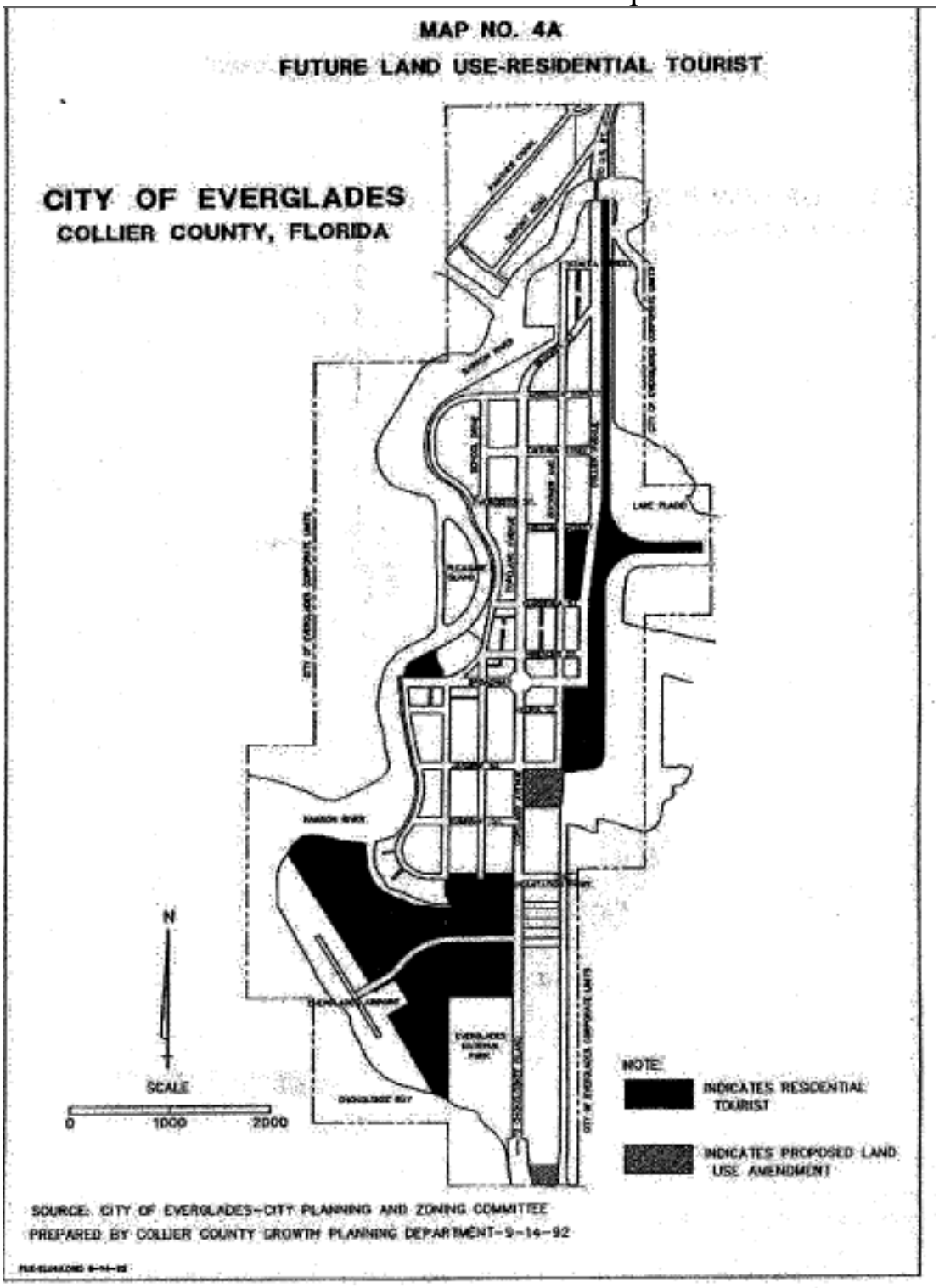
Adopted January 2, 2001
Ordinance No. 2000-05

Future Land Use – EGC Map 5-4



Adopted January 2, 2001
Ordinance No. 2000-05

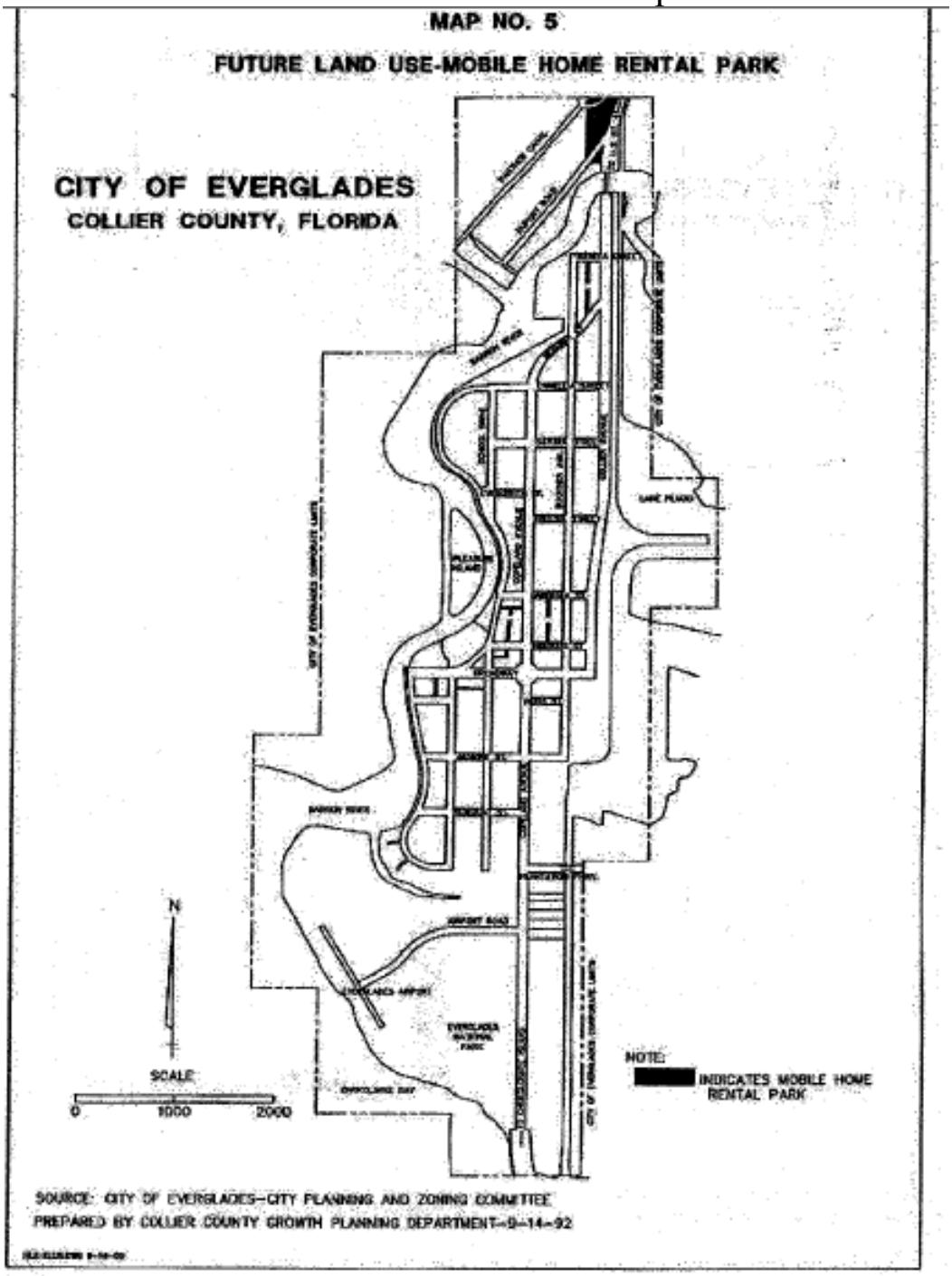
Future Land Use – EGC Map 5-4a



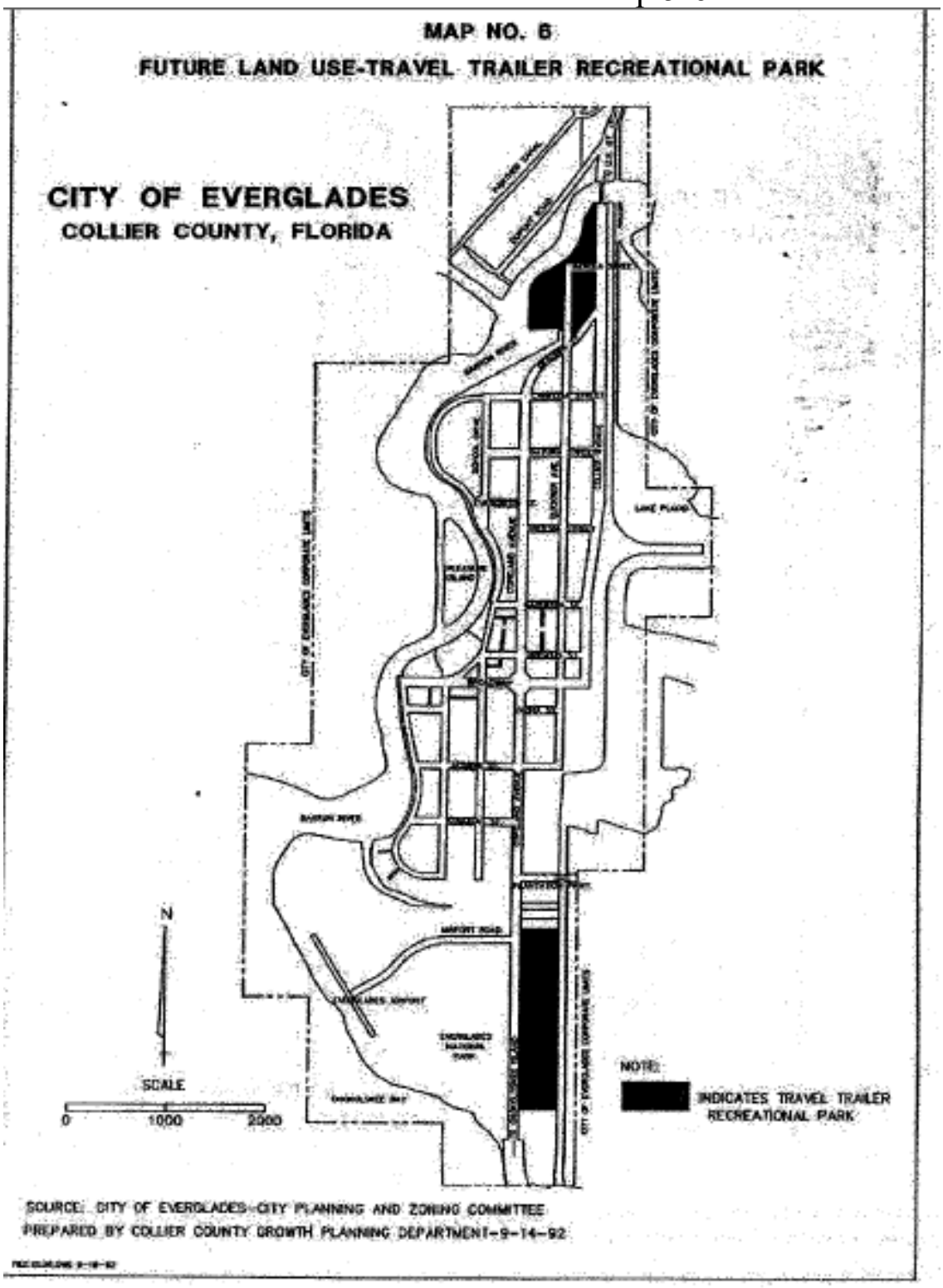
II. 42

Adopted January 2, 2001
Ordinance No. 2000-05

Future Land Use – EGC Map 5-5



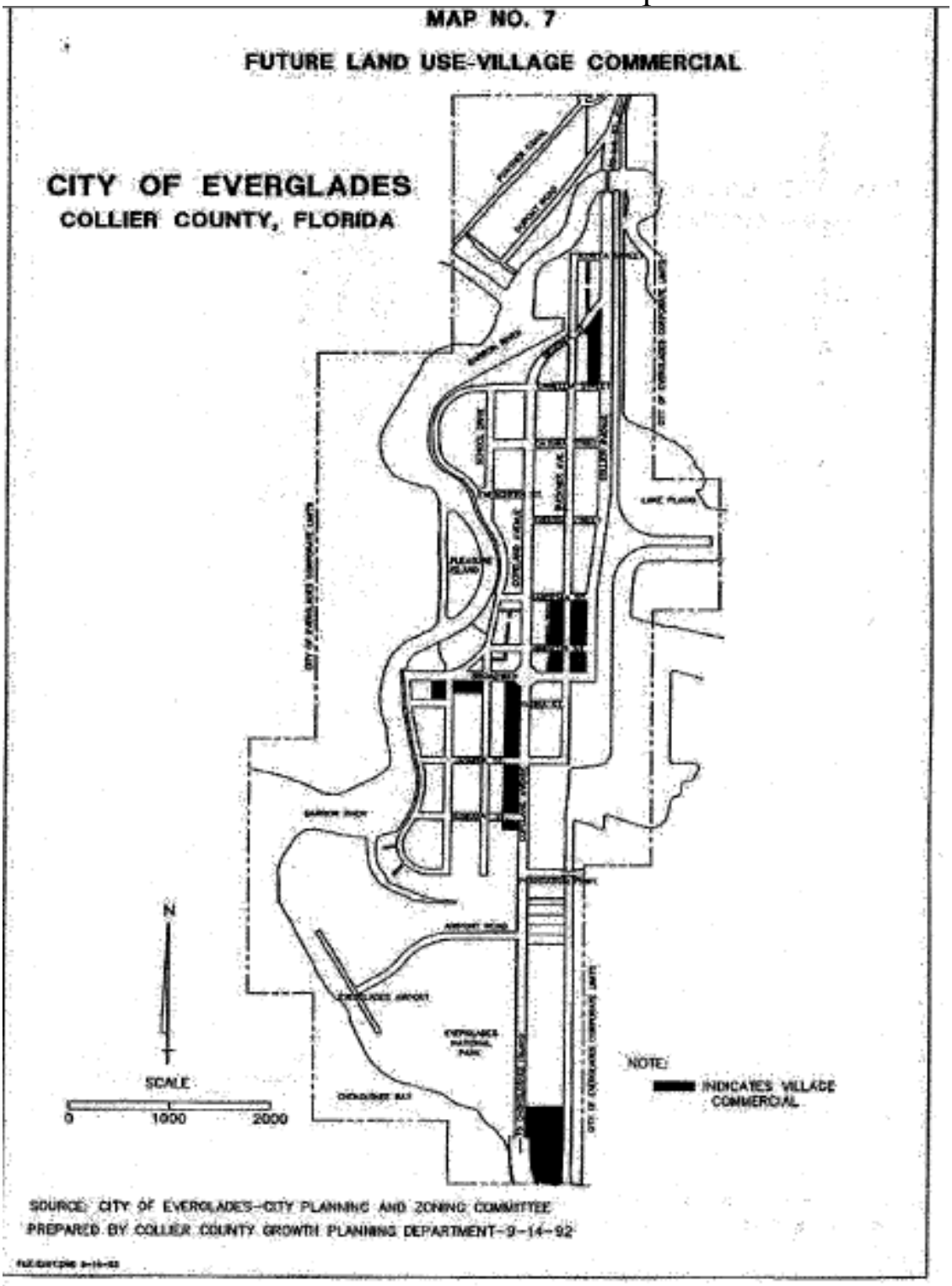
Future Land Use – EGC Map 5-6



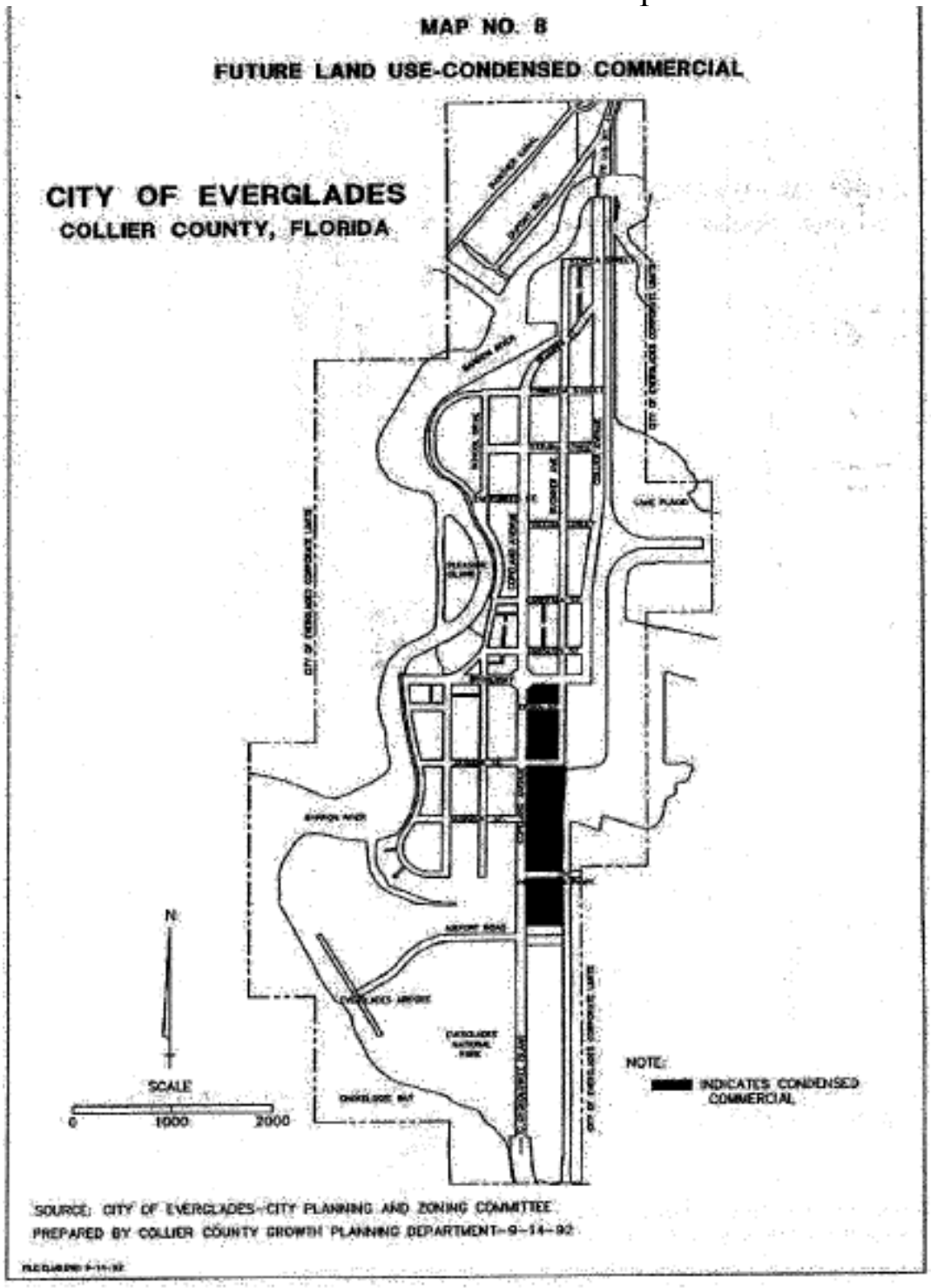
II. 44

Adopted January 2, 2001
Ordinance No. 2000-05

Future Land Use – EGC Map 5-7

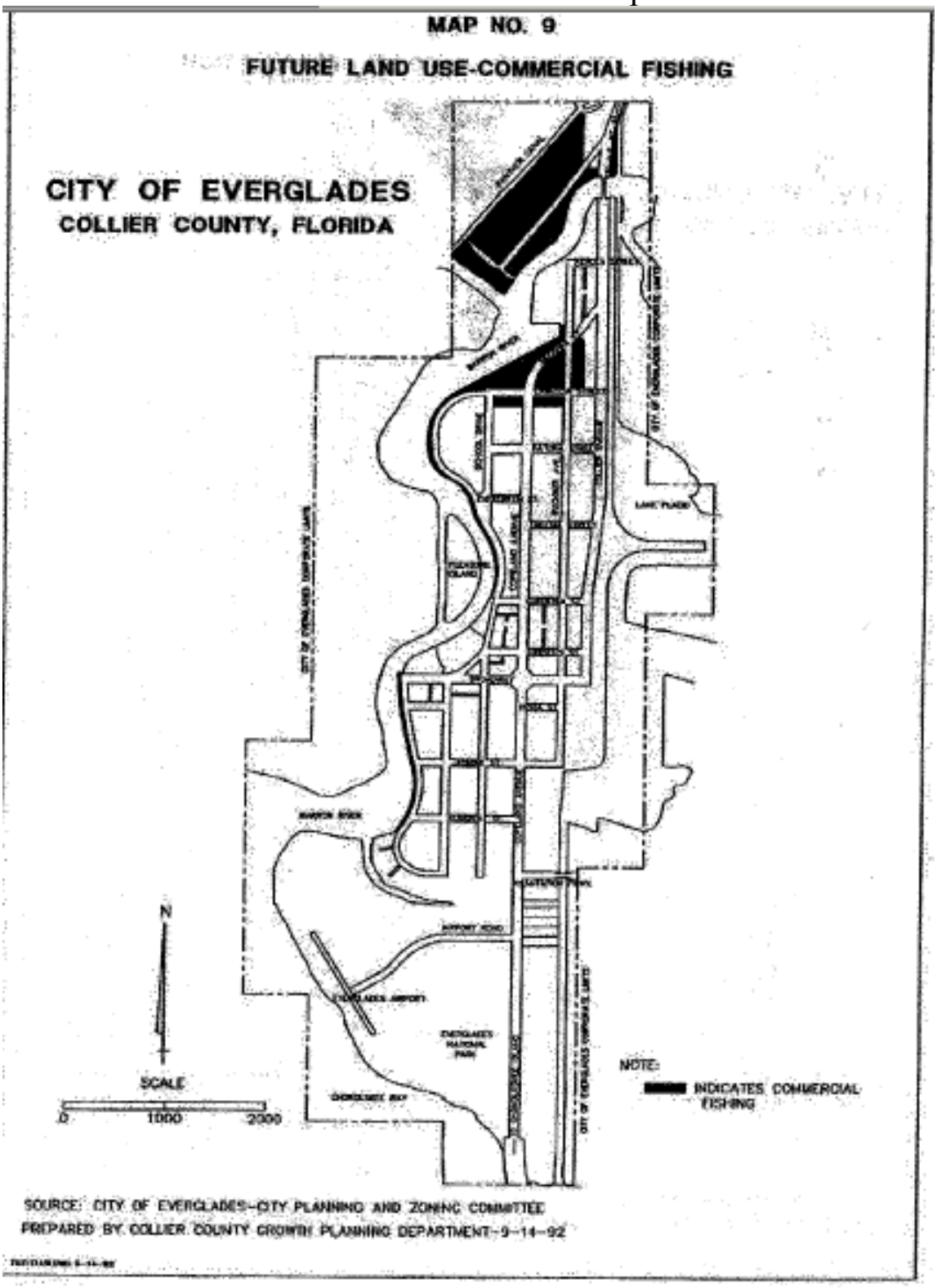


Future Land Use – EGC Map 5-8



Adopted January 2, 2001
Ordinance No. 2000-05

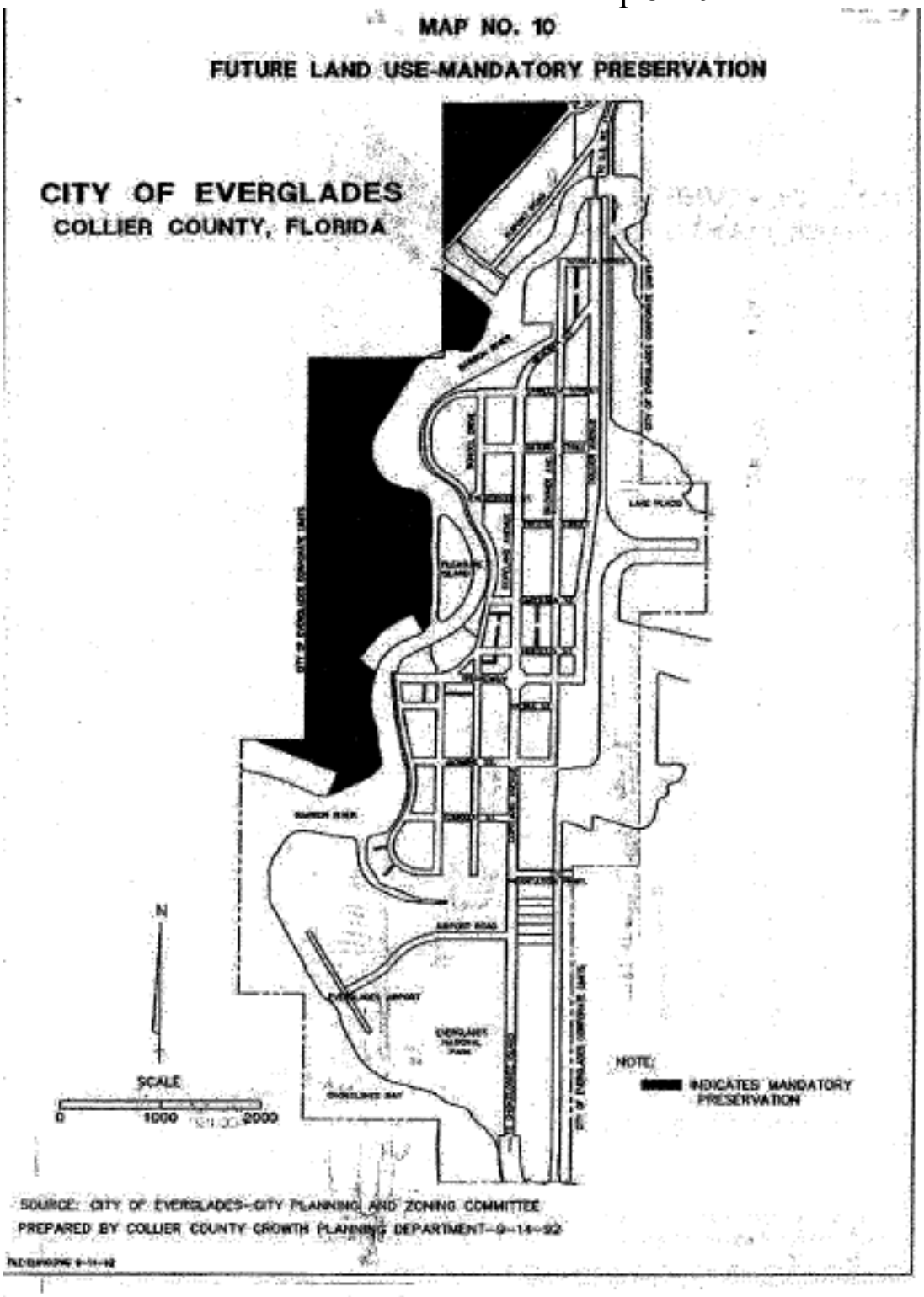
Future Land Use – EGC Map 5-9



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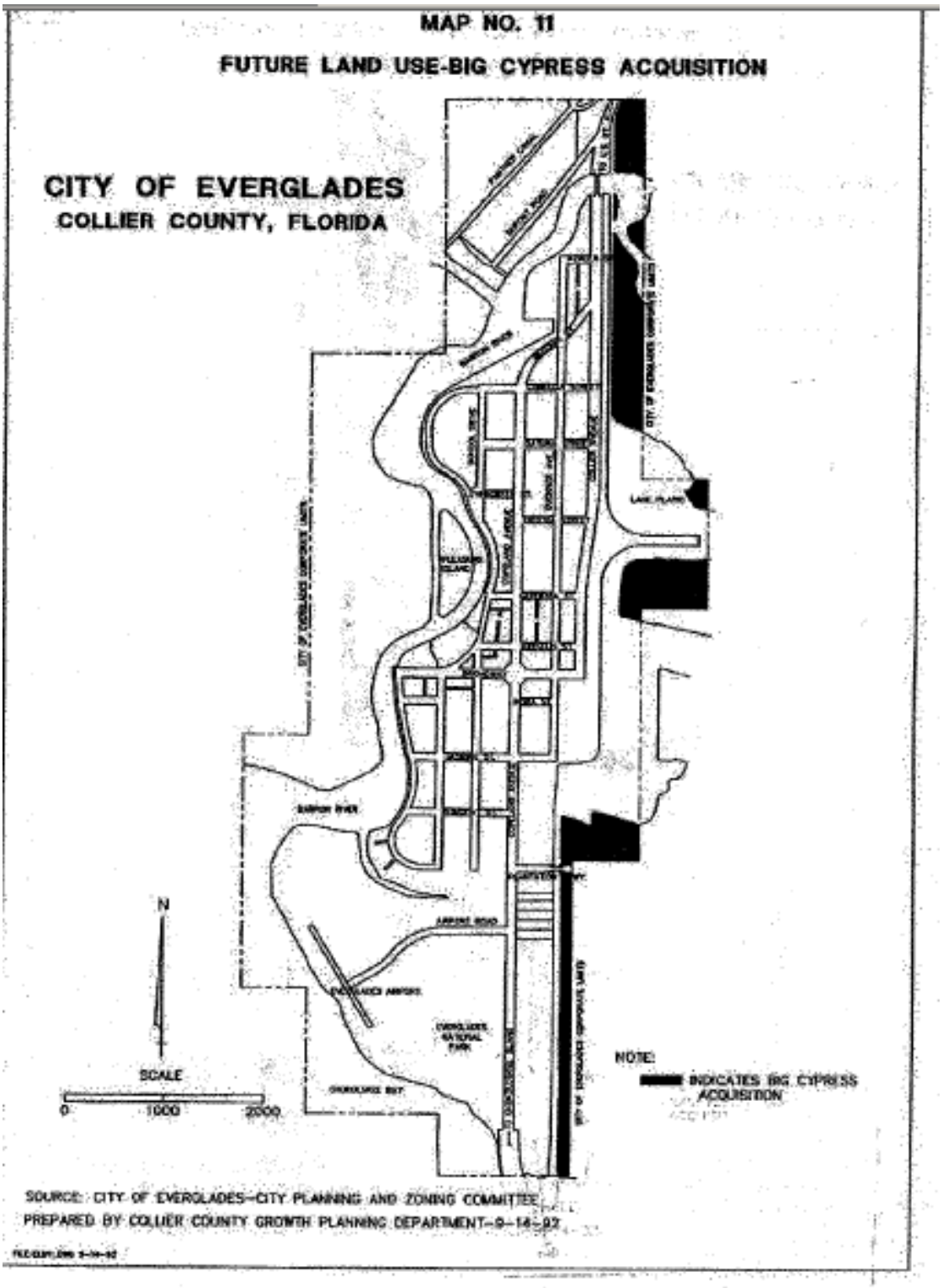
Future Land Use – EGC Map 5-10



II. 48

Adopted January 2, 2001
Ordinance No. 2000-05

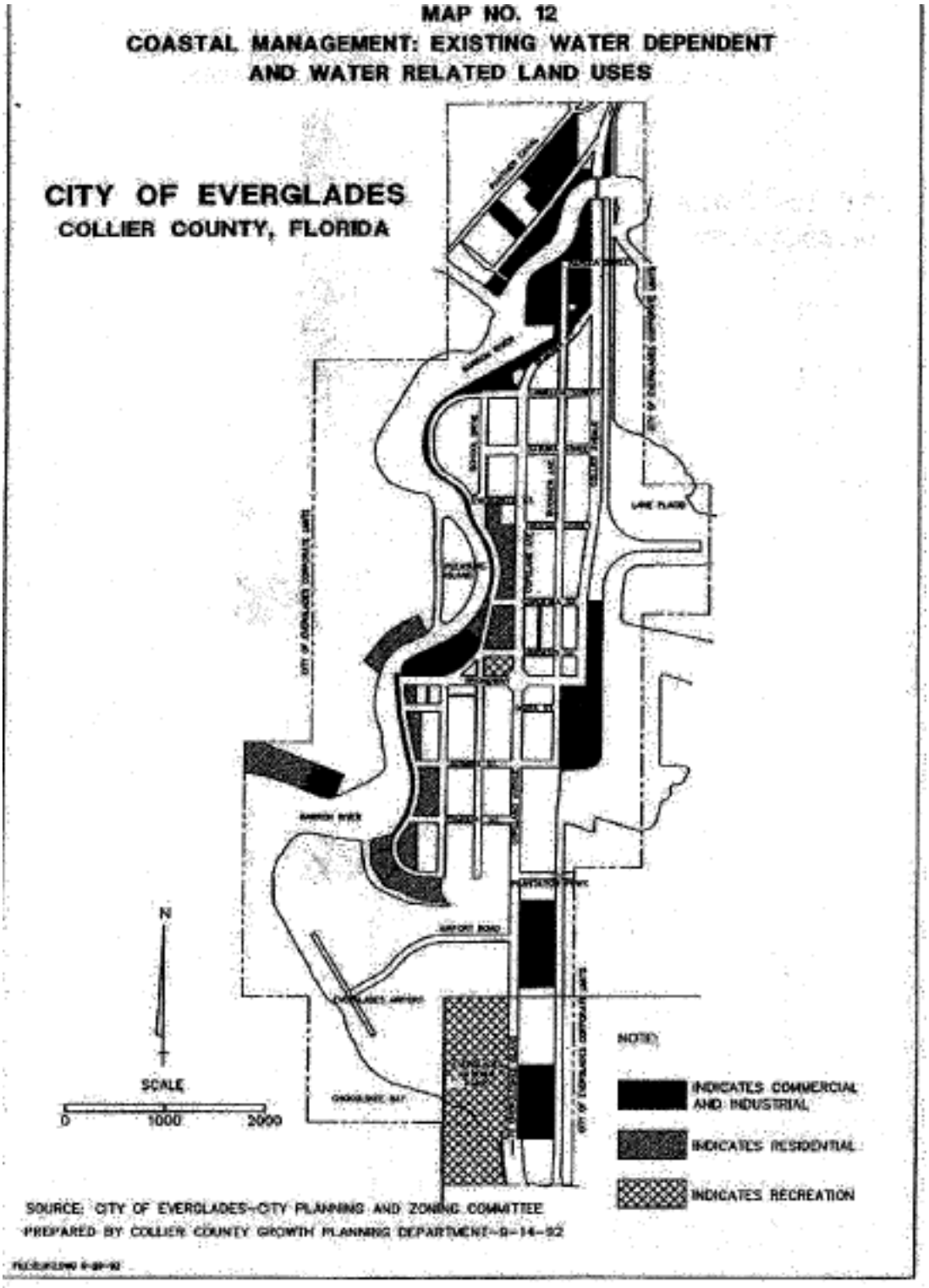
Future Land Use – EGC Map 5-11



II. 49

Adopted January 2, 2001
Ordinance No. 2000-05

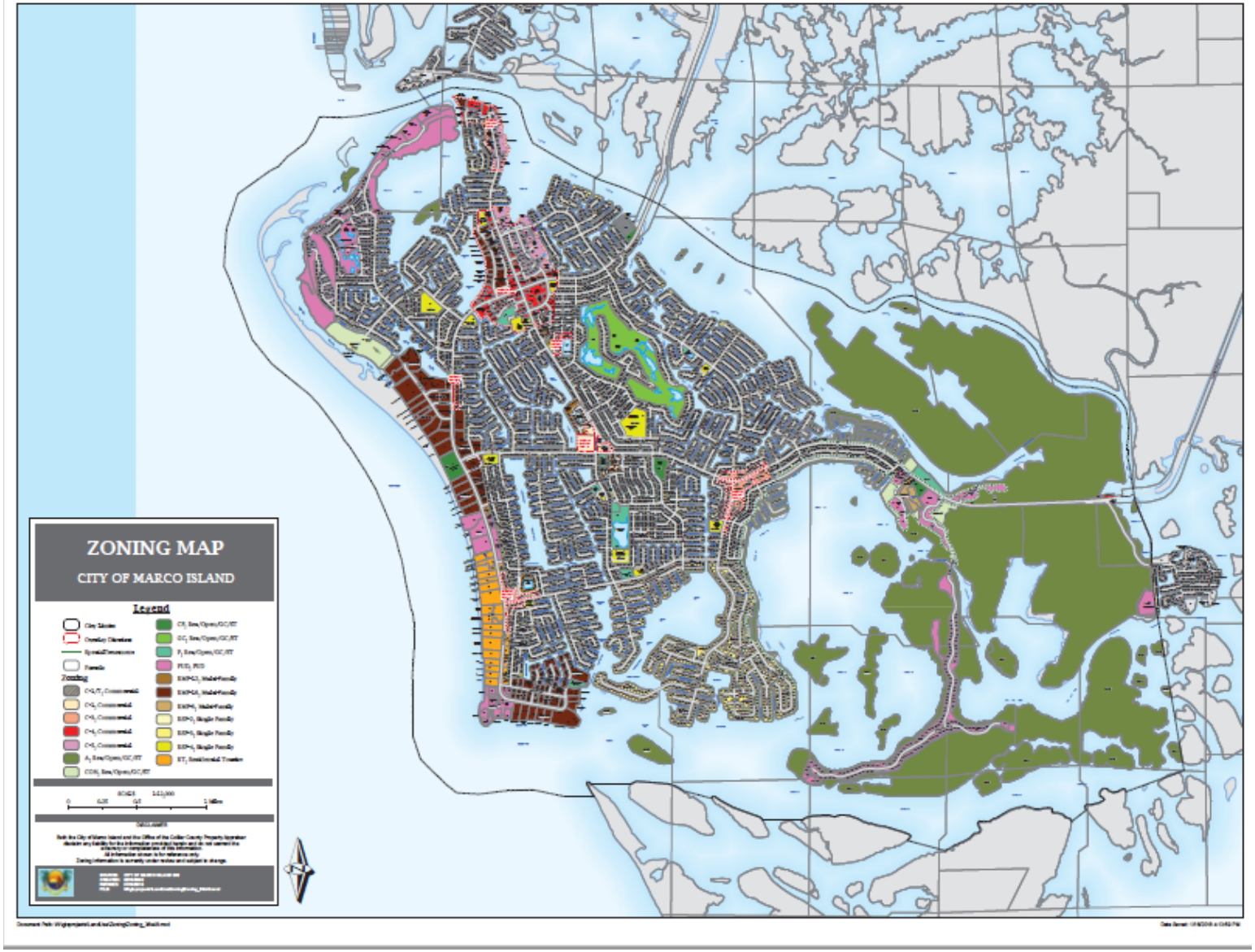
Future Land Use – EGC Map 5-12



Everglades City Land Use – Map 5a

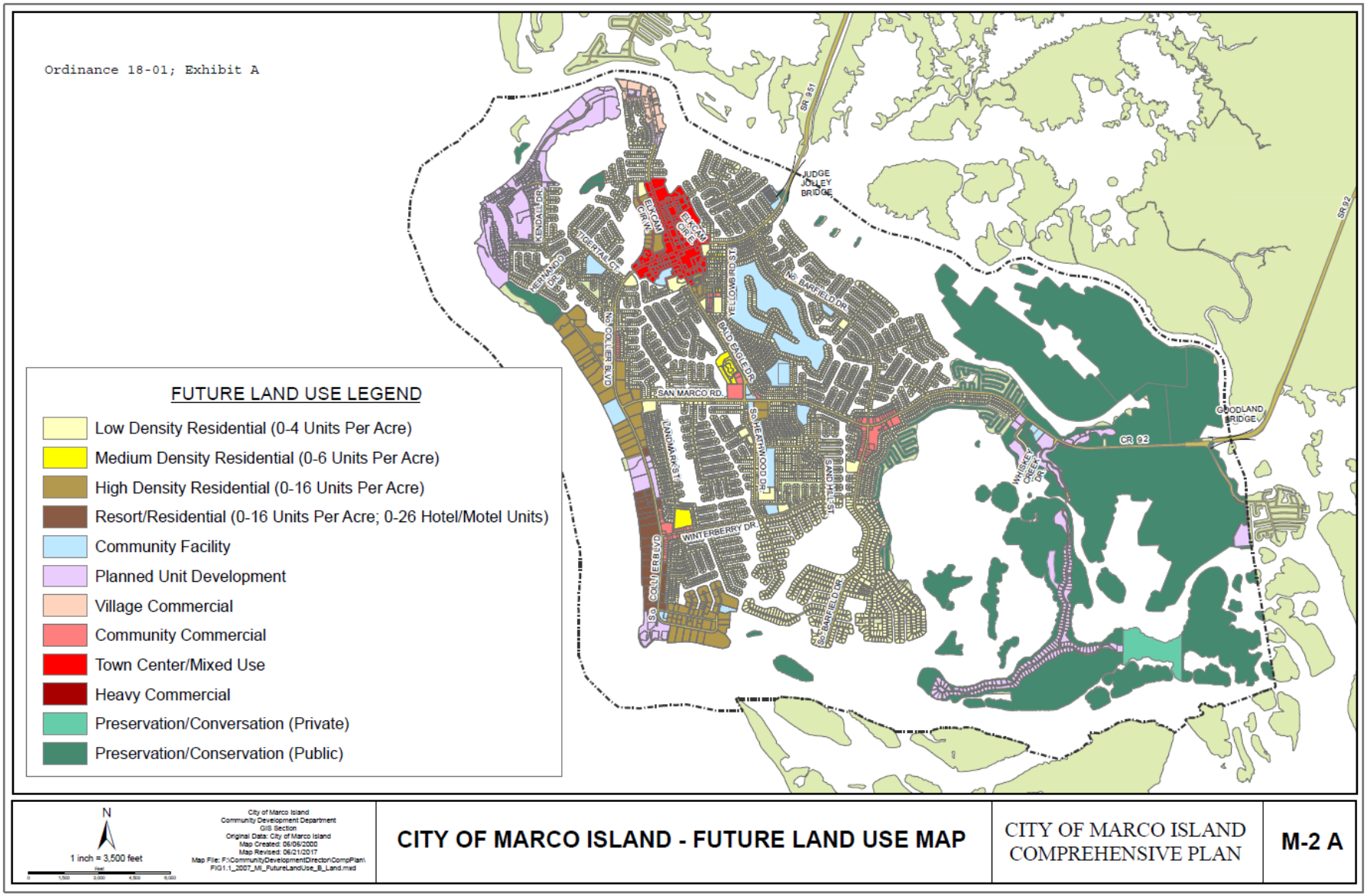


Marco Island Current Land Use - 6



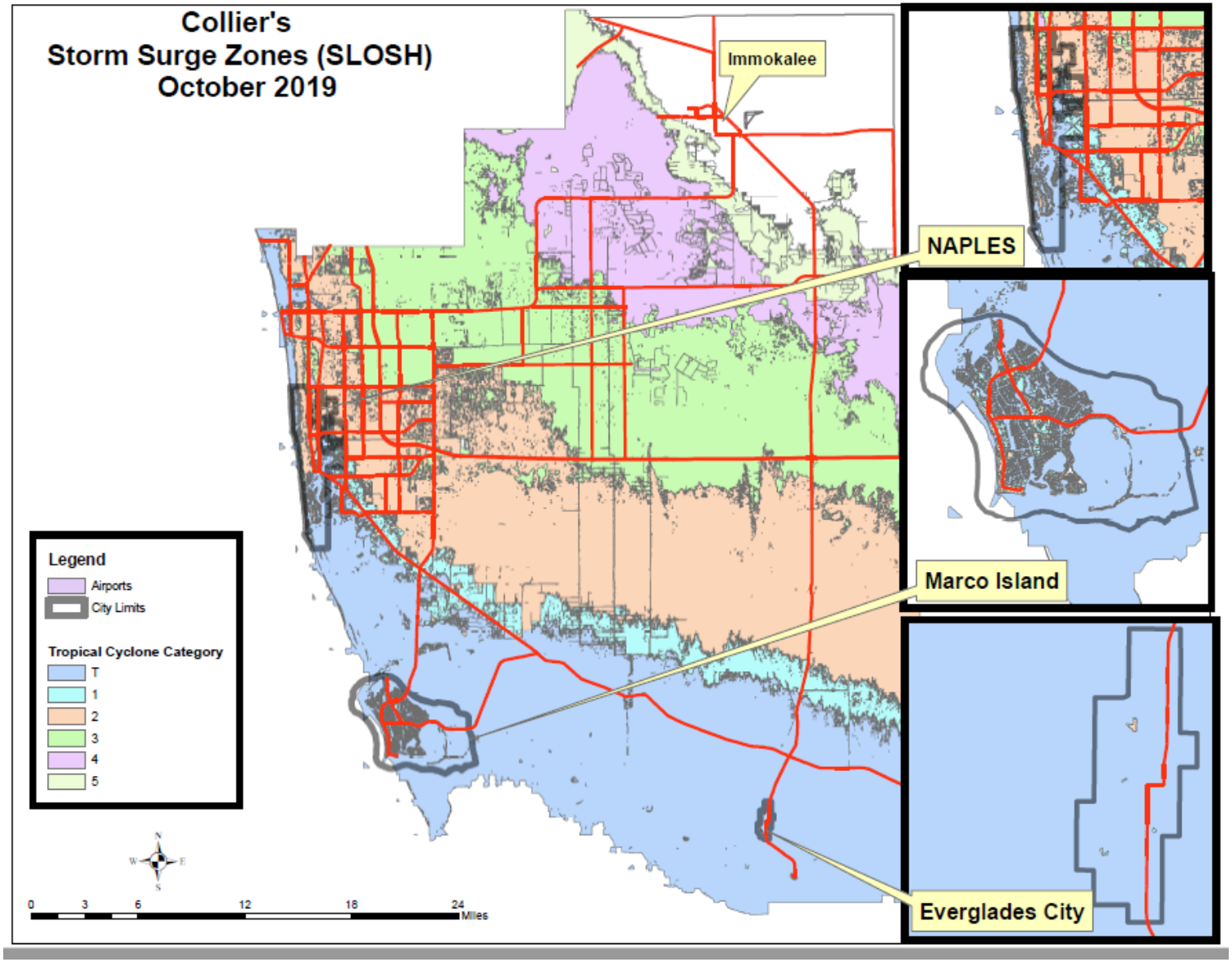
ANNEX - A

Marco Island Future Land Use – 7



ANNEX - A

Collier County Storm Surge Map – 8



ANNEX - A

Collier Flood Zones – 9

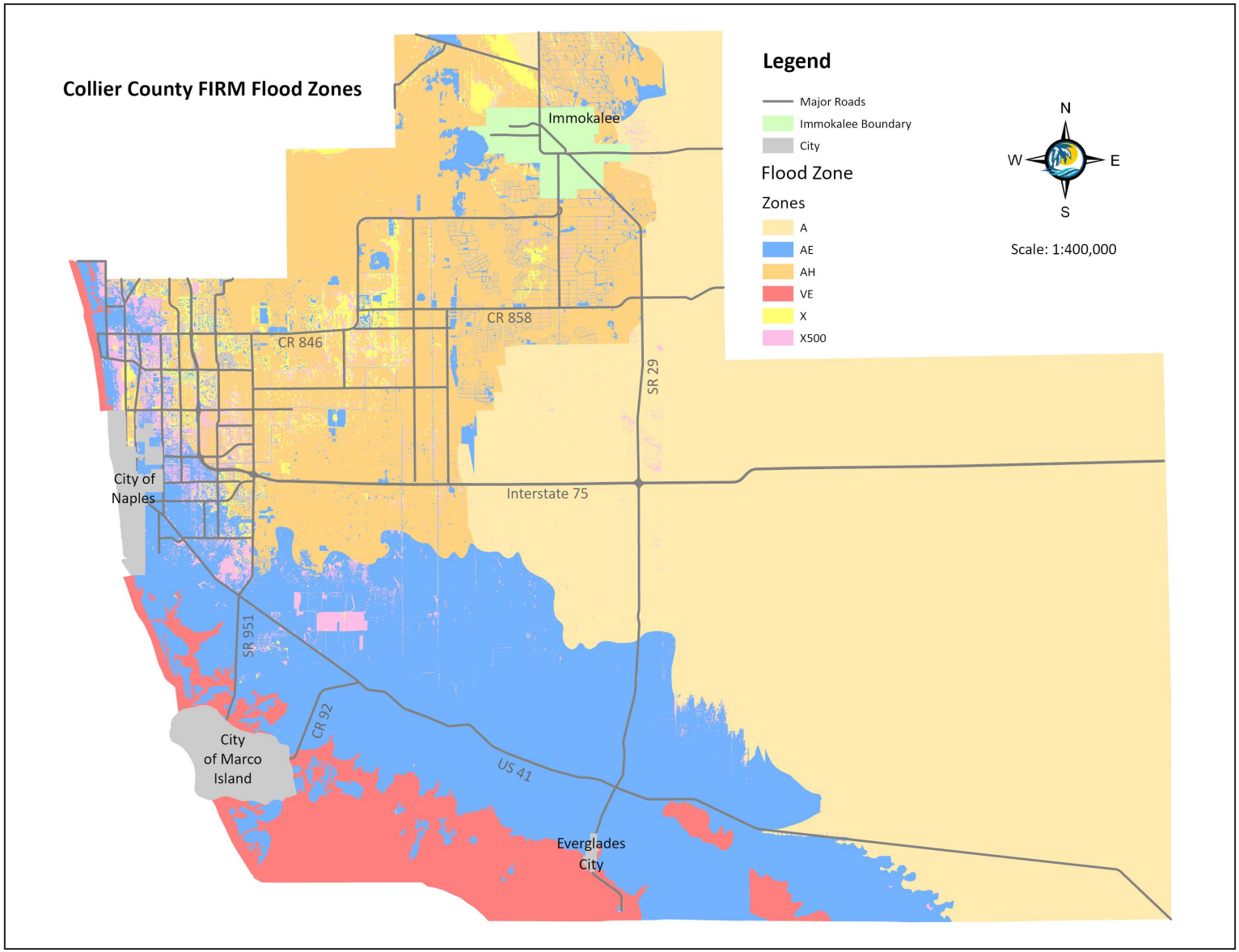


Figure 1 2024 FIRM Flood Zone Map

ANNEX - A

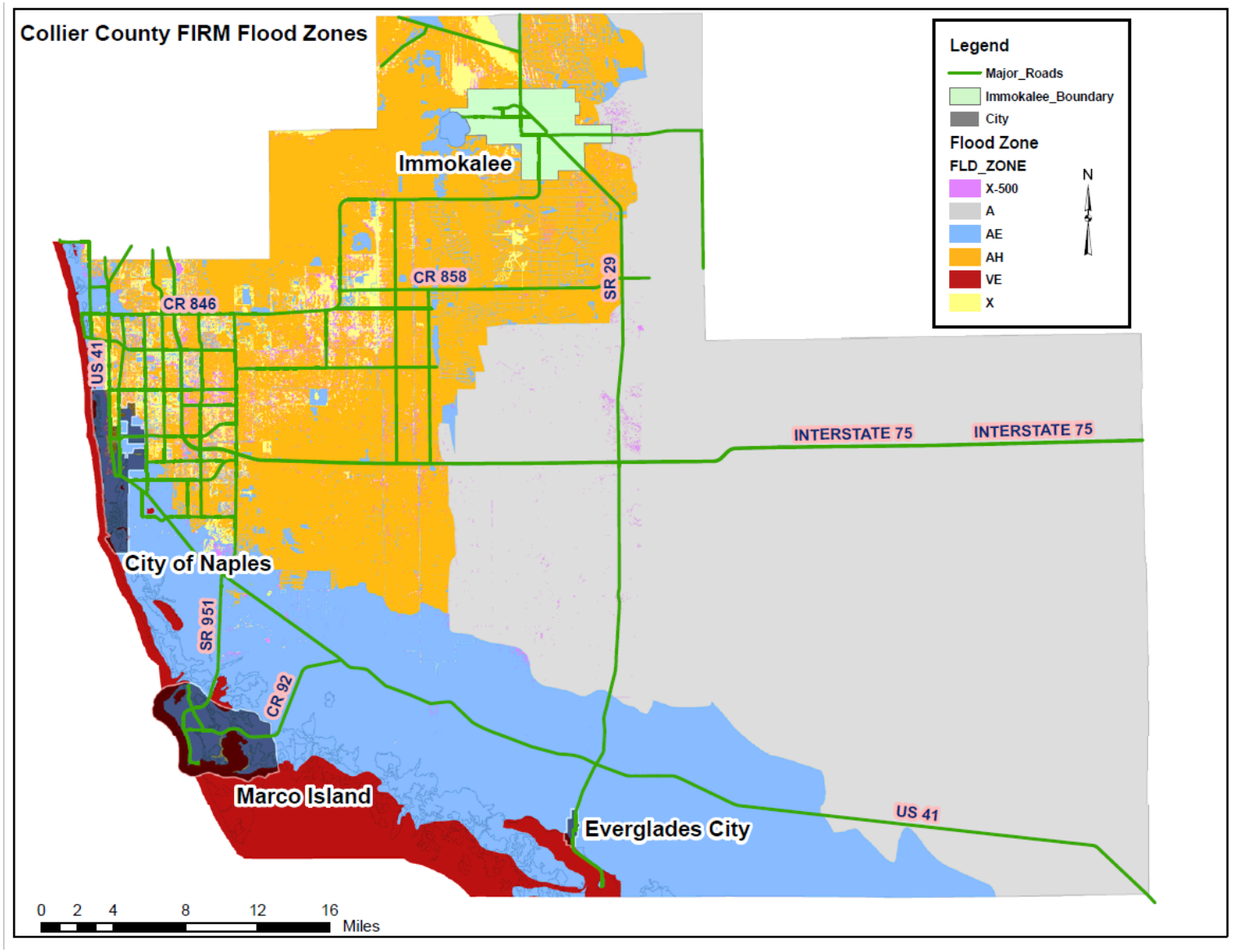
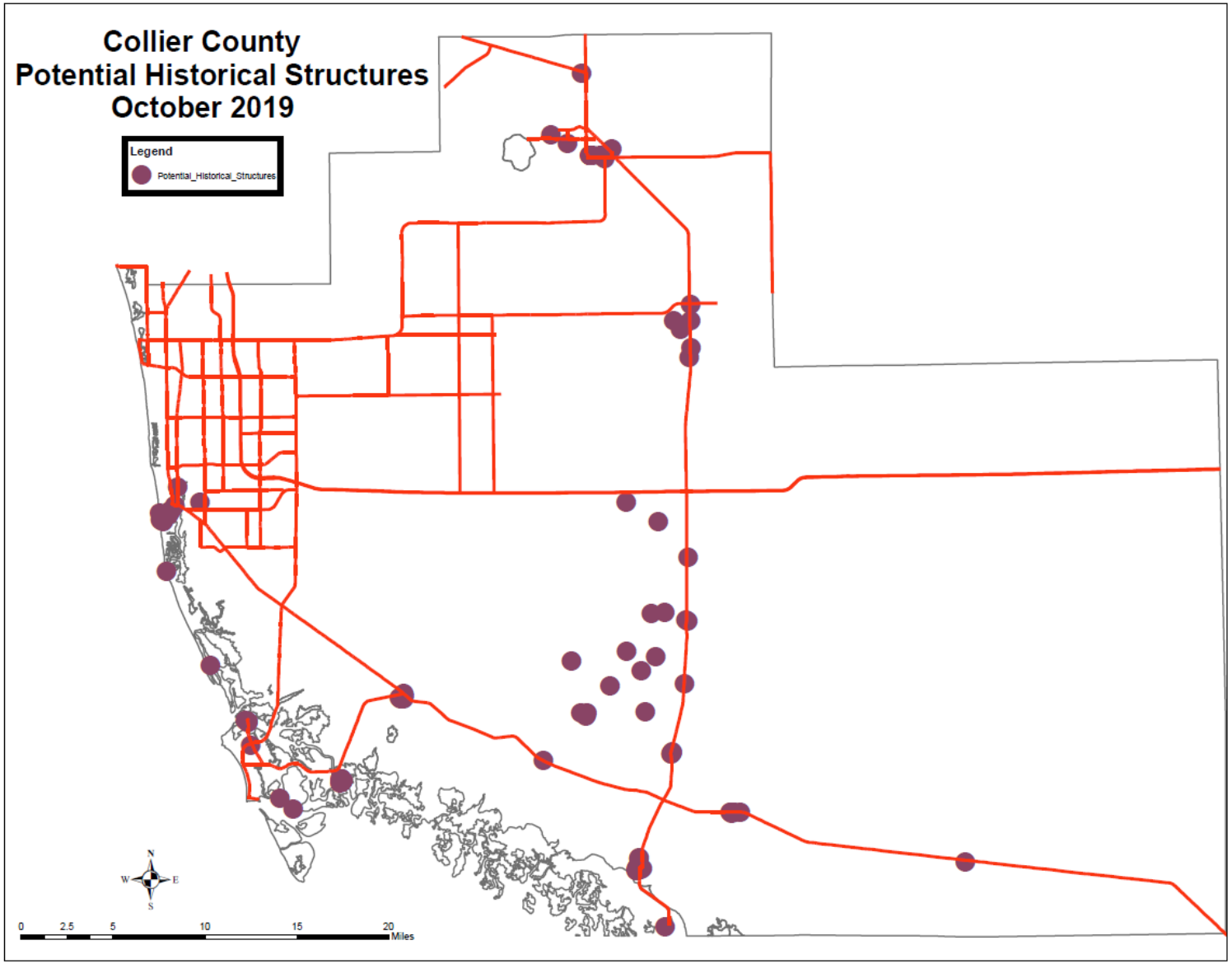


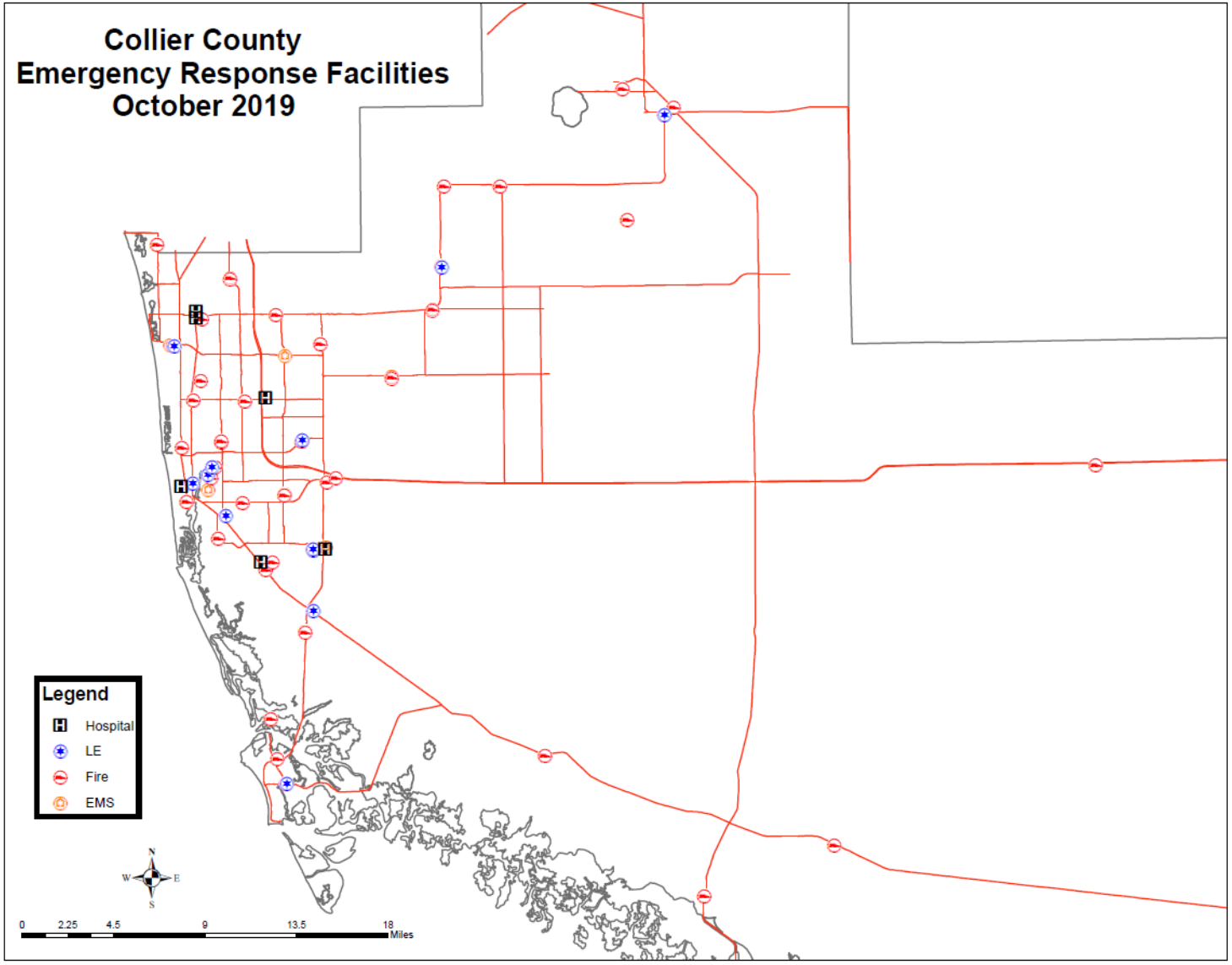
Figure 2 - Prior to 2024 FIRM Flood Zone Map (Remain in LMS Plan as reference)

ANNEX - A

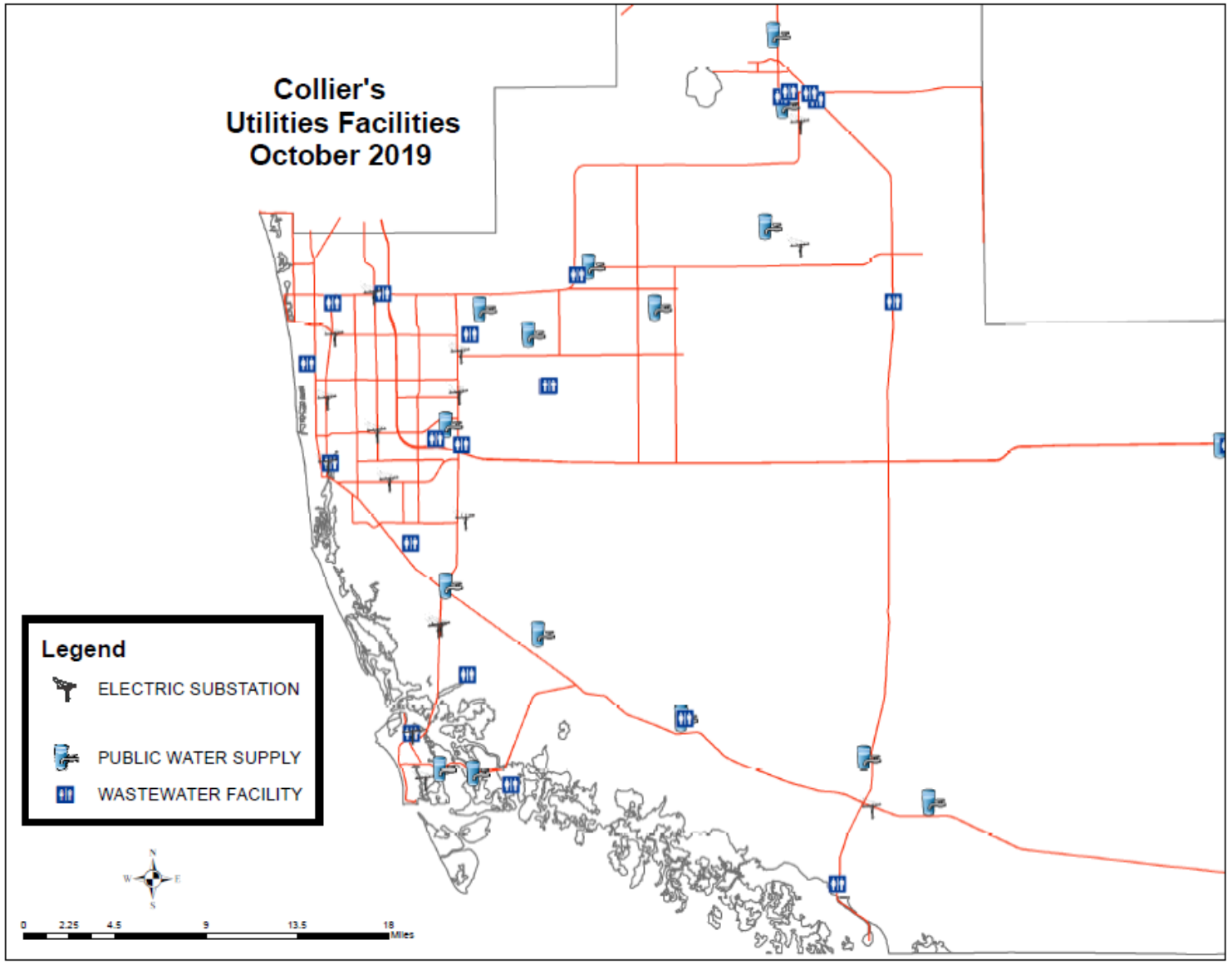
Historical Structures Map - 10



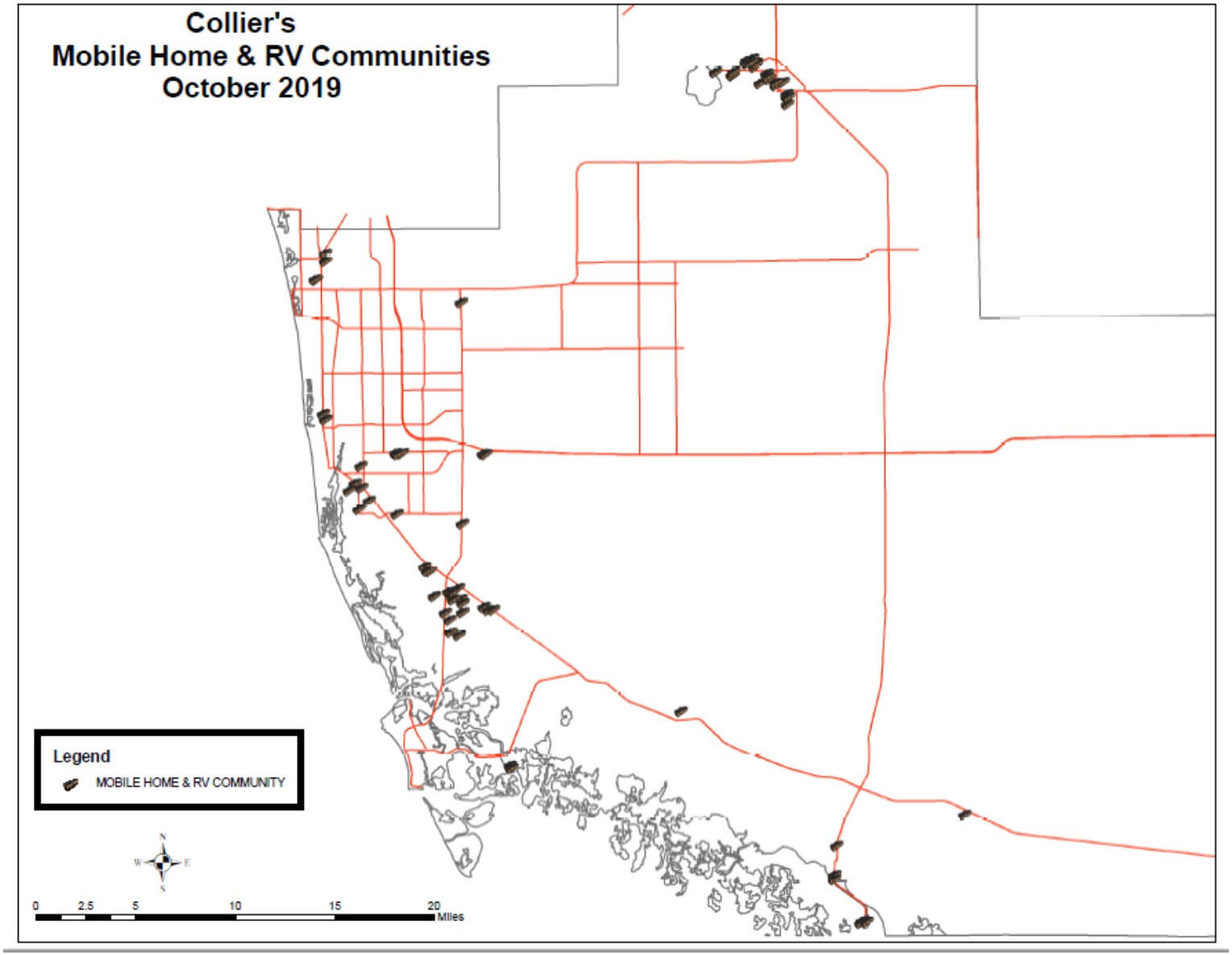
Emergency Facilities – 11



Major Utilities – 12

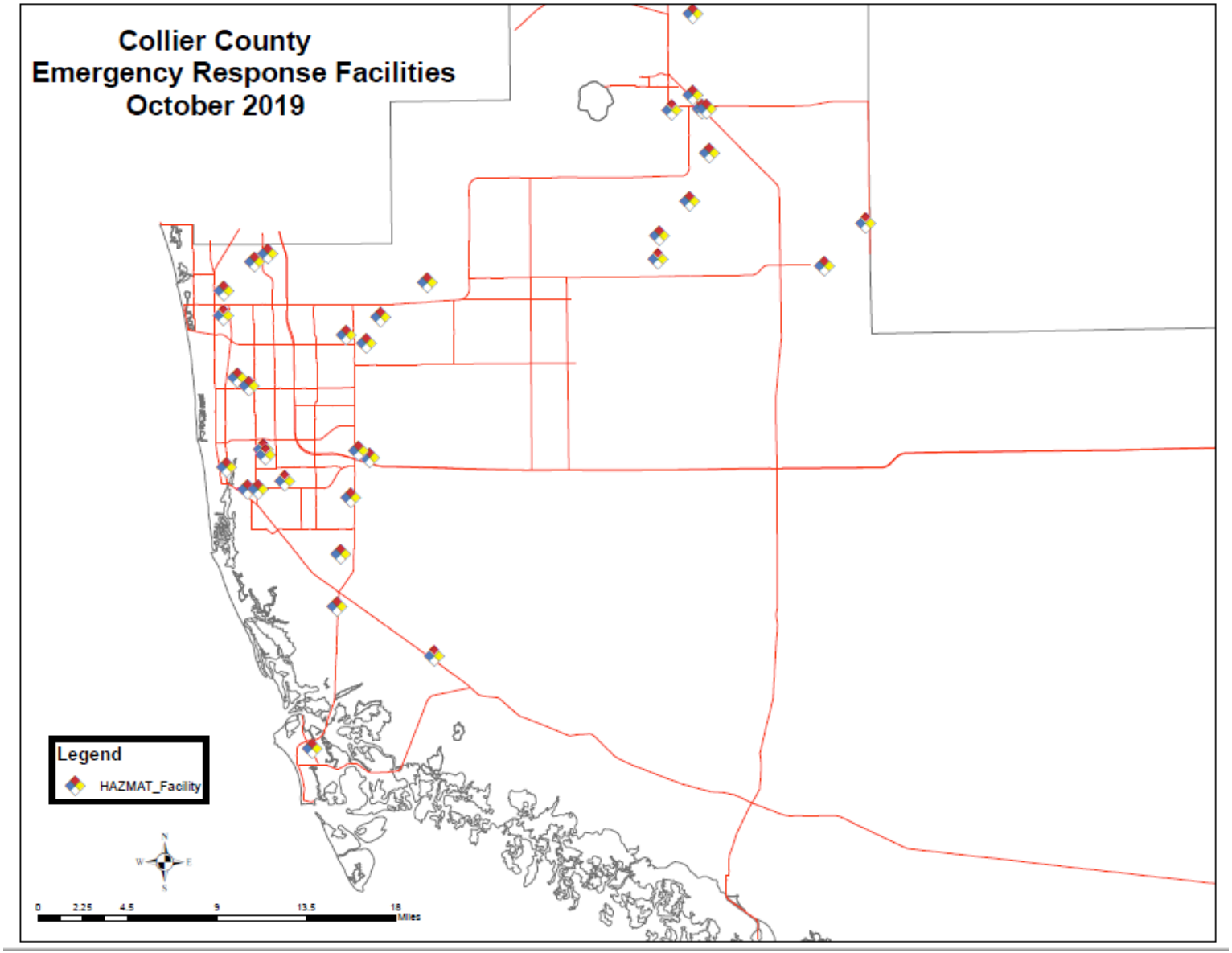


Manufactured Home & RV Communities – 13



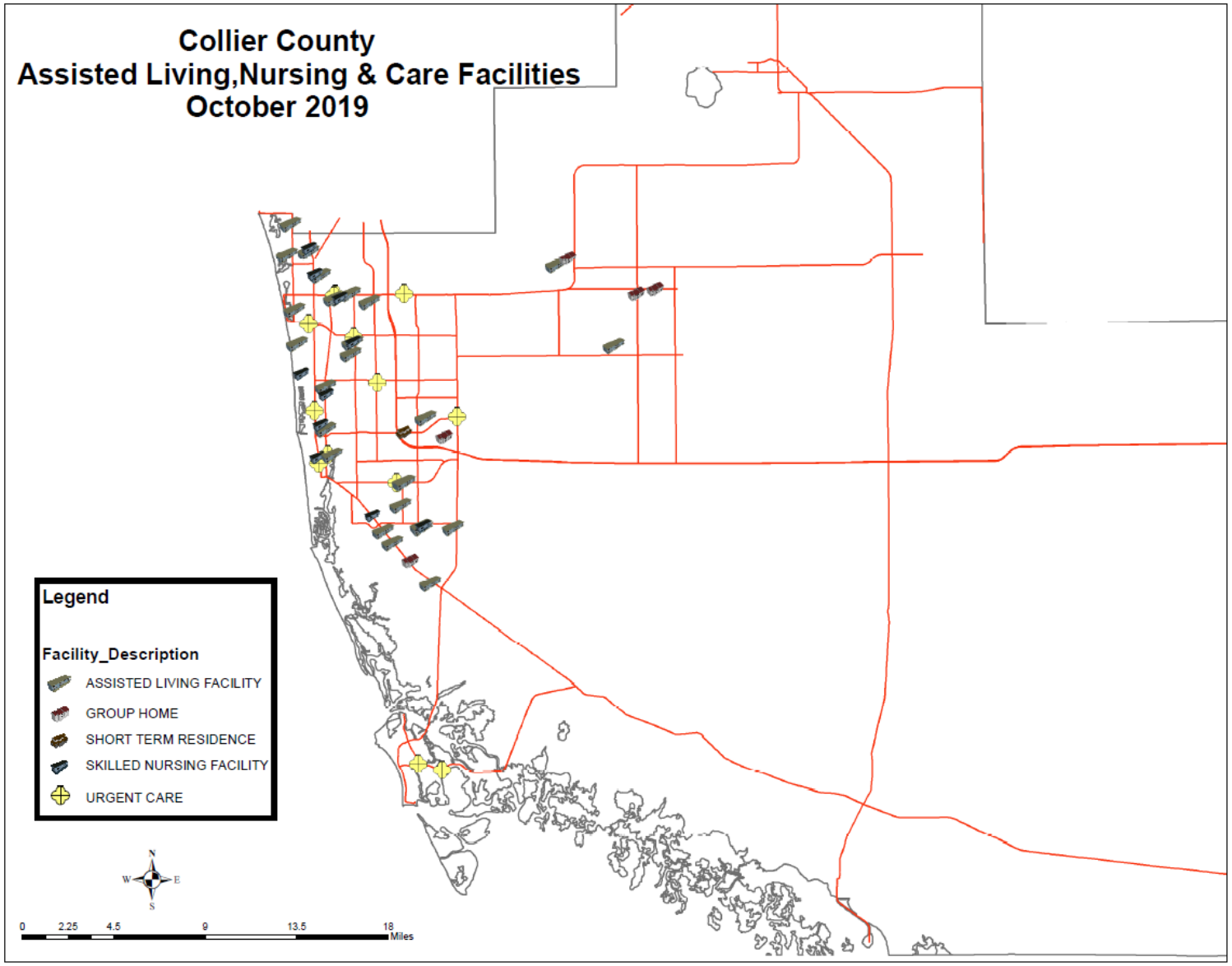
ANNEX - A

Hazardous Materials Facilities – 14



ANNEX - A

Assisted Living, Nursing & Care Facilities – 15



ANNEX - A

B

ANNEX B: Resolutions Adopting the Local Mitigation Strategy

ANNEX B

Formal Adoption of Local Mitigation Strategy: Resolutions of Participating Communities

Resolutions from Collier County's participating jurisdictions formally adopting the updated Collier 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. Letters of participation are included in this section.

Collier Board of County Commissioners' Resolution

Everglades City

City of Naples

City of Marco Island

Collier County Public Schools

Collier Mosquito Control District

North Collier Fire and Rescue District

Greater Naples Fire Rescue District

Immokalee Fire Control District

Naples Airport Authority

RESOLUTION NO. 25 - 74

RESOLUTION OF THE BOARD OF COUNTY COMMISSIONERS OF COLLIER COUNTY, FLORIDA, ADOPTING THE LOCAL MITIGATION STRATEGY PLAN

WHEREAS, the Federal Emergency Management Agency and the Florida Division of Emergency Management have requirements for a local and statewide mitigation strategy plan; and

WHEREAS, Florida Statute Chapter 252 – Emergency Management and Florida Administrative Code Rule 27P-22 establish the legal framework for local mitigation strategies, requiring counties to develop and maintain a Local Mitigation Strategy to be eligible for state and federal hazard mitigation funding; and

WHEREAS, Collier County faces a variety of natural, technological, and human-made hazards that pose risks to public health and safety, threaten economic stability, and impact the quality of the natural environment; and

WHEREAS, Collier County has worked with local municipalities and community stakeholders to develop this strategy to break the repetitive damage and repair cycle typically caused by disasters and major emergencies; and

WHEREAS, Communities with an adopted mitigation strategy plan will be eligible to apply for Hazard Mitigation Grant Program, Pre-Disaster Mitigation Grant Program & Flood Mitigation Assistance Grant Program funding; and

WHEREAS, substantial savings may be realized because the costs of mitigation efforts are less than the costs of recovery and rebuilding.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF COLLIER COUNTY, FLORIDA that the Local Mitigation Strategy Plan Hazard attached as "Exhibit A" is hereby adopted.

This Resolution adopted after motion, second and majority vote in favor of adoption this 8th day of April, 2025.

ATTEST: Crystal Kinzel, Clerk

By: _____
Attest as to Chairman's signature only
Deputy Clerk

Approved as to Form and Legal Sufficiency:

_____
Jeffrey A. Klatzkow, County Attorney

BOARD OF COUNTY COMMISSIONERS, COLLIER COUNTY, FLORIDA

By: _____
Burt Saunders, Chairman

[25-EMG-00534/1928976/1]

C

ANNEX C: Procedures to Encourage Public Involvement

ANNEX C
Public Participation and Communication Framework

In compliance with **Section 44 CFR 201.6(b)**, Collier County prioritizes robust public-private participation in the Local Mitigation Strategy (LMS) planning process. This framework ensures accessibility, transparency, and ongoing community engagement to strengthen hazard mitigation efforts.

1. Web Presence

The **Local Mitigation Strategy Working Group (LMSWG) Home Page** is the central platform for public engagement and information dissemination. The webpage is designed to:

- Provide a comprehensive overview of Collier County's Hazard Mitigation Program.
- Share resources, such as "How-To" guides and references for mitigation activities.
- Announce grant opportunities, LMS meetings, and key program updates.
- Offer links to the current Local Mitigation Strategy and past meeting minutes.
- Highlight floodplain management information and initiatives.

To enhance accessibility, the Home Page meta-data includes targeted keywords, ensuring it ranks high in search engine results for individuals seeking hazard mitigation resources. The site is available 24/7, providing continuous access to essential information. Visit the LMSWG Home Page.

2. Meeting Announcements and Stakeholder Outreach

- **Public Notices:** Meeting announcements are distributed via Collier County's Public Affairs Office to all local media outlets, ensuring widespread visibility.
- **Stakeholder Notifications:** Direct emails are sent to LMS stakeholders for every meeting, fostering consistent engagement.
- **Documentation:** Outreach efforts are documented through archived screenshots and correspondence as evidence of public and stakeholder engagement (see Attachments 1 and 4).

3. Floodplain Management Outreach

Annual outreach events conducted by the **Floodplain Management Section** target homeowners, civic groups, and professional organizations. These sessions cover:

- The benefits of the Community Rating System (CRS) program.
- History and significance of the National Flood Insurance Program.
- Requirements for flood insurance and elevation certificates.
- Building and construction standards for flood-prone areas.

4. Emergency Preparedness Seminars

Hurricane preparedness seminars and **Community Emergency Response Team (CERT) training** programs include presentations on:

- The Local Mitigation Strategy and its objectives.
- Available disaster mitigation programs tailored to the community.

5. Social Media Engagement

The Emergency Management Division utilizes **Facebook** and **Twitter** to:

- Announce upcoming meetings and events.
- Share updates on disaster mitigation initiatives and grant opportunities.
- Post community awareness campaigns. Examples of posts are provided in **Attachment 2**.

6. Public Comments and Feedback

- Public attendees at “properly noticed” LMSWG meetings have their names and comments recorded in the minutes.
- Feedback and recommendations submitted outside meetings are documented, reviewed, and addressed during future sessions (see **Attachment 3**).

7. Ongoing Public Involvement

Collier County is committed to maintaining and enhancing public participation in the Local Mitigation Strategy (LMS) beyond the plan’s approval. Currently, the county carries out digital outreach and awareness through various channels, including the LMS page on the County’s website, social media platforms, and interactive GIS tools that allow residents to better understand their flood and evacuation zones. In addition, the county collaborates with the Chamber of Commerce, whose members actively participate in the LMS Working Group, ensuring valuable input from the business community. The LMS has also been incorporated into local planning processes to align mitigation efforts with broader community development initiatives. To further promote transparency and accessibility, LMS meeting minutes, schedules, and other pertinent information are regularly posted on the LMS page of the County Emergency Management website, providing the public with ongoing opportunities to stay informed and engaged in mitigation planning efforts.

Goal
The goal of these processes is to create accessible and meaningful opportunities for public involvement, build trust and transparency, and foster collaborative efforts to reduce hazard vulnerabilities and enhance community resilience in Collier County.

Attachment 1 – Sample Press Release

Collier County Government

Communications, Government & Public Affairs
3299 Tamiami Trail E., Suite 102
Naples, Florida 34112-5746

Date To Be Published

FOR IMMEDIATE RELEASE

Notice of Public Meeting
Collier County Local Mitigation Strategy Working Group
Collier County, Florida

Date of Meeting
Time of Meeting

Notice is hereby given that the **Collier County Local Mitigation Strategy Working Group** will meet on **(Day Date and Time of Meeting)** in (Meeting Room) at the (Location of Meeting), (Address of Meeting Location). This is a quarterly meeting to address new disaster mitigation projects around the county.

The meeting is open to the public. Residents are encouraged to attend and provide comments on the proposed disaster mitigation initiatives.

Two or more members of the Board of County Commissioners may be present and participate at the meeting. The subject matter of this meeting may be an item for discussion and action at a future Board of County Commissioners meeting.

All interested parties are invited to attend, and to register to speak. All registered public speakers will be limited to three minutes unless changed by the chairman.

Collier County Ordinance Number 2004-05 requires that all lobbyists shall, before engaging in any lobbying activities (including, but not limited to, addressing the Board of County Commissioners, an advisory board or quasi-judicial board), register with the Clerk to the Board at the Board Minutes and Records Department.

Anyone who requires an auxiliary aid or service for effective communication, or other reasonable accommodations to participate in this proceeding, should contact the Collier County Facilities Management Division, located at 3335 Tamiami Trail E., Suite 101, Naples, Florida 34112, or (239) 252-8380, as soon as possible, but no later than 48 hours before the scheduled event. Such reasonable accommodations will be provided at no cost to the individual.

For more information, call (Name of LMS Staff Liaison) at (Telephone Number of Staff Liaison).

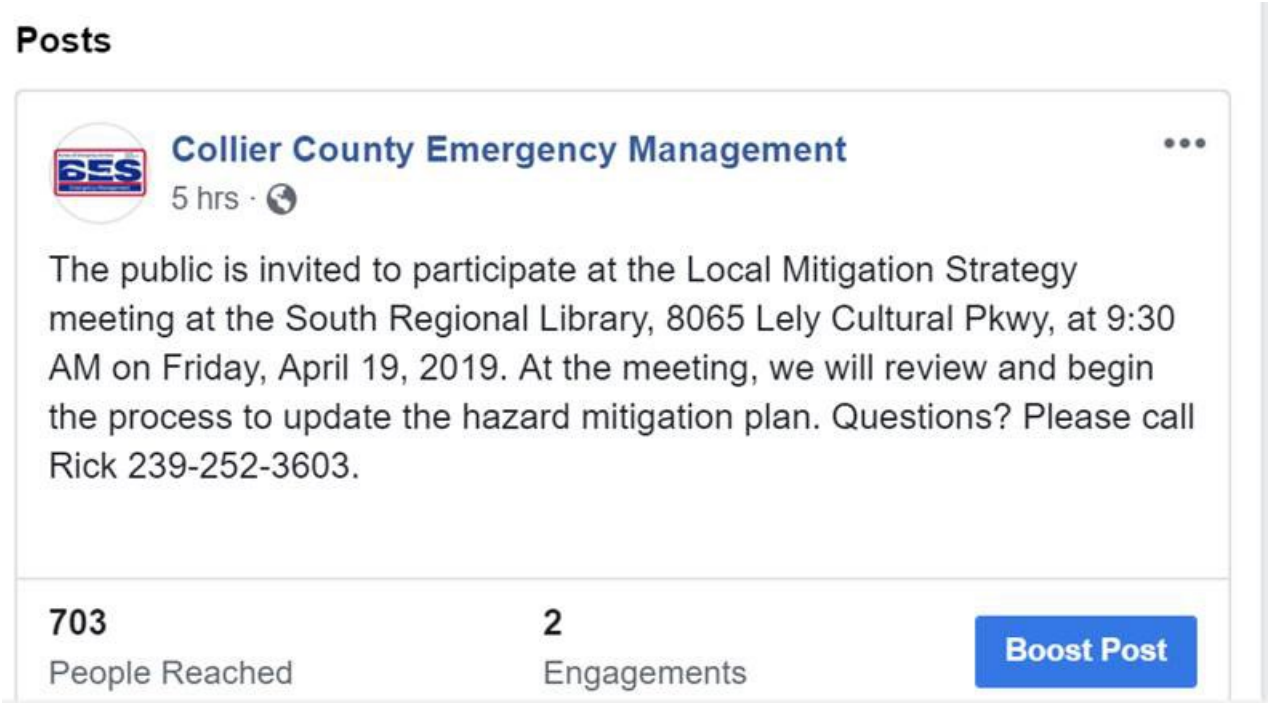
###

Attachment 2 – Social Media

Twitter:



Facebook:



Attachment 3 – Samples of Public Comment & Recommendations

What follows is a collection of comments and recommendations from the pubic and members.

Para 1.2.3
If a resolution appears possible, but further discussion is needed, a subsequent meeting may be scheduled between a representative of the Board of County Commissioners (BCC) and a Mayor or representative of the City Council of the municipalities opposed. A representative from the state may also be invited to this meeting if deemed appropriate.

Section 3, paras: 1.2.1, 1.2.1.1, 1.2.1.2, 1.6, 1.8, 1.9 – add Sea Level Rise as a hazard

Goal 6, 1st sentence - Collier County and local Municipalities shall make….

Section 6, para 6.2.1.3
The City of Marco Island:
The Growth Management Director, Chief Building Official and Floodplain Coordinator (CFM) and the staff from the Growth Management Planning Division are currently amending the City's Comprehensive Plan to include various Local Mitigation Strategy (LMS) initiatives. Staff will continue to emphasize the goals and objectives of the mitigation process in all area of government with regard to regulation and development inside and outside the floodplain. Attachment 2 shows ways the city may incorporate the LMs in existing plans.

---

1. In Section 1.2.1 the paragraph discussing revoking voting membership status generally sounds good, but I thought that the revocation also applied to the individual sections represented in the participating jurisdictions. For example, if nobody from Stormwater attends at least 2 of the quarterly meetings then Stormwater can be voted for removal. However, that would not mean that Collier County is removed from the LMSWG. Is that your understanding? If so, perhaps there should be some additional verbiage to better identify sub-units within the participating jurisdictions. Also, in that same paragraph, the second highlighted text should probably say "members from the public or <u>from</u> private non-profit" instead of "members from the public or <u>form</u> private non-profit".
2. In Section 4.1.5 I thought the LMSWG agreed for an annual update rather every two years. I'm probably wrong on this but thought it worth checking.
3. Annex C on the DRAFT 2020 LMS web page needs to have a closing parenthesis at the end of the Board of County Commissioners line.
4. Annex D Public Meeting Announcements paragraph has a typo in that the work "formerly" should be "formally".
5. Annex D Annual Flood Plain Outreach Meetings needs to be consistent in how the term "floodplain" is spelled. While it should be one word, there are two places where is spelled with two words.
6. Annex D Emergency Management Hurricane Seminars and Community Emergency Response Team paragraph seems to have a typo in that it doubles the "Local Mitigation Strategy" term when perhaps something else was intended to be included.
7. Annex D Social Media (Facebook & Twitter) paragraph should reference the location of the social media account samples as being in Attachment 2.
8. Annex E – Excel Spreadsheet has cells A3 thru G3 blank when it appears there should be some text to identify the program. Note that I did not check the links.
9. Annex F could perhaps benefit by indicating the effective date of the project priority listing. That way everyone knows when priority revisions are made by the LMSWG.

10. Annex H listing of membership needs to be updated to reflect membership changes identified in the Summary of Changes document.
11. Annex I needs to be checked to ensure all criteria have been updated as discussed at the last few LMSWG meetings.

Section One. Recommend the following changes: paragraph 1.2 change "Pubic School District" to "Collier County Public Schools", paragraph 1.2.1 change "School Superintendent" to "Collier County Public Schools Superintendent", paragraph 1.2.1, change "District Schools of Collier County" to "Collier County Public Schools", paragraph 1.3.1 change "District School Board of Collier County" to "Collier County Public Schools".

Sections three, four, and five: No changes recommended.

Annex C. Change "Collier District Public Schools" to "Collier County Public Schools".

LMS Update Annex A: Page 2 of 9
Listed below are the potential hazards which may affect Collier County and its communities. Please note that a detailed analysis for some hazards are contained in the Collier County Floodplain Management Plan (FMP):
https://www.colliercountyfl.gov/home/showdocument?id=58898

The Collier County Floodplain Management Plan will not be repeated in this document. Hazard analyses not found in the FMP are addressed here by either noting a low probability of occurrence to a detail analysis of the event, via appendices to this annex. Many of these hazards have a low impact status or are too random in nature and do not represent a significant threat, therefore a thorough analysis was not performed.

LMS Update Annex D: Annual Floodplain Outreach Meetings
Annual Floodplain Management Outreach Meetings: The Collier County Floodplain Management Section conducts outreach to homeowner associations, condominium associations, civic groups, professional organizations, and other specific groups regarding the following information:

- Benefits of the Community Rating System program
- History of the National Flood Insurance Program
- Flood insurance
- Elevation certificate information
- Building and construction standards within the floodplain

LMS Update Annex J: Collier County's Floodplain Plans (Update)
Unincorporated Collier County has a Floodplain Management Plan. The City of Marco Island and the City of Naples do not possess a Floodplain Management Plan, nor are they required to adopt one. The Floodplain Management Plan is a part of the Collier County multi-jurisdictional, multi-hazard mitigation plan which addresses the jurisdictional flooding hazards. They are written according to FEMA regulations and Section 511 and 512 of the CRS Coordinator's Manual.
All jurisdictions are active participants in the NFIP. To ensure continued compliance with the NFIP, each participating community will:

1. Continue to enforce their adopted Floodplain Management Ordinance requirements, which include regulating all new development and substantial improvements in Special Flood Hazard Areas (SFHA).

2. Continue to maintain all records pertaining to floodplain development, which shall be available for public inspection
3. Continue to notify the public when there are proposed changes to the floodplain ordinance or Flood Insurance Rate Maps.
4. Maintain the map and Letter of Map Change repositories.
5. Continue to promote Flood Insurance for all properties.
6. Continue their Community Rating System outreach programs.

SUMMARY OF JURISDICTIONAL CRS PROGRAMS

Collier County: Collier County's NFIP participation commitments meet or exceed the following minimum requirements as set for by the NFIP.

- Issuance or denial of floodplain development/building permits
- Inspection of all development to assure compliance with the local ordinance
- Maintaining records of floodplain development
- Assisting in the preparation and revision of floodplain maps
- Aid residents in obtaining information on flood hazards, floodplain map data, flood insurance and proper construction measures

The County's Building Plan Review & Inspection Division (BPRID) is the agency responsible for the review and approval of all development order applications to the County. The application review process includes analysis for compliance with the County's Land Development Code, the County's Code of Laws and Ordinances (which includes the Floodplain Management Ordinance), the Florida Building Code, the South Florida Water Management District permitting rules (when applicable), the County's Growth Management Plan, and other related regulations for development compliance. The development and building permit approval processes consist of extensive reviews of the submitted applications to determine compliance before a recommendation for approval is given. Once a development project begins actual construction, there are periodic on-site inspections performed by trained inspection staff to ensure compliance before the construction can proceed toward completion. All documents submitted to the County become part of the project's public record file and are available for the public to review upon request. Copies can be ordered if requested. Once a project is completed, the file is closed and archived and is available for record retrieval. The BPRID is also active in the preparation and revision of Flood Insurance Rate Maps (FIRM) and maintains the record of all map revisions and changes received from FEMA. As a part of the services offered to the public, the BPRID provides FIRM information, flood insurance program information, flooding hazards, and proper construction methods within the special flood hazard area. The BPRID also oversees the County's participation in the Community Rating System (CRS) program. The County is currently designated as a CRS Class 5 rated community for its efforts to promote activities that make the community more resistant to flood damage.

Collier County is currently in the process of to producing a new Digital Flood Insurance Rate Map (DFIRM) series through a CTP Partnership Agreement with the City of Naples, the South Florida Water Management District, and FEMA. On January 9, 2019 the County adopted a new Floodplain Management Ordinance that is compliant with the current State of Florida "Model" Flood Ordinance. The County has an active Floodplain Management Planning Committee to oversee the development and updating of the County's Floodplain Management Plan. As part of the CRS program the County provides flood hazard and flood insurance information to the public through a newsletter, mailings, and the internet.

Appendix 1 - Wildfires has seen no significant change in wildfire incidence type, though the acreage for each has adjusted due the 30th Ave and Lee Williams Road fires in 2017 and the Greenway complex in 2018. I did send out an email today for the GGE CWPP which needs signing in order to incorporate it into the LMS in addition to or in place of Appendix 1. I shall continue to prod 'the bear' as it were to get that in time for our deadline.

North Collier Fire Control and Rescue District's acknowledgement of reviewing the Draft 2020 LMS plan. The only change for us is to correct our Legal name to match our enabling legislation (currently the word ***Control*** is missing):

North Collier Fire Control and Rescue District.

- Page 6-1, edits corresponding with highlights on below excerpt: 1) "C"; 2) remove hyphen – it is all one word; 3) & 4) insert "density bonus"; "R"; 6) insert "density bonus"; 7) replace "-" with "/"; 8) remove "s".

➢ Ordinances under review/revision that deal with the hazard mitigation.
➢ The Collier County Growth Management Plan contains policies and goals to be reviewed this to insure consistency with the Local Mitigation Strategy. Specific elements of the plan are:
  - Conservation & Coastal Management Element
  - Drainage Sub-Element
  - Solid Waste Sub-Element
  - Housing Element
  - Future Land Use Element
  - Urban Future Land Use Designation, Urban coastal Fringe Sub-district, Density Rating System, Affordable Housing, Residential In-Fill, Transfer of Development rights, Bayshore-Gateway Triangle Redevelopment Overlay
  - Golden Gates Area Master Plan Element

- Page 6-4, see below edits in red. I struck thru the EAR text because: 2011 is past, and the EAR process required in F.S. has been gutted – we now only review for any changes in F.S. not reflected in our GMP whereas previously we would conduct a detailed re-evaluation of the GMP.

6.2.1.1 **Unincorporated Collier County:** Coordinators in the Emergency Management Office, the Floodplain Manager and members of the Comprehensive Planning Section ~~Department~~ will weigh the goals and objectives of the LMS against each plan and/or ordinance being reviewed at the time determined for each document. The LMSWG will assess Goal 12 in the Conservation and Coastal Management Element (CCME) of the GMP, which contains policy 12.1.9 which references the Hazard Mitigation Plan, would include an assessment by the county that we needed to modify this element to meet the specifics of any current mitigation requirements. Additionally, where opportunities present themselves, the responsible agency will seek the LMSWG's support in amending the appropriate documents.

- Page 6-6: Text is out of order – re-arrange as shown below:

FUTURE LAND USE ELEMENT

C. UNDERLYING CONCEPTS

Management of Coastal Development

Two major coastal development issues in Collier County are the protection of natural resources and the balancing of risk in natural hazard areas.

Extensive populated areas in Collier County are vulnerable to periodic salt-water inundation from tropical storms or hurricanes. It is extremely important that an acceptable balance between at-risk population and evacuation capability be achieved. In addition, public and private investment in such vulnerable areas must be carefully considered.

This issue is addressed here and in the Conservation and Coastal Management Element through several measures. A Coastal High Hazard Area is identified on the Future Land Use Map essentially as all lands seaward of US 41. This line is based on the close fit to the storm Category 1 SLOSH area (potential for saltwater flooding from 1 storm in 12 years) and evacuation planning areas. Within the Coastal High Hazard Area maximum permissible residential density is limited in recognition of the level of risk, the existing deficiency of evacuation shelter space and existing patterns of density. The Coastal High Hazard Area is also identified in the Conservation and Coastal Management Element and policies are provided therein. Finally, coastal natural hazards are addressed through Land Development Regulations already in effect relating to coastal building standards, per Chapter 161, Florida Statutes, and protection of structures from floods, per County participation in the FEMA Flood Insurance Program.

OBJECTIVE 1: Unless otherwise permitted in this Growth Management Plan, new or revised uses of land shall be consistent with designations outlined on the Future Land Use Map. The Future Land Use Map and companion Future Land Use Designations, Districts and Sub-districts shall be binding on all Development Orders effective with the adoption of this Growth Management Plan. Standards and permitted uses for each Future Land Use District and Subdistrict are identified in the Designation Description Section. Through the magnitude, location and configuration of its components, the Future Land Use Map is designed to coordinate land use with the natural environment including topography, soil and other resources; promote a sound economy; coordinate coastal population densities with the Regional Hurricane Evacuation Plan; and discourage unacceptable levels of urban sprawl.

FUTURE LAND USE DESIGNATION DESCRIPTION SECTION

The following section describes the land use designations shown on the Future Land Use Map. These designations generally indicate the types of land uses for which zoning may be requested. However, these land use designations do not guarantee that a zoning request will be approved. Requests may be denied by the Board of County Commissioners based on criteria in the Land Development Code or on special studies completed for the County.

- Pages 6-6 thru 6-23: 1) Because the GMP has been amended several times since the last LMS update, I suggest removing all GMP excerpts and replacing with the same from the current GMP. 2) I suggest placing a text break whenever skipping from one GMP provision to another so as to make it clear to the reader that the text from one section is not a continuation from the prior section. See below example from page 6-7.

existing development; patterns of approved, but unbuilt, development; natural resources; water management; hurricane risk; existing and proposed public facilities; population projections and the land needed to accommodate the projected population growth.

*** *** **TEXT BREAK** *** ***

(IV)(XI)(XV)(XXI) 3. Urban Coastal Fringe Subdistrict:
The purpose of this Subdistrict is to provide transitional densities between the Conservation designated area (primarily located to the south of the Subdistrict) and the remainder of the Urban designated area (primarily located to the north of the Subdistrict). The Subdistrict comprises those Urban areas south of US 41, generally east of the City of Naples, and generally west of the Rural Fringe Mixed Use District Neutral Lands, but excludes Section 13, Township 51 South, Range 26 East, and comprises approximately 11,354 acres and 10% of the Urban Mixed Use District. The entire Subdistrict is located seaward of the Coastal High Hazard Area Boundary. In order to facilitate hurricane evacuation and to protect the adjacent environmentally sensitive Conservation designated area, residential densities within the Subdistrict shall not exceed a maximum of 4 dwelling units per acre, except as allowed in the Density Rating System to exceed 4 units per acre through provision of Affordable Housing and Transfers of Development Rights, and except as allowed by certain FLUE Policies under Objective 5, and except as provided in the Bayshore Gateway Triangle Redevelopment Overlay. New rezones to permit mobile home development within this Subdistrict are prohibited. Rezones are recommended to be in the form of a Planned Unit Development.

*** *** **TEXT BREAK** *** ***

(IX) B. Rural Fringe Mixed Use District
The Rural Fringe Mixed Use District is identified on Future Land Use Map. This District consists of approximately 93,600 acres, or 7% of Collier County's total land area. Significant portions of this District are adjacent to the Urban area or to the semi-rural, rapidly developing, large-lot North Golden Gate Estates platted lands. Agricultural land uses within the Rural Fringe Mixed Use District do not represent a significant portion of the County's active agricultural lands. As of the date of adoption of this Plan Amendment, the Rural Fringe Mixed Use District consists of more than 5,550 tax parcels, and includes at least 3,835 separate and distinct property owners. Alternative land use strategies have been developed for the Rural Fringe Mixed Use District, in part, to consider these existing conditions.

Attachment 4 – Evidence of Public Announcements

Evidence of a public announcement to LMS stakeholders and members of the public at large for the past 4 years.

PRESS RELEASES (July 2020 to November 2024)

Collier County Government

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July 8, 2020

FOR IMMEDIATE RELEASE
Notice of Public Meeting
Collier County Local Mitigation Strategy Working Group
Collier County, Florida

Friday, July 17, 2020
9:30 a.m.

Notice is hereby given that the **Collier County Local Mitigation Strategy Working Group** will meet at **9:30 a.m., Friday, July 17**, in the large Community Room at the Collier County South Regional Library, 8065 Lely Cultural Parkway, Naples, Florida 34113 for a Special meeting to address new disaster mitigation projects around the county.

The meeting is open to the public. Residents are encouraged to attend and provide comments on the proposed disaster mitigation initiatives Social distancing will be observed. Entry to the large meeting room will be from the outside entrance to the room, not through the main entrance of the Library. Designated seating within the room will be marked and/or situated to ensure appropriate distancing.

Two or more members of the Board of County Commissioners may be present and participate at the meeting. The subject matter of this meeting may be an item for discussion and action at a future Board of County Commissioners meeting.

All interested parties are invited to attend, and to register to speak. All registered public speakers will be limited to three minutes unless permission for additional time is granted by the chairman.

Collier County Ordinance No. 2004-05 requires that all lobbyists shall, before engaging in any lobbying activities (including, but not limited to, addressing the Board of County Commissioners, an advisory board or quasi-judicial board), register with the Clerk to the Board at the Board Minutes and Records Department.

Anyone who requires an auxiliary aid or service for effective communication, or other reasonable accommodations to participate in this proceeding, should contact the Collier County Facilities Management Division, located at 3335 Tamiami Trail E., Suite 101, Naples, Florida 34112, or (239) 252-8380, as soon as possible, but no later than 48 hours before the scheduled event. Such reasonable accommodations will be provided at no cost to the individual.

For more information, call William Lang at 239-252-3624.

###

News Releases

Collier County Local Mitigation Strategy Working Group

Post Date: 10/06/2020 3:00 PM

Notice of Public Meeting
Collier County Local Mitigation Strategy Working Group
Collier County, Florida

October 16, 2020
9:30 a.m.

Notice is hereby given that the Collier County Local Mitigation Strategy Working Group will meet on Friday, October 16, 2020, at 9:30 a.m. on the third floor, in the Emergency Operations Center at the James V. Mudd Emergency Services Center, 8075 Lely Cultural Parkway, Naples, Florida 34113. This is a quarterly meeting to address new disaster mitigation projects around the county.

The meeting is open to the public. Residents are encouraged to attend and provide comments on the proposed disaster mitigation initiatives. Face coverings are required, and social distancing will be observed.

Two or more members of the Board of County Commissioners may be present and participate at the meeting. The subject matter of this meeting may be an item for discussion and action at a future Board of County Commissioners meeting.

All interested parties are invited to attend and to register to speak. All registered public speakers will be limited to three minutes unless changed by the chairman.

The public is reminded that the CDC and the Department of Health recommend social distancing and avoiding public gatherings when possible.

Collier County Ordinance No. 2004-05 requires that all lobbyists shall, before engaging in any lobbying activities (including, but not limited to, addressing the Board of County Commissioners, an advisory board, or quasi-judicial board), register with the Clerk to the Board at the Board Minutes and Records Department.

Anyone who requires an auxiliary aid or service for effective communication, or other reasonable accommodations to participate in this proceeding, should contact the Collier County Facilities Management Division, located at 3335 Tamiami Trail E., Suite 101, Naples, Florida 34112, or 239-252-8380, as soon as possible, but no later than 48 hours before the scheduled event. Such reasonable accommodations will be provided at no cost to the individual.

For more information, call Richard Zyvoloski at 239-252-3603.

Return to fu

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January 4, 2021

FOR IMMEDIATE RELEASE

Notice of Public Meeting
Collier County Local Mitigation Strategy Working Group
Collier County, Florida
Conference Room 118, S Collier Regional Library
8065 Lely Cultural PKWY, Naples, FL 34113
Friday, January 15, 2021
9:30 a.m.

Notice is hereby given that the **Collier County Local Mitigation Strategy Working Group** will meet at **9:30 a.m., Friday, January 17, 2021** in Conference Room 118 at the Collier County South Regional Library, 8065 Lely Cultural Parkway, Naples, Florida 34113. This is a quarterly meeting to address new disaster mitigation projects around the county.

The meeting is open to the public. Residents are encouraged to attend and provide comments on the proposed disaster mitigation initiatives Social distancing will be observed. Entry to the large meeting room will be from the outside entrance to the room, not through the main entrance of the Library. Designated seating within the room will be marked and/or situated to ensure appropriate distancing.

Two or more members of the Board of County Commissioners may be present and participate at the meeting. The subject matter of this meeting may be an item for discussion and action at a future Board of County Commissioners meeting.

All interested parties are invited to attend, and to register to speak. All registered public speakers will be limited to three minutes unless permission for additional time is granted by the chairman.

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Anyone who requires an auxiliary aid or service for effective communication, or other reasonable accommodations to participate in this proceeding, should contact the Collier County Facilities Management Division, located at 3335 Tamiami Trail E., Suite 101, Naples, Florida 34112, or (239) 252-8380, as soon as possible, but no later than 48 hours before the scheduled event. Such reasonable accommodations will be provided at no cost to the individual.

For more information, call William Lang at 239-252-3624.

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March 05, 2021

FOR IMMEDIATE RELEASE

Notice of Public Meeting
Collier County Local Mitigation Strategy Working Group Special Meeting
Emergency Operations Center (3rd Floor), 8075 Lely Cultural PKWY
Naples, FL 34112
Collier County, Florida

Friday, March 19, 2021
9:30 a.m.

Notice is hereby given that the ***Collier County Local Mitigation Strategy Working Group*** will meet at ***9:30 a.m. Friday, March 19th***, at the Collier Emergency Operations Center (3rd Floor), 8075 Lely Cultural Parkway, Naples, Florida 34113. The purpose of this special meeting is to review proposed projects and develop the project priority letter that will accompany the applicable Hazard Mitigation Grant Program (HMGP-FM-5307) project application.

About the public meeting:

Two or more members of the Board of County Commissioners may be present and may participate at the meeting. The subject matter of this meeting may be an item for discussion and action at a future Board of County Commissioners meeting.

All interested parties are invited to attend, and to register to speak. All registered public speakers will be limited to three minutes unless permission for additional time is granted by the chairman.

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For more information, call the William Lang at 239-252-3624.

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April 01, 2021

FOR IMMEDIATE RELEASE

Notice of Public Meeting
Collier County Local Mitigation Strategy Working Group
Collier County, Florida
Emergency Operations Center (3rd Floor), 8075 Lely Cultural PKWY
Naples, FL 34112, Collier County, Florida

Friday, April 16, 2021
9:30 a.m.

Notice is hereby given that the **Collier County Local Mitigation Strategy Working Group** will meet at **9:30 a.m., Friday, April 16, 2021** at the Collier Emergency Operations Center (3rd Floor), 8075 Lely Cultural Parkway, Naples, Florida 34113. This is a quarterly meeting to address disaster mitigation projects around the county.

The meeting is open to the public. Residents are encouraged to attend and provide comments on the proposed disaster mitigation initiatives Social distancing will be observed. Entry to the large meeting room will be from the outside entrance to the room, not through the main entrance of the Library. Designated seating within the room will be marked and/or situated to ensure appropriate distancing.

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For more information, call William Lang at 239-252-3624.

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July 06, 2021

FOR IMMEDIATE RELEASE

Notice of Public Meeting
Collier County Local Mitigation Strategy Working Group
Collier County, Florida
Emergency Operations Center (3rd Floor), 8075 Lely Cultural PKWY
Naples, FL 34113, Collier County, Florida

Friday, July 16, 2021
9:30 a.m.

Notice is hereby given that the **Collier County Local Mitigation Strategy Working Group** will meet at **9:30 a.m., Friday, July 16, 2021** at the Collier Emergency Operations Center (3rd Floor), 8075 Lely Cultural Parkway, Naples, Florida 34113. This is a quarterly meeting to address disaster mitigation projects around the county.

The meeting is open to the public. Residents are encouraged to attend and provide comments on the proposed disaster mitigation initiatives. Social distancing will be observed.

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For more information, call William Lang at 239-252-3624.

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September 05, 2021

FOR IMMEDIATE RELEASE

Notice of Public Meeting
Collier County Local Mitigation Strategy Working Group
Collier County, Florida
Conference Room 118, South Regional Library
8065 Lely Cultural PKWY, Naples, FL 34113

Friday, October 15, 2021
9:30 a.m.

Notice is hereby given that the **Collier County Local Mitigation Strategy Working Group** will meet at **9:30 a.m., Friday, October 15, 2021,** in Conference Room 118 at the Collier County South Regional Library, 8065 Lely Cultural Parkway, Naples, Florida 34113. This is a quarterly meeting to address new disaster mitigation projects around the county.

The meeting is open to the public. Residents are encouraged to attend and provide comments on the proposed disaster mitigation initiatives Social distancing will be observed. Entry to the conference room will be through the main entrance of the Library.

Two or more members of the Board of County Commissioners may be present and participate at the meeting. The subject matter of this meeting may be an item for discussion and action at a future Board of County Commissioners meeting.

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November 24, 2021

FOR IMMEDIATE RELEASE

Notice of Public Meeting
Collier County Local Mitigation Strategy Working Group Special Meeting
Collier County, Florida
Conference Room 118, South Regional Library
8065 Lely Cultural PKWY, Naples, FL 34113

Thursday, December 09, 2021
9:30 a.m.

Notice is hereby given that the **Collier County Local Mitigation Strategy Working Group** will meet at **9:30 a.m., Thursday, December 09, 2021,** in Conference Room 118 at the Collier County South Regional Library, 8065 Lely Cultural Parkway, Naples, Florida 34113. The purpose of this special meeting is to review proposed projects and develop the project priority letter that will accompany the applicable Hazard Mitigation Grant Program (FEMA-4486-DR-FL).

The meeting is open to the public. Residents are encouraged to attend and provide comments on the proposed disaster mitigation initiatives Social distancing will be observed. Entry to the conference room will be through the main entrance of the Library.

Two or more members of the Board of County Commissioners may be present and participate at the meeting. The subject matter of this meeting may be an item for discussion and action at a future Board of County Commissioners meeting.

All interested parties are invited to attend, and to register to speak. All registered public speakers will be limited to three minutes unless permission for additional time is granted by the chairman.

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January 07, 2021

FOR IMMEDIATE RELEASE

Notice of Public Meeting
Collier County Local Mitigation Strategy Working Group
Collier County, Florida
Conference Room 118, South Regional Library
8065 Lely Cultural PKWY, Naples, FL 34113

Friday, January 21, 2022
9:30 a.m.

Notice is hereby given that the **Collier County Local Mitigation Strategy Working Group** will meet at **9:30 a.m., Friday, January 21, 2022,** in Conference Room 118 at the Collier County South Regional Library, 8065 Lely Cultural Parkway, Naples, Florida 34113. This is a quarterly meeting to address new disaster mitigation projects around the county.

The meeting is open to the public. Residents are encouraged to attend and provide comments on the proposed disaster mitigation initiatives. Social distancing will be observed. Entry to the conference room will be through the main entrance of the Library.

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For more information, call William Lang at 239-252-3624.

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March 30, 2022

FOR IMMEDIATE RELEASE

Notice of Public Meeting
Collier County Local Mitigation Strategy Working Group
Collier County, Florida
Conference Room 118, South Regional Library
8065 Lely Cultural PKWY, Naples, FL 34113

Friday, April 15, 2022
9:30 a.m.

Notice is hereby given that the **Collier County Local Mitigation Strategy Working Group** will meet at **9:30 a.m., Friday, April 15, 2022,** in Conference Room 118 at the Collier County South Regional Library, 8065 Lely Cultural Parkway, Naples, Florida 34113. This is a quarterly meeting to address new disaster mitigation projects around the county.

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All interested parties are invited to attend, and to register to speak. All registered public speakers will be limited to three minutes unless permission for additional time is granted by the chairman.

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Anyone who requires an auxiliary aid or service for effective communication, or other reasonable accommodations to participate in this proceeding, should contact the Collier County Facilities Management Division, located at 3335 Tamiami Trail E., Suite 101, Naples, Florida 34112, or (239) 252-8380, as soon as possible, but no later than 48 hours before the scheduled event. Such reasonable accommodations will be provided at no cost to the individual.

For more information, call William Lang at 239-252-3624.

###

Collier County Government

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July 1, 2022

FOR IMMEDIATE RELEASE

Notice of Public Meeting
Collier County Local Mitigation Strategy Working Group
Collier County, Florida
Conference Room 118, South Regional Library
8065 Lely Cultural PKWY, Naples, FL 34113

Friday, July 15, 2022
9:30 a.m.

Notice is hereby given that the **Collier County Local Mitigation Strategy Working Group** will meet at **9:30 a.m., Friday, July 15, 2022,** in Conference Room 118 at the Collier County South Regional Library, 8065 Lely Cultural Parkway, Naples, Florida 34113. This is a quarterly meeting to address new disaster mitigation projects around the county.

The meeting is open to the public. Residents are encouraged to attend and provide comments on the proposed disaster mitigation initiatives. Social distancing will be observed. Entry to the conference room will be through the main entrance of the Library.

Two or more members of the Board of County Commissioners may be present and participate at the meeting. The subject matter of this meeting may be an item for discussion and action at a future Board of County Commissioners meeting.

All interested parties are invited to attend, and to register to speak. All registered public speakers will be limited to three minutes unless permission for additional time is granted by the chairman.

Collier County Ordinance Number 2004-05 requires that all lobbyists shall, before engaging in any lobbying activities (including, but not limited to, addressing the Board of County Commissioners, an advisory board or quasi-judicial board), register with the Clerk to the Board at the Board Minutes and Records Department.

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For more information, call William Lang at 239-252-3624.

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November 1, 2022

FOR IMMEDIATE RELEASE

Notice of Public Meeting
Collier County Local Mitigation Strategy Working Group
Collier County, Florida
Joint Information Center (JIC) Room, 3rd Floor
Collier County Emergency Services Center
8075 Lely Cultural PKWY, Naples, FL 34113

Thursday, November 10, 2022
9:30 a.m.

Notice is hereby given that the **Collier County Local Mitigation Strategy Working Group** will meet at **9:30 a.m., Thursday, November 10, 2022,** in the Joint Information Center (JIC) Room, 3rd floor, Collier County Emergency Services Center, 8075 Lely Cultural Parkway, Naples, Florida 34113. This is a quarterly meeting to address new disaster mitigation projects around the county.

The meeting is open to the public. Residents are encouraged to attend and provide comments on the proposed disaster mitigation initiatives. Social distancing will be observed. Entry to the Joint Information Center Room will be on the third (3rd) floor of the Emergency Services Center.

Two or more members of the Board of County Commissioners may be present and participate at the meeting. The subject matter of this meeting may be an item for discussion and action at a future Board of County Commissioners meeting.

All interested parties are invited to attend, and to register to speak. All registered public speakers will be limited to three minutes unless permission for additional time is granted by the chairman.

Collier County Ordinance Number 2004-05 requires that all lobbyists shall, before engaging in any lobbying activities (including, but not limited to, addressing the Board of County Commissioners, an advisory board or quasi-judicial board), register with the Clerk to the Board at the Board Minutes and Records Department.

Anyone who requires an auxiliary aid or service for effective communication, or other reasonable accommodations to participate in this proceeding, should contact the Collier County Facilities Management Division, located at 3335 Tamiami Trail E., Suite 101, Naples, Florida 34112, or (239) 252-8380, as soon as possible, but no later than 48 hours before the scheduled event. Such reasonable accommodations will be provided at no cost to the individual.

For more information, call William Lang at 239-252-3624. ###

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January 6, 2023

FOR IMMEDIATE RELEASE

Notice of Public Meeting
Collier County Local Mitigation Strategy Working Group
Collier County, Florida
Meeting Rooms A/B, South Regional Library
8065 Lely Cultural PKWY, Naples, FL 34113

Friday, January 20, 2023
9:30 a.m.

Notice is hereby given that the **Collier County Local Mitigation Strategy Working Group** will meet at **9:30 a.m., Friday, January 20, 2023,** in Meeting Rooms A/B at the Collier County South Regional Library, 8065 Lely Cultural Parkway, Naples, Florida 34113. This is a quarterly meeting to address new disaster mitigation projects around the county.

The meeting is open to the public. Residents are encouraged to attend and provide comments on the proposed disaster mitigation initiatives. Social distancing will be observed. Entry to the conference room will be through the main entrance of the Library.

Two or more members of the Board of County Commissioners may be present and participate at the meeting. The subject matter of this meeting may be an item for discussion and action at a future Board of County Commissioners meeting.

All interested parties are invited to attend, and to register to speak. All registered public speakers will be limited to three minutes unless permission for additional time is granted by the chairman.

Collier County Ordinance Number 2004-05 requires that all lobbyists shall, before engaging in any lobbying activities (including, but not limited to, addressing the Board of County Commissioners, an advisory board or quasi-judicial board), register with the Clerk to the Board at the Board Minutes and Records Department.

Anyone who requires an auxiliary aid or service for effective communication, or other reasonable accommodations to participate in this proceeding, should contact the Collier County Facilities Management Division, located at 3335 Tamiami Trail E., Suite 101, Naples, Florida 34112, or (239) 252-8380, as soon as possible, but no later than 48 hours before the scheduled event. Such reasonable accommodations will be provided at no cost to the individual.

For more information, call William Lang at 239-252-3624.

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March 08, 2022

FOR IMMEDIATE RELEASE

Notice of Public Meeting
Collier County Local Mitigation Strategy Working Group Special Meeting for DR-4673-FL
South Regional Library, Conference Rooms A/B, 8065 Lely Cultural PKWY
Naples, FL 34113
Collier County, Florida

Friday, March 24, 2022
9:30 a.m.

Notice is hereby given that the ***Collier County Local Mitigation Strategy Working Group*** will meet at ***9:30 a.m. Friday, March 24th,*** at the South Regional Library, Conference Rooms A/B, Naples, Florida 34113. The purpose of this special meeting is to review proposed projects and develop the project priority letter that will accompany the applicable Hazard Mitigation Grant Program (DR-4673-FL | Hurricane Ian) project application.

About the public meeting:

Two or more members of the Board of County Commissioners may be present and may participate at the meeting. The subject matter of this meeting may be an item for discussion and action at a future Board of County Commissioners meeting.

All interested parties are invited to attend, and to register to speak. All registered public speakers will be limited to three minutes unless permission for additional time is granted by the chairman.

Collier County Ordinance No. 2004-05 requires that all lobbyists shall, before engaging in any lobbying activities (including, but not limited to, addressing the Board of County Commissioners, an advisory board or quasi-judicial board), register with the Clerk to the Board at the Board Minutes and Records Department.

Anyone who requires an auxiliary aid or service for effective communication, or other reasonable accommodations to participate in this proceeding, should contact the Collier County Facilities Management Division, located at 3335 Tamiami Trail E., Suite 101, Naples, Florida 34112, or (239) 252-8380, as soon as possible, but no later than 48 hours before the scheduled event. Such reasonable accommodations will be provided at no cost to the individual.

For more information, call the William Lang at 239-252-3624.

###

Collier County Government

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Naples, Florida 34112-5746

April 10, 2023

FOR IMMEDIATE RELEASE

Notice of Public Meeting
Collier County Local Mitigation Strategy Working Group
Collier County, Florida

April 21, 2023
9:30 a.m.

Notice is hereby given that the **Collier County Local Mitigation Strategy Working Group** will meet on **Friday, April 21, at 9:30 a.m.** at the South Regional Library, Meeting Rooms A/B, Naples, Florida. The purpose of this regular meeting is to review proposed projects and develop the project priority letter that will accompany the applicable Hazard Mitigation Grant Program (DR-4673-FL | Hurricane Ian) project application.

About the public meeting:

Two or more members of the Board of County Commissioners may be present and may participate at the meeting. The subject matter of this meeting may be an item for discussion and action at a future Board of County Commissioners meeting.

All interested parties are invited to attend, and to register to speak. All registered public speakers will be limited to three minutes unless changed by the chairman.

Collier County Ordinance No. 2004-05 requires that all lobbyists shall, before engaging in any lobbying activities (including, but not limited to, addressing the Board of County Commissioners, an advisory board or quasi-judicial board), register with the Clerk to the Board at the Board Minutes and Records Department.

Anyone who requires an auxiliary aid or service for effective communication, or other reasonable accommodations to participate in this proceeding, should contact the Collier County Facilities Management Division, located at 3335 Tamiami Trail E., Suite 101, Naples, Florida 34112, or (239) 252-8380, as soon as possible, but no later than 48 hours before the scheduled event. Such reasonable accommodations will be provided at no cost to the individual.

For more information, call William Lang at (239) 252-3624.

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Collier County Government

Communications, Government & Public Affairs
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Naples, Florida 34112-5746

June 16, 2023

FOR IMMEDIATE RELEASE

Notice of Public Meeting
Collier County Local Mitigation Strategy Working Group
Collier County, Florida

July 21, 2023
9:30 a.m.

Notice is hereby given that the **Collier County Local Mitigation Strategy Working Group** will meet on **Friday, July 21, 2023, at 9:30 a.m.** at the South Regional Library, Meeting Rooms A/B, Naples, Florida. The purpose of this regular meeting is to review proposed projects and develop the project priority letter that will accompany the applicable Hazard Mitigation Grant Program (DR-4673-FL-Hurricane Ian & DR-4680-FL-Hurricane Nicole) project application.

About the public meeting:

Two or more members of the Board of County Commissioners may be present and may participate at the meeting. The subject matter of this meeting may be an item for discussion and action at a future Board of County Commissioners meeting.

All interested parties are invited to attend, and to register to speak. All registered public speakers will be limited to three minutes unless changed by the chairman.

Collier County Ordinance No. 2004-05 requires that all lobbyists shall, before engaging in any lobbying activities (including, but not limited to, addressing the Board of County Commissioners, an advisory board or quasi-judicial board), register with the Clerk to the Board at the Board Minutes and Records Department.

Anyone who requires an auxiliary aid or service for effective communication, or other reasonable accommodations to participate in this proceeding, should contact the Collier County Facilities Management Division, located at 3335 Tamiami Trail E., Suite 101, Naples, Florida 34112, or (239) 252-8380, as soon as possible, but no later than 48 hours before the scheduled event. Such reasonable accommodations will be provided at no cost to the individual.

For more information, call the Collier County Emergency Management Division at (239) 252-3600.

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Collier County Government

Communications, Government & Public Affairs
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Naples, Florida 34112-5746

August 14, 2023

FOR IMMEDIATE RELEASE

Notice of Public Meeting
Collier County Local Mitigation Strategy Working Group
Collier County, Florida

August 25, 2023
9:30 a.m.

Notice is hereby given that the **Collier County Local Mitigation Strategy Working Group** will meet on **Friday, August 25, 2023, at 9:30 a.m.** at the South Regional Library, Meeting Rooms A/B, Naples, Florida. The purpose of this regular meeting is to review proposed projects and develop the project priority letter that will accompany the applicable Hazard Mitigation Grant Program (DR-4673-FL-Hurricane Ian & DR-4680-FL-Hurricane Nicole) project application.

About the public meeting:

Two or more members of the Board of County Commissioners may be present and may participate at the meeting. The subject matter of this meeting may be an item for discussion and action at a future Board of County Commissioners meeting.

All interested parties are invited to attend, and to register to speak. All registered public speakers will be limited to three minutes unless changed by the chairman.

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For more information, call the William Lang at 239-252-1070.

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September 29, 2023

FOR IMMEDIATE RELEASE

Notice of Public Meeting
Collier County Local Mitigation Strategy Working Group
Collier County, Florida
Meeting Rooms A/B, South Regional Library
8065 Lely Cultural PKWY, Naples, FL 34113

Thursday, October 12, 2023
9:30 a.m.

Notice is hereby given that the **Collier County Local Mitigation Strategy Working Group** will meet at **9:30 a.m., Thursday, October 12, 2023,** in Meeting Rooms A/B at the Collier County South Regional Library, 8065 Lely Cultural Parkway, Naples, Florida 34113. This is a quarterly meeting to address new disaster mitigation projects around the county.

The meeting is open to the public. Residents are encouraged to attend and provide comments on the proposed disaster mitigation initiatives. Social distancing will be observed. Entry to the conference room will be through the main entrance of the Library.

Two or more members of the Board of County Commissioners may be present and participate at the meeting. The subject matter of this meeting may be an item for discussion and action at a future Board of County Commissioners meeting.

All interested parties are invited to attend, and to register to speak. All registered public speakers will be limited to three minutes unless permission for additional time is granted by the chairman.

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For more information, call Jennifer Schmidt at 239-252-3603.

###

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November 30, 2023

FOR IMMEDIATE RELEASE

Notice of Public Meeting
Collier County Local Mitigation Strategy Working Group
Collier County, Florida
Meeting Rooms A/B, South Regional Library
8065 Lely Cultural PKWY, Naples, FL 34113

Friday, December 08, 2023
9:30 a.m.

Notice is hereby given that the **Collier County Local Mitigation Strategy Working Group** will meet at **9:30 a.m., Friday, December 08, 2023,** in Meeting Rooms A/B at the Collier County South Regional Library, 8065 Lely Cultural Parkway, Naples, Florida 34113. This is a quarterly meeting to address new disaster mitigation projects around the county.

The meeting is open to the public. Residents are encouraged to attend and provide comments on the proposed disaster mitigation initiatives. Social distancing will be observed. Entry to the conference room will be through the main entrance of the Library.

Two or more members of the Board of County Commissioners may be present and participate at the meeting. The subject matter of this meeting may be an item for discussion and action at a future Board of County Commissioners meeting.

All interested parties are invited to attend, and to register to speak. All registered public speakers will be limited to three minutes unless permission for additional time is granted by the chairman.

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For more information, call Jennifer Schmidt at 239-252-3603.

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Collier County Government

Communications, Government & Public Affairs
3299 Tamiami Trail E., Suite 102
Naples, Florida 34112-5746

January 5, 2024

FOR IMMEDIATE RELEASE

Notice of Public Meeting
Collier County Local Mitigation Strategy Working Group
Collier County, Florida

January 19, 2024
9:30 a.m.

Notice is hereby given that the **Collier County Local Mitigation Strategy Working Group** will meet on **Friday, January 19,** at **9:30 a.m.,** in Meeting Rooms A/B at the Collier County South Regional Library, 8065 Lely Cultural Parkway, Naples, Florida. This is a quarterly meeting to address new disaster mitigation projects around the county.

The meeting is open to the public. Residents are encouraged to attend and provide comments on the proposed disaster mitigation initiatives.

Two or more members of the Board of County Commissioners may be present and participate at the meeting. The subject matter of this meeting may be an item for discussion and action at a future Board of County Commissioners meeting.

All interested parties are invited to attend, and to register to speak. All registered public speakers will be limited to three minutes unless changed by the chairman.

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For more information, call Jennifer Schmidt at (239) 252-3603.

###

Collier County Government

Communications, Government & Public Affairs
3299 Tamiami Trail E., Suite 102
Naples, Florida 34112-5746

April 5, 2024

FOR IMMEDIATE RELEASE

Notice of Public Meeting
Collier County Local Mitigation Strategy Working Group
Collier County, Florida

April 19, 2024
9:30 a.m.

Notice is hereby given that the **Collier County Local Mitigation Strategy Working Group** will meet on **Friday, April 19,** at **9:30 a.m.,** in Meeting Rooms A/B at the Collier County South Regional Library, 8065 Lely Cultural Parkway, Naples, Florida. This is a quarterly meeting to address new disaster mitigation projects around the county.

The meeting is open to the public. Residents are encouraged to attend and provide comments on the proposed disaster mitigation initiatives.

Two or more members of the Board of County Commissioners may be present and participate at the meeting. The subject matter of this meeting may be an item for discussion and action at a future Board of County Commissioners meeting.

All interested parties are invited to attend, and to register to speak. All registered public speakers will be limited to three minutes unless changed by the chairman.

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For more information, call Amy Howard at (239) 252-3608.

###

Collier County Government

Communications, Government & Public Affairs
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Naples, Florida 34112-5746

July 15, 2024

FOR IMMEDIATE RELEASE

Notice of Public Meeting
Collier County Local Mitigation Strategy Working Group
Collier County, Florida

July 19, 2024
9:30 a.m.

Notice is hereby given that the **Collier County Local Mitigation Strategy Working Group** will meet on **Friday, July 19, 2024,** at **9:30 a.m.,** in Meeting Rooms A/B at the Collier County South Regional Library, 8065 Lely Cultural Parkway, Naples, Florida. This is a quarterly meeting to address new disaster mitigation projects around the county.

The meeting is open to the public. Residents are encouraged to attend and provide comments on the proposed disaster mitigation initiatives.

Two or more members of the Board of County Commissioners may be present and participate at the meeting. The subject matter of this meeting may be an item for discussion and action at a future Board of County Commissioners meeting.

All interested parties are invited to attend, and to register to speak. All registered public speakers will be limited to three minutes unless changed by the chairman.

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For more information, call Amy Howard at (239) 252-3608.

###

Collier County Government

Communications, Government & Public Affairs
3299 Tamiami Trail E., Suite 102
Naples, Florida 34112-5746

October 21, 2024

FOR IMMEDIATE RELEASE

Notice of Public Meeting
Collier County Local Mitigation Strategy Working Group
Collier County, Florida

November 8, 2024
9:30 a.m.

Notice is hereby given that the **Collier County Local Mitigation Strategy Working Group** will meet on **Friday, November 8, 2024,** at **9:30 a.m.,** in Meeting Rooms A/B at the Collier County South Regional Library, 8065 Lely Cultural Parkway, Naples, Florida. This is a quarterly meeting to address new disaster mitigation projects around the county.

The meeting is open to the public. Residents are encouraged to attend and provide comments on the proposed disaster mitigation initiatives.

Two or more members of the Board of County Commissioners may be present and participate at the meeting. The subject matter of this meeting may be an item for discussion and action at a future Board of County Commissioners meeting.

All interested parties are invited to attend, and to register to speak. All registered public speakers will be limited to three minutes unless changed by the chairman.

Collier County Ordinance Number 2004-05 requires that all lobbyists shall, before engaging in any lobbying activities (including, but not limited to, addressing the Board of County Commissioners, an advisory board or quasi-judicial board), register with the Clerk to the Board at the Board Minutes and Records Department.

Anyone who requires an auxiliary aid or service for effective communication, or other reasonable accommodations to participate in this proceeding, should contact the Collier County Facilities Management Division, located at 3335 Tamiami Trail E., Suite 101, Naples, Florida 34112, or (239) 252-8380, as soon as possible, but no later than 48 hours before the scheduled event. Such reasonable accommodations will be provided at no cost to the individual.

For more information, call Amy Howard at (239) 252-3608.

###

D

ANNEX D: Potential Grant Funding Sources

ANNEX D

Potential Grant Funding Sources

(An excel spreadsheet of the following information is available upon request.)

Airport Improvement Program (AIP)

- Grantor Name: United States Department of Transportation/Federal Aviation Administration
- Purpose: To assist sponsors, owners, or operators of public-use airports in the development of a nationwide system of airports adequate to meet the needs of civil aeronautics.
- Eligibility: States, counties, municipalities, U.S. Territories and possessions, and other public agencies, including an Indian tribe
- Criteria/Use: Grants can be made for integrated airport system planning in a specific area; and airport master planning, construction, or rehabilitation at a public-use airport or a portion thereof
- Funding Mechanism: Project Grants; Advisory Services and Counseling
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: Large and Medium Primary Hub Airports: These airports are responsible for 25% of eligible project costs, with the AIP grant covering the remaining 75%. For noise program implementation projects, the local match requirement is reduced to 20%, with the AIP covering 80%. Small Primary, Reliever, and General Aviation Airports: These airports typically have a local match requirement ranging from 5% to 10% of eligible project costs, with the AIP grant covering 90% to 95%. The exact percentage depends on statutory requirements and specific project details.
- Deadline: Contact Agency
- Applicability to Mitigation: This program is the primary federal funding source for improvements and expansions of medium-scale to large-scale airports. As such, it is a valuable mitigation program for potential disasters related to airport and civil aviation operations.

Alcohol, Tobacco and Firearms Training Assistance (None)

- Grantor Name: United States Department of the Treasury/Bureau of Alcohol, Tobacco and Firearms
- Purpose: To help participants identify the laws relating to alcohol, tobacco, firearms and explosives; to provide training in specific investigative skills and techniques; and, to help State, county, and local law enforcement officers improve their law enforcement capabilities in the organized crime area, including arson, undercover, firearms and explosives investigations.
- Eligibility: State, county, and local law enforcement agencies. Participation is limited to non-uniformed police personnel engaged in firearms and arson investigations, or are in the process of being assigned or promoted to such non-uniformed assignments
- Criteria/Use: Training programs in areas of: Identification of the Firearms Problem; Motives and Analysis of Applicable Federal, State and Local Laws; Laboratory Capability; Sources of Information; Interviewing; Investigative Techniques; and Case Management.

- Funding Mechanism: Grants, Specialized Services
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: None
- Deadline: Contact Agency
- Applicability to Mitigation: This is a good training program for local police agencies. Training, in this instance, would serve as mitigation for civil unrest, violent crime, and terrorist acts

Assistance to Firefighters Grants Program (AFG)

- Grantor Name: United States Department of Homeland Security/Federal Emergency Management Agency/United States Fire Administration
- Purpose: To help rural, urban and suburban fire departments better train, prepare and equip themselves; primary goal is to provide assistance to meet fire departments' firefighting and emergency response needs. This program seeks to support departments that lack the tools and resources necessary to protect the health and safety of the public and their firefighting personnel with respect to fire and all other hazards they may face.
- Eligibility: Fire departments of a State, which are an agency or organization that has a formally recognized arrangement with a State, territory, local, or tribal authority (city, county, parish, fire district, township, town, or other governing body) A municipality or fire district may submit an application on behalf of a fire department when the fire department lacks the legal status to do, but when a municipality or fire district submits an application on behalf of a fire department, the fire department is precluded from submitting an additional application on its own.
- Criteria/Use: May submit only one application per program year.
- Funding Mechanism: Grants
- Overall Funding Available: $750,000,000.00
- Funding Amount: Ranged from $6,000 to $250,000 in previous years; limits vary according to activity
- Match Requirements: Jurisdictions with 20,000 or fewer residents: A 5% cost share is required. Jurisdictions with more than 20,000 but not more than 1 million residents: A 10% cost share is required. Jurisdictions with more than 1 million residents: A 15% cost share is required.
- Deadline: December 20, 2024
- Applicability to Mitigation: Improvement to fire operations and safety, fire prevention and acquisition of firefighting vehicles all contribute to fire departments' ability to respond to and mitigate against incidents of hazardous materials and natural disaster.

Brownfields Assessment, Revolving Loan Fund and Cleanup Grants (Brownfields Program)

- Grantor Name: United States Environmental Protection Agency/Office of Brownfields Cleanup and Redevelopment
- Purpose: Assessment grants provide funding for a grant recipient to inventory, characterize, assess, and conduct cleanup and redevelopment planning and community involvement

related to brownfield sites; Revolving Loan Fund (RLF) grants provide funding for a grant recipient to capitalize a revolving loan fund and to provide subgrants to carry out cleanup activities at brownfield sites; Cleanup grants provide funding for a grant recipient to carry out cleanup activities at brownfield sites.

- Eligibility: Entities, including nonprofit organizations, that own the property they wish to clean up
- Criteria/Use: Specific criteria apply to each program; check website for details
- Funding Mechanism: Grants and loans
- Overall Funding Available: $100,000,000 estimate in FY 05 for all programs; approximately 200 grants will be awarded
- Funding Amount: Assessment - up to $400,000 if doing communitywide and site specific; Revolving Loan - up to $1,000,000; Cleanup - up to $200,000 per site
- Match Requirements: Assessment Grants: These grants do not require a cost share or matching funds from recipients.
  EPA Cleanup Grants: Traditionally, Cleanup Grants have required a 20% cost share, which could be met through contributions of money, labor, materials, or services. However, consistent with the direction on cost sharing in the Bipartisan Infrastructure Law, a cost share is not required for Fiscal Year 2024 (FY24).
  EPA Revolving Loan Fund (RLF) Grants: Similar to Cleanup Grants, RLF Grants have typically required a 20% cost share. The Bipartisan Infrastructure Law has also waived this requirement for FY24.
- Deadline: 2004-11-12 00:00:00
- Applicability to Mitigation: Source of funds for clean up and redevelopment of sites which may have been impacted by toxic pollutants.

Brownfields Training, Research and Technical Assistance Grants (Brownfields Program)

- Grantor Name: United States Environmental Protection Agency/Office of Brownfields Cleanup and Redevelopment
- Purpose: Financial assistance to facilitate “the inventory of brownfield sites, site assessments, remediation of brownfield sites, community involvement and site preparation” to focus brownfields programmatic (goals) attention on the environmental and human health conditions in low income communities and socio-economically disadvantaged communities unable to draw on alternative sources of funding for assessment or cleanup of brownfields and their subsequent redevelopment and to provide technical assistance to communities which will enable them to stimulate economic and other beneficial reuses.
- Eligibility: Governmental applicants and non-profit organizations; public and non-profit private universities are eligible as well.
- Criteria/Use: Must emphasize: 1) Community Involvement in Low-income and Socio-Economically Disadvantaged Communities, 2) Integrated Approaches to Brownfields Cleanup and Redevelopment in Low-income and Socio-Economically Disadvantaged Communities, and 3) How the Economics of Brownfields Cleanup and Redevelopment Impact Low-income and Socio-Economically Disadvantaged Communities
- Funding Mechanism: Cooperative agreement

- Funding Amount: $100,000.00
- Match Requirements: None, however leveraging of other funding is considered during ranking process
- Deadline: 11/16/2004
- Applicability to Mitigation: Source of funds for clean up and redevelopment of sites which may have been impacted by toxic pollutants.

Building Resilient Infrastructure and Communities Program (BRIC)

- Grantor Name: United States Federal Emergency Management Agency
- Purpose: The BRIC program supports states, local communities, tribes, and territories in implementing pre-disaster hazard mitigation projects. It emphasizes infrastructure projects and community resilience.
- Eligibility: States, territories, federally recognized tribes, and local governments
- Criteria/Use: Focuses on infrastructure improvements to increase community resilience. BRIC emphasizes pre-disaster planning and large-scale infrastructure projects that increase community resilience to natural hazards, making it a key funding source for mitigation efforts.
- Funding Mechanism: Competetive Grant
- Overall Funding Available: FY 2021 $1 Billion, FY 2022 $2.3 Billion, FY 2023 Nearly $1 Billion
- Funding Amount: Historically, competitive projects have received awards ranging from $1 million to $50 million based on project scale and feasibility. Large infrastructure projects with significant regional impacts are prioritized for larger awards.
- Match Requirements: 25%
- Deadline: 2/29/2024
- Applicability to Mitigation: BRIC emphasizes proactive efforts to reduce risks before disasters occur, aligning with FEMA’s goal of reducing the cost and impact of disasters. Projects funded by BRIC aim to prevent or minimize damage from natural hazards like floods, hurricanes, wildfires, earthquakes, and more. BRIC funding complements efforts to integrate resilience into long-term community planning
- Applicable Collier Mitigation Projects: BRIC can support projects identified in the Local Mitigation Strategy (LMS), such as stormwater infrastructure upgrades, evacuation route improvements, and flood mitigation initiatives.

Capitalization Grants for Clean Water State Revolving Funds (None)

- Grantor Name: United States Environmental Protection Agency
- Purpose: To fund activities related to protection of water quality. Examples may include construction of wastewater treatment plants, control of runoff, estuary improvement projects, wet weather flow control for sewers and storm sewers, alternative wastewater treatment technologies, and preparation of landfills and riparian buffers, among other types of projects.
- Eligibility: States, territories and possessions of the U.S., including the District of Columbia. These entities may use allotments under Title II of the Clean Water Act as grants for the construction of municipal wastewater facilities. Indian tribes are eligible to receive capitalization grants

- Criteria/Use: The purpose of this program is to enable States to create State Revolving Funds (SRFs) through a program of capitalization grants to States which will provide a long term source of State financing for construction of wastewater treatment facilities and implementation of other water quality management activities.
- Funding Mechanism: Formula grants
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: 20%
- Deadline: Contact Agency
- Applicability to Mitigation: This is a mitigation funding source for disasters which involve the damage or destruction of water and wastewater treatment plants

Capitalization Grants for Drinking Water State Revolving Funds (None)

- Grantor Name: United States Environmental Protection Agency
- Purpose: To create Drinking Water State Revolving Funds (DWSRFs) through a program which provides capitalization grants to States in order to establish a long-term source of State financing for the costs of infrastructure needed to achieve or maintain compliance with Safe Drinking Water Act (SDWA) requirements, and to protect public health. The State may also use the Federal funds to establish new programs that emphasize the prevention of contamination problems through water source protection and enhanced water systems management procedures.
- Eligibility: The States and Puerto Rico are eligible to receive capitalization grants. The District of Columbia, U.S. Territories, and Indian tribes are eligible to receive direct grants from the program. The funds are to be used by the States to provide loans and other financial assistance to water supply utilities that are publicly and privately owned, or which operate non-profit drinking water systems for small communities.
- Criteria/Use: Capitalization grants are available to each State for the purpose of establishing a Drinking Water State Revolving Fund (DWSRF) for providing assistance for construction of potable water systems at the local level
- Funding Mechanism: Formula grants
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: 20%
- Deadline: Contact Agency
- Applicability to Mitigation: This is a mitigation funding source for potential failure of small potable water treatment plants

Chemical Emergency Preparedness and Prevention Technical Assistance Grant Program (None)

- Grantor Name: United States Environmental Protection Agency
- Purpose: To provide financial assistance to States and Indian Tribes for chemical emergency planning, chemical accident prevention, and community right-to-know programs which are established to prevent or eliminate unreasonable risk to the health and environment of communities within the State.

- Eligibility: The States, the District of Columbia, Puerto Rico, the U.S. Virgin Islands, the Northern Mariana Islands, and Federally Recognized Indian Tribes. Beneficiaries include States, Local Emergency Planning Committees, and local emergency responders. (Note: In Florida, the Local Emergency Planning Committees (LEPCs) are staffed by the Regional Planning Councils.
- Criteria/Use: Projects which address extremely hazardous substances or high profile chemicals and/or high risk areas are especially of interest. The grant money may not supplant State or Tribal funds already being spent. Because these awards are being made under the Toxic Substances Control Act (TSCA) authorities, all grant proposals must be related to activities involving chemicals subject to regulation under the TSCA.
- Funding Mechanism: Project grants
- Overall Funding Available: $1,000,000.00
- Funding Amount: Contact Agency
- Match Requirements: 25%
- Deadline: Contact Agency
- Applicability to Mitigation: This is the primary federal funding source for most State and local hazardous material programs. As such, it is an excellent mitigation funding source for chemical emergency incidents.

Clean Water Act Section 319 Grants/Nonpoint Source Implementation Grants (319 Program)

- Grantor Name: United States Environmental Protection Agency
- Purpose: Formula funds are awarded to states (state agencies) to implement certain non-point source programs pursuant to Section 319(h) of the Clean Water Act, including wetland restoration.
- Eligibility: Applicants can include: States, the District of Columbia, American Samoa, Guam, Northern Marianas, Puerto Rico, Pacific Trust Territories, Virgin Islands, and Indian Tribes. Beneficiaries can include: State and local governments, interstate and intrastate agencies, public and private nonprofit organizations and institutions
- Criteria/Use: Requires maintenance of effort; proceeds of State grants may be used for financial assistance to individual persons in the case of demonstration projects only; a limit on administrative costs; annual reporting requirements; and EPA determinations of adequate State progress before additional funding.
- Funding Mechanism: Formula grants
- Overall Funding Available: $100,000,000 in 1997
- Funding Amount: Contact Agency
- Match Requirements: Federal participation is limited to 60%, and an EPA-approved State non-point source management program is required.
- Deadline: Contact Agency
- Applicability to Mitigation: This is a good program for local governments; however, funding is through the Florida Department of Environmental Protection through a competitive grant process; thus the usefulness of this program to smaller local governments may be limited

Coastal Zone Management Program (CZM)

- Grantor Name: United States Department of Commerce/National Oceanic and Atmospheric Administration
- Purpose: Funds for planning and implementing sustainable management of coastal zones. Section 306 Grants are for programs at the state level and for coastal hazard mitigation strategies, including the development of local hazard mitigation plans, outreach and education activities, monitoring programs, and projects to enhance program management. Section 308 Grants, The Coastal Zone Management Fund, provides emergency grants to address a wide range of unforeseen or disaster-related circumstances. Section 309 Grants are competitive funds designed to enhance state programs, including planning and land regulation activities, enhancing natural features, and preventative measures.
- Eligibility: State, tribal, and local entities
- Criteria/Use: Through FDEP, the State has an annual funding program which allows coastal zone program monies to be passed on to local governments. In order to be funded, the project must be consistent with the State's approved Coastal Zone Management Program. The consistency review process is coordinated by the Florida Department of Community Affair's Coastal Zone Management Office.
- Funding Mechanism: Grants and cooperative agreements
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: Contact Agency
- Deadline: Contact Agency
- Applicability to Mitigation: The State's Coastal Program consists of the majority of the State statutes concerning environmental regulations, as well as portions of Chapters 163 and 180, Florida Statutes, dealing with the local comprehensive planning requirements. In that sense, the program is a mitigation funding source for hurricane and coastal storm disasters, and for inappropriate planning and zoning decisions which might contribute to potential future disasters.

Community Assistance Program – State Support Services Element (CAP)

- Grantor Name: United States Department of Homeland Security/Federal Emergency Management Agency
- Purpose: To ensure that communities participating in the National Flood Insurance Program (NFIP) are achieving flood loss reduction measures consistent with program direction. The program is intended to identify, prevent, and resolve floodplain management issues in participating communities before they require compliance action by FEMA.
- Eligibility: The direct beneficiary of the CAP-SSSE is the individual State receiving financial assistance. In addition, participating NFIP communities and local governments which receive floodplain management and flood loss reduction assistance provided by the State are also (indirect) beneficiaries as a consequence of the services they receive.
- Criteria/Use: The CAP-SSSE is a product-oriented program directly related to the flood loss reduction objectives of the NFIP.
- Funding Mechanism: Cooperative agreement
- Overall Funding Available: $5,000,000 in 1997

- Funding Amount: Contact Agency
- Match Requirements: 75% federal maximum and 25% minimum State cost sharing basis
- Deadline: Contact Agency
- Applicability to Mitigation: This program does not provide any form of direct mitigation funding to local governments. However, the program is a source of funding for State Programs and, thus, indirectly impacts local governments.

Community Development Block Grant Mitigation (CDBG-MIT)

- Grantor Name: U.S. Department of Housing and Urban Development (HUD),
- Purpose: DBG-MIT is designed to support mitigation activities that reduce risks from future disasters, focusing on long-term resilience and protection of critical infrastructure, housing, and community facilities.
- Eligibility: States, territories, and tribal governments. Local governments and non-profit organizations (through state sub-grants). Projects must serve areas impacted by presidentially declared disasters within specific timeframes defined by HUD. Projects must primarily benefit low- and moderate-income (LMI) populations.
- Criteria/Use: CDBG-MIT funds can be used for:
- Funding Mechanism: Grants
- Overall Funding Available: Varies by State and Disaster Allocation
- Funding Amount: Contact Agency
- Match Requirements: Typically, no local match is required for CDBG-MIT projects. However, recipients are encouraged to align projects with other funding sources for maximum impact.
- Deadline: Contact Agency
- Applicability to Mitigation: Projects could include flood mitigation in low-income neighborhoods, stormwater infrastructure upgrades, or retrofitting community centers as emergency shelters. CDBG-MIT can fund projects identified in the Collier County LMS that address: Flooding in vulnerable areas.
- Applicable Collier Mitigation Projects: CDBG-MIT funds can be used for:Infrastructure Improvements: Projects such as upgrading stormwater systems, elevating roads, and flood protection measures.

Community Development Block Grant Program (CDBG)

- Grantor Name: United States Department of Housing and Urban Development THROUGH Collier County Financial Administration and Housing Department
- Purpose: Annually allocated to Collier County to develop viable urban communities through decent housing, a suitable living environment, and by expanding economic activities, principally for low- and moderate-income persons.
- Eligibility: Non profit organizations (501(c)3 and governmental organizations
- Criteria/Use: Contact Collier County Financial Administration and Housing Department for details and current priorities outlined in annual plan
- Funding Mechanism: Grants
- Overall Funding Available: varies from year to year
- Funding Amount: Contact Agency
- Match Requirements: none, although applicant commitment gives project higher ranking

- Deadline: Contact Agency
- Applicability to Mitigation: Funds call also fund 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, and extraordinary increases in the level of necessary public services.

Community Disaster Loans (None)

- Grantor Name: United States Department of Homeland Security/Federal Emergency Management Agency
- Purpose: To provide loans to any local government that has suffered substantial loss of tax and other revenues, and which is in a geographic area in which the President designates a major disaster exists. The funds can only be used to maintain existing functions of a municipal operating character and the local government must demonstrate a need for financial assistance.
- Eligibility: Applicants must be in a designated major disaster area and must demonstrate that they meet the specific conditions of FEMA Disaster Assistance Regulations 44 CFR, Part 206, Subpart K, Community Disaster Loans. To be eligible the applicant must demonstrate: 1) a substantial loss of tax and other revenues, as a result of a major disaster; and 2) a need for financial assistance to perform its governmental functions. Any local government within a designated disaster area is a potential beneficiary.
- Criteria/Use: Loans are made only to local governments or other political subdivisions of the State, and are based on need, not to exceed 25 percent of the annual operating budget of the local government for the fiscal year in which the disaster occurs. The funds cannot be used to meet the non-federal share of any Federal program, finance capital improvements, or repair or restore public facilities
- Funding Mechanism: Direct loans
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: 25%
- Deadline: Contact Agency
- Applicability to Mitigation: This is an excellent mitigation program for the purpose of enabling local governments to temporarily (occasionally, permanently) recoup their disaster period operating expenses.

Comprehensive Improvement Assistance Program for Public and Indian Housing (CIAP)

- Grantor Name: United States Department of Housing and Urban Development
- Purpose: To provide capital funds to improve the physical condition and to upgrade the management and operation of existing Public and Indian Housing projects to assure that they continue to be available to serve low-income families.
- Eligibility: Public Housing Agencies (PHAs) and Indian Housing Authorities (IHAs) operating PHA/IHA-owned low-income housing projects under an existing Annual Contributions

Contract (ACC) with fewer than 250 units. The residents of the housing projects are the program's ultimate beneficiaries.
- Criteria/Use: Comprehensive Improvement Assistance Program (CIAP) funding may be used to fund capital improvements, as well as major repairs, management improvements, and planning costs.
- Funding Mechanism: Grants
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: None
- Deadline: Contact Agency
- Applicability to Mitigation: This is a good funding source for local housing agencies which are contemplating modernizing and upgrading their existing public housing projects. The program also covers the establishment of new public housing projects. This is disaster mitigation in the sense that sub-standard housing is less likely to withstand a disaster than is "up-to-code" housing.

Disaster Mitigation Planning and Technical Assistance (None)

- Grantor Name: United States Department of Commerce/Economic Development Administration
- Purpose: Primarily for economic development initiatives, but also for hazard mitigation when the focus is on creating disaster resistant jobs and workplaces; monies are applicable because projects related to developing infrastructure are also making the community more disaster resistant.
- Eligibility: Primarily for economic development initiatives, but also for hazard mitigation when the focus is on creating disaster resistant jobs and workplaces; monies are applicable because projects related to developing infrastructure are also making the community more disaster resistant.
- Criteria/Use: Contact Agency
- Funding Mechanism: Grants
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: Contact Agency
- Deadline: Contact Agency
- Applicability to Mitigation: Primarily for economic development initiatives, but also for hazard mitigation when the focus is on creating disaster resistant jobs and workplaces; monies are applicable because projects related to developing infrastructure are also making the community more disaster resistant.

Disaster Relief Program (DRI/Disaster Recovery Initiative)

- Grantor Name: United States Department of Housing and Urban Development
- Purpose: Provides flexible grants to help cities, counties, and States recover from Presidentially declared disasters, especially in low-income areas. When disasters occur, Congress may appropriate additional funding for the CDBG and HOME programs as DRI grants to rebuild the affected areas and bring crucial seed money to start the recovery

process. Since it can fund a broader range of recovery activities than most other programs, DRI helps communities and neighborhoods that otherwise might not recover due to limited resources. DRI supplements disaster programs of the Federal Emergency Management Agency, the Small Business Administration, and the U.S. Army Corps of Engineers.

- Eligibility: States and local governments in places that have been designated by the President of the United States as disaster areas
- Criteria/Use: Examples of funded activities include: (1) buying damaged properties in a flood plain and relocating them to safer areas; (2) relocation payments for people and businesses displaced by the disaster; (3) debris removal; (4) rehabilitation of homes and buildings damaged by the disaster; (5) buying, constructing, or rehabilitating public facilities such as water and sewer systems, streets, neighborhood centers, and government buildings; (6) code enforcement; (7) home ownership activities such as down payment assistance, interest rate subsidies and loan guarantees; (8) public services (generally limited to no more than 25 percent of the grant); (9) energy conservation activities; (10) helping businesses create jobs; and (11) planning and administration costs (limited to no more than 20 percent of the grant)
- Funding Mechanism: Grants
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: None
- Deadline: Contact Agency
- Applicability to Mitigation: The funds from this program are distributed to the State, to be disbursed to local governments within declared disaster areas. This program is part of the "package" of funding sources which the federal government makes available to States which have suffered from disasters.

Disposal of Federal Surplus Real Property (None)

- Grantor Name: United States General Services Administration
- Purpose: To dispose of surplus federal property through lease, use permits, sale, exchange or donation.
- Eligibility: State and local governments are eligible to apply for surplus real property for the purpose of constructing parks, recreational facilities, correctional institutions, historical monuments, public airports, health facilities, educational institutions, facilities to serve homeless persons, replacement housing, and general public purposes.
- Criteria/Use: Surplus real and related personal property may be conveyed to eligible entities for use as public parks or recreation areas, and public health or educational uses at discounts of up to 100%. Property to be utilized for public airports, wildlife conservation, correctional facilities, replacement housing, and historic monuments, may be provided to eligible agencies at no cost. Otherwise, property planned to be utilized for general public uses can be provided, without restrictions, at a negotiated cost of fair market value or greater.
- Funding Mechanism: Varies depending on type of acquisition
- Match Requirements: None

- Applicability to Mitigation: Excellent way for a local agency to replace equipment which was damaged or lost as a result of its use in disaster response activities. Response/relief agencies can find replacement equipment and supplies within the Federal inventory.

Emergency Bank Protection (None)

- Grantor Name: United States Department of Defense/United States Army/United States Army Corps of Engineers
- Purpose: To provide protection for highways, highway bridges, essential public works, churches, hospitals, schools, and other nonprofit public services which are endangered by flood-caused erosion.
- Eligibility: States, political subdivisions of States or other responsible local agencies which have been established under State law with full authority and ability to undertake necessary legal and financial responsibilities
- Criteria/Use: The Corps of Engineers designs and constructs the project. Each project selected must be feasible from an engineering standpoint, complete within itself and economically justifiable.
- Funding Mechanism: Specialized services, Contact Agency
- Overall Funding Available: $12,500,000 spent nationwide in 1996
- Funding Amount: Non-federal interests are responsible for all project costs in excess of the Federal limit of $500,000
- Match Requirements: Anything above $500,000 project costs
- Deadline: Contact Agency
- Applicability to Mitigation: Any local government which is aware of a local critical facility which has recently been endangered by erosion of a stream bank or flowway could be an eligible local sponsor for this type of federal aid. While most of these projects are related to erosion of highways or bridge embankments, the Corps has also conducted erosion control projects for schools, hospitals, wastewater treatment plants, and other types of public facilities.

Emergency Community Water Assistance Grants (None)

- Grantor Name: United States Department of Agriculture
- Purpose: Available to rural communities when disaster strikes. Congress may appropriate funds for the program after a flood, earthquake, or other disaster if Federal assistance is warranted.
- Eligibility: Applicants must demonstrate that a significant decline in quantity or quality of water occurred within two years of the date the application was filed with RUS. Public bodies and nonprofit corporations serving rural areas, including cities or towns whose population does not exceed 10,000 people may be eligible.
- Criteria/Use: Extend, repair, or perform significant maintenance on existing water systems; construct new water lines, wells or other sources of water, reservoirs, and treatment plants; replace equipment; and pay costs associated with connection or tap fees. (2) Pay related expenses such as legal and engineering fees and environmental impact analyses, or acquire rights associated with developing sources of, treating, storing, or distributing water. (3) Achieve compliance with the requirements of the Federal Water Pollution Control Act (33

U.S.C. l et seq.) or with the Safe Drinking Water Act when noncompliance is directly related to a recent decline in quality of potable water.
- Funding Mechanism: Grants
- Overall Funding Available: $21,700,000 (FY 03)
- Funding Amount: $500,000.00
- Match Requirements: None
- Deadline: Contact Agency
- Applicability to Mitigation: Construction of new or improved facilities that are up to current standards, wind strengths, etc. is mitigation.

Emergency Management Assistance for State and Local Governments (State and Local Assistance (SLA))

- Grantor Name: United States Department of Homeland Security/Federal Emergency Management Agency
- Purpose: To encourage the development of comprehensive disaster preparedness and assistance plans, programs, capabilities, and organizations by the States and by local governments.
- Eligibility: Applications are accepted only from States; local governments and Indian Tribes are eligible to participate as sub-grantees under their States' applications.
- Criteria/Use: SLA funds may be used for necessary and essential State and local emergency management personnel and administrative expenses including salaries and benefits of emergency management personnel, essential official travel and other administrative expenses.
- Funding Mechanism: Formula grants
- Overall Funding Available: Varies from year to year
- Funding Amount: Contact Agency
- Match Requirements: Vaires
- Deadline: Contact Agency
- Applicability to Mitigation: This program covers a wide variety of activities; both at the State and local levels. Local agencies should maintain communications with their appropriate State contacts, in order to determine what kinds of activities will be eligible to receive funding during the fiscal year

Emergency Management Preparedness and Assistance Trust Fund - General (EMPA)

- Grantor Name: Florida Department of Community Affairs
- Purpose: To implement projects that will further state and local emergency management objectives
- Eligibility: State or regional agencies, local governments, and private non-profit organizations
- Criteria/Use: Eligible applicants may submit multiple applications, however, no single application shall seek or receive an award in excess of $300,000. All eligible applicants, with the exception of counties and state agencies shall be limited to no more than three (3) application submissions in an application cycle.

- Funding Mechanism: Grants
- Overall Funding Available: Contact Agency
- Funding Amount: $300,000 max.
- Match Requirements: Points awarded depending on match provided
- Deadline: To submit to County EM Department for review- January; to DEM - February
- Applicability to Mitigation: Projects that do any of the following have the potential to support mitigation: 1) promote public education on disaster preparedness and recovery issues, 2) enhance coordination of relief efforts of statewide private sector organizations, including public-private business partnership efforts, or 3) improve the training and operations capabilities of agencies assigned lead or support responsibilities in the State Comprehensive Emergency Management Plan.

Emergency Management Preparedness and Assistance Trust Fund - Municipalities (EMPA)

- Grantor Name: Florida Department of Community Affairs
- Purpose: To implement projects that will further state and local emergency management objectives
- Eligibility: Municipalities that are legally constituted
- Criteria/Use: Municipalities must have an authorized, established, and maintained emergency management program, and have signed the current Statewide Mutual Aid Agreement (SMAA) and supplied all required information and documentation such that the SMAA agreement is ready to be signed by the Division as of the date of the application deadline.
- Funding Mechanism: Grants
- Overall Funding Available: Contact Agency
- Funding Amount: $50,000.00
- Match Requirements: Points awarded depending on match provided
- Deadline: To submit to County EM Department for review- January; to DEM - February
- Applicability to Mitigation: Projects that do any of the following have the potential to support mitigation: 1) promote public education on disaster preparedness and recovery issues, 2) enhance coordination of relief efforts of statewide private sector organizations, including public-private business partnership efforts, or 3) improve the training and operations capabilities of agencies assigned lead or support responsibilities in the State Comprehensive Emergency Management Plan.

Emergency Relief Program (None)

- Grantor Name: United States Department of Transportation/Federal Highway Administration
- Purpose: To assist State Transportation agencies in planning for and developing an integrated, interconnected transportation system based upon the National Highway System (including the interstate system). The program will also assist state agencies in making transportation improvements to all public roads (excepting designated “minor collectors”). The program will also assist in repairs to federal-aid roads after disasters. The program objectives are to foster safe highway design, replace or rehabilitate deficient or obsolete bridges, and to provide for certain special purposes.

- Eligibility: State transportation agencies, or local road/bridge agencies receiving federal funds.
- Criteria/Use: Federal-aid highway funds are generally apportioned by statutory formulas to the States and restricted to roads open to the public and not functionally classified as local or rural minor collectors. Exceptions to this include planning and research activities, bridge and safety improvements which may be done on any public road. Projects in Collier County must be based on transportation planning process carried out by the Metropolitan Planning Organization (MPO) in cooperation with the State and transit operators, and be included in metropolitan plans and programs. These projects must also be included in the approved statewide transportation improvement program (STIP)
- Funding Mechanism: Formula Grants and Project Grants
- Funding Amount: Contact Agency
- Match Requirements: None
- Deadline: Contact Agency
- Applicability to Mitigation: In order to use this program for mitigation purposes, it would probably be necessary for the local transportation agency to establish some type of partnership with the Florida Department of Transportation (FDOT). Furthermore, the particular project might have to be scheduled on FDOT's five-year work program for the region. Thus, it could take several years for the project to be selected, scheduled, funded and then actually completed.

Emergency Watershed Protection Program (EWP)

- Grantor Name: United States Department of Agriculture/Natural Resources Conservation Service
- Purpose: Undertake emergency measures, including the purchase of flood plain easements, for runoff retardation and soil erosion prevention to safeguard lives and property from floods, drought, and the products of erosion on any watershed whenever fire, flood or any other natural occurrence is causing or has caused a sudden impairment of the watershed. It is not necessary for a national emergency to be declared for an area to be eligible for assistance. Program objective is to assist sponsors and individuals in implementing emergency measures to relieve imminent hazards to life and property created by a natural disaster. Activities include providing financial and technical assistance to remove debris from streams, protect destabilized streambanks, establish cover on critically eroding lands, repairing conservation practices, and the purchase of flood plain easements. The program is designed for installation of recovery measures.
- Eligibility: Public and private landowners are eligible for assistance but must be represented by a project sponsor. The project sponsor must be a public agency of state, county, or city government, or a special district.
- Criteria/Use: All EWP work must reduce threats to life and property. Furthermore, it must be economically and environmentally defensible and sound from an engineering standpoint. EWP work must yield benefits to more than one person. All work must represent the least expensive alternative.
- Funding Mechanism: Individual assistance
- Overall Funding Available: Varies depending on project

- Funding Amount: Varies depending on project
- Match Requirements: 25%
- Deadline: Contact Agency
- Applicability to Mitigation: Emergency work includes establishing quick vegetative cover on denuded land, sloping steep land, and eroding banks; opening dangerously restricted channels; repairing diversions and levees; and other emergency work; purchase of rural and agricultural floodplain easements designed to retire land from frequent flooding to preclude federal disaster payments, retire land to allow levee setbacks, or limit the use of the land.

Environmental Justice Grants to Small Community Groups (None)

- Grantor Name: United States Environmental Protection Agency
- Purpose: To provide financial assistance to community-based organizations and Tribal governments for the support of projects to design, demonstrate or disseminate practices, methods or techniques related to environmental justice.
- Eligibility: Eligible applicants include: community-based grassroots organizations, other incorporated nonprofit organizations and federally recognized Tribal Governments. Eligible beneficiaries can include: the general public, community groups, public nonprofit institutions/organizations, and federally recognized Tribal governments.
- Criteria/Use: Projects may include: 1. design, demonstration, or dissemination of environmental justice curricula, including development of educational tools and materials; 2. design and demonstration of field methods, practices, and techniques, including assessment of environmental and ecological conditions and analysis of environmental and public health problems; 3. identification, assessment or improvement of a specific local environmental justice issue or a specific environmental problem; and, 4. provision of environmental justice training or related education for teachers, faculty, or related personnel in a specific geographic area or region.
- Funding Mechanism: Grants
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: None
- Deadline: Contact Agency
- Applicability to Mitigation: The program is geared toward helping local communities educate the public about potential environmental hazards, and to alleviating such hazards when they are identified (particularly with regard to lower income areas within a local jurisdiction). Communities or groups looking for funding to clean up hazardous waste sites in residential areas, remove or reduce sources of water and air pollution, and/or seeking to halt environmental health problems should investigate this program

Fannie Mae Pilot Loan Program (None)

- Grantor Name: United States Department of Homeland Security/Federal Emergency Management Agency/Florida Department of Community Affairs
- Purpose: FEMA and DCA jointly sponsor this program. It makes consumer installment loans available to Florida homeowners to make specific disaster prevention home improvements.
- Eligibility: All single-family homeowners in Florida.

- Criteria/Use: Homeowners may borrow up to $15,000 and take up to 10 years to repay the loan.
- Funding Mechanism: Loans
- Funding Amount: $15,000.00
- Applicability to Mitigation: When Florida homeowners make improvements to their homes to protect the structure from disasters, they are potentially mitigating certain disaster related problems and reduce insurance claims and costs.

Federal & State Grant Locator Site ()

- Grantor Name: FEMA
- Purpose: One-stop search site for Federal Grants
- Eligibility: Varies
- Criteria/Use: Variety of Uses
- Funding Mechanism: Varies
- Overall Funding Available: Varies
- Funding Amount: Varies
- Match Requirements: Varies
- Deadline: Varies
- Applicability to Mitigation: Varies
- Applicable Collier Mitigation Projects: Needs to be checked first...

First Responder Anti-Terrorism Assistance (None)

- Grantor Name: United States Department of Homeland Security/Federal Emergency Management Agency
- Purpose: To enhance the capabilities of first responders in managing the consequences of terrorist acts.
- Eligibility: All fire and emergency first response agencies and law enforcement personnel who have operational and/or incident management responsibilities
- Criteria/Use: Training is provided through State fire training programs. The program is targeted to first responders, as being the individuals who will first come into contact with and have to manage terrorist acts and their consequences.
- Funding Mechanism: Grants
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: None
- Deadline: Contact Agency
- Applicability to Mitigation: These funds are provided to the State Fire College (in Florida), and aren’t really available to local agencies. However, first response agencies who either come into contact with terrorist acts, or who expect to do so, would do well to contact the State Fire College or FEMA and explore the possibility of making this training available to their employees

Fisheries Development, Utilization Research and Development (None)

- Grantor Name: United States Department of Commerce/National Oceanic and Atmospheric Administration
- Purpose: These related programs are administered by the National Marine Fisheries Service (NMF). The stated purpose of these programs is: "To increase greatly the Nation's wealth and quality of life through sustainable fisheries that support fishing industry jobs, safe and wholesome seafood, and recreational opportunities."
- Eligibility: Any United States citizen, any group of commercial interests; federal, state or local governments, or groups thereof
- Criteria/Use: Proposals must be consistent with the annual funding priorities of the applicable NMF or Regional Fisheries Council offices. Applicants should demonstrate an awareness of the fisheries resources of their region, as well as the issues or problems associated with local fisheries. Issues and problems to be addressed in the project should be supported by industry experience.
- Funding Mechanism: Grants
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: None
- Deadline: Contact Agency
- Applicability to Mitigation: Any entity meeting the eligibility requirements, and interested in fisheries enhancement could apply. Presumably, if a disaster had damaged a fisheries resource, or an economic disaster was likely, due to a fisheries collapse, program funds could be used for restoration purposes.

Flood Insurance (FIP)

- Grantor Name: United States Department of Homeland Security/Federal Emergency Management Agency/National Flood Insurance Program
- Purpose: To enable persons to purchase insurance against physical damage to or loss of buildings and/or contents therein caused by floods, mudslide (i.e., mud flow), or flood-related erosion, thereby reducing Federal disaster assistance payments, and to promote wise floodplain management practices in the Nation's flood-prone and mud flow-prone areas.
- Eligibility: Flood insurance can be made available in any community (a State or political subdivision thereof with authority to adopt and enforce floodplain management measures for the areas within its jurisdiction) that submits a properly completed application to FEMA including copies of enacted floodplain management measures consistent with the National Flood Insurance Program regulations.
- Criteria/Use: Under the Emergency Program of the National Flood Insurance Program (NFIP), property owners may buy flood insurance at a chargeable premium rate that is generally lower than a normal actuarial rate.
- Funding Mechanism: Insurance
- Funding Amount: Maximum amounts of such coverage available under the Emergency Program of the NFIP are: $35,000 for a single-family home, $100,000 for all other residential

structures, plus $10,000 per dwelling unit for any contents; for non-residential structures, an ag

- Match Requirements: None
- Applicability to Mitigation: This is the quintessential hazard mitigation program in the United States. So important is this program that it essentially drives all federal flood, storm and hurricane related disaster response programs. One of the best mitigation activities a local government could undertake would be to encourage increased resident purchase of flood insurance.

Flood Mitigation Assistance Program (FMA)

- Grantor Name: United States Department of Homeland Security/Federal Emergency Management Agency
- Purpose: To fund cost-effective measures by States and communities that reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other insurable structures. Planning grants assist state agencies and local governments in developing or updating flood mitigation plans that assess risk and propose possible mitigation actions. Project grants assist state agencies and local governments in implementing flood mitigation projects that will reduce risk of flood damage to repetitive loss properties identified in a flood mitigation plan.
- Eligibility: State agencies, local governments participating in the National Flood Insurance Program (NFIP), and qualified local organizations.
- Criteria/Use: Planning Grants may be used to assist States and communities in developing and updating flood mitigation plans. Technical Assistance Grants may be used to provide States with funding that will allow them to provide technical assistance to communities that are completing applications for Flood Mitigation Assistance (FMA) planning or project grants, or in the process of implementing FMA-funded mitigation projects. The only applicants eligible for Technical Assistance Grants are the State agencies or departments responsible for administering FMA. Project Grants may be used to assist States and communities in implementing flood mitigation projects to reduce the risk of flood damage to insurable structures
- Funding Mechanism: Project grants and formula grants
- Overall Funding Available: $20 million
- Funding Amount: Individual planning grants will not exceed $150,000 to any State agency applicant, or exceed $50,000 to any community applicant. The total planning grant made in any Fiscal Year to any State, including all communities located in the State, will not exceed
- Match Requirements: 25%
- Deadline: Contact Agency
- Applicability to Mitigation: This is a very good mitigation program for communities which are members of the NFIP and actively maintain their ratings status under the program. The primary requirement of the grant program is that the community must have or propose to develop a mitigation plan to guide proposed activities. Regional staff notes that the approved, finalized Local Mitigation Strategy may meet the criteria for such planning

Flood Plain Management Services (None)

- Grantor Name: United States Department of Defense/United States Army/United States Army Corps of Engineers
- Purpose: Section 206 of the 1960 Flood Control Act provides USACE services in planning and technical services without charge for studies, including hurricane evacuation studies, comprehensive flood plain management studies, flood damage reduction studies, urbanization impact studies, stormwater management studies, and inventories of flood-prone structures.
- Eligibility: State, tribal, and local governments
- Criteria/Use: None provided
- Funding Mechanism: Services
- Applicability to Mitigation: Planning, designing and constructing for flood control is a form of mitigation

Florida Communities Trust/Florida Forever Program (FCT)

- Grantor Name: Florida Department of Community Affairs/Florida Communities Trust
- Purpose: To facilitate the purchase of lands, for conservation and/or recreation purposes, by local governments
- Eligibility: Local governments and non-profit environmental organizations that are tax exempt under section 501(c)(3) of the United States Internal Revenue Code are eligible to apply for funding.
- Criteria/Use: Land acquisition proposals in which the local government proposes to use matching funds are viewed more favorably than outright grants. However, both types of financing can be approved.
- Funding Mechanism: Purchases, purchase agreements
- Overall Funding Available: $66 million
- Funding Amount: $6.6 million
- Match Requirements: Counties with populations greater than 75,000 and municipalities with populations greater than 10,000 are required to provide a minimum match of 25% of the total project cost. Small counties and cities that are under the above thresholds, and eligible non
- Deadline: May each year, date varies
- Applicability to Mitigation: Because of its emphasis on preservation, conservation and environmental protection, this program is often overlooked as a potential funding source for disaster mitigation. However, a partially settled area, wherein the local government has recorded periodic reoccurring flood damage, is an excellent subject for purchase with funds from this program; particularly if other (environmental) benefits can also be demonstrated.

Florida Recreation Development Assistance Program (FRDAP)

- Grantor Name: Department of Environmental Protection/Division of Recreation and Parks
- Purpose: Provides grants for acquisition or development of land for public outdoor recreation use or to construct or renovate recreational trails.
- Eligibility: Municipal and county governments or other legally constituted entities with the legal responsibility to provide public outdoor recreation.

- Criteria/Use: Applicants may submit up to two applications during the submission period
- Funding Mechanism: Grants
- Overall Funding Available: Contact Agency
- Funding Amount: $200,000.00
- Match Requirements: The match requirements depend on the total project cost: 1) $50,000 or less requires a 0% match, 2) $50,001 - 150,000, requires a 25% match, and 3) over $150,000, requires a 50% match. Matching funds may be in the form of cash, the value of undeveloped l
- Deadline: October each year
- Applicability to Mitigation: Acquisition of land or improvement of acquired land may be mitigation.

Florida Warning and Information Network (None)

- Grantor Name: Florida Department of Community Affairs
- Purpose: This is a state-sponsored program to harden existing facilities against disasters events. The program contains some new elements and may be applicable to needs identified by participating municipalities.
- Eligibility: Contact Agency
- Criteria/Use: None provided
- Funding Mechanism: Contact Agency
- Overall Funding Available: $4.66 million
- Funding Amount: Contact Agency
- Match Requirements: Contact Agency
- Deadline: Contact Agency
- Applicability to Mitigation: Hardening facilities against hazards is a form of mitigation

Food Distribution (Food Donation Program)

- Grantor Name: United States Department of Agriculture
- Purpose: To improve the diets of school-age and pre-school children, the elderly, needy persons in charitable institutions, and other individuals requiring food assistance. To increase the market for domestically produced foods which have been acquired under surplus removal or price support programs.
- Eligibility: State, territorial and federal agencies involved in food distribution programs, or other entities who receive and distribute donated food, school systems and child-feeding programs, charitable institutions to the extent that they serve needy persons, emergency feeding operations, elderly nutrition programs, elderly nutrition programs for American Indians on reservations, and households participating in The Emergency Food Assistance Program, are eligible to participate, but must do so through the relevant State or Federal agency.
- Criteria/Use: USDA makes food available to state agencies for distribution to qualified outlets. These outlets include, but may not be limited to, emergency feeding organizations, soup kitchens, food banks, child/adult day care facilities, certain charitable institutions, elderly nutrition programs, non-profit summer camps, and Summer Food Service Programs for children. Individuals receiving food are not charged. Donated foods may not be sold,

exchanged or disposed of by the distributing agencies, without specific prior approval by the USDA.

- Funding Mechanism: Sale, exchange or donation of food/food supplies.
- Applicability to Mitigation: In order to use this program for mitigation purposes, a local agency would need to establish an emergency food distribution service meeting all applicable state and federal requirements. In order to justify its existence, the service would also have to operate in a non-disaster capacity. It is likely that most local governments are aware of local programs which provide meals, canned goods, etcetera, to needy individuals. A good mitigation strategy might be to work with one or more of these agencies (already certified under the USDA program) to establish mechanisms for quickly putting disaster mass feeding operations in place.

Forest Lands (None)

- Grantor Name: Florida Department of Agriculture and Consumer Services/Division of Forestry
- Purpose: To preserve Florida forests
- Eligibility: The State of Florida receives annual Florida Forever funding for the acquisition of forested lands
- Criteria/Use: The program operates primarily through the purchase of land from “willing sellers”. However, land acquired through other land acquisition programs may also be added to the State Forest System.
- Funding Mechanism: Purchases, purchase agreements, donations, condemnation, purchase of development rights, conservation easements, etc.
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: Contact Agency
- Deadline: Contact Agency
- Applicability to Mitigation: Acquisition of lands, especially along the coast or rivers is mitigation because it removes the potential for development. Acquisition and subsequent appropriate management of interior forested lands is mitigation .

Greenways and Trails Land Acquisition Program (Florida Forever)

- Grantor Name: Office of Greenways and Trails/Department of Environmental Protection
- Purpose: To preserve natural environments and to establish a State Trail System. The Florida Recreational Trails Program was created in 1979, and in 1987 the Florida Rails-to-Trails Program was created to acquire abandoned railroad rights of way and additions to the Florida National Scenic Trail for recreational purposes. This program was added to the Preservation 2000 program in 1990. In 1996, the Florida State Legislature created the Florida Greenways and Trails Acquisition Program. The components of the original Recreational Trails program are still included in the new program, but now the Department of Environmental Protection can purchase greenways in addition to purchasing abandoned railroad rights-of-way and additions to the Florida National Scenic Trail.
- Eligibility: Federal, state, or local government; non-profit organizations; and individual citizens of Florida. For a project to qualify for the Greenways and Trails Acquisition

Program, it must meet the following criteria: (1) have documentation of a willing seller; (2) have documentation of a willing manager; and, (3) meet the definition of a greenway or trail

- Criteria/Use: A Certificate of Eligibility is necessary to prove that the applicant's proposed project meets the following criteria: project meets statutory definition of greenway or trail, the project is located within or adjacent to an opportunity segment on the Recreational Prioritization Maps, at least 80% of project has a willing seller(s), project has a willing manager
- Funding Mechanism: Land acquisition
- Overall Funding Available: $4.5 million
- Funding Amount: Depends on land costs
- Match Requirements: Variable
- Deadline: August each year
- Applicability to Mitigation: Because of its emphasis on preservation, conservation and environmental protection, this program is often overlooked as a potential funding source for disaster mitigation. Also, these funds are not directly available to local governments, unless, of course, the local agency is the land. However, in Florida, lands which are environmentally endangered, such as wetlands, coastal areas and riverine areas, are often also lands subject to flooding, tidal surge, frequent fires and other natural hazards. Removal of these properties from the threat of development is thus a form of disaster mitigation.

Hazard Mitigation Grant Program -Section 404 (HMGP - Post Disaster Hazard Mitigation Program)

- Grantor Name: United States Department of Homeland Security/Federal Emergency Management Agency and Florida Department of Community Affair/Division of Emergency Management
- Purpose: To prevent future losses of lives and property due to disasters. The program seeks to aid emergency management agencies in implementing State and local hazard mitigation plans, to enable mitigation measures to begin in the immediate aftermath of a disaster, and to provide funding to enable agencies to implement previously identified mitigation measures.
- Eligibility: State and local governments, private/non-profit organizations, Indian
- Criteria/Use: Eligible applicants make application through their State emergency management agency following a Presidential disaster declaration. Eligible projects include, but may not be limited to, elevating, relocating, acquiring, or demolishing structures so as to prevent or reduce future losses. Following a disaster declaration, the State will advertise that HMGP funding is available to fund mitigation projects in the State. Those interested in applying to the HMGP should contact their local government to begin the application process. Local governments should contact their State Hazard Mitigation Officer.
- Funding Mechanism: Grants
- Overall Funding Available: The amount of funding available for the HMGP under a particular disaster declaration is limited. The program may provide a State with up to 7.5 percent of the total disaster grants awarded by FEMA. States that meet higher mitigation planning criteria may
- Funding Amount: Varies depending on amount of overall funding allocated post disaster

- Match Requirements: FEMA can fund up to 75% of the eligible costs of each project. The State or grantee must provide a 25% match, which can be fashioned from a combination of cash and in-kind sources. Funding from other Federal sources cannot be used for the 25% share with o
- Deadline: Applications for mitigation projects are encouraged as soon as possible after the disaster occurs so that opportunities to do mitigation are not lost during reconstruction. The State will set a deadline for application submittal. You should contact your S
- Applicability to Mitigation: This is one of the better mitigation funding sources. From examining the various projects referenced on the DCA website, it appears that these funds could be utilized for a large variety of mitigation projects.

Hazard Mitigation Technical Assistance Program (HMTAP)

- Grantor Name: United States Department of Homeland Security/Federal Emergency Management Agency
- Purpose: To provide technical support to state/local communities, FEMA Regional and Headquarters Mitigation staff in support of mitigation initiatives; technical support necessary to mitigate against potential loss of lives and minimize the amount of damage as a result of a natural disaster
- Eligibility: Available for use by all FEMA Regional and Headquarters Mitigation staff.
- Criteria/Use: Provides assistance to FEMA staff, designed to provide architectural, engineering, and other mitigation related technical assistance in support of post disaster mitigation initiatives; examples are environmental assessments, benefit cost analysis, engineering/architectural feasibility studies, remote sensing and GIS, post disaster floodplain analysis and training
- Funding Mechanism: Technical assistance
- Applicability to Mitigation: Support of mitigation initiatives; technical support necessary to mitigate against potential loss of lives and minimize the amount of damage as a result of a natural disaster

Hazardous Materials Training Program (None)

- Grantor Name: United States Department of Homeland Security/Federal Emergency Management Agency
- Purpose: To make funding available to provide training in support 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.
- Eligibility: These funds are available to State and tribal governments and U.S. territories. The funds benefit State governments, local governments, tribes, and U.S. territories.
- Criteria/Use: These funds are authorized to provide education and training programs for Federal, State, local, and tribal personnel with special emphasis on hazardous chemicals and related chemical emergencies. These funds are intended for the delivery of training courses only. The assistance is normally available for one year. The assistance is awarded to the State in a lump sum. The State may then pass the funds through to other agencies (in Florida, the Local Emergency Planning Committees).

- Funding Mechanism: Grants
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: 20%
- Deadline: Contact Agency
- Applicability to Mitigation: Training is a form of preparation.

Hazardous Waste Worker Health and Safety (Superfund Worker Training Program)

- Grantor Name: United States Department of Health and Human Services
- Purpose: To provide cooperative agreements and project grant support for the development and administration of model worker health and safety training programs, consisting of both classroom and practical health and safety training of workers and supervisors, for activities related to hazardous materials, hazardous waste generation, treatment, storage, disposal, removal, containment, transportation, or emergency response. To assist organizations in the development of institutional competency to provide appropriate training and education to hazardous waste workers
- Eligibility: Eligible applicants include: public or private nonprofit entities providing worker health and safety education and training
- Criteria/Use: Cooperative agreements and project grants administered under this program are intended to support the direct costs of a project, in accordance with an approved budget, plus indirect costs at a pre-established rate. Both the award and use of funds are subject to applicable provisions of basic statutory authorities, appropriations acts, pertinent regulations, and operating policies of the National Institute of Environmental Health Sciences (NIEHS), the National Institutes of Health (NIH), and the Department of Health and Human Services (DHHS).
- Funding Mechanism: Grants
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: None
- Deadline: Contact Agency
- Applicability to Mitigation: This is a good training program for local governments to utilize. Education is a form of mitigation, in that individuals responsible for implementing and overseeing hazardous waste cleanups would be better trained to do so, and thus would be more likely to be successful.

Home Investment Partnerships Program (HOME)

- Grantor Name: United States Department of Housing and Urban Development
- Purpose: To expand the supply of decent, affordable housing, with particular emphasis on rental housing, for low-income and very low-income citizens.
- Eligibility: States, cities, urban counties, and consortia (of contiguous units of general local governments with a binding agreement)

- Criteria/Use: This program provides loans for rehabilitation of existing units, conversion of non-residential uses to residential uses; acquisition and rehabilitation of existing units, and new construction; all for the purpose of increasing the availability of affordable housing units.
- Funding Mechanism: Grants
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: None
- Deadline: Contact Agency
- Applicability to Mitigation: A mitigation strategy utilizing these funds would require the local government to have, or to partner with, a local housing agency. Under such circumstances, the program could be a good source of mitigation funds for replacement of sub-standard units (more likely to succumb to a disaster) with safe, decent, affordable housing.

Hurricane Loss Mitigation Program ()

- Grantor Name: State of Florida
- Purpose: Fund activities that promote property resiliency through retrofits made to residential, commercial, and mobile home properties, the promotion of public education and public information, and through hurricane research activities.
- Eligibility: Governmental entities, nonprofit organizations, and qualified for-profit organizations. (individual homeowners are ineligible to apply)
- Criteria/Use: Projects/initiatives must be aimed at minimizing damages caused by hurricanes.
- Funding Mechanism: Promote property resiliency through retrofits made to residential, commercial, and mobile home properties, the promotion of public education and public information, and through hurricane research activities.
- Overall Funding Available: $7.0M
- Funding Amount: Varies
- Match Requirements: None
- Deadline: Varies. Email HLMP@em.myflorida.com to request being added to announcements in funding opportunities.
- Applicability to Mitigation: Activities that promote property resiliency through retrofits made to residential, commercial, and mobile home properties, the promotion of public education and public information, and through hurricane research activities.

Hurricane Program (None)

- Grantor Name: United States Department of Homeland Security/Federal Emergency Management Agency
- Purpose: To significantly reduce the loss of life, property, economic disruption, and disaster assistance costs resulting from hurricanes.
- Eligibility: States
- Criteria/Use: 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.
- Funding Mechanism: Grants

- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: 25%
- Deadline: Contact Agency
- Applicability to Mitigation: The program primarily provides information, public awareness materials, and technical assistance to local and State governments (for use by their own programs). This is a good public outreach mitigation program.

Impact Aid Disaster Assistance Program (None)

- Grantor Name: United States Department of Education
- Purpose: To assist with the increased costs to schools, and the decreased revenues to school districts, which can result from the effects of a disaster.
- Eligibility: Local educational agencies that provide free public elementary or secondary education may apply for these funds.
- Criteria/Use: Applications must be submitted within 90 days of the publication of the applicable disaster declaration notice in the Federal Register. However, applicant eligibility and the funding awarded will be based upon “before and after” (the disaster) data, which may not be available for a year, or longer time period.
- Funding Mechanism: Grants
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: None
- Deadline: Contact Agency
- Applicability to Mitigation: These funds could be used by individual public schools, or school districts, to aid in post-disaster recovery and mitigation. However, the long time lag between application and receipt of the grant (if awarded) is somewhat of a deterrent.

Interagency Hazardous Materials Public Sector Training and Planning Grants (Hazardous Materials Emergency Preparedness Grants.)

- Grantor Name: United States Department of Transportation
- Purpose: To increase State, local, territorial and Native American tribal abilities to safely and efficiently handle hazardous materials accidents and incidents; to enhance implementation of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA); and to encourage a comprehensive approach to emergency planning and training by incorporating response to transportation standards.
- Eligibility: States, U. S. Territories and Federally recognized Native American Tribes may apply for either or both planning and training grants
- Criteria/Use: This grant program is intended to be used to increase the emphasis on transportation in ongoing training efforts and to improve the capability of communities to plan for and respond to the full range of potential risks posed by accidents and incidents involving hazardous materials. The grants have two principal uses: (1) to assist States, Territories and Native American Tribes in developing, improving and implementing emergency response plans under EPCRA (including the determination of flow patterns of hazardous materials within a State, between States and Native American lands); and

determining the need for regional hazardous materials response teams. (2) to stimulate support for training of Public Sector employees to respond to accidents and incidents involving hazardous materials.
- Funding Mechanism: Grants
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: None
- Deadline: Contact Agency
- Applicability to Mitigation: The LEPC training programs are an excellent mitigation tool for local emergency response agencies. Communities which have not taken advantage of these programs should consider doing so.

My Safe Florida Home Program ()

- Grantor Name: Florida Division of Emergency Management
- Purpose: To provide financial assistance and guidance to Florida homeowners for hurricane mitigation improvements.
- Eligibility: Florida homeowners residing in single-family, site-built homes.
- Criteria/Use: The program supports various mitigation improvements, including:
- Funding Mechanism: Grants are awarded on a first-come, first-served basis, subject to funding availability.
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: Homeowners are required to contribute funds towards the project, which the program matches at a 2:1 ratio.
- Deadline: The program operates on an annual funding cycle, with deadlines varying based on available funds. For the most current deadlines, consult the program website or contact the Florida Division of Emergency Management.
- Applicability to Mitigation: For Collier County, the My Safe Florida Home Program can be integrated into the Local Mitigation Strategy (LMS) to:

National Fire Academy Educational Program (None)

- Grantor Name: United States Fire Administration
- Purpose: The National Fire Academy (part of the U.S. Fire Administration, which is part of FEMA) offers various courses on disaster and emergency related topics for fire department personnel, or others with fire prevention responsibility. The purpose of this program is to provide travel stipends to students attending Academy courses.
- Eligibility: Potential applicants include any student who is a member of a fire department or has significant responsibility for fire prevention and control and has been accepted into an eligible course at the National Fire Academy. The program reimburses the local agency or personal travel expense for attending training programs.
- Criteria/Use: Presently, the program covers reimbursement for the cost of a 21-day pre-purchase, non-refundable ticket for round-trip transportation by common carrier, or privately owned vehicle mileage reimbursement not to exceed the cost of the airline ticket, for the resident program courses at the National Fire Academy in Emmitsburg, Maryland, and also

a limited stipend for selected regional delivery courses throughout the nation. For Resident Program courses, students are required to pay the cost of meals which is $15.76 (includes tax) daily (subject to change each October 1). For Regional Delivery courses, a limited stipend of up to $100 for a one-week course and up to $200 for a two-week course is provided to help offset the students' transportation and lodging costs. Reimbursements are not made to Federal employees attending on behalf of their employer, private industry employees, or foreign students.

- Funding Mechanism: Direct payments
- Match Requirements: None
- Deadline: Contact Agency
- Applicability to Mitigation: This is an excellent mitigation program; particularly with regard to fire suppression and control issues. The reimbursement program is open to all fire and rescue or related agencies. Training of personnel to enable them to better respond to an emergency is a form of mitigation.

National Historical Publications and Records Grants (None)

- Grantor Name: National Historical Publications and Records Commission/National Archives and Records Administration
- Purpose: To undertake a wide range of activities related to the preservation, publication and use of documentary sources relating to United States history.
- Eligibility: State and local governments, territorial governments, Indian tribes, educational and/or non-profit institutions, universities, colleges, libraries, historical societies, museums, university presses, archives, individuals, etc.
- Criteria/Use: Funds may be used for projects having the purpose of: advancing the state of the art (of preservation); to promote cooperative efforts by institutions and organizations; to improve the knowledge, performance and professional skills of those individuals who work with historic records; for the preservation, arrangement and description of historical records; and for the publication (in book, microfiche or electronic versions) of historical records.
- Funding Mechanism: Grants
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: None
- Deadline: Contact Agency
- Applicability to Mitigation: These funds could be used by local agencies in the creation of County/Municipal records preservation or restoration strategies. Preservation of documents to reduce the amount of paperwork is a form of mitigation.

Nonprofit Security Grant Program (NSGP)

- Grantor Name: FEMA
- Purpose: To improve security for nonprofit organizations at high risk of terrorist attacks.
- Eligibility: Nonprofit organizations must be:
- Criteria/Use: Projects must focus on addressing identified risks and vulnerabilities.
- Funding Mechanism: Competetive Grant
- Overall Funding Available: Varies

- Funding Amount: Varies
- Match Requirements: None
- Deadline: Annual deadlines are set in the FEMA NOFO. States typically have their own earlier submission deadlines.
- Applicability to Mitigation: he NSGP can fund security upgrades for nonprofit facilities identified as critical to community resilience.

Oil Spill Liability Trust Fund (None)

- Grantor Name: United States Department of Transportation
- Purpose: To encourage greater State participation in response to actual or threatened discharges of oil. The program is funded through fines paid to the U.S. Coast Guard by entities liable for clean up costs for oil/fuel spills.
- Eligibility: The Governor of any State may apply for financial assistance under this program.
- Criteria/Use: Funds are to be used for immediate clean up action costs that are directly related to a specific incident. Removal costs must generally be incurred at the spill site or in support of spill site clean up activities (e.g., salary costs for State officials actually engaged in the removal actions, transportation costs for transporting persons and materials to the spill site, costs of equipment usage and items consumed during clean up, contract costs, and administrative costs for preparing reports and documenting actions which occurred at the spill site). Removal actions must be consistent with the National Contingency Plan (40 CFR 300) and must be approved by the cognizant Coast Guard or Environmental Protection Agency (EPA) Federal On-Scene Coordinator (FOSC). Remedial actions and restorations are not eligible for reimbursement.
- Funding Mechanism: Grants and cooperative agreements
- Overall Funding Available: Contact Agency
- Funding Amount: Funding is limited to $250,000 per incident.
- Match Requirements: Contact Agency
- Deadline: Contact Agency
- Applicability to Mitigation: This program represents the primary funding source for U.S. Coast Guard activities involved in responding to fuel or oil spills; particularly in navigable waterways. This type of funding is generally available when a large-scale disaster has created actual or potential fuel spill incidents.

Partners for Fish and Wildlife (None)

- Grantor Name: United States Department of the Interior/United States Fish and Wildlife Service
- Purpose: The US Fish and Wildlife Service provides financial and technical assistance to private landowners, businesses, and local governments interested in restoring wetlands and riparian habitats on their land.
- Eligibility: Private landowners, Native American Organizations, local governments, educational institutions and organizations are eligible for financial and technical assistance from the Partners Program.

- Criteria/Use: Assistance provided to private landowners and Native American Tribes. Program goal is to achieve a 50 percent cost share on projects with matching funds and in-kind contributions provided by the landowners and other partners.
- Funding Mechanism: Direct Payments for Specified Use
- Overall Funding Available: FY 05 est $32,000,000
- Funding Amount: $200 to $25,000. The average cost per project is $5,400
- Match Requirements: This program has no statutory formula. The Program goal is to obtain a 50 percent match of Federal monies by partnering with landowners, local community groups and other local and national conservation organizations.
- Deadline: Contact Agency
- Applicability to Mitigation: Typical wetland restoration and enhancement techniques involve restoring the natural hydrology of a site through the blocking of surface ditches, breaking sub-surface drain tiles, building shallow berms to trap water, filling in concentration pits, removing eroded sediment which fills in basins, installing grass buffers, or installing fences along wetlands or stream corridors that prevent cattle grazing within the stream or wetland.

Physical Disaster Loans (None)

- Grantor Name: Small Business Administration
- Purpose: To provide loans to victims of physical disasters to cover uninsured losses.
- Eligibility: Individuals, business concerns, charitable and nonprofit organizations. Agricultural enterprises are ineligible. Applicants must have suffered physical property loss s a result of a disaster which occurred in an area declared as eligible for assistance by the President or The Small Business Administration. Applicants must demonstrate an ability to repay the loan.
- Criteria/Use: Loans are made to homeowners, renters, businesses of all sizes and nonprofit organizations to repair and/or replace damaged and/or destroyed real property and/or personal property to its pre-disaster conditions. Loans to homeowners/tenants are made for periods of up to 30 years.
- Funding Mechanism: Direct Loans; Guaranteed/Insured Loans
- Overall Funding Available: Contact Agency
- Funding Amount: There is a funding limit of $200,000 for repair/replacement of real property and a limit of $40,000 for repair/replacement of personal property. The loan limit may be increased by 20 percent to provide protective measures from damages caused by physical d
- Match Requirements: Contact Agency
- Deadline: Contact Agency
- Applicability to Mitigation: This is the standard SBA disaster loan which becomes available after an area has suffered from a Presidentially-declared disaster. The purpose is to implement mitigation measures to protect business property from damage by future disasters. Examples might be retaining walls, sea walls, grading and contouring land, elevating flood-prone structures, relocating utilities, and retrofitting structures against high winds, earthquakes, floods, wildfires, or other disasters.

Planning Assistance to States (Section 22 Program)

- Grantor Name: United States Department of Defense/United States Army/United States Army Corps of Engineers
- Purpose: Section 22 of the Water Resources Development Act (WRDA) of 1974 allows the USACE to assist state, tribal, and local governments in the preparation of comprehensive plans for the development, utilization, and conservation of water and related land resources with up to 50% federal match. Technical and planning assistance may include wetlands evaluation studies, flood damage reduction studies, flood plain management studies, and water quality/quantity studies.
- Eligibility: State, regional, and local units of government should submit requests for assistance to the State Section Coordinator with a copy to the Corps.
- Criteria/Use: The State or Tribal coordinator/official would verify that the request for assistance is in agreement with their comprehensive water plan and include it in their annual program budget request. The State's and Tribe's annual request for assistance is used to develop the Corps Section 22 Program for that year
- Funding Mechanism: Technical assistance
- Overall Funding Available: Contact Agency
- Funding Amount: $300,000.00
- Match Requirements: 50%
- Deadline: Contact Agency
- Applicability to Mitigation: Some neighborhood drainage systems are only designed to handle, or are capable of handing, a few inches of rainfall. The Corps can perform studies of these and other community flooding problems, perform environmental improvement studies involving water resources, act in concert with other governmental agencies to perform hurricane evacuation and damage studies, and perform studies of floods and flood plain issues. The Planning Assistance to States Program may help States in support of the Coastal Zone Management Act of the Floodplain Management Services Program when the primary purpose is to supplement basinwide or regional State planning for the coastal zone or floodplains.

Pollution Control Bond Program (State Bond Loan Program)

- Grantor Name: Florida Department of Environmental Protection
- Purpose: Construction of pollution control facilities, including those related to drinking water, wastewater, stormwater, solid waste, and air pollution.
- Eligibility: Local governments; special districts are eligible as well as municipalities and county governments
- Criteria/Use: Plans and specifications of proposed facilities are required. The loan interest rate is a pass through rate.
- Funding Mechanism: Loans that come from State of Florida full faith and credit revenue bonds. Bonds are sold on a competitive bid basis and reflect market conditions. The bonds are tax exempt. No interest subsidy.
- Overall Funding Available: $300 million annually; source of the funds are bonds sold by the state

- Funding Amount: Loans less than $10 million probably would be packaged with other loans. Loans in the million dollar range may not be practical. Projects involving numerous small contracts, work orders, purchase orders, etc. are not practical under this program.
- Match Requirements: Contact Agency
- Deadline: Contact Agency
- Applicability to Mitigation: Ensuring structurally sound and properly engineered facilities is a form of mitigation.

Pollution Prevention Grants Program (PPIS)

- Grantor Name: United States Environmental Protection Agency
- Purpose: To support State and tribal level pollution prevention programs that address the reduction of pollutants across all environmental media: air, land, and water.
- Eligibility: States, local governments, private universities, private non-profit entities, private businesses, and individuals are not eligible. Any State, interstate, and/or local agency/organization/university, Federally-Recognized Indian Tribes, public non-profit organization/institution, for-profit organization, private organization, and quasi-public nonprofit organization may serve as a funding beneficiary.
- Criteria/Use: Source reduction is any practice that: (1) reduces the amount of any hazardous substance, pollutant, or contaminant entering any waste stream or otherwise released into the environment (including fugitive emissions) prior to recycling, treatment, or disposal; and, (2) reduces the hazards to public health and the environment associated with the release of such substances, pollutants, or contaminants.
- Funding Mechanism: Grants
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: 50%
- Deadline: Contact Agency
- Applicability to Mitigation: Use of this program by a local government in Florida would probably require a partnership arrangement with the State and Federal governments and, perhaps, a contributing non-profit agency. However, the program might be able to provide assistance in resolving local pollution control problems.

Pre-Disaster Mitigation Competitive Grant Program (PDM - Competitive)

- Grantor Name: United States Department of Homeland Security/Federal Emergency Management Agency and Florida Department of Community Affairs/Division of Emergency Management
- Purpose: Provides funds to State, Tribal, and local governments for pre-disaster mitigation planning and projects primarily addressing natural hazards. Cost-Effective pre-disaster mitigation activities reduce risk to life and property from natural hazard events before a natural disaster strikes, thus reducing overall risks to the population and structures, while also reducing reliance on funding from actual disaster declarations. Funds will be awarded on a competitive basis to successful.
- Eligibility: State and territorial emergency management agencies; eligible sub-applicants include state agencies; Federally-recognized Indian Tribal governments; and local

governments. Applicants can apply for PDM competitive grant funds directly to FEMA, while Sub-applicants must apply for funds through an eligible Applicant. Private non-profit organizations are not eligible to apply for PDM but may ask the appropriate local government to submit an application for the proposed activity on their behalf.

- Criteria/Use: Not dependent upon a Presidential disaster declaration. Mitigation planning and mitigation projects are eligible activities, including information dissemination activities regarding cost-effective mitigation technologies related to the proposed mitigation planning activity or project. Associated Applicant and Sub-applicant management costs also are eligible.
- Funding Mechanism: Grants
- Overall Funding Available: $132,650,000 in FY 2003
- Funding Amount: $3,000,000
- Match Requirements: 25%, for small impoverished communities, match is 10%
- Deadline: October each year
- Applicability to Mitigation: A PDM competitive grant will provide funds for the community to reduce the overall risk to populations and structures through mitigation projects and plans prior to a disaster occurring. Mitigation projects, acquisition or relocation of vulnerable properties, hazard retrofits, minor structural hazard control or protection projects, community outreach and education

Pre-Disaster Mitigation Program – Planning Grants (PDM - Planning)

- Grantor Name: United States Department of Homeland Security/Federal Emergency Management Agency and Florida Department of Community Affairs/Division of Emergency Management
- Purpose: To provide technical assistance (risk assessments, project development) and to revise and update the Local Mitigation Strategy.
- Eligibility: States, which, in turn, may provide sub-grants to local and Indian Tribal governments. Private non-profit organizations are not eligible sub-grantee applicants; however, local governments may sponsor an application on their behalf.
- Criteria/Use: Not dependent upon a Presidential disaster declaration. All applicants must be participating in the National Flood Insurance Program if they have been identified through the NFIP as having a Special Flood Hazard Area (a Flood Hazard Boundary Map (FHBM) or Flood Insurance Rate Map (FIRM).
- Funding Mechanism: Grants
- Overall Funding Available: For FY 2003, FEMA provided a maximum of $248,375 (Federal share) to each state, Collier County's share was $20,000
- Funding Amount: $20,000.00
- Match Requirements: 25%
- Deadline: Deadline for state submittal to FEMA is in April, local government deadline to state would follow
- Applicability to Mitigation: Useful for updating mitigation strategies

Public Assistance (PA/Section 406)

- Grantor Name: United States Department of Homeland Security/Federal Emergency Management Agency
- Purpose: To allow state and local governments to respond to disasters, to recover from their impact and to mitigate impact from future disasters. While these grants are aimed at governments and organizations -- their final goal is to help a community and all its citizens recover from devastating natural disasters. The PA Program provides the basis for consistent training and credentialing of staff (people) who administer the program; more accessible and understandable guidance and policy for participating in the grant program; improved customer service through a more efficient grant delivery process, applicant-centered management, and better information exchange; and continuing performance evaluations and program improvements.
- Eligibility: State and local governments and to certain private nonprofit organizations.
- Criteria/Use: The Public Assistance Program provides supplemental Federal disaster grant assistance for the repair, replacement, or restoration of disaster-damaged, publicly owned facilities and the facilities of certain Private Non-Profit (PNP) organizations. Grants can be used to clear debris; apply emergency protective measures to preserve life and property in response to the declared event; and repair or replace damaged structures, such as buildings, utilities, roads and bridges, water-control facilities, and recreational facilities.
- Funding Mechanism: Grants
- Overall Funding Available: Varies each year, and depends on cost of declared disasters and funding available
- Funding Amount: For small projects (under $48,900 for FY00), the grant is based on an estimate of the cost of the work. For large projects ($48,900 or more), the final grant is based on actual eligible costs. In large projects, the State will disburse progress payments,
- Match Requirements: The Federal share of assistance is not less than 75% of the eligible cost for emergency measures and permanent restoration. The State determines how the non-Federal share (up to 25%) is split with the applicants
- Deadline: The project completion deadlines are set from the date that the major disaster or emergency is declared. Emergency Work: 6 months, Permanent Work: 18 months
- Applicability to Mitigation: Repair of facilities, cleaning up of debris, etc. is mitigation and improving the facilities to a standard that makes them even more secure and damage resistant is even better mitigation.

Public Works & Infrastructure Development Grants (EDA)

- Grantor Name: United States Department of Commerce/Economic Development Administration
- Purpose: To support the construction or rehabilitation of essential public infrastructure and development facilities necessary to generate private sector jobs and investment, including investments that support technology-led development, redevelopment of brownfield sites, and eco-industrial development.
- Eligibility: Universities, state and local governments, Indian Tribes and non-profit organizations in cooperation with governmental organization.

- Criteria/Use: Project proposals must be located within an economically distressed EDA designated area and be in conformance with an Overall Economic Development Program (OEDP) for the eligible area. Projects must also contribute to long-term economic development of the area by creating or retaining permanent jobs and raising income levels. Examples of projects include 1) Infrastructure for industrial park development; 2) port development and expansion; 3) infrastructure necessary for economic development (e.g. water/sewer facilities); 4) renovation and recycling of old industrial buildings; 5) construction of vocational-technical facilities and skill centers; and 6) construction of incubator facilities.
- Funding Mechanism: Grants
- Overall Funding Available: $204,000,000.00
- Funding Amount: Average of over $1.24 million in FY 02
- Match Requirements: 50%
- Deadline: None
- Applicability to Mitigation: Communities that have experienced economic distress, either as a result of a disaster, or as a result of local demographics and unrelated conditions, may find these funds useful to help establish facilities that are up to current codes and/or that are stronger in the face of natural or manmade disasters; may also be used to redevelop contaminated brownfield sites; economic distress may result from natural or other major disasters

Recreational Trails Program (RTP)

- Grantor Name: United States Department of Transportation/Federal Highway Administration and Florida Department of Environmental Protection/Office of Greenways & Trails
- Purpose: Federally funded competitive grant program that provides financial assistance to agencies of city, county, state or federal governments, and organizations, approved by the State, or state and federally recognized Indian tribal governments, for the development of recreational trails, trailheads and trailside facilities.
- Eligibility: Municipal or county governments, state or federal governmental agencies, recognized state and federal Indian tribal governments, and organizations approved by the State.
- Criteria/Use: Projects must be either a Greenway: A linear open space established along either a natural corridor, such as a riverfront, stream valley, or ridgeline, or over land along a railroad right-of-way converted to recreational use, a canal, a scenic road, or other route; any natural or landscaped course for pedestrian or bicycle passage; an open space connector linking parks, nature reserves, cultural features, or historic sites with each other and populated areas; or a local strip or linear park designated as a parkway or greenbelt. Or a Trail: Linear corridors and any adjacent support parcels on land or water providing public access for recreation or authorized alternative modes of transportation. The evaluation criteria include ecological, recreational, and acquisition components.
- Funding Mechanism: Grants
- Overall Funding Available: Contact Agency
- Funding Amount: Non-Motorized Projects = $100,000, Mixed-Use Projects = $100,000, Motorized Projects = $250,000

- Match Requirements: 80:20, 60:40, 50:50, more points are awarded depending on the match provided
- Deadline: January in 2004, deadline varies
- Applicability to Mitigation: Because of its emphasis on preservation, conservation and environmental protection, this program is often overlooked as a potential funding source for disaster mitigation. Also, these funds are not directly available to local governments, unless, of course, the local agency is the land. However, in Florida, lands which are environmentally endangered, such as wetlands, coastal areas and riverine areas, are often also lands subject to flooding, tidal surge, frequent fires and other natural hazards. Removal of these properties from the threat of development is thus a form of disaster mitigation.

Residential Construction Mitigation Program (RCMP)

- Grantor Name: Florida Department of Community Affairs
- Purpose: Funds are used for programs to improve wind resistance of residences and mobile homes, including loans, subsidies, grants demonstration projects, and direct assistance; cooperative programs with local governments and the Federal Government; and other efforts to prevent or reduce losses or reduce the cost of rebuilding after a disaster.
- Eligibility: Typically, grants have been provided to local governments on a noncompetitive basis for wind resistive house retrofit projects, while grantees/ contractors are sought for other desired projects through Notice of Funding Availability (NOFA) and Request for Proposals (RFP) processes.
- Criteria/Use: $2.8 million is designated for the Mobile Home Tie-Down Program. $700,000 is designated for Hurricane Research to be conducted by Florida International University. Research tracks include: (a) eliminate state and local barriers to upgrading existing mobile homes and communities; (b) research and develop a recycling program of older mobile homes; and (c) support programs of research and development relating to hurricane loss reduction devices and techniques for site-built residences. $3.5 million is to be used to improve the wind resistance of residences through loans, subsidies, grants, demonstration projects, direct assistance, and cooperative programs with local and federal governments.
- Funding Mechanism: Contact Agency
- Overall Funding Available: $7 million
- Funding Amount: An annual budget is determined by the Secretary of the Department of Community Affairs, in consultation with the RCMP Advisory Council
- Match Requirements: Contact Agency
- Deadline: NOFAs are advertised in the Florida Administrative Weekly and all RFPs are issued via the www.myflorida.com web portal. NOFAs and RFPs can be issued at any time during the fiscal year.
- Applicability to Mitigation: Provides funding for hurricane retrofitting. A certified inspector using DCA's Wind Resistance Checklist may perform a structural inspection of the home. Information is assessed and a mitigation report is prepared that outlines the hurricane hazard risk, identifies retrofit options and packages, assesses costs and benefits, and provides retrofitting recommendations and estimated costs. If homeowners are recommended for the program, they are eligible for a forgivable loan to complete the retrofitting.

Revolving Fund Loan Program for Waste Water Treatment (Water Pollution Control SRF program)

- Grantor Name: Florida Department of Environmental Protection
- Purpose: Provides funding to assist in the financing of publicly owned waster water and stormwater treatment collection, transmission, disposal, and reclamation, re-use facilities as well as infiltration/inflow correction. Project loans for up to 20 years at interest rates that are over 60% below market rate.
- Eligibility: Local governments (municipalities, counties, authorities, special districts, and agencies thereof) are eligible for loans to control wastewater and stormwater pollution. Non-governmental parties (basically any entity that can repay a loan) are eligible for loans to control stormwater pollution related to agricultural operations.
- Criteria/Use: The Clean Water Act State Revolving Fund (SRF) Program provides low interest loans for water pollution control activities and facilities. Water pollution control can be divided into point source (a permit for discharge in an urban area is generally involved) and non-point source (stormwater runoff from agricultural operations is generally involved). The Clean Water SRF Program is distinct from the Safe Drinking Water Act SRF that provides funding for drinking water activities and facilities. The Clean Water SRF Program began in 1989 and over a billion dollars in loans have been made by the Florida Department of Environmental Protection. The Program was recently expanded to make stormwater management, agricultural runoff, estuary protection, and nearly any type of water pollution control activity eligible for funding. The Program revolves in perpetuity using state and federal appropriations, loan repayments, investment earnings, and bond proceeds.
- Funding Mechanism: Low interest loans; loans are to be repaid over the useful life of the project (a maximum of 20 years). Preconstruction loans and loans for the costs associated with pollution control associated with agricultural runoff have shorter loan repayment period
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: Contact Agency
- Deadline: Contact Agency
- Applicability to Mitigation: Projects eligible for SRF loans include wastewater management facilities, reclaimed wastewater reuse facilities, stormwater management facilities, widely accepted pollution control practices (sometimes called "best management practices") associated with agricultural stormwater runoff pollution control activities, and estuary protection activities and facilities.

Rural Business Enterprise Grant Program (RBEG)

- Grantor Name: United States Department of Agriculture
- Purpose: To facilitate the development of small and emerging private business, industry, and related employment opportunities in order to improve the economy in rural areas. There are two different grant programs.
- Eligibility: State, county, city, township and municipal governments, government agencies, special districts, and tribal agencies which serve rural areas. The rural area in question cannot be within a municipal boundary of an incorporated local government having a population of 50,000 or more. Priority for the grants is given to areas with populations of

25,000 or less. The grantee can pass the money to a designated beneficiary business which will employ 50 or less new employees, has less than $1,000,000.00 in projected gross revenue, and is utilizing, or proposing to utilize technological innovation and/or new product commercialization within the target rural area.

- Criteria/Use: RBEG funds are utilized to establish revolving funds, provide operating capital, finance industrial site acquisition/construction/start-up, modernize buildings and equipment, construct access roads, construct parking areas, provide transportation to project sites, extend utility infrastructure, provide pollution control cost funding, provide technical assistance, pay permitting fees, and for refinancing. TDG funds can be used to establish television programs targeting agricultural and rural interests.
- Funding Mechanism: Grants
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: None
- Deadline: Contact Agency
- Applicability to Mitigation: Utilized by local governments to assist in the rebuilding of businesses which had been previously damaged in a disaster, or which were particularly vulnerable to certain types of disasters.

Rural Economic Development Loans and Grants (None)

- Grantor Name: United States Department of Agriculture
- Purpose: To promote rural economic development and job creation projects, including funding for project feasibility studies, start-up costs, incubator projects, and other reasonable expenses for the purpose of fostering rural development.
- Eligibility: Electric and telephone utilities that have current Rural Electric Administration or Rural Telephone Bank loans, or outstanding guarantees, and which are not delinquent on any Federal debt or which are not currently in bankruptcy proceedings.
- Criteria/Use: Projects must promote rural economic development and job creation. The maximum loan or grant available is $100,000.00, with a ten-year term at 0% interest rate.
- Funding Mechanism: Grants or Loans
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: None
- Deadline: Contact Agency
- Applicability to Mitigation: It appears that the funding applicant would have to be a designated Rural Electric Cooperative or a Rural Telephone Bank. This would be a potential source of funds for a rural utility that had received extensive damage from a large-scale disaster and needed money for repairs.

Rural Housing Site Loans and Self-Help Housing Land Development (Section 523 and Section 524 Site Loans)

- Grantor Name: United States Department of Agriculture
- Purpose: To assist public or private non-profit organizations, who are interested in providing sites for housing, in acquiring and developing rural land areas, and subdividing land into

appropriate building sites. The land so acquired is to be sold, on a “cost of development” basis, to families eligible for low income and very low income loans, housing cooperatives, and broadly based non-profit rural rental housing applicants.

- Eligibility: Applicants must be private or public non-profit entities which provide developed sites to qualified borrowers, on a “cost of development” basis. The sites are to be located in open country and/or incorporated municipalities with 10,000 or less population, or recognized places with up to 25,000 in population, under certain conditions. Potential applicants located within areas of population between 10,000 and 25,000 should check with their local Rural Development program before making application. Sites developed with Section 524 loans must be utilized for low, or very low, income housing, and may be sold as such to families, non-profit organizations, public agencies, and eligible cooperatives. Section 523 sites must be for housing to be built by the “self-help” method.
- Criteria/Use: Loans may be utilized for the purchase and development of adequate sites, including the placement of any necessary infrastructure, such as sewer/water facilities; payment of fees for engineering, legal services, and closing costs; landscaping; or, construction of sidewalks, parking areas and driveways. Loans above $200,000.00 must receive national office approval. Loan funds may not be used for the purpose of debt refinancing, payment of broker/negotiator/referral fees, meeting administrative expenses (except in limited circumstances). Loans are expected to be repaid in two years.
- Funding Mechanism: Loans
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: None
- Deadline: Contact Agency
- Applicability to Mitigation: A local agency with housing construction authority, or a local non-profit agency specializing in housing provision, could utilize these funds to build up site elevations above projected flood levels, install sewer and water mains for future low income housing development, or, possibly, to elevate existing low income areas being reconstructed after a flood disaster.

Rural Self-Help Housing Technical Assistance (Section 523 Technical Assistance)

- Grantor Name: United States Department of Agriculture
- Purpose: This program is based upon requirements of the Federal Housing Act of 1949, as amended. The purpose of the program is to provide financial support for programs of technical and supervisory assistance that will aid very low and low-income individuals and their families in carrying out mutual self-help housing efforts in rural areas.
- Eligibility: Applicants must be a State or political subdivision of a State, a public nonprofit corporation or a private nonprofit corporation. The targeted beneficiaries are very low and low-income rural families, usually in groups of 6 to 10 families.
- Criteria/Use: Not-for-profit organizations may use technical assistance funds to hire the personnel to carry out a program of technical assistance for self-help housing in rural areas; to pay necessary and reasonable office and administrative expenses; to purchase or rent equipment such as power tools for use by families participating in self-help housing

construction; and to pay fees for training self-help group members in construction techniques or for other professional services needed. Funds will not be used to hire personnel to perform any construction work, to buy real estate or building materials, or pay any debts, expenses or costs other than previously outlined for participating families in self-help projects.

- Funding Mechanism: Grants
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: None
- Deadline: Contact Agency
- Applicability to Mitigation: This program is a good long-term funding source for a local low-income housing construction program. The program could be operated solely by the local government, or in partnership with another public (or private) entity. Getting low-income individuals into safer and stronger housing is important to mitigation against natural hazards.

Rural Utilities Service Water and Waste Disposal Program (RUS)

- Grantor Name: United States Department of Agriculture
- Purpose: Provides grants and loans to rural communities with fewer than 10,000 people for wastewater, drinking water, solid waste, and storm drainage projects.
- Eligibility: Recipients must be public entities. These can include municipalities, counties, special purpose districts, Indian tribes, and corporations not operated for profit, including cooperatives. A new entity may be formed to provide the needed service if an appropriate one does not already exist.
- Criteria/Use: Construct, repair, modify, expand, or otherwise improve water supply and distribution systems and waste collection and treatment systems, including storm drainage and solid waste disposal facilities. Certain other costs related to development of the facility may also be covered. (2) Acquire needed land, water sources, and water rights. (3) Pay costs such as legal and engineering fees when necessary to develop the facilities.
- Funding Mechanism: Grants and Loans
- Overall Funding Available: FY 2003: Direct Loans $797,567,000, Guaranteed Loans $ 75,000,000, Grants $425,000,000
- Funding Amount: Contact Agency
- Match Requirements: Grants may be provided when necessary to reduce user costs to a reasonable level. They may cover a maximum of 75 percent of eligible facility development costs. Loan guarantees may be available for up to 90 percent of any eligible loss incurred by the len
- Deadline: File requests any time of year at any rural development office in the county, district or state.
- Applicability to Mitigation: Construction of new or improved facilities that are up to current standards, wind strengths, etc. is mitigation.

Section 108 Loan Guarantee Program (Section 108 Loans)

- Grantor Name: United States Department of Housing and Urban Development

- Purpose: HUD offers CDBG recipients guaranteed loan funds to acquire real property, relocate homeowners and businesses, rehabilitate publicly owned real property (including infrastructure), housing rehabilitation, and economic development.
- Eligibility: Metropolitan cities and urban counties (i.e. CDBG entitlement recipients
- Criteria/Use: Section 108 provides communities with a source of financing for economic development, housing rehabilitation, public facilities, and large-scale physical development projects.
- Funding Mechanism: Loans
- Overall Funding Available: Varies
- Funding Amount: Entitlement public entities. An entitlement public entity may apply for up to five times the public entity's latest approved CDBG entitlement amount, minus any outstanding Section 108 commitments and/or principal balances of Section 108 loans.
- Match Requirements: Contact Agency
- Deadline: Contact Agency
- Applicability to Mitigation: Any of the following could be used for mitigation purposes: acquisition of real property, rehabilitation of publicly owned real property, housing rehabilitation eligible under CDBG, construction, reconstruction, or installation of public facilities (including street, sidewalk, and other site improvements), related relocation, clearance, and site improvements

Small Business Development Center (SBDC)

- Grantor Name: Small Business Administration
- Purpose: To provide management counseling, training, and technical assistance to the small business community through Small Business Development Centers (SBDCs).
- Eligibility: The Small Business Administration (SBA) is authorized to make grants (including contracts and cooperative agreements) to any public or private institution of higher education, including but not limited to any land-grant college or university, any college or school of business, engineering, commerce, or agriculture, community college or junior college. SBA is also authorized to renew the funding of other entities currently funded as SBDCs providing SBA affirmatively determines that such applicants have their own budget and will primarily utilize institutions of higher education to provide the services to the small business community. Beneficiaries of these programs are current and potential small business persons.
- Criteria/Use: Funds are restricted to the purpose of assisting small businesses.
- Funding Mechanism: Project Grants and Cooperative Agreements
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: Contact Agency
- Deadline: Contact Agency
- Applicability to Mitigation: A small business which had been damaged by a disaster would be eligible for participation in this program. In fact, it is part of the disaster aid package typically offered to communities by the federal government.

Small Watershed Program (PL-566 Operations Phase) (None)

- Grantor Name: United States Department of Agriculture
- Purpose: The objective of this program is 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.
- Eligibility: Funding is available to any State agency, county or groups of counties, municipality, town or township, soil and water conservation district, flood prevention or flood control district, Indian tribe or tribal organization, or any other nonprofit agency with authority under State law to carry out, maintain, and operate watershed works of improvement may apply for assistance.
- Criteria/Use: Resource Conservation and Development (RCD) loans for measures or projects needed to implement the RCD area plan to achieve objectives in an RCD area.
- Funding Mechanism: Loans and Advances
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: Program funds may pay for up to 100% of flood prevention costs and requires preparation of an approved watershed plan. Contact Agency for details.
- Deadline: Contact Agency
- Applicability to Mitigation: Protection of the watershed is a form of mitigation.

Snagging and Clearing for Flood Control (None)

- Grantor Name: United States Department of Defense/United States Army/United States Army Corps of Engineers
- Purpose: To reduce the potential for flood damage through the removal of debris and vegetation from watercourses.
- Eligibility: States, political subdivisions of States or other responsible local agencies which have been established under State law with full authority and ability to undertake necessary legal and financial responsibilities.
- Criteria/Use: ACOE designs and performs the project. Each project selected must be feasible from an engineering standpoint, complete within itself, and economically justifiable. The non-federal sponsor must provide all lands, easements and rights-of-way; must provide all project costs in excess of the Federal limit of $500,000; agree to maintain the project after completion; hold and save the United States free from damages; provide a contribution toward the costs of land enhancement or special benefits; and, agree to prevent future encroachment of vegetation or structures upon the stream bed or floodway. Local cost participation requirements and procedures for feasibility studies, cost-sharing and determining the local share of project cost are similar to those for flood control projects specifically authorized by Congress under regular authorization procedures.
- Funding Mechanism: Provision of Specialized Services
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: Technically, no match is required. However, the local sponsor generally shares the cost of the project and, in some cases, performs all or part of the actual work.

- Deadline: Contact Agency
- Applicability to Mitigation: Any local government or public agency can serve as the local sponsor for this type of project. However, the feasibility study phase for these projects is often long and involved; including environmental impact studies, permitting and public comment. Also, the project is likely to involve a fair amount of local expenditure, in terms of time, expertise, equipment and personnel.

Solid Waste Management Grants (None)

- Grantor Name: United States Department of Agriculture
- Purpose: Objectives are 1) Reduce or eliminate pollution of water resources in rural areas, 2) Improve planning and management of solid waste sites in rural areas. Solid Waste Management Grants are made available from an amount which is usually stipulated by Congress when it appropriates funds for Water Programs Grants.
- Eligibility: Private nonprofit organizations that have been granted tax exempt status by the IRS and public bodies, including local government-based multi-jurisdictional organizations, may be eligible for assistance. Applicants must have proven ability, background, experience, legal authority, and actual capacity to provide the proposed services.
- Criteria/Use: Funds may be used to: (1) Evaluate landfill conditions to determine threats to water resources. (2) Provide technical assistance and/or training to help communities reduce the solid waste stream; enhance operator skills in operation and maintenance of active landfills, or assist operators of landfills which are closed, or will be closed soon, with the development and implementation of the plans for closing and future land use.
- Funding Mechanism: Grants
- Overall Funding Available: FY 2003 - $3,500,000
- Funding Amount: Contact Agency
- Match Requirements: None
- Deadline: Preapplications must be filed between October 1 and December 31 of each fiscal year.
- Applicability to Mitigation: Reducing the potential for pollution is a form of mitigation.

Special Agricultural Research Grants (None)

- Grantor Name: Sustainable Agriculture Network/National Agricultural Library
- Purpose: To carry out research in order to facilitate or expand promising breakthroughs in the areas of food and agricultural sciences, which are of importance to the nation, and to facilitate or expand on-going State-Federal food and agricultural research programs. The program includes two types of Grants: Special Research Grants; and, Rangeland Research Grants.
- Eligibility: Entities eligible to apply for Special Research Grants include: State agricultural experiment stations, all colleges and universities, other research institutions and organizations, Federal agencies, private organizations or corporations and individuals having a demonstrable capacity to conduct research to facilitate or expand promising breakthroughs in areas of the food and agricultural sciences which are of importance to the United States. Entities eligible to apply for Rangeland Research Grants include: Land-grant

colleges, universities, State agricultural experiment stations, colleges, universities and Federal laboratories having a demonstrable capacity in rangeland research.

- Criteria/Use: Areas of basic and applied research are generally limited to high priority problems of a regional or national scope. Areas recently awarded, on a competitive basis, are Special Research Grants for Water Quality, Integrated Pest Management and General Rangeland Research Grants.
- Funding Mechanism: Grants
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: None
- Deadline: Contact Agency
- Applicability to Mitigation: This could be a good mitigation funding source for an agricultural business, State agricultural extension service, university or local environmental agency which is seeking to either conduct new agricultural research or to disseminate little-known knowledge which might be valuable to agricultural interests. Such information could be considered as mitigation for agricultural and/or economic disasters.

Special Disease Prevention and Health Promotion Services for the Aging (Title III, Part F Grants)

- Grantor Name: United States Department of Health and Human Services
- Purpose: To assist State Agencies on Aging and Area Agencies on Aging to carry out programs with respect to disease prevention and health promotion for older individuals.
- Eligibility: All States and U.S. Territories which have State agencies on aging designated by the State Governor are eligible to receive grants. Eligible program beneficiaries are individuals age 60 and older, especially older individuals with the greatest social needs and those with the greatest economic needs.
- Criteria/Use: Funds are awarded to States to develop or strengthen preventive health service and health promotion systems through designated State Agencies on Aging and Area Agencies on Aging. A State plan covering 2, 3, or 4 years, with annual revisions as necessary, must be submitted to appropriate State agencies for approval. Funds are used to design and implement programs for periodic preventive health services to be provided at senior centers or alternative sites as appropriate. The preventive health services under this Program may not include services eligible for reimbursement under Medicare.
- Funding Mechanism: Formula Grants
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: None
- Deadline: Contact Agency
- Applicability to Mitigation: This program is administered through the State's various Area Agencies on Aging, along with other programs for the aging. As such it is not truly a mitigation program. However, local governments should coordinate with Area Agencies on Aging in order to determine what services could be provided within an emergency setting.

Special Economic Development and Adjustment Assistance Program (Sudden and Severe Economic Dislocation (SSED) and Long-Term Economic Deterioration (LTED))

- Grantor Name: United States Department of Commerce
- Purpose: To assist States and local areas in developing and/or implementing strategies designed to address structural economic adjustment problems resulting from sudden and severe economic dislocation such as plant closings, military base closures and defense contract cutbacks, as well as natural disasters (SSED), or from long-term economic deterioration in an area's economy (LTED).
- Eligibility: States, cities, counties, other political subdivisions of a state, consortia of such entities; public/private non-profit organizations representing redevelopment areas designated under the Public Works and Economic Development Act of 1965; Economic Development Districts as established under Title IV of the Act; and Indian tribes
- Criteria/Use: LTED eligibility factors are: (1) very high unemployment; (2) low per capita income; and, (3) chronic distress. The SSED eligibility factor is that economic dislocation must exceed certain standard job loss thresholds for the target area. Grants may be for the purpose of developing an economic adjustment strategy (Adjustment Strategy Grant), or to implement a previously developed strategy (Adjustment Implementation Grant). Implementation grants may also be made to fund construction of public facilities, new business development and financing (including revolving loan programs), technical assistance, job training, or any other activities aimed at addressing economic adjustment problems.
- Funding Mechanism: Project Grants
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: None
- Deadline: Contact Agency
- Applicability to Mitigation: This is an excellent program, which has awarded a large number of post-disaster redevelopment grants, covering a wide range of projects.

Special Nutrition Programs for the Aging (Title III, Part C Grants)

- Grantor Name: United States Department of Health and Human Services
- Purpose: To provide grants to States to support nutrition services including nutritious meals, nutrition education and other appropriate nutrition services for older Americans in order to maintain health, independence and quality of life. Meals may be served in a congregate setting or delivered to the home.
- Eligibility: All States and Territories may apply. Beneficiaries for this program are older individuals aged 60 and over and their spouses, especially those older individuals with the greatest social need or those with the greatest economic need, and in certain cases, under age 60, if the individual is handicapped or disabled and resides with and accompanies an older individual.
- Criteria/Use: Local projects must provide a hot or other appropriate meal which provides one-third of the "recommended dietary allowance" (RDA), at least once per day, five or more

days per week, except in rural areas where a lesser frequency may be determined feasible, to eligible people aged 60 and over and their spouses.
- Funding Mechanism: Formula grants
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: None
- Deadline: Contact Agency
- Applicability to Mitigation: It is possible that a local agency, in partnership with the appropriate State agency, could use these funds to develop a mass feeding program for older residents in the event of a large-scale emergency. To be most effective, the funds would need to be applied for and received prior to the actual emergency event. Otherwise, and also through a State partnership, a local government could use the funds to establish an elderly nutrition program.

State Disaster Preparedness Grants (None)

- Grantor Name: United States Department of Homeland Security/Federal Emergency Management Agency
- Purpose: To assist States in developing and improving State and local plans, programs, and capabilities for disaster preparedness and prevention.
- Eligibility: All States are eligible (including the District of Columbia, Puerto Rico, the Virgin Islands, Guam, American Samoa, the Republic of the Marshall Islands, the Commonwealth of the Northern Mariana Islands, and the Federated States of Micronesia. Requests must be in writing from the Governor or his authorized representative. All of the above-referenced entities are also beneficiaries of the program.
- Criteria/Use: These "improvement grants" may apply to such preparedness programs and capabilities as: (1) planning for disaster response in general, for specific natural disaster contingencies in special locales, for local and area mutual emergency support under State sponsorship, for long-range recovery, and for disaster mitigation and hazard reduction; (2) revision, as necessary, of State legislation, implementing orders, regulations, and other authorities and assignments relevant to disaster preparedness and assistance; (3) disaster-related mutual aid compacts and agreements; (4) the conduct of vulnerability analyses not otherwise available but necessary for the development of State and local disaster preparedness plans and programs; (5) the design of disaster-related emergency systems; (6) training and exercises; (7) program reviews and post-disaster critiques; and (8) public information and education programs. Grant funds may not be used to procure or repair equipment, materials, or facilities except as required for grant administration.
- Funding Mechanism: Grants
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: 50%
- Deadline: Contact Agency
- Applicability to Mitigation: This program does not provide any form of direct mitigation funding to local governments. However, it benefits them indirectly, in that State disaster planning, training and advisory programs are funded, in part, from this program.

State Identification Systems Grant Program (SIS)

- Grantor Name: United States Department of Justice
- Purpose: This program provides Federal assistance to States to establish, develop, update, or upgrade: 1) computerized identification systems that are compatible and integrated with the database of the National Crime Information Center (NCIC) at the FBI; 2) the capability to analyze deoxyribonucleic acid (DNA) in a forensic laboratory in ways that are compatible with the Combined DNA Identification Systems (CODIS) of the FBI; and 3) automated fingerprint identification systems that are compatible and integrated with the Integrated Automation Fingerprint Identification System (IAFIS) of the FBI.
- Eligibility: States, which can then identify subrecipients. State shall require that each person convicted of a sexual felony must provide, to appropriate State law enforcement officials, a sample of blood, saliva, or other specimen necessary to conduct a DNA analysis consistent with the standards established for DNA testing by the FBI Director.
- Criteria/Use: In general, expenditures for this grant program may include equipment, supplies, training, contractor-provided services to address backlog or program implementation issues, State and local personnel expenses, and other expenses deemed reasonable and necessary for a qualifying project. The Federal share of funds may cover 100% of the total cost of the project described in the application. States may use grant funds in conjunction with local government agencies or other States in any combination. States receiving funding under the SIS grant program however, are not required to pass through funding to local agencies. Additionally, a State may enter into compacts with other States to implement the grant programs.
- Funding Mechanism: Formula grants
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: None
- Deadline: Contact Agency
- Applicability to Mitigation: Local law enforcement agencies should contact the Office of Justice Programs, or the Florida Department of Law Enforcement for information regarding this program. An improved identification system would serve as a mitigation tool for civil disturbances, crime and/or terrorism.

State Park Additions (None)

- Grantor Name: Florida Department of Environmental Protection
- Purpose: To acquire endangered environmental, historical and/or archaeological lands for State Parks.
- Eligibility: The Division of Recreation and Parks, Florida Department of Environmental Protection (FDEP), annually reserves funds for the purchase of lands to be added to existing State Parks and State Recreation Facilities. The ultimate sources for these funds include the State's Conservation and Recreation Lands Program, Preservation 2000, and other sources. The Division has authority to negotiate land purchase agreements with single or multiple parties.

- Criteria/Use: The program operates primarily through the purchase of land from “willing sellers”. However, land acquired through other land acquisition programs may be added to the State Park System.
- Funding Mechanism: Purchases, purchase agreements, donations, condemnation, purchase of development rights, conservation easements, etc.
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: Contact Agency
- Deadline: Contact Agency
- Applicability to Mitigation: Because of its emphasis on preservation, conservation and environmental protection, this program is often overlooked as a potential funding source for disaster mitigation. Also, these funds are not directly available to local governments, unless, of course, the local agency is the land. However, in Florida, lands which are environmentally endangered, such as wetlands, coastal areas and riverine areas, are often also lands subject to flooding, tidal surge, frequent fires and other natural hazards. Removal of these properties from the threat of development is thus a form of disaster mitigation.

Superfund Technical Assistance Grants for Citizen Groups at Priority Sites (TAG)

- Grantor Name: United States Environmental Protection Agency
- Purpose: To provide resources under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, Section 117(e) to enable community groups to hire technical advisors to assist them in interpreting technical information concerning the assessment of potential hazards and the selection and design of appropriate remedies at sites eligible for cleanup under the Superfund program.
- Eligibility: Any qualified group of individuals which may be affected by a release or threatened release at any Superfund facility. "Affected" individuals are those who can demonstrate direct effects from the site, such as actual or potential health effects or economic injury. The recipient group must incorporate to receive funds.
- Criteria/Use: There are specific criteria regarding the activities for which these Federal funds may be used: (a) Federal funds may be used at sites listed or proposed for listing on the National Priorities List (NPL) where cleanup is underway for the purpose of obtaining technical assistance in interpreting information with regard to the nature of the hazard, performing the remedial investigation and feasibility study, record of decision, selection and construction of remedial action, operation and maintenance, or removal action.
- Funding Mechanism: Technical assistance and grants
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: Contact Agency
- Deadline: Contact Agency
- Applicability to Mitigation: A local government environmental agency could conceivably serve as the “consulting firm” for helping a community group perform the required site assessment. If the “consulting” position was one with which the local agency was not comfortable, the local agency could make interested citizens aware of this program and

guide them through the application process; leaving the citizen group to hire its own consultant. In either case, this is a good mitigation funding source for contaminated site cleanup.This program will benefit groups of individuals affected by Superfund hazardous waste sites. This may include homeowners, land/property owners, as well as any other individuals in the general public who live near a site or are otherwise affected by it.

Surplus Property Utilization (Federal Property Assistance Program)

- Grantor Name: United States Department of Health and Human Services
- Purpose: To convey or lease all surplus Federal real properties which are needed and usable by eligible healthcare organizations and institutions.
- Eligibility: States governments, their political subdivisions and instrumentalities; tax-supported public health institutions, and nonprofit institutions which (except for institutions which lease property to assist the homeless under Title V of Public Law 100-77) have been held exempt from taxation under Section 501 (c) (3) of the 1986 Internal Revenue Code. Beneficiaries can include anyone attending, working with or for, or served by the eligible applicants. Examples of potentially eligible programs are hospitals, public health clinics, water and sewer systems, institutions for the rehabilitation of the mentally or physically handicapped, health research institutions, homeless assistance facilities, and other institutions which operate basic health programs.
- Criteria/Use: Real property must be used for eligible health purposes including research. It may consist of land, with or without buildings and other improvements, or buildings only. A discount of up to 100 percent, based on the proposed-use, is granted. This discount, applied against the fair value of the property, is earned by the approved use over a prescribed period of 30 years for land, with or without improvements, and a lesser time for leased facilities and improvements which are sold without land. Discount of less than 100 percent requires payment of the difference in cash at the time of conveyance. Property must be used for the purpose for which conveyed, and may not be sold, leased, mortgaged, or encumbered without consent of the Department.
- Funding Mechanism: Sale, Exchange, or Donation of Property and Goods.
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: None
- Deadline: Contact Agency
- Applicability to Mitigation: The main limitation of this program for local governments is that HHS property must be located within or reasonably close to the local jurisdiction in order for the program to be useful. Otherwise, this program represents an excellent way for local agencies to acquire (at little or no out-of-pocket expense) public facilities sites.

Technical Assistance and Training Grants (None)

- Grantor Name: United States Department of Agriculture
- Purpose: Identify and evaluate solutions to water and/or waste related problems of associations in rural areas. (2) Assist entities with preparation of applications for Water and Waste Disposal loans and grants. (3) Provide training to association personnel in order to

improve the management, operation and maintenance of water and/or waste disposal facilities. (4) Pay expenses related to providing the technical assistance and/or training.
- Eligibility: Private nonprofit organizations may receive grants. They must have tax exempt status granted by the Internal Revenue Service (IRS). Applicants must have the proven ability, background, experience, legal authority, and actual capacity to provide technical assistance and/or training to associations.
- Criteria/Use: Technical Assistance and Training Grants are made available from at least one percent and not more than three percent of the funds appropriated for Water and Waste Disposal Grants.
- Funding Mechanism: Assistance and Grants
- Overall Funding Available: FY 2003 - $18,213,835
- Funding Amount: Contact Agency
- Match Requirements: None
- Deadline: Preapplications must be filed between October 1 and December 31 of each fiscal year.
- Applicability to Mitigation: Construction of new or improved facilities that are up to current standards, wind strengths, etc. is mitigation.

Technology Opportunities Program (TOP)

- Grantor Name: United States Department of Commerce/National Telecommunications and Information Administration
- Purpose: To demonstrate how digital networks support lifelong learning for all Americans, help public safety officials protect the public, assist in the delivery of health care and public health services, and foster communication, resource-sharing, and economic development within rural and urban communities.
- Eligibility: State, local and tribal governments, health care providers, schools, libraries, police departments, and community-based non-profit organizations.
- Criteria/Use: TOP projects are demonstrations of how digital network technologies can be used to extend and improve the delivery of valuable services and opportunities to all Americans. By serving as models that can be replicated in similar communities across the country, TOP projects extend their benefits far beyond the communities in which they take place, and provide economic and social benefits to the nation as a whole.
- Funding Mechanism: Grants
- Overall Funding Available: $12.9 million
- Funding Amount: $700,000.00
- Match Requirements: 1:1
- Deadline: April each year
- Applicability to Mitigation: A project help public safety officials protect the public could result in mitigation.

Unemployment Compensation (None)

- Grantor Name: United States Department of Labor
- Purpose: To administer a program of unemployment insurance for eligible workers through Federal and State cooperation; to administer payment of trade adjustment assistance; to

administer disaster unemployment assistance; to provide unemployment compensation for Federal employees and military veterans.

- Eligibility: Eligible agencies include all State unemployment insurance agencies, (including agencies in the District of Columbia, Puerto Rico and the Virgin Islands). Eligible beneficiaries are all workers whose wages are subject to State unemployment insurance laws, Federal civilian employees, and ex-employees of the military services. The program also provides trade readjustment allowances for workers who become unemployed as a result of product imports, and assistance to workers whose unemployment is caused by a Presidentially declared disaster (under the Robert T. Stafford Disaster Relief and Emergency Assistance Act). Workers are eligible if they are involuntarily unemployed, able to work, available for work, meet the eligibility and qualifying requirements of the State law, and are free from disqualifications. Individual State information and eligibility requirements are available from local employment offices.
- Criteria/Use: The States have direct responsibility for establishing and operating their own unemployment insurance programs, while the Federal Government finances the cost of administration.
- Funding Mechanism: Formula Grants; Direct Payments with Unrestricted Use
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: None
- Deadline: Contact Agency
- Applicability to Mitigation: Of importance for mitigation purposes is the Disaster Unemployment Assistance Program, administered by the Department of Labor from funds allocated by FEMA. Unfortunately, this funding would only be available after a disaster, and could not be used by a local government to build up the employment base of a community before a disaster struck. However, the monies would conceivably be available after an economic disaster; such as a massive crop failure or the closure of a major employer.

Volunteer Fire Assistance Grants (VFAG)

- Grantor Name: Florida Division of Forestry/Florida Department of Agriculture and Consumer Services
- Purpose: To provide federal financial, technical, and other assistance to State Foresters to organize, train, and equip fire departments in rural areas and rural communities to prevent and suppress fires.
- Eligibility: A single fire department serving a rural area or a rural community with a population of 10,000 or less, area fire departments (fire districts, townships, etc.) may serve an aggregate population of greater than 10,000 as long as the service area of the fire department includes a rural area or a rural community having a population of 10,000 or less, a single county or town with a population over 10,000 which is served by two or more fire districts operating entirely within the bounds of the county or town, a single community with a population greater than 10,000 and having a single fire department with one or more fire stations may qualify, or a single community fire department serving a population greater than 10,000 and not providing protection to a rural area or to a rural community is not eligible for VFA financial assistance.

- Criteria/Use: A rural community is defined as having 10,000 or less population, or as defined below. This 10,000-population limit for participation in the VFA Program facilitates distribution of available VFA funds to the most needy fire departments. Preference will be given to VFA Grant applications for the purchase of wildland personal protective gear, communications equipment, water handling equipment, and training. The purchase of vehicles and high value equipment will not be funded due to the limited amount of funds available. Purchases made before the date of the VFA application are not eligible for reimbursement. Proof of Purchase forms and invoices must be dated after the date of the VFA application
- Funding Mechanism: Grants and technical assistance
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: 50%
- Deadline: April each year
- Applicability to Mitigation: Having properly trained and resourced firefighters is a form of mitigation.

Volunteer Florida Disaster Mitigation Projects (None)

- Grantor Name: United States Department of Homeland Security/Federal Emergency Management Agency and Florida Department of Community Affairs/Division of Emergency Management
- Purpose: To support community based projects to prevent a disaster or to minimize the impact of the disaster on people, property and the environment
- Eligibility: Local non-profit/501(c)3
- Criteria/Use: None provided
- Funding Mechanism: Grants
- Overall Funding Available: $70,000.00
- Funding Amount: $5,000.00
- Match Requirements: None
- Deadline: March
- Applicability to Mitigation: Installation of smoke alarms, safe room demo, clean storm drains, perform stream restoration, conduct wildfire risk assessment, install storm shutters, remove threatening trees,

Water Pollution Control (None)

- Grantor Name: United States Environmental Protection Agency
- Purpose: To assist States (including territories, the District of Columbia, and qualified Indian tribes, and interstate agencies in establishing and maintaining adequate measures for prevention and control of surface and ground water pollution.
- Eligibility: Potential applicants include State and interstate water pollution control agencies, as defined in the Federal Water Pollution Control Act, and Indian Tribes qualified under Section 519(e) of the Act. Agencies making application for funds must annually submit their pollution-control program to the appropriate EPA Regional Administrator for approval. Requirements of the program are based on Section 106 of the Act, and 40 CFR Parts 35

and 30. Eligible beneficiaries include State and interstate water pollution control agencies and Indian Tribes qualified under Section 518(e) of the Clean Water Act (CWA).
- Criteria/Use: The program is intended to provide broad support for the prevention and abatement of surface and ground water pollution from point and nonpoint sources including water quality planning, monitoring, setting of water quality standards, assessments, permitting, pollution control studies, planning, surveillance and enforcement; advice and assistance to local agencies; training; and public information. Funds cannot be used for construction, operation, or maintenance of waste treatment plants, nor can they be used for costs financed by other Federal grants.
- Funding Mechanism: Formula grants
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: None
- Deadline: Contact Agency
- Applicability to Mitigation: This is a good grant program for use in mitigating existing or potential water pollution control problems. However, the restriction against utilizing the program to correct problems regarding water/wastewater treatment plants may limit its usefulness to small local governments.

Water Quality Cooperative Agreements (None)

- Grantor Name: United States Environmental Protection Agency
- Purpose: To support creation of new and unique approaches to enhancing State capabilities in water quality.
- Eligibility: State water pollution control agencies, interstate water resource agencies, local governments, Indian tribes, non-profit institutions, organizations and individuals.
- Criteria/Use: Grants are for the purpose of aiding appropriate agencies in meeting water quality goals for stormwater treatment, combined sewer outflows, sludge disposal, and potable water treatment, and for enhancing State capabilities in these areas.
- Funding Mechanism: Loans
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: None
- Deadline: Contact Agency
- Applicability to Mitigation: Loan funds might be applicable for the purpose of restoring, or even upgrading, a treatment facility damaged by a natural disaster.

Watercourse Navigation Maintenance (Emergency Dredging Projects)

- Grantor Name: United States Department of Defense/United States Army/United States Army Corps of Engineers
- Purpose: To restore channels for purposes of navigation and/or flood control.
- Eligibility: States, political subdivisions of States or other responsible local agencies which have been established under State law with full authority and ability to undertake necessary legal and financial responsibilities.

- Criteria/Use: Each project selected must be feasible from an engineering standpoint, complete within itself, and economically justifiable. Work pursuant to this program is undertaken as an emergency measure to clear or remove obstructions to navigation in navigable portions of rivers, harbors, and other waterways of the United States, or tributaries thereof, in order to provide existing traffic with immediate and significant benefit. The non-federal interest (the local sponsor) involved must provide all lands, easements and rights-of-way necessary for completion of the project and must bear the costs of necessary annual maintenance until and unless such time as the location may become a part of a specifically authorized annual or periodic project. Local cost participation requirements and procedures for determining the local share of project costs are similar to those for navigation or flood control projects specifically authorized by Congress under regular authorization procedures. Annual expenditures under this program are limited to $1,000,000 per project.
- Funding Mechanism: Provision of Specialized Services
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: None
- Deadline: Contact Agency
- Applicability to Mitigation: Any governmental entity with jurisdiction over a natural or artificial waterway is eligible to serve as a local sponsor for Corps of Engineers' activities performed under this program. Certain floodplain management activities, such as removal of debris, dredging of shoals or sediment dams, and flowway maintenance are eligible activities under this program

Watershed Surveys and Planning (None)

- Grantor Name: United States Department of Agriculture/Natural Resources Conservation Service
- Purpose: To provide planning assistance to Federal, State, and local agencies for the development of coordinated water resource (and related land resource) programs within watersheds or river basins. Funding priority is given to proposed studies which: (1) Contribute to achieving the National Conservation Program high priority objectives; (2) Have a high likelihood of implementation; (3) Can be implemented with little or no direct federal assistance; (4) Have the assistance of other State and/or local agencies in the Study; (5) Are of 2 to 4 years expected duration; and (6) Are considered low cost. Special priority is given to freshwater flooding problems, agricultural nonpoint source water quality improvements, wetland preservation, and drought management in rural/agricultural communities. Special emphasis has been given to communities desiring to develop floodplain regulations to meet requirements of the National Flood Insurance Program (NFIP), and State agencies involved in the development of a strategic water resource plan.
- Eligibility: Applicants can include any local or State water resource agency, federal land and water resource agencies, counties, municipalities, towns, townships, soil and water conservation districts, flood prevention/control districts, Indian tribes, tribal organizations, non-profit organizations. Federal participation is a cooperative effort with the applicant. State and local agencies are expected to participate in the Studies and fund their own activities.

- Criteria/Use: Technical assistance is provided in planning activities to help solve water, and related land, resource problems. Federal technical assistance can include, but is not limited to, engineering, economics, social sciences, agronomy, range management, forestry, biology, hydrology, archaeology, landscape architecture, waste management, and recreation.
- Funding Mechanism: Provision of Specialized Services; Advisory Services and Counseling.
- Overall Funding Available: Contact Agency
- Funding Amount: Contact Agency
- Match Requirements: None
- Deadline: Contact Agency
- Applicability to Mitigation: This is an excellent technical assistance program to aid local governments, and other governmental agencies in the development of floodplain regulations.

Wind and Water Technical Assistance Program (WAWTAP)

- Grantor Name: United States Department of Homeland Security/Federal Emergency Management Agency
- Purpose: To provide technical support to state/local communities, FEMA Regional and Headquarters Mitigation staff in support of mitigation initiatives; technical support necessary to mitigate against potential loss of lives and minimize the amount of damage as a result of a natural disaster
- Eligibility: Provide assistance in support of hurricane and flood programs; designed to enhance the state/local communities' ability to become more resistant to hazards related to flooding and hurricanes
- Criteria/Use: All states and US territories that participate in the Hurricane and/or Flood Programs
- Funding Mechanism: Technical assistance
- Applicability to Mitigation: Provide assistance in support of hurricane and flood programs; designed to enhance the state/local communities' ability to become more resistant to hazards related to flooding and hurricanes

E

ANNEX E: Prioritized Listing of Mitigation Action Items

ANNEX E
Prioritized Listing of Mitigation Action Items

Mitigation actions, projects, and initiatives outlined in the Local Mitigation Strategy (LMS) primarily focus on addressing vulnerabilities in existing buildings, infrastructure, and the natural environment. However, new buildings and infrastructure are incorporated into the LMS in two key ways:

1. **Compliance with the Florida Building Code**: Collier County rigorously enforces the Florida Building Code for all new construction. This code, developed based on lessons learned from Hurricane Andrew, ensures that new structures are built to high standards of resilience and safety.

2. **Development Review for Mitigation Opportunities**: The Emergency Management Department conducts thorough reviews of all Developments of Regional Impact (DRIs) and Planned Unit Developments (PUDs). This process identifies mitigation initiatives to address and reduce potential impacts these developments may have on the community's emergency preparedness and overall resilience.

Process for Inclusion of Mitigation Action Items in the LMS Listing

The inclusion of mitigation action items in the Local Mitigation Strategy (LMS) project priority listing follows a structured and transparent process:

1. **Initiation of a Mitigation Proposal**

    - A Local Mitigation Strategy Working Group (LMSWG) member may propose a mitigation initiative to a "responsible agency" for grant application. Alternatively, a "responsible agency" may directly submit a Mitigation Initiative Evaluation Score Sheet (Annex H) to the LMSWG for consideration at a working group meeting.

    - *Note:* The Mitigation Initiative Evaluation Score Sheet (Annex H) serves as a critical evaluation tool. It ensures alignment with the LMS goals and objectives (Section 3), provides an assessment of the project's community impact and value, and includes a basic benefit-cost analysis (BCA) for the applicant to complete.

2. **Applicant Presentation**

    - The "responsible agency" (hereafter referred to as the applicant) presents the proposed mitigation initiative to the LMSWG during a regular or special meeting.

3. **Discussion and Evaluation**

    - LMSWG members engage in discussions, ask clarifying questions, and may challenge the scores or comments on the Mitigation Initiative Evaluation Score Sheet (Annex H).

4. **Scoring and Voting**

    - Once all questions are addressed and scores are finalized, LMSWG members vote on the initiative. A simple majority vote is required for approval.

    - The Chair finalizes the scoring process, applying the weighting factors outlined in Section 4 (Procedures for Prioritizing Hazard Mitigation Initiatives), and incorporates the new action item into the project priority listing based on its final weighted score.

5. **Special Circumstance for Time-Sensitive Applications**

    - If an eligible entity identifies a grant opportunity for a mitigation initiative not yet listed on the Prioritized Listing of Mitigation Action Items (Annex E) and the next LMSWG meeting would delay the application process, the following expedited procedure applies:

        - The applicant submits a completed Annex H score sheet to the Emergency Management Department.
        - Emergency Management forwards the score sheet to the Chair, who electronically distributes it to LMSWG voting members along with an explanation of the time-sensitive nature of the application.
        - Voting members have two business days to vote on the initiative. A majority vote, with at least three members in agreement, determines its status.
        - A record of this expedited process is included in the minutes of the next scheduled meeting.

6. **Special Rule for Unquantifiable Initiatives**

    - For initiatives that cannot be quantified, refer to Section 4, Paragraph 4.1.4 for guidance.

7. **Floodplain Management Initiatives**

    - Annex I (Collier County Floodplain Plans) addresses the minimum actions required for compliance with the National Flood Insurance Program (NFIP).

    - Communities participating in the Community Rating System (CRS) with floodplain management plans document their activities that exceed NFIP requirements in their respective plans.

    - For CRS communities that are not required to have floodplain management plans and choose not to develop one, this section serves as the repository for their floodplain-related initiatives.

Important Note:

Approval through this process only adds the project to the Collier County project priority listing. The applicant is still responsible for completing the appropriate project application, including the full FEMA Benefit-Cost Analysis (BCA), for grant consideration.

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ANNEX E
COLLIER COUNTY LOCAL MITIGATION ACTION ITEMS
PRIORITY LISTING
(Effective December 18, 2024)

1. Hazard: The hazard listed was the main hazard the responsible office considered when developing this initiative. However, that does not mean that the mitigation initiative only reduces the effects from only the disaster indicated. Projects which indicate "dangerous winds" as the hazard specifically will mitigate against the severe storm, tornado and tropical cyclone wind hazards. Likewise, flooding, coastal storms and tropical cyclone surge are all related in that mitigation projects which address flooding address these specific hazards.

2. New or Existing Buildings or Infrastructure: Does the project address reducing the effects of the hazard on new or existing buildings and/or infrastructure.

3. Beneficiary: Who benefits by the project? CW=Countywide (includes Collier County Public Schools)

4. FUNDING: Grant Abbreviations: (see also: http://floridadisaster.org/mitigation/)

- **FMAP** = Flood mitigation Assistance Program (offered annually)
- **RCMP** = Residential Construction Mitigation Program (offered annually)
- **PDM** = Pre-Disaster Mitigation (offered annually)
- **HMGP** = Hazard Mitigation Grant Program (offered after Presidential Disaster Declaration)
- **CDBG** = Community Development Block Grant

5. Office Responsible:

- **CC=Collier County,**
- **PUD=Public Utilities Department,**
- **ATM=Alternative Transportation Modes,**
- **P & R=Parks & Recreation,**
- **PSD =Public Services Department,**
- **SFWMD/BCB=South Florida Water Management District/Big Cypress Basin,**
- **GMD=Growth Management Department,**
- **LCEC=Lee County Electric Cooperative,**
- **CCPS = Collier County Public Schools,**
- **NAA=Naples Airport Authority**

6. Timeframe (to be Implemented) **- Status:** If grant monies and corresponding match monies available, timeframe is either less than (<) a year or more than (>) a year to implement project.

- **NS=Not Submitted,**
- **IP-NS=In Progress-Not Submitted,**
- **FDEM-UR=FDEM Under Review,**
- **IE=Ineligible,**
- **FEMA-UR=FEMA Under Review,**
- **AWD=Awarded,**
- **WIP=Work in Progress,**
- **Complete=Project Complete,**
- **Remove=Remove,**
- **Withdrawn=Project Withdrawn Voluntarily from FEMA/FDEM but remain on the PPL for Future Consideration.**

NOTE: Projects marked for removal or completion will remain on the list for historical record but will be moved to the bottom of the list.

Collier County Local Mitigation Strategy Project Priority List
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#	SCORE	Name/ Location/ JURISDICTION	Description & Goal(s) Achieved	Hazard Mitigated[1]	New or Existing Bldgs?[2]	Beneficiary[3]	Estimated Cost	Potential Funding Source[4]	Office Responsible	Office Responsible2	Submitted/Updated	Timeframe - Status
1	72567.57	New Communications Microwave Tower - Improved Flood Control | Immokalee FL/Lake Trafford Area | **South Florida Water Management**	New microwave tower will provide redundancy when cell towers go offline during events | Goal 6.0	All	New	Collier County (All jurisdictions)	$7.4M	HMGP	SFWMD Resiliency Division	SFWMD | Carolina (Ana) Maran | cmaran@sfwmd.gov | 561-682-6868	16-Dec-24	>1Year | FDEM-UR
2	25437.5	Marco Island/Collier Co. Watermain Interconnect | Mainsail Dr, Naples34114 | MARCO ISLAND/COLLIER COUNTY	This water supply interconnect between the City and County water systems will provide redundancy in a disaster situation for community water and fire suppression. Goal.3	All	Existing	Marco Isl & E. Naples	$200.0K	HMGP/PDM	City of Marco Island-Fire Department/Emergency Management (Consolidated)	Chris Byrne cbyrne@cityofmarcoisland.com 239-206-0318	16-Dec-24	>1Year|FDEM-UR
3	14840.48398	NCFR, Wind Retrofit (Window & Door Replacements), Fire Station 44: 8970 Hammock Oak Drive, Naples, FL 34108 Fire Station 45: 1885 Veterans Park Drive, Naples, FL 34109 Fire Station 46: 3410 Pine Ridge Rd, Naples FL 34105	Wind Retrofit (Window & Door Replacements), Fire Station 44, 45 & 46 Goal 1 (Obj. 1.1 & 1.2), Goal 3 (Obj. 3.1 & 3.3)	Wind	Existing	Collier County (All Jurisdictions)	$697,005	HMGP	North Collier Fire-Logistics/Finance	Kris Thomas, kthomas@northcolliefire.com, 552-1369	16-Dec-24	Timeframe Not Applicable | NS
4	5647.27	Wind Retrofit - Greater Naples Fire District Stations (GNFD) 20, 22, 71, 72, 73, 90 | COLLIER COUNTY	Harden Bay Doors for building envelope integrity. Current doors are not at highest code standards. | Goals 3.1, 3.3, 3.4, 3.6	Damaging Winds	Existing	Collier County (All jurisdictions)	$4.6M	HMGP	Greater Naples Fire District-Logistics	Chris Wolfe | cwolfe@gnfire.org | 239-229-9991	16-Dec-24	>1Year|AWD-Waiting on SA from FDEM
5	4789.88	Naples Manor North Area Flood Mitigation | COLLIER COUNTY	Complete Nap. Manor North Canal improvements by rechannelization of existing canal. Goal 1	Flood	Existing	E. Naples	$600.0K	CDBG	Collier Transportation Management Services Department -	Beth Johnssen@colliercountyfl.gov | 239-252-1456	16-Dec-24	>1Year|AWD

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6	3290.09	Water Storage Redundancy Project | Port of the Isles Community Improvement District (POI CID) | 25005 Peacock Lane, Naples, FL 34114	Water Backup Storage for POI CID Water Plant | Goal 1.1, 1.2	All	New	Unincorporated Collier County	$1.1M	HMGP	POI CID - Board of Supervisors	Dan Truckey, Vice Chair | dtruckey@poicid.com | 920-737-1345	16-Dec-24	>1Year|FDEM-UR
7	2783.03	Port of The Islands Canal Irrigation Pump Station Mitigation | 25005 Peacock Lane, Naples, FL 34114	To eliminate the potential loss of water service to over 7000 residents during hurricane and storm events, the Port of The Islands Canal Irrigation Pump Station will be hardened against future events. 25005 Peacock Lane Naples, Florida 34114 Objective 1:1, Objective 1.2	Flood, Wind, Hurricane	Existing	Port of the Islands	$500,000	HMGP	POI CID - Board of Supervisors	Dan Truckey, Vice Chair | dtruckey@poicid.com | 920-737-1345	16-Dec-24	Timeframe Not Appliable |NS
8	2642.7	Flood Mitigation of Madison Ave Area in Immokalee.| COLLIER COUNTY	Improvement of roadside ditches/swales, repair/upgrading of non-functioning driveway culverts, addition of cross-drainage structures, & construction of stormwater treatment facs. Goal	Flood	Existing	Immokalee	$1.0M	HMGP	Collier Transportation Management Services Department - Stormwater	Beth Johnssen@colliercountyfl.gov | 239-252-1456	16-Dec-24	Timeframe Not Appliable |NS
9	2256.01	Essential Facility Retrofit| Expanded 1st Responder Shelter | South Regional Library, 8065 Lely Cultural PKWY, Naples, FL 34113 | Collier County	Install est. 500KW generator at South Regional Library. Goal 3.4	All	Existing	Collier County	$550K	HMGP/BRIC	Collier Public Services Department-Libraries	Collier County Public Services | jeffrey.weir@colliercountyfl.gov | 239-252-5509	16-Dec-24	Timeframe Not Appliable |NS

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10	1816.34	Naples City Hall Wind Protection | 735 8th St. S. Naples 34102 | CITY OF NAPLES	Wind retrofit non-structural exterior glass window and metal frame replacement with higher impact glass to meet code…Goal 3, objs 3.1,3.2,3.3	Dangerous Winds	Existing	Naples	$776.0K	HMGP	City of Naples-Utilities Department	mflores@naplesgov.com | 239-213-5004	16-Dec-24	> 1Year|IP-NS
11	1677.37	Upper Gordon River north of GG Pkwy to Pine Ridge Rd Dvmt | COLLIER COUNTY	Includes improvements to the existing conveyance channel known as the Upper Gordon River. Goal 1	Flooding	Existing	N. Naples	$2.0M	HMGP	Collier Transportation Management Services Department - Stormwater	Beth Johnssen@colliercountyfl.gov | 239-252-1456	16-Dec-24	Timeframe Not Applicable|Withdrawn
12	1599.64	Mobile Generators | POI CID | 25005 Peacock Lane, Naples, FL 34114	6 x Mobile Generators for POI CID Pump Stations | Goal 1.1, 1.2	All	New	Unincorporated Collier County	≈$280K	HMGP	POI CID - Board of Supervisors	Dan Truckey, Vice Chair | dtruckey@poicid.com | 920-737-1345	16-Dec-24	>1Year|FDEM-UR
13	1501.37	Immokalee-Eden Garden Bypass | COLLIER COUNTY	Construct new ditch along northern boundary and Install 24'' pipe under Boxwood Drive to tie into. Goal 1	Flooding	Existing	Immokalee	$600,000	CDBG DR & MIT, HMGP	Collier Transportation Management Services Department - Stormwater	Beth Johnssen@colliercountyfl.gov | 239-252-1456	16-Dec-24	Timeframe Not Applicable|Withdrawn
14	1444.62	Old Lely Area | COLLIER COUNTY	Old Lely Backbone Stormwater Management System Improvements. Goal 1	Flooding	Existing	E. Naples	$2.0M	HMGP	Collier Transportation Management Services Department -	Beth Johnssen@colliercountyfl.gov | 239-252-1456	16-Dec-24	Timeframe Not Applicable|Withdrawn
15	1413.75	West side of Goodlette Rd from GG Pkwy north to Pine Ridge Rd | COLLIER COUNTY	Improving the capacity for flow of an existing ditch located on the west side of Goodlette Road. Goal 1	Flooding	Existing	N. Naples	$1.0M	HMGP	Collier Transportation Management Services Department - Stormwater	Beth Johnssen@colliercountyfl.gov | 239-252-1456	16-Dec-24	Timeframe Not Applicable|Withdrawn
16	1324.74	Allen Avenue | EVERGLADES CITY	Allen Avenue Drainage Improvement	Flooding	Existing	Everglades City	$600.0K	HMGP	Everglades City-Public Works Department	Chris Wolfe | cwolfe@gnfire.org | 239-229-9991	16-Dec-24	Timeframe Not Appliable |NS

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17	956.87	Rock Rd./Cypress Canal Area Flood Mitigation | COLLIER COUNTY	Elevating the roads, improvement of roadside ditches, addition of cross-drainage culverts, & Stormwater treatment outfalls. Goal 1	Flooding	Existing	GG Estates	$1.2M	HMGP	Collier Transportation Management Services Department - Stormwater	Beth Johnssen@colliercountyfl.gov | 239-252-1456	16-Dec-24	Timeframe Not Appliable |NS
18	894.03	Water Utility Hardening/Elevation Project | POI CID | 25005 Peacock Lane, Naples, FL 34114	Elevate 1.9 mile road, harden 6 inch water main, elevate 3 well heads and electrical out of SFHA | Goal 3.1	Flood & Wind	New	Unincorporated Collier County	≈$3.8M	HMGP	POI CID - Board of Supervisors	Dan Truckey, Vice Chair | dtruckey@poicid.com | 920-737-1345	16-Dec-24	>1Year|FDEM-UR
19	877.5	Lake Trafford Slough | COLLIER COUNTY	Lake Trafford Immokalee Slough Capacity Improvements. Goal 1	Flooding	Existing	Immokalee Area	$1.0M	HMGP	Collier Transportation Management Services Department -	Beth Johnssen@colliercountyfl.gov | 239-252-1456	16-Dec-24	Timeframe Not Appliable |NS
20	859.89	Griffin Road Area | COLLIER COUNTY	Griffin Road Area Stormwater Management Improvements. Goal 1	Flooding	Existing	E. Naples Area	$1.5M	HMGP	Collier Transportation Management Services Department -	Beth Johnssen@colliercountyfl.gov | 239-252-1456	16-Dec-24	Timeframe Not Applicable|Withdrawn
21	778.64	Immokalee-North 3rd Street Drainage |	Roadside Swales. Installation of inlets on 3rd Street, Construct storm drainpipe system to alleviate ponding and allow conveyance southward to storm drain system on West Main Street.	Flooding	Existing	Immokalee	$600,000	CDBG DR & MIT, HMGP	Collier Transportation Management Services Department - Stormwater	Beth Johnssen@colliercountyfl.gov | 239-252-1456	16-Dec-24	Timeframe Not Applicable|Withdrawn
22	682.916	Naples Fire Sta 2 | 977 26th Avenue North | CITY OF NAPLES	Apparatus Bay renovation and facility hardening. Goal 1	All	Existing	Naples	$450K	HMGP	City of Naples-Utilities Department	mflores@naplesgov.com | 239-213-5004	16-Dec-24	Timeframe Not Applicable|Withdrawn

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23	552.46	Naples Park Area Flood Mitigation | COLLIER COUNTY	Improvement to existing roadside swales, driveways, & installation of stormwater outfall treatment system. Goal 1	Flood	Existing	N. Naples	$14.0M total, in 7 phases	HMGP	Collier Transportation Management Services Department - Stormwater	Beth Johnssen@colliercountyfl.gov | 239-252-1456	16-Dec-24	Timeframe Not Applicable|Withdrawn
24	527.78	Auto Ranch Road Area Flood Mitigation | COLLIER COUNTY	Improvement of roadside ditches, elevation of roads, addition of cross-drainage culverts, and stormwater treatment outfalls. Goal 1	Flood	Existing	E. Collier County	$500K	HMGP	Collier Transportation Management Services Department - Stormwater	Beth Johnssen@colliercountyfl.gov | 239-252-1456	16-Dec-24	Timeframe Not Appliable |NS
25	526.76	Pine 5idge Estates | COLLIER COUNTY	Stormwater Management Improvements. Goal 1	Flooding	Existing	E. Collier County	$5.5M	HMGP	Collier Transportation Management Services Department -	Beth Johnssen@colliercountyfl.gov | 239-252-1456	16-Dec-24	Timeframe Not Applicable|Withdrawn
26	520.37	Big Corkscrew Isl. Regional Park | COLLIER COUNTY	Generators for facilities, wind-hardening Goal 3.	All	New	Collier County (All jurisdictions)	$1,200.0K	HMGP	Collier Public Services Department-Parks & Recreation	Collier County Public Services | jeffrey.weir@colliercountyfl.gov | 239-252-5509	16-Dec-24	Timeframe Not Appliable |NS
27	501.43	Approx. 200' south of the Goodlette Rd/GG Pkwy intersection | COLLIER COUNTY	Construction of a new piped stormwater outfall conveying flow south from the existing ditch along the west side of Goodlette Rd., adjacent to the Naples High School. Goal 1	Flooding	Existing	Naples area	$4.0M	HMGP	Collier Transportation Management Services Department - Stormwater	Beth Johnssen@colliercountyfl.gov | 239-252-1456	16-Dec-24	Timeframe Not Appliable |NS
28	476.25	Desoto Blvd Area, GGE | COLLIER COUNTY	Swale reconstruction. Goal 1	Flooding	Existing	Golden Gate	$2.6M	HMGP	Collier Transportation Management Services Department -	Beth Johnssen@colliercountyfl.gov | 239-252-1456	16-Dec-24	Timeframe Not Appliable |NS

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29	463.68	Essential Facility Retrofit | City of Marco Island Annex Bldg | 1310 San Marco RD 34145 | City of Marco Island	Replace existing windows/doors with impact-rated products. Dry-floodproofing at points of entry to BFE + 4, improved roofing, and backup power/generator. GO 3.1, 3.3	All	Existing	City of Marco Island	≈$446K	HMGP (DR-4486 COVID)	City of Marco Island-Fire Department/Emergency Management (Consolidated)	Chris Byrne cbyrne@cityofmarcoisland.com 239-206-0318	16-Dec-24	>1Year|AWD
30	428.62	Lake Trafford Rd | COLLIER COUNTY	Lake Trafford Road Stormwater Management Improvements. Goal 1	Flooding	Existing	Immokalee Area	$2.0M	HMGP	Collier Transportation Management Services Department -	Beth Johnssen@colliercountyfl.gov | 239-252-1456	16-Dec-24	Timeframe Not Appliable |NS
31	412.75	Logan Blvd Area | COLLIER COUNTY	Stormwater Improvements. Goal 1	Flood	Existing	W. Golden Gate Estates	$4.5M	HMGP	Collier Transportation Management Services Department -	Beth Johnssen@colliercountyfl.gov | 239-252-1456	16-Dec-24	Timeframe Not Appliable |NS
32	412.75	Old Lely Utility Renewal | COLLIER COUNTY	Old Lely Utility Renewal Stormwater Management Improvements. Goal 1.	Flood	Existing	E. Naples Area	$7.0M	HMGP	Collier Transportation Management Services Department -	tsmallwood@cityofeverglades.org | 239-340-4007	16-Dec-24	Timeframe Not Appliable |NS
33	410.69	Equipment Retrofit - Looping Transmission Lines | Carnestown to Marco Island | Unincorporated Collier & Marco Island, FL	Approximately 19 miles of new transmission lines & substation equipment with LOOP feed for improved redundancy | Goal 3.0, 3.1	All	Existing	Collier County and City of Marco Island	$38M	HMGP	Lee County Electric Cooperative (PNP) | Finance Section	LCEC | karen.vivian@lcec.net | 239-656-2236	16-Dec-24	>1Year|FDEM-UR
34	372.52	IFCD Station 30 | 510 New Market Rd, Immokalee | IMMOKALEE FIRE CONTROL DISTRICT	New/Reconstruction of Fire Station #30	Dangerous Winds	Existing	Immokalee & Ave Maria	$5.0M	CDBG/HMGP	Immokalee Fire Control Dist.-Logistics	IFCD | tcunningham@immfire.com | 239-657-2111	16-Dec-24	Timeframe Not Applicable|Withdrawn
35	360.08	Caxambas USCGA Building | 909 Collier Ct., MI | COLLIER COUNTY	Add a new hardened building. Goal 3	Damaging Winds	New	Marco Island	$1,500.0K	HMGP	Collier Public Services Department-Parks & Recreation	Collier County Public Services | jeffrey.weir@colliercountyfl.gov | 239-252-5509	16-Dec-24	Timeframe Not Appliable |NS

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36	341.33	Emergency Services Ctr | 8075 Lely Cultural Pkwy | COLLIER COUNTY	Drill water well and install backup water system. Goal 1	All	Existing	CW	$150.0k	HMGP	Collier Public Utilities Department - Facilities Mgt	Timothy.Rygiel@collie rcountyfl.gov | 239-	16-Dec-24	Timeframe Not Applicable|Withdrawn
37	337.5	Essential Facility Retrofit|CCSO Jail, 3319/3347 Tamiami TRL E	Harden Jail Facility-New Roof-Goal 1	Damaging Winds	Existing	Collier County (All jurisdictions)	$5.0M	HMGP	Collier Public Utilities Department - Facilities Mgt	Timothy.Rygiel@collie rcountyfl.gov | 239-	16-Dec-24	Timeframe Not Applicable|Withdrawn
38	321.59	Non-Residential Retrofit | Marina Store, 525 Newport DR, Naples, FL 34114 | Collier County	Install 100KW permanent generator at Marina Store for fuel operations in a disaster. Goal 1.1	All	Existing	Port of the Isles (POI)	$373K	HMGP/BRIC	Collier Public Services Department-Operations & Veterans Services	Collier County Public Services | jeffrey.weir@collierco untyfl.gov | 239-252-5509	16-Dec-24	Timeframe Not Appliable |NS
39	213.6	Yacono Residential Elevation Project | 112 Pago Pago Drive West, Naples, FL 34113 | BCC	Elevate existing residential structure from 4.9' NAVD to 14.9' NAVD | Goals 1.1 & 1.2	Flood	Existing	Unincorporated Collier County	$310K	HMGP	Greater Naples Fire District-Logistics	Chris Wolfe | cwolfe@gnfire.org | 239-229-9991	16-Dec-24	>1Year|FDEM-UR
40	196.8	Essential Facility Retrofit| Lift Station Generator Install x 4| Shadowlawn Elementary, Avalon Elementary, Naples High School, Everglades School |CCPS	Install Generator and Connect to assoicated Lift Station for backup power. Goal 3.4 and 3.5	All	Existing	Collier County (All jurisdictions)	$75K each	HMGP	Collier County Public Schools - Facilities Department	Marc Rouleau, PE (roulem@collierschoo ls.com)/239-377-0630	16-Dec-24	Timeframe Not Appliable |NS
41	105.93	Essential Facility Retrofit | Alternate EOC Generator | UES, 14700 Immokalee RD, Naples, FL 34120 | Collier County	Install 200KW permanent generator for University Extension Bldg. Goal 3.1.	All	Existing	Collier County (All jurisdictions)	$452K	HMGP/BRIC	Collier Public Services Department-University/IFAS Extension	Collier County Public Services | jeffrey.weir@collierco untyfl.gov | 239-252-5509	16-Dec-24	Timeframe Not Appliable |NS
42	3.04	Essential Facility Retrofit| 1.8W Generator Install x 2 | Golden Gate High, Gulf Coast High | CCPS	Install 1.8W Generator at indicated schools for emergency backup. Goal 3.4	All	Existing	Collier County (All jurisdictions)	$3.4M each	HMGP	Collier County Public Schools - Facilities Department	Marc Rouleau, PE (roulem@collierschoo ls.com)/239-377-0630	16-Dec-24	Timeframe Not Appliable |NS

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43	0	US Hwy-41 Distribution | Ochopee, Florida | Lee County Electric Cooperative	Move the electric lines to the Southside of US-41 for quicker access to repair	All	Existing	Ochopee & Everglades City	$4.01M	HMGP	Lee County Electric Cooperative (PNP) | Finance Section	LCEC | karen.vivian@lcec.net | 239-656-2236	16-Dec-24	Timeframe Not Appliable |NS
		Electrical Building New Construction Elevation/Hardening | 160 Aviation DR, Naples, FL 34104 | Naples Airport Authority (NAA)	Demo existing building. Elevate new electrical building and incorporate hardening into new building design/construction.	All	New	Collier County (All jurisdictions)	$5.2M	HMGP	Naples Airport Authority (NAA)	NAA | Ndietrich@flynaples.com | 239-380-0845	16-Dec-24	Timeframe Not Applicable|Remove
		Wind Retrofit - Naples Community Hospital (NCH) Downtown Campus | City of Naples	Harden Windows to Level E hurricane impact throughout facility | Goal 1.1, 3.1, 3.3	Damaging Winds	Existing	Collier County (All jurisdictions)	$3.6M	HMGP	Naples Communiity Hospital-Emergency Management & Public Safety (Consolidated)	Jennifer Smith/Jennifer.Smith@nchmd.org/239-624-1528	16-Dec-24	Timeframe Not Applicable|Remove
		Wind Retrofit - Naples Community Hospital (NCH) Downtown & North Naples Campus (2 x projects combined) | City of Naples & Collier County	Harden entry points at both hospitals with E level hurricane impact rated doors | Goal 1.1, 3.1, 3.3	Damaging Winds	Existing	Collier County (All jurisdictions)	$632K	HMGP	Naples Communiity Hospital-Emergency Management & Public Safety (Consolidated)	Jennifer Smith/Jennifer.Smith@nchmd.org/239-624-1528	16-Dec-24	Timeframe Not Applicable|Remove
		Essential Facility Retrofit | Dry-Floodproofing | NCH Downtown & NCH NN | City of Naples	Flood Mitigation Fencing (Dry-Floodproofing) at points of entry | Combination of manual install and automatic activation flood barriers | Goals 1.1, 1.2, 3.1	Flooding	Existing	Collier County (All Jurisdictions)	$800K	HMGP (DR-4486 COVID)	Naples Communiity Hospital-Emergency Management & Public Safety (Consolidated)	Jennifer Smith/Jennifer.Smith@nchmd.org/239-624-1528	16-Dec-24	Timeframe Not Applicable|Remove
		Sewer Mitigation Project | Riverbend Mobile Home Park Co-Op | 777 Walkerbilt RD, Naples, FL 34110 | Unincorporated Collier County, FL	Gravity sewer system | low-pressure system at 500-year elevation | Goal 1.2.1	Flood	New	Unincorporated Collier County	$950K	HMGP	Riverbend MHP Co-Op	RBMHP | Wendy Stamnas | wpstamnas@aol.com | 617-842-2618	16-Dec-24	Timeframe Not Applicable|Remove

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		Utilities Admin Bldg | 380 Riverside Circle | CITY OF NAPLES	The Purchase and Installation of Impact rated windows. Goal 3	Dangerous Winds	Existing	Naples	$150.0K	HMGP	City of Naples-Utilities Department	mflores@naplesgov.com | 239-213-5004	16-Dec-24	Timeframe Not Applicable|Remove
		Water Treatment Plant Nuove Energie Filtration System | POI CID | 25005 Peacock Lane, Naples, FL 34114	POI WWTP - Nuove Energie Filter System | Goal 1.1, 1.2	All	New	Unincorporated Collier County	$613.5K	HMGP	POI CID - Board of Supervisors	Dan Truckey, Vice Chair | dtruckey@poicid.com | 920-737-1345	16-Dec-24	Timeframe Not Applicable|Remove
		Flood Retrofit | Utilities & Equipment Elevation | Fred Smith & Bostic Substations | Lily Court & 965 North Barfield Drive, Marco Island, FL 34145	Raise elevation of utilities and equipment controls at both locations. BFE + 1 | Goal 3.0, 3.1	Flooding	Existing	City of Marco Island	$6.0M	HMGP	Lee County Electric Cooperative (PNP) | Finance Section	LCEC | karen.vivian@lcec.net | 239-656-2236	16-Dec-24	Timeframe Not Applicable|Withdrawn
		Safe Room | Belle Meade Facility - Due south of 5735 Collier BLVD Latitude: 26.035600, Longitude: -81.702969 | Unincorporated Collier County	Construct a "FEMA-Compliant" Saferoom for LCEC staff to immediately respond post-event. Goal 1, Objective 1.1, 1.2	All	New	Unincorporated Collier County	$7.0M	HMGP	Lee County Electric Cooperative (PNP) | Finance Section	LCEC | karen.vivian@lcec.net | 239-656-2236	16-Dec-24	Timeframe Not Applicable|IE
		Retrofit - Naples Public Beach Ends - Hardening | North Lake Dr, 3rd AVE S, 14th, 15th, & 16 AVE S | City of Naples	Reconstruction of five (5) shore-protection coastal armoring structures. Goal/Obj 1.1, 1.2	Flood	New	City of Naples	$2.5M	HMGP/BRIC	City of Naples-Public Works Department	City of Naples Public Works |mflores@naplesgov.com | 239-213-5004	16-Dec-24	Timeframe Not Applicable|Remove
		Harden proposed Sports & Entertainment Complex for PSN sheltering | COLLIER COUNTY	Harden field-house facility of the proposed/new Sports & Entertainment Complex for PSN sheltering. Goal 1	All	New	Collier County (All jurisdictions)	$7.5M	HMGP/PDM	Collier County County Managers' Operations (CMO)	Timothy.Rygiel@colliercountyfl.gov | 239-	16-Dec-24	Timeframe Not Applicable|Remove

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#	SCORE	Name/ Location/ JURISDICTION	Description & Goal(s) Achieved	Hazard Mitigated[1]	New or Existing Bldgs?[2]	Beneficiary[3]	Estimated Cost	Potential Funding Source[4]	Office Responsible	Office Responsible2	Submitted/Updated	Timeframe - Status
		SHWMD Lechate Backup Generators | 3730 White Lake BLVD | Collier County	Generator for Master Pump Station and Deep Injection Well	All	Existing and New	Collier County (All jurisdictions)	$250.0K	HMGP	Collier Public Utilities Department-Solid Hazard Waste Management	Phil.Snyderburn@colliercountyfl.gov | 239-252-5081	16-Dec-24	Timeframe Not Applicable|Remove
		Essential Facility Retrofit | UES Bldg Parking Lot Flood Mitigation | 14700 Immokalee RD, Naples, FL 34120 | Collier County	Construct sustainable, permeable surface for 100 space parking lot to mediate flooding around critical facility (alternate EOC). Goal	All	Existing	Collier County (All jurisdictions)	$1.4M	HMGP/BRIC	Collier Public Services Department-University/IFAS Extension	Collier County Public Services | jeffrey.weir@colliercountyfl.gov | 239-252-5509	16-Dec-24	Timeframe Not Applicable|Remove
		Essential Facility Retrofit/Station 31, 1107 Carson RD, Immokalee, FL 34142/Immokalee Fire Control District (IFCD)	Wind Resistant Bay/Pedestrian Doors & Protective Shutters for windows in facility	Damaging Winds	Existing	Immokalee	$55,000	HMGP	Immokalee Fire Control Dist.-Logistics	IFCD | tcunningham@immfire.com | 239-657-2111	16-Dec-24	Timeframe Not Applicable|Remove
		Essential Facility Retrofit | GNFD Station 90 | 175 Capri BLVD, Naples, FL 34113 | Collier County (Isles of Capri)	Replace exterior windows, exterior doors, and apparatus bay doors with hurricane-rated openings-Miami-Dade County approved products	Isles of Capri/All	Existing	Collier County (All jurisdictions)	$239K	BRIC	Greater Naples Fire District-Logistics	Chris Wolfe | cwolfe@gnfire.org | 239-229-9991	16-Dec-24	Timeframe Not Applicable|Remove
		Flood Mitigation - Utility Elevation - City of Marco Island Fire Station 50/EOC | 1280 San Marco RD, Marco Island, FL 34145	Elevate transformer BFE + 2 based on preliminary future flood map BFE | Goals 1.1, 1.2, 3.3	Flooding	Existing	City of Marco Island	$100K	HMGP	City of Marco Island-Fire Department/Emergency Management (Consolidated)	Chris Byrne cbyrne@cityofmarcoisland.com 239-206-0318	16-Dec-24	Timeframe Not Applicable|Remove
		370 Riverside CIR | City of Naples Equipment Service | City of Naples	Wind Retrofit via hardening of doors/windows | Goals 1.1, 3.1, & 3.3	All	Existing	City of Naples	$500K	HMGP/PA	City of Naples-Utilities Department	Timothy.Rygiel@colliercountyfl.gov | 239-	16-Dec-24	Timeframe Not Applicable|Remove
	-470.64	Essential Facility Retrofit | Generator Replacement | NCFD, 13240 Immokalee RD, Naples, FL 34120	Backup Power Generator Replacement. Goal 3, Obj 3.2	All	Existing	Collier County (All Jurisdictions)	≈$36K	HMGP	North Collier Fire-Logistics/Finance	Kris Thomas, kthomas@northcollierfire.com, 552-1369	16-Dec-24	Timeframe Not Applicable|Completed

NON-"BRICK-AND-MORTAR" MITIGATION INITIATIVES
(SEE ALSO FLOODPLAIN MANAGEMENT PLAN PROGRESS REPORTS FROM THE CITIES – ANNEX J)

#	NAME	Description & Goal(s) Achieved	Hazard	New or Existing	Beneficiary	Est.Cost	Potential Funding Source	Office Respon.	Submitted/ Updated	Timeframe - Status
40	Annual Public Appeal/Outreach **ALL JURISDICTIONS**	Annually, present the LMS to the public for comment and participation in the LMS process via the Flood Plain Management Committee outreach initiative. Goal 5	All Hazards	Both	CW	None	N/A	EM & Floodplain Mgrs.	2/20	Annually
41	StormReady Community Certification from the National Weather Service **ALL JURISDICTIONS**	Maintain the County's certification as StormReady which signifies that the community is better prepared to save lives from the onslaught of severe weather through advances planning, education and awareness. Goals 1 & 5	All Hazards	Both	CW	None	N/A	EM & Municipalities	2/20	2025 due
42	**Fire wise** Community Designation & Awareness Program **ALL JURISDICTIONS**	Program that recognizes communities or neighborhoods that demonstrate the spirit, resolve and willingness to take responsibility as a partner in wildfire protection. Fire wise Communities/USA is a way to help prevent and reduce losses to wildland/urban interface fire and foster community participation in applying Fire wise principles. Goals 1, 5 & 6	Wildfire	Both	Municipalities & Immokalee, Golden Gate Estates, Ave Maria, N. Naples Communities	None	Residents, Div. of Forestry & HMGP	Fla. Forest Svs.	2/20	On-going
43	County Wildfire Mitigation – Establish Defensible Spaces **COLLIER COUNTY**	Roller chop or mow approx. 50' wide defensible space corridors from roadside to roadside and behind properties.	Wildfire	Both	WUI Residents/Businesses	$456K	FMAG/HMGP	FFS/GNFRD/NCFRD/IFRD	10/20	On-going

DELETED & DEFERRED PROJECT/ACTION ITEM LISTING

(This space is provided to show projects which were approved by the LMSWG to go forward, but lacked support, etc. later)

NAME/Location	Description & Goal(s) Achieved	Hazard	Beneficiary	Est.Cost	Potential Funding Source	Office Respon.	Why Deleted/Deferred?
Wind Retrofit residential properties **REBUILD NW FLORIDA**	Wind retrofit residential properties. Goal 1	Dangerous Winds	CW	$93M	HMGP	Retrofit NW Fla.	Couldn't find the project sponsor to validate project.
Roberts Ranch Museum 1215 Roberts Ave, Immok. **COLLIER COUNTY**	On all facilities at the museum, retrofit w/hurricane strapping, storm shutters, bury electrical utilities & wind-proof. Goal 3, Obj 3.2.& 3.3	Dangerous Winds	E. Collier County	$92K	HMGP	Collier PSD Museums	Not considered a necessary project.
Naples Depot Museum 1051 5th Ave S. **COLLIER COUNTY**	Install hurricane tie-down at loading dock and buy/install generator. Goal 3	Dangerous Winds	Naples	$215K	HMGP	Collier PSD Museums	Not considered a necessary project.
Museum @ Collier Govt Ctr 3339 Tamiami Trl E. **COLLIER COUNTY**	Replace doors, add hurricane strapping, shutters and generator. Goal 3	Dangerous Winds	E. Naples	$208K	HMGP	Collier PSD Museums	Not considered a necessary project.

NAME/Location	Description & Goal(s) Achieved	Hazard	Beneficiary	Est.Cost	Potential Funding Source	Office Respon.	Why Deleted/Deferred?
Headquarters Library 2385 Orange Blossom Dr. **COLLIER COUNTY**	Generator and installation. Goal 3	All	N. Naples	$200K	HMGP	Collier PSD Library	Not an eligible generator project as a Critical Facility
Vanderbilt Beach Library 788 Vanderbilt Bch Rd. **COLLIER COUNTY**	Generator and installation. Goal 3	All	N. Naples	$100K	HMGP	Collier PSD Library	Not an eligible generator project as a Critical Facility
Marco Island Library 210 s. Heathwood Dr. **COLLIER COUNTY**	Generator and installation. Goal 3	All	Marco Island	$150K	HMGP	Collier PSD Library	Not an eligible generator project as a Critical Facility
South Regional Library 8065 Lely Cultural Pkwy **COLLIER COUNTY**	Generator and installation. Goal 3	All	E. Naples	$150K	HMGP	Collier PSD Library	Not an eligible generator project as a Critical Facility
Estates Branch Library 1266 GG Blvd. W. **COLLIER COUNTY**	Generator and installation. Goal 3	All	G.G. Estates	$150K	HMGP	Collier PSD Library	Not an eligible generator project as a Critical Facility
E. Naples Library 2385 Orange Blossom Dr. **COLLIER COUNTY**	Generator and installation. Goal 3	All	E. Naples	$225K	HMGP	Collier PSD Library	Not an eligible generator project as a Critical Facility
Golden Gate Library 2432 Lucerne Rd. **COLLIER COUNTY**	Generator and installation. Goal 3	All	G.G Estates	$175K	HMGP	Collier PSD Library	Not an eligible generator project as a Critical Facility
Naples Regional Library 650 Central Ave **COLLIER COUNTY**	Generator and installation. Goal 3	All	Naples	$150.K	HMGP	Collier PSD Library	Not an eligible generator project as a Critical Facility
Gulf Coast High School, 7878 Shark Way **COLLIER COUNTY SCHOOLS**	Connect generator to lift station. Goal 1.1	All	CW	$20.0K	HMGP/PDM	Collier Public Schools	The grant process takes too long. Superintendent wants work done now.
Sabal Palm ES, 4095 18th Ave. NE **COLLIER COUNTY SCHOOLS**	Connect generator to lift station. Goal 1.1	All	CW	$20.0K	HMGP/PDM	Collier Public Schools	The grant process takes too long. Superintendent wants work done now.
Corkscrew Elementary School, 1065 C.R. 858 **COLLIER COUNTY SCHOOLS**	Connect generator to lift station. Goal 1.1	All	CW	$20.0K	HMGP/PDM	Collier Public Schools	The grant process takes too long. Superintendent wants work done now.
Mike Davis Elementary School, 3215 Magnolia Pond Drive **COLLIER COUNTY SCHOOLS**	Connect generator to lift station. Goal 1.1	All	CW	$20.0K	HMGP/PDM	Collier Public Schools	The grant process takes too long. Superintendent wants work done now.
Lely Elementary School, 8125 Lely Cultural Pkwy **COLLIER COUNTY SCHOOLS**	Connect generator to lift station. Goal 1.1	All	CW	$20.0K	HMGP/PDM	Collier Public Schools	The grant process takes too long. Superintendent wants work done now.
Oakridge Middle School, 14975 Collier Blvd **COLLIER COUNTY SCHOOLS**	Connect generator to lift station. Goal 1.1	All	CW	$35.0K	HMGP/PDM	Collier Public Schools	The grant process takes too long. Superintendent wants work done now.
Palmetto Ridge High School, 1655 Victory Lane **COLLIER COUNTY SCHOOLS**	Connect Special Needs Shelter Electrical Load to Existing 1.8MW Generator. Goals 1 & 3	All	CW	$400.0K	HMGP/PDM	Collier Public Schools	The grant process takes too long. Superintendent wants work done now.

NAME/Location	Description & Goal(s) Achieved	Hazard	Beneficiary	Est.Cost	Potential Funding Source	Office Respon.	Why Deleted/Deferred?
Calusa Park Elementary School, 4600 Santa Barbara Blvd **COLLIER COUNTY SCHOOLS**	Connect generator to lift station. Goal 1	All	CW	$35.0K	HMGP/PDM	Collier Public Schools	The grant process takes too long. Superintendent wants work done now.
Gulf Coast High School, 7878 shark Way **COLLIER COUNTY SCHOOLS**	Install 1.8MW Generator. Goals 1 & 3	All	CW	$1.3M	HMGP/PDM	Collier Public Schools	The grant process takes too long. Superintendent wants work done now.
Golden Gate High School, 2925 Titan Way **COLLIER COUNTY SCHOOLS**	Install 1.8MW Generator. Goals 1 & 3	All	CW	$1.3M	HMGP/PDM	Collier Public Schools	The grant process takes too long. Superintendent wants work done now.
Various Locations **COLLIER COUNTY**	Public Safety Radio System redundant fiber optic connectivity	County Wide	County Wide	$750K	HMGP	County IT	Found it difficult to meet the HMGP criteria.
Radio Station, 110 South 2nd Street, Immokalee **IMMOKALEE (PNP)**	Generator, residential and wind retrofit facility. Goal 1,2,3,4,5,6	All	Immokalee	$88.0K	HMGP	Coalition of Immokalee Workers	Found another source for the money to complete the project
San Marco Rd from Collier Blvd. , easterly to Landmark St. **CITY OF MARCO ISLAND**	Improve drainage into large collector piping systems. Goal 1	Flood	Marco Island	$750K	HMGP	City of Marco Island	Found another funding source.
City of Marco Island fuel inventory for self-sustainability **CITY OF MARCO ISLAND**	Acquire fuel truck for fuel transfer of diesel and gas and obtain generators for lift stations. Goal 3	All	Marco Island	$175K	HMGP	City of Marco Island	Couldn't get HMGP funding for equipment.
Naples Airport **Collier Mosquito Control District**	Purchase two side by side surveillance all-wheel drive vehicles. Goal 1	Disease Control	County Wide	$50.33K	HMGP	Collier Mosquito Control	Couldn't get HMGP funding for equipment.
1240 Blue Hill Creek, MI **CITY OF MARCO ISLAND**	Construct a residential safe room. Goal 1	Wind	Resident	$30K	HMGP	City of Marco Island	City requested removal
Marine Based Fire/EMS Station **CITY OF MARCO ISLAND**	Elevate and reconstruct this facility that was struck by lightning and damaged by fire. Objs 1.1 & 1.2	Wind/flood	Marco Island Area	$540.0K	HMGP	City of Marco Island	Began the project without HMGP funding
Retrofit SW Fla Homes through the county. **ALL JURISDICTIONS**	Retrofit single family homes to Cat-3 Hurricane wind threat. Goal 1	Dangerous winds	County Wide	$20.0M	HMGP/PDM & RCMP	Retrofit SW Fla	Retrofit SW Florida dissolved.
Port. Gen.Wire Pass-thru & Anchorage **COLLIER COUNTY**	Install Portable Generator pad w/tie-down & building cutout to pass Gen. wires. Goal 1,Obj:1.1, 1.2 Goal 3, Obj 3.1	Dangerous winds	County Wide	$100K	HMGP	Collier Dist. Schools	Schools decided to fund the project totally with its resources.
Wood Electric Pole Replacement **LEE COUNTY ELECTRIC COOPERATIVE**	Replace a portion of the wood poles in its Collier County electric system to concrete. Goal 1, objs. 1.1, 1.2, 1.2.1, Goal 2, objs. 2.2, 2.3, 2.4, and Goal 3, objs. 3.1, 3.2, 3.3	Wind	Subscribers to LCEC	$750K	HMGP	LCEC	FEMA didn't think replacing wood poles with concrete ones was mitigation.
Marco Substation Relay Vault Replacement & Elevation **LEE COUNTY ELECTRIC COOPERATIVE**	Replace the existing relay vault with a relay vault whose floor would be at a higher elevation, thereby minimizing the risk of flood damage to the relay. Goal 1, objs. 1.1, 1.2, 1.2.1, Goal 2, objs. 2.2, 2.3, 2.4, and Goal 3, objs. 3.1, 3.2, 3.3	Flood	Marco Island area served by LCEC	$338K	HMGP	LCEC	Involved more staffing time than the project was worth. Too many FEMA obstacles.

NAME/Location	Description & Goal(s) Achieved	Hazard	Beneficiary	Est.Cost	Potential Funding Source	Office Respon.	Why Deleted/Deferred?
Community Emergency Radio Network	Establish an emergency radio system throughout the community.	All	Vineyards Community	$13K	HMGP/local	Vineyards Amateur Radio Assn	Purchased and established program via member resources.
NNFD #40 – Wind Protection	Install entry door and cupola protection and wind protection for 5 vehicle bay doors at No. Naples Fire District Station 40.	Dangerous Winds	County Wide	$13K	HMGP/PDM	NN Fire District	Did not indicate interest when grant available and validate requirement on time. Given an opportunity to resubmit and nothing received.
NNFD #42 – Wind Protection	Install entry door and cupola and wind protection for 5 bay doors at No. Naples Fire District Station 42.	Dangerous Winds	County Wide	$13K	HMGP/PDM	NN Fire District	Did not indicate interest when grant available and validate requirement on time. Given an opportunity to resubmit and nothing received.
NNFD #46 – Wind Protection	Install entry door protection and cupola and wind protection for 5 bay doors at No. Naples Fire Station 46.	Dangerous Winds	County Wide	$13K	HMGP/PDM	NN Fire District	Did not indicate interest when grant available and validate requirement on time. Given an opportunity to resubmit and nothing received.
NNFD #44- Wind Protection	Install entry door and cupola protection and wind protection for 5 bay doors at North Naples Fire District Station 44	Dangerous Winds	County Wide	$13K	HMGP/PDM	NN Fire District	Did not indicate interest when grant available and validate requirement on time. Given an opportunity to resubmit and nothing received.
Naples Recycling Center	Install pad, berm and electric for building being moved on site to store hazardous waste.	All	County Wide	$80K	HMGP/PDM	CC Solid Waste Dept	Changed recycling center locations.
Big Corkscrew IFRD Sta. 10 Wind Retrofit	Replace four bay doors.	Dangerous Winds	County Wide	$19.3K	HMGP/PDM	Big Corkscrew IFRD	Job completed using other funding mechanisms.
Big Corkscrew IFRD Sta. 11 Wind Retrofit	Strengthen siding and doors and roof.	Dangerous Winds	County Wide	$60K	HMGP/PDM	Big Corkscrew IFRD	Job completed using other funding mechanisms.
Wind Retrofit Building H (DoH, EMS HQ, & Lab)	Install 10,800 sq.ft. wind protection to all bldg windows of Bldg. H.	Dangerous Winds	County Wide	$800K	HMGP/PDM	CC Facilities Dept.	H. Wilma HMGP was to be used, but materials FEMA approved was not aesthetically suitable for the building.
3301 Tamiami Tr. E, Building F, Naples	Replace Generator	All	County Wide	$408K	PDM	CC Facilities Dept.	County replaced generator with other funding mechanism.
Acquisition & development of Gordon River Water Quality Park	The project will combine wetlands, habitats, trails, boardwalks, fishing piers, educational facilities, extensive landscape and hardscape within a passive park setting that will intrigue & educate nature enthusiasts.	Flood	Adjacent community	$19.2M	unknown	CC Trans. Services Division - Stormwater	Project had been acquired and 80% development completion.
Barefoot Beach Sea Oats Project	To plant a sea oat buffer 10 feet wide for approximately 9,210 LF to replace the dune system that has been damaged by many years of storms.	Coastal storms	Adjacent community	$163.4K	FMAP/HMGP	CC Tourism	Pulled. Found out that FEMA and Fla. DEP would not fund because the beach is a Reserve, with no public access and not critically eroded.

SUCCESS STORIES - Funded/Complete Projects

NOTE: Annex 1, Appendix 4, Attachment 1 lists completed wildfire mitigation projects and the affected communities. **OPR**=Office of Primary Responsibility

Title	Description	Amt Req/funded	Source	OPR
Equipment Svs Facility & River Park Cmty Ctr 301 11th Street North & 370 Riverside Cir, Naples	Purchase and install a generator at each facility. Goal 3.	$110K	HMGP	City of Naples

Title	Description	Amt Req/funded	Source	OPR
CITY OF NAPLES (Previously #19 above)				
GNFD Sta 21, 11121 E. Tamiami Trail Greater Naples Fire & Rescue (Previously 12.3 above)	Purchase and install larger generator to increase coverage of emergency activities. Goal 3	$110K	Wildfire HMGP	GNFD
Naples Airport Hangar Collier Mosquito Control District (Previously # 8 above)	Purchase /install one generator at the hangar. Goal 1	$80K	HMGP	CMCD
Community Services Bldg., 270 Riverside Circle **CITY OF NAPLES**	The Purchase and Installation of Impact rated windows. Goal 1	$60K	H. Irma HMGP	Naples
Estates Wildland Areas **FLORIDA FOREST SERVICE**	Hazardous Fuel Reduction. Goal 1	$566,677	HMGP (Wildfire Mitigation Project)	Florida Forest Service
N. Collier Regional Park 15000 Livingston Rd. **COLLIER COUNTY**	3 each, Generator and installation. Goal 3	$398.0K	H. Irma HMGP	Collier PSD P&R
IFAS Bldg. 14700 Immokalee Rd. **COLLIER COUNTY**	Wind retrofit building and harden facility	$300.0K	H. Irma HMGP	Collier University Extension
20 Residential Structures in EGC **EVERGLADES CITY**	Elevate 20 homes. Goal 1.	$800.0K	H. Irma CDBG	Everglades City
Five (5) Critical Facilities **COLLIER COUNTY**	Install emergency generator improvements at 5 critical buildings. Goal 1	$2.506M	H. Irma HMGP	Collier Fac. Mgt
Northwest Corner of Freedom Park @ Goodlette Road – Pump Sta. **COLLIER COUNTY**	Upgrading the existing stormwater pumping station located at the northwest corner of the Freedom Park Goal 1	$800.0K	H. Irma HMGP	Collier GMD Stormwater
Marco Island Police 50 Bald Eagle Dr. **CITY OF MARCO ISLAND**	Install quick generator connection Goal 3	$27,992	H. Irma HMGP	City of Marco Island
Immokalee Sports Complex 505 Escambia St. **COLLIER COUNTY**	2 each, Generator and installation. Goal 3	$245.0K	H. Irma HMGP	Collier PSD P&R
Three (3) Critical Facs. **COLLIER COUNTY**	Procure and install wind protection. Goal 1	$150K	H. Irma HMGP	Collier Fac. Mgt
Marco Island City Hall 50 Bald Eagle Dr. **CITY OF MARCO ISLAND**	Wind retrofit window & doors. Dry flood-proof the facility. Install generator. Goal 3	$2,955.0K	H. Irma HMGP	City of Marco Island
Lift Stations #18, 27,82,32,106,86 & 61 **CITY OF NAPLES**	Purchase/Install Seven (7) Diesel-Driven Standby Pumps at lift stations. Goal 3	$525.0K	H. Irma HMGP	City of Naples
Solana Road East of Goodlette Road **COLLIER COUNTY**	Reconstruct 400 feet of a county stormwater management conveyance system. Goal 1	$700.0K	H. Irma HMGP	Collier GMD Stormwater
Intersection of San Marco Rd & Heathwood Dr. **CITY OF MARCO ISLAND**	Elevate existing roadway. Goal 1	$1,136.0K	H. Irma HMGP	City of Marco Island
Domestic Animal Services	Generator and installation. Goal 3	$350.0K	H. Irma HMGP	Collier PSD

Title	Description	Amt Req/funded	Source	OPR
7610 Davis Blvd **COLLIER COUNTY**				DAS
Wastewater Membrane 807 E. Elkcam Cir. Marco Island **CITY OF MARCO ISLAND**	Harden existing structure by constructing walls and overhead doors. Reinforce roof to withstand Category 5 Hurricane wind forces. Goal 3	$1.5M	H. Irma HMGP	City of Marco Island
Project for 15 Critical Facilities **COLLIER COUNTY**	Install emergency generators pin & sleeve connectors at 15 critical bldg. Goal 1	$300K	H. Irma HMGP	Collier Facilities Mgt.
Marco Island Lift Stas. & RO Wells 807 E. Elkcam Cir. **CITY OF MARCO ISLAND**	Purchase and install 60 generators for lift stations and RO wells. Goal 3	$3,320.0K	H. Irma HMGP	City of Marco Island
Upper Gordon River just south of Golden Gate Parkway **COLLIER COUNTY**	Replacement of the downstream-most existing water level and flow control structure in the Upper Gordon River. Goal 1	$3.09M	H. Irma HMGP	Collier GMD Stormwater
Source Water Facility 7130 Collier Bl, Naples **CITY OF MARCO ISLAND**	Purchase and install a generator for the Source Water Facility. Goal 1	$2.0M	H. Irma HMGP	City of Marco Island
Immokalee Library 243417 N 1st St. **COLLIER COUNTY**	Generator and installation, replace roof and windows Goal 3	$275.0K	H. Irma HMGP	Collier PSD Library
David Lawrence Center, Naples **David Lawrence Center (PNP)**	Purchase & Install Generator to service bldgs. D & F. Goal 1	$260.0K	H. Irma HMGP	David Lawrence Ctr
22 Poles along SR-29 Canal **LEE CTY. ELECTRIC COOP.**	Reinforce w/riprap 22 electric distribution poles along SR-29 canal. Goal 1	$308K	H. Irma HMGP	LCEC
North Collier Fire Stas.43 & 44 **N. Collier Fire Control & Rescue District**	Replace generators at two stations. Goal 3	$120.0K	H. Irma HMGP	NCFC&R
MI Fire Sta. 50 1280 San Marco Road **CITY OF MARCO ISLAND**	Wind and water retrofit fire station. Goal 3	$3.5M	H. Irma HMGP	City of Marco Island
Naples Cmty Development Bldg. 295 Riverside Cr. **CITY OF NAPLES**	Roof replacement. Goal 3.3	$412.0K	H. Irma HMGP	City of Naples
53 locations around the county **COLLIER COUNTY**	Procure and install 54 generators for lift stations. Goal 1	$4,510,000	H. Irma HMGP	Collier PUD
Lift stations city wide **CITY OF NAPLES**	Add Transfer Switches to Lift Stas. in Naples. Obj 3.1	$45K	H. Irma HMGP	City of Naples
America's Business Park Land Acquisition **COLLIER COUNTY**	Develop 83 acres for public access consistent w/conservation goals. Goal 1- 1.1, 1.2, 1.3, 1.7, 1.8 .Goal 2- 2.3, 2.4, Goal 5- 5.1, 5.2. , Goal 6- 6.1, 6.2, 6.4, 6.5	$21.200M	Ad Valorum	Conservation Collier

Title	Description	Amt Req/funded	Source	OPR
CC Road Maintenance Facility Generator Pre-wiring **COLLIER COUNTY**	Install generator hook-up equipment Goal 1, 1.1, 1.2, 1.3 1.4 – Goal 3, 3.1,3.2.3.3	$10K	General Revenue	CC Growth Mgt Dept
Naples Cmty Early Warning Outdoor WX Siren Sys. **CITY OF NAPLES**	Install early wx warning equipment thru-out city. Goal1/Obj 1.2	$31K		City of Naples
Haldeman Creek Stormwater Improvements & Lock Louise Weir Reconstruction **COLLIER COUNTY**	Construct/reconstruct weir, install box culvert & ditch, etc. Goal 6	$515.2K	HMGP (TS Fay)	CC Growth Mgt Dept
CC Landfill leachate 6-inch HDPE pipe Install. **COLLIER COUNTY**	Install 6 – inch pipe Obj 3.1	$320K	HMGP (TS Fay)	CC Public Utilities
Repetitive Loss Property Acquisition on Marco Island **CITY OF MARCO ISLAND**	The City of Marco Island will acquire the property and demo the structure. The property will be designated as "Open Space" and landscaped utilizing Florida Friendly Landscaping. Goal 6	$234K	FMAP	City of Marco Island
E. Naples Cmty Center Wind Retrofit **COLLIER COUNTY**	Install electrical shutters & pre-wire for generator. Obj 3.1 & 3.1	$75K	TS Fay	CC Parks & Recreation Dept.
Immokalee High School – Wind Prot & Prewire (701 Immokalee Dr., Immokalee 34142) **COLLIER COUNTY**	Install emergency generator switching equipment…. Goal 1, Obj. 1.1, Goal 3 –Obj. 3.3	$1.6M	TS Fay -DRI	CC School District
Wind Retrofit Immokalee & Golden Gate Cmty Centers **COLLIER COUNTY**	Wind retrofit with electrical shutters. Obj 3.12 & 3.3	$125K	TS Fay	CC Parks & Recreation Dept.
CAT Facility Wind Retrofit **COLLIER COUNTY**	Install electric roll-down shutters Obj 3.1.& 3.3	$200K	TS Fay	CC Alt. Transportation Modes
MI – WW Treatment Plant - Wind Protection **CITY OF MARCO ISLAND**	Install windscreen protection on two membrane Bio-Reactor skids. Goal 1 – Obj 1.1 & Goal 3, Obj 3.3	$70,000	TS Fay	City of Marco Island
CC Landfill Scale House Hurricane Shutters **COLLIER COUNTY**	Install wind protection. Obj 3.1.& 3.3	$50.0K	TS Fay – HMGP	CC Public Utilities Dept.
Shadowlawn Dr. & Francis Av Drainage Improvement	Construct/repair swales and culverts in project area. Goal 1: Objective 1.2 and 1.2.1	$2.7M	TS Fay -DRI	Bayshore/ Gateway Triangle CRA
Collier County Emergency Services Complex – Wind Abatement (4600 Santa Barbara Bl., Naples 34116)	Improve hi-wind survivability by installing wind resistance improvements aimed at further protecting communications and the generator. Goal 3, Obj. 3.1 & Goal 2, Obj. 2.2	$1.63M/$1.63M	HMGP - Wilma	CC Emergency Management
112 10th Av S.,Naples 34102	Elevate Chirgwin Historical House above BFE	$185K/$222K	HMGP-Wilma	City of Naples
Lee Co. Electric Coop – Move Electric to Underground in MI	Move overhead elect. facs. to underground in Marco Island. (Obj 1.1, 1.2 and Goal 3)	$5.9M/$?	HMGP-Wilma Awaiting City of MI to let LCEC proceed	LCEC

Title	Description	Amt Req/funded	Source	OPR
N. Collier Regional Park 15000 Livingston Rd.	Wind protection for several facilities @ the park and pre-wire Gym for generator.	$40K/$19.9K	HMGP-Wilma	CC P&R
Marco Island EOC	Wind protection -MIFD/EOC	$70K/$38.975K	HMGP-Wilma	MIFRD
Isles of Capri DFD	Heliport retention wall.	$59K/$60K	HMGP-Wilma Need $~$10K	ICDFD
Road Maint. Admin. Fac. 4800 Davis Blvd, Naples 34101	Wind retrofit.	$60K/$30K	HMGP-Wilma	Trans. Svs Div
3301 Tamiami Tr. E, Buildings W, G, D, B & K, Naples	Wind protection for glass & doors.	$244K/$203.950K	HMGP-Wilma	CC Facilities
Naples FD #2	Wind Renovation	~$150K	2002	Emerg Mgt & Nap FD
Everglades City Hall	Elevation Engineering	~$7K	2002	CC Emergency Management
ENFS #20	Wind Screens	~$10K	2002	CC Emergency Management
NNFS #45	Shutters/screens	~$10K	2002	CC Emergency Management
GGFS #73	Shutters/screens	~$10K	2002	CC Emergency Management
BCSFS #12	Shutters/screens	~$10K	2002	CC Emergency Management
Immokalee FS #30	Shutters/screens	~$10K	2002	CC Emergency Management
Ochopee FS #60	Shutters/screens	~$10K	2002	CC Emergency Management
Isles of Capri FS 90	Shutters/screens	~$10K	2002	CC Emergency Management
Marco Island FS 50	Wind Screens	~$10K	2002	CC Emergency Management
Sheriff/EMS Hanger	Wind Screens	~$10K	2002	CC Emergency Management
Golden Terrace Middle School	Roof Retrofit	~$15K	2000	CC Emergency Management
Golden Gate Middle School	Roof Retrofit	~$15K	2000	CC Emergency Management
Laurel Oak Elementary School	Roof Retrofit	~$15K	2000	CC Emergency Management
Big Cypress Elementary School	Roof Retrofit	~$15K	2000	CC Emergency Management
Barron Collier High School	Window Screens	~$10K	2000	CC Emergency Management
Veterans Elementary School	Shutters/Roof Retrofit	~$20K	1999/2000	CC Emergency Management
Village Oak Elementary School	Shutters	~$15K	1999	CC Emergency Management

Title	Description	Amt Req/funded	Source	OPR
Gulf Coast High School	Wind Screens	~$10K	1999	CC Emergency Management
Norris Center (City of Nap)	Window Film	~$5K	1999	CC Emergency Management
Immokalee Middle School	Shutters	~$10K	1998	CC Emergency Management
Oak Ridge Middle School	Shutters	~$10K	1998	CC Emergency Management
Golden Gate Community Ctr	Window Film	~$5K	1998	CC Emergency Management
Fleishman Park	Window Film	~$5K	1997	CC Emergency Management
Barron Collier High School	Window Film	~$5K	1997	CC Emergency Management

F

ANNEX F: Local Mitigation Strategy Working Group Meeting Minutes

ANNEX F

Local Mitigation Strategy Working Group

Meeting Minutes
2020 to 2024

For this LMS cycle only the minutes and the sign-in sheet for each Local Mitigation Strategy (LMS) Working Group meeting held between 2020 and 2024 will be included in this annex, with no additional attachments. Copies of press releases are posted in Annex C.

Should you need verification of LMS Working Group meetings prior to 2020, please contact amy.howard@colliercountyfl.gov.

2020
January 17, 2024 - Regular Meeting

Summary Minutes
Collier County Local Mitigation Strategy (LMS) Working Group
S. Regional Library
8065 Lely Cultural Pkwy, Naples, FL 34113
17 January 2020

Name	Affiliation	X=Present E=Excused
Rick Zyvoloski, **Chair**	Collier C. Emergency Management	X
William Lang, **Vice Chair**	Collier C. Emergency Management	X
Melinda Avni/Tom Gonzalez	Florida Forest Service	E
Kelli Defedericis	City of Marco Island, Community Affairs	-
Chris Byrne	City of Marco Island	X
Reg Buxton	Citizens Corps/North Naples Journal	X
Terry Smallwood/Dottie Joiner	Everglades City	-
Christa Carrera	City of Naples (Floodplain Mgr)	E
Nicole Jensen	Collier C. Public Util. Dept., Solid & Haz. Waste	X
Chris Mason	Collier C. Growth Mgt. Dept. (Floodplain Coord.)	X
R.Wiley/ Jerry Kurtz/L.Gosselin	Collier C. Stormwater Div.	X
Ilonka Washburn	Collier C. Parks & Recreation Div.	E
Tricia Dorn	Lee County Electric Coop	X
Marc Rouleau/Marc MacDonald	Collier C. Public Schools	-
Jim von Rinteln	Interested Citizen	X
Mark Grazewski	Collier Mosquito Control District	E
W. Martin/A. McLaughlin	Greater Naples Fire Rescue District	X
Sal D'Angelo	North Collier Fire Rescue District	X
Rita Greenberg	Immokalee Independent Fire District	-
Ashley Jones	The Salvation Army	X
Dennis Gagne/Jack Arcurie	Heritage Bay Cmty. Development Dist.	E

Visitors: Deborah Forester, CRA-Immokalee

1. **Minutes Approval:** The 18 October 2019 Regular Meeting minutes were unanimously approved. **(Attachment 1)**

2. **Projects for Review**:

a. Greater Naples Fire Stations # 23 and 90 hardening were re-reviewed, both fire hardening projects (station 23 and 90) had $15,000 increase. Projects may need floodproofing? Mr. Mason seemed to think compliance was already met. Motion approved to accept both projects. (Attachment 2)
b. Immokalee North 3rs Street and Eden Garden Bypass Drainage Projects: Area is boxed off due to construction design in past. Stormwater has come up with design per map provided. Going to go under storm main and sewer main to west outfall. Both projects are going for CDBG funding. (Attachment 3)

3. **Membership:** Ms. Lisa Oien transferred to another department and she feels that the LMS would not be related to her new position. Bob Adkins, LCEC alternate, retired.

4. **Grant Opportunity:** Hurricane Michael – Tier 3 monies – Application period closes on 10 Mar 2020. See LMS Meeting page (http://bit.ly/2Br1j3Z) for more info. Chair briefed the working group about the Florida Forest Service's Wildfire Grant approval. FFS will brief on the progress at the next meeting in April.

5. **LMS Update:** The Chair briefed the working group regarding the status of the new LMS Plan. All items except the Hazard Analysis seem to have been accepted by the State. The LMS Working Group approved all changes noted below and posted as the DRAFT plan on-line in December. The contractor advised that they would complete the Hazard Analysis by mid-February. When received, the Chair will provide to the working group for review and approval.

6. **Other Business**:

   a. **Flood News**: Chris Mason discussed RISKMAP preliminary FEMA maps have been released to Collier/Naples/Marco Island community officials for review. Chris Byrne. asked how map changes will affect communities. Mr. Lang and Mr. Wiley explained how current preliminary RISKMAP data will go through open house processes, publication to Federal Register, and then protest period will open. Mr. Lang, Mr. Wiley, and Mr. Mason further explained that due to current status of ongoing review of Collier's FIRM Physical Map Revisions (1 and 2) at Region IV FEMA, the protest period for the current RISKMAP product may be extended. Additionally, once the PMR reviews are finished, it is unsure how all the data will be combined, if combined. Lastly, Mr. Lang mentioned that FEMA's Risk Rating 2.0 initiative may add another layer of complexity to the finalized products and our community outreach efforts. Ashley Jones (Salvation Army) requested if Mr. Lang could review some habitat for humanity projects for possible flood insurance affects. Mr. Lang advised he would assist as needed.

7. **Adjournment:** This meeting ended at 10:10 am. The next regular meeting is April 7, 09:30am, at the S. Regional Library.

ATTACHMENTS

1. October 18, 2019 Summary Minutes (attachments removed)
2. Greater Naples Fire Rescue Department's Project Worksheets
3. Immokalee North 3rd Street and Eden Garden Bypass Drainage Project Worksheets

1/17/20 Initial	Name	Affiliation Participating Jurisdiction
	Rick Zyvoloski, Chair	Collier C. Emergency Mgt.
	William Lang, Vice Chair	Collier C. Emergency Mgt.
E/E	Melinda Avni/Tom Gonzalez	Florida Forest Service Caloosahatchee Dist. Office
	Kelli Defedericis	City of Marco Island, Cmty. Affairs (Floodplain Mgr.)
	Chris Byrne	City of Marco Island
	Reg Buxton	Citizen Corps/N. Naples Journal
	Terry Smallwood/Dottie Smallwood	Everglades City
E	Christa Carrera	City of Naples (Floodplain)
	Nicole Jensen	Collier C. Public Util. Dept., Solid & Haz. Waste
	Chris Mason	Collier County (Floodplain Coordinator)
	vacant	Collier Co. Growth Mgt Dept.
	R.Wiley/J.Kurtz/L.Gosselin	Collier Co. Growth Mgt Dept. (Stormwater)
E	Ilonka Washburn	Collier C. Parks & Recreation Div.
	Tricia Dorn/~~Bob Atkins~~	Lee County Electric Coop
	Marc Rouleau/Marc MacDonald	Collier Co. Public Schools
	James von Rinteln	Interested Citizen
E	Mark Grajewski	Collier Mosquito Control District
E	DC's W. Martin/A. McLaughlin	Greater Naples Fire Rescue District
	Sal D'Angelo	North Collier Fire & Rescue District
	Rita Greenberg	Immokalee Independent Fire District
	Ashley Jones	The Salvation Army
E	Dennis Gagne/ Jack Arcurie	Heritage Bay Cmty Development District

VISITORS

Name	Affiliation	Email Address
Deborah Forester	CRA	deborah.forester@colliercountyfl.gov

April 17, 2020 - Regular Meeting

No Meeting Held – Due to COVID Restrictions

June 11, 2020 - Special Meeting

Summary Minutes
Collier County Local Mitigation Strategy (LMS) Working Group
S. Regional Library
8065 Lely Cultural Pkwy, Naples, FL 34113
11 June 2020

Name	Affiliation	X=Present E=Excused
Rick Zyvoloski, **Chair**	Collier C. Emergency Management	X
William Lang, **Vice Chair**	Collier C. Emergency Management	X
Melinda Avni/Tom Gonzalez	Florida Forest Service	E
Kelli Defedericis	City of Marco Island, Community Affairs	E
Chris Byrne	City of Marco Island	X
Reg Buxton	Citizens Corps/North Naples Journal	X
Terry Smallwood/Dottie Joiner	Everglades City	X
Christa Carrera	City of Naples (Floodplain Mgr)	X
Stefanie Rochow/Phil Snyderburn	Collier C. Public Util. Dept., Solid & Haz. Waste	X
Chris Mason	Collier C. Growth Mgt. Dept. (Floodplain Coord.)	X
R.Wiley/ Jerry Kurtz/L.Gosselin	Collier C. Stormwater Div.	X
Ilonka Washburn	Collier C. Parks & Recreation Div.	E
Tricia Dorn	Lee County Electric Coop	-
Marc Rouleau/Marc MacDonald	Collier C. Public Schools	-
Jim von Rinteln	Interested Citizen	X
Mark Grazewski	Collier Mosquito Control District	E
W. Martin/A. McLaughlin	Greater Naples Fire Rescue District	X/X
Sal D'Angelo	North Collier Fire Rescue District	X
Rita Greenberg	Immokalee Independent Fire District	X
Ashley Jones	The Salvation Army	-

1. **Minutes Approval:** The 17 January 2020 Regular Meeting minutes were unanimously approved. **(Attachment 1)**

2. **Projects for Review**:

    a. Immokalee Fire Control District Station 30 – Reconstruction: $5.0M. Chair advised that HMGP typically does not cover unless demo/rebuild in same location. LMSWG advised that CDBG or other funding will

most likely be the better route and use this approval as the justification that it is an important project for the county. LMSWG voted to approve. (Attachment 2)

b. Allen Avenue Drainage Improvements – Everglades City: $600.0K LMSWG voted to approve. (Attachment 3)

3. **Membership:** Ms. Stefanie Rochow and Mr. Phil Snyderburn, requested voting membership as primary and alternates, representing Collier County Public Utilities Division (PUD). Ms. Nicole Jensen of PUD resigned. The assembled voting membership unanimously voted to accept the actions described above.

4. **Grant Opportunity:**

   a. Fire Mitigation Assistance Grant (FMAG) will soon be advertised. Collier is one of the three counties for Tier 1 funding. Estimate approximately $600.0K available for us.
   b. Hurricane Dorian HMGP Tier 3 funding may soon be available for us.
   c. The Feds have not decided if the COVID-19 disaster will have HMGP grant opportunities in the future.
   d. 30th Av FMAG: We were recently informed FFS had dropped their applications for mitigation projects. We are attempting to negotiate with the State to fund other projects with the monies.

5. **Other Business**:

   a. **Flood News**: Group discussed CRS Activity 610, Flood Warning Program, and new CRS Requirements. Vice Chair would send our CC Growth Management Dept's Standard Operations Guide for Immediate Damage Assessment for comments. Mr. Lang advised he would assist as needed.

   b. **Collier County's Comprehensive Emergency Management Plan (CEMP) is under review**. Anyone having comments and/or recommendations, please do so before August.

6. **Adjournment:** This meeting ended at 10:12 am. The next regular meeting is July 17, 09:30am, at the S. Regional Library.

ATTACHMENTS

1. January 17, 2020 Summary Minutes (attachments removed)
2. IFCD Station #30 New/ReConstruction, Critical Infrastructure Immokalee
3. Allen Avenue Drainage Improvements

6/11/20 Initial	Name	Affiliation Participating Jurisdiction
	Rick Zyvoloski, Chair	Collier C. Emergency Mgt.
WL	William Lang, Vice Chair	Collier C. Emergency Mgt.
E	Melinda Avni/Tom Gonzalez	Florida Forest Service Caloosahatchee Dist. Office
E	Kelli Defedericis	City of Marco Island, Cmty. Affairs (Floodplain Mgr.)
	Chris Byrne	City of Marco Island
	Reg Buxton	Citizen Corps/N. Naples Journal
	Terry Smallwood/Dottie Smallwood	Everglades City
E	Christa Carrera	City of Naples (Floodplain)
SR	Nicole Jensen/Stefanie Rochow	Collier C. Public Util. Dept., Solid & Haz. Waste
	Chris Mason	Collier County (Floodplain Coordinator)
	vacant	Collier Co. Growth Mgt Dept.
RCW	R.Wiley/J.Kurtz/L.Gosselin	Collier Co. Growth Mgt Dept. (Stormwater)
E	Ilonka Washburn	Collier C. Parks & Recreation Div.
—	Tricia Dorn/Bob Atkins	Lee County Electric Coop
—	Marc Rouleau/Marc MacDonald	Collier Co. Public Schools
	James von Rinteln	Interested Citizen
E	Mark Grajewski	Collier Mosquito Control District
	W. Martin/A. McLaughlin	Greater Naples Fire Rescue District
	Sal D'Angelo	North Collier Fire & Rescue District
	Rita Greenberg	Immokalee Fire Control District
—	Ashley Jones	The Salvation Army

VISITORS

Name	Affiliation	Email Address
Stefanie Rochow	PUD/SHWMD	Stefanie.rochow@colf.gov

July 17, 2020 - Regular Meeting

Summary Minutes
Collier County Local Mitigation Strategy (LMS) Working Group
S. Regional Library
8065 Lely Cultural Pkwy, Naples, FL 34113
17 July 2020

Members		
7/17/20 Initial	Name	Affiliation Participating Jurisdiction
E	Rick Zyvoloski, Chair	Collier C. Emergency Mgt.
X	William Lang, Vice Chair	Collier C. Emergency Mgt.
E	Melinda Avni/Tom Gonzalez	Florida Forest Service Caloosahatchee Dist. Office
X	Kelli DeFedericis	City of Marco Island, Cmty. Affairs (Floodplain Mgr.)
X	Chris Byrne	City of Marco Island
E	Reg Buxton	Citizen Corps/N. Naples Journal
E	Terry Smallwood/Dottie Smallwood	Everglades City
E	Christa Carrera	City of Naples (Floodplain)
X	Stefanie Rochow/Phil Snyderburn	Collier C. Public Util. Dept., Solid & Haz. Waste
X	Chris Mason	Collier County (Floodplain Coordinator)
E	**VACANT**	Collier Co. Growth Mgt Dept.
E	Robert Wiley/Gerald Kurtz/Liz Gosselin	Collier Co. Growth Mgt Dept. (Stormwater)
X	Ilonka Washburn	Collier C. Parks & Recreation Div.
E	Tricia Dorn/Bob Atkins	Lee County Electric Coop
E	Marc Rouleau/Marc MacDonald	Collier Co. Public Schools
X	James von Rinteln	Interested Citizen
E	Mark Grajewski	Collier Mosquito Control District
E	W. Martin/A. McLaughlin	Greater Naples Fire Rescue District
X	Sal D'Angelo	North Collier Fire & Rescue District
E	Rita Greenberg	Immokalee Fire Control District
E	Ashley Jones	The Salvation Army
	VACANT	Collier Community & Housing Services Div.

Visitors		
Name	Affiliation	Email Address
Mike Lalbachan, Grant Coordinator	Collier Community and Human Services Division	Mike.Lalbachan@colliercountyfl.gov

1. **Minutes Approval:** The 11 Jun 2020 Special Meeting Minutes were unanimously approved. **(Attachment 1)**

    1. **Project(s) for Review:** No projects to review. Meeting began at 9:35 am. Previous 11JUN20 minutes were approved at 9:39 am.

    2. **Membership** – Ms. Lisa Oien transferred to another department and she feels that the LMS would not be related to her new position. Mike Lalbachan has recently joined the Collier County Community and Human Services Division (CHS). He will be handling all disaster grant programs for the Division (including HMGP, CDBG MIT, and CDBG DR). Upon his attendance, LMSWG needs to discuss adding to membership to represent CHS (need to vote).
        a. Introductions completed and Mike Lalbachan voted in as a member of the Collier LMSWG at 9:42 am.

    3. **Grant Opportunity** –

    a. Fire Mitigation Assistance Grant (FMAG) will soon be advertised. Collier is one of the three counties for Tier 1 funding. Estimate approximately $600.0K available for us.
        i. Tentative NOFA: August 2020
        ii. Chris Byrne asked who would be the best contact at the County to discuss the upcoming Florida Resilient Coastlines Program (FRCP) Grant opportunity
        iii. William Lang advised that Gary McAlpin or Clint Perryman with Coastal Zone Management would probably be the best contacts

    b. Hurricane Dorian HMGP Tier 3 funding may soon be available for us.
        i. Tentative NOFA: August 2020

    c. Building Resilient Infrastructure and Communities (BRIC)
        i. Tentative NOFA: Fall, 2020 (unknown month)
        ii. FEMA will be hosting a webinar series to go over more details of the program. More info at https://www.fema.gov/bric.

    d. The Feds have not decided if the COVID-19 disaster will have HMGP grant opportunities in the future.

    4. **LMS Update** – LMS update was approved by FEMA on May 7, 2020. The LMS expires on April 13, 2025.

    5. **Other News** –
        a. **Collier County's Comprehensive Emergency Management Plan (CEMP) is under review**. Anyone having comments and/or recommendations, please do so before August.

        b. 2020 Flood Exercise will be held 21-23 July 2020 for CRS 610 Credit.

            - William Lang discussed the upcoming exercise (next week; 21-23JUL2020)
            - After the meeting, Mr. Lang and Mr. D'Angelo spoke regarding Crisis Track and his organization's role (Greater Naples Fire) in damage assessment
                - Mr. Lang and Mr. D'Angelo agreed that after the flood exercise, a meeting with GMD Building Review may be needed to determine County First Responder Agency roles in Damage Assessment

c. Flood News (Other News)
   - Kelli DeFedericis advised that Marco Island is still working on their CRS Verification
   - Chris Mason advised that Collier County will be updating their Floodplain Management Plan in the near future (more to follow)

d. Meeting adjourned at 10:04 am

6. Next regular meeting: **16 October** 2020, 0930hrs, at the S. Regional Library

ATTACHMENTS

11 Jun 2020 Summary Minutes

Collier County LMS Sign-In Sheet

Members

7/17/20 Initial	Name	Affiliation Participating Jurisdiction
E	Rick Zyvoloski, Chair	Collier C. Emergency Mgt.
X WL	William Lang, Vice Chair	Collier C. Emergency Mgt.
E	Melinda Avni/Tom Gonzalez	Florida Forest Service Caloosahatchee Dist. Office
X KD	Kelli DeFedericis	City of Marco Island, Cmty. Affairs (Floodplain Mgr.)
X CB	Chris Byrne	City of Marco Island
E	Reg Buxton	Citizen Corps/N. Naples Journal
E	Terry Smallwood/Dottie Smallwood	Everglades City
E	Christa Carrera	City of Naples (Floodplain)
X TB	Stefanie Rochow/Phil Snyderburn	Collier C. Public Util. Dept., Solid & Haz. Waste
X CM	Chris Mason	Collier County (Floodplain Coordinator)
E	**VACANT**	Collier Co. Growth Mgt Dept.
E	Robert Wiley/Gerald Kurtz/Liz Gosselin	Collier Co. Growth Mgt Dept. (Stormwater)
X IW	Ilonka Washburn	Collier C. Parks & Recreation Div.
E	Tricia Dorn/Bob Atkins	Lee County Electric Coop
E	Marc Rouleau/Marc MacDonald	Collier Co. Public Schools
X JVR	James von Rinteln	Interested Citizen
E	Mark Grajewski	Collier Mosquito Control District
E	W. Martin/A. McLaughlin	Greater Naples Fire Rescue District
X SD	Sal D'Angelo	North Collier Fire & Rescue District
E	Rita Greenberg	Immokalee Fire Control District
E	Ashley Jones	The Salvation Army
	VACANT	Collier Community & Housing Services Div.

Visitors

Name	Affiliation	Email Address
Mike Lalbachan	CHS	Mike.Lalbachan@colliercountyfl.gov

October 16, 2020 - Regular Meeting

Summary Minutes
Collier County Local Mitigation Strategy (LMS) Working Group
Collier County Emergency Services Center (ESC)
8075 Lely Cultural Pkwy, Naples, FL 34113
16 October 2020

LMSWG Members (see footnote below table for initial references)		
10/16/20 Initial	**Name**	**Affiliation Participating Jurisdiction**
X (IP)	Rick Zyvoloski, Chair	Collier C. Emergency Mgt.
X (IP)	William Lang, Vice Chair	Collier C. Emergency Mgt.
X (V)	**Melinda Avni**/Tom Gonzalez	Florida Forest Service Caloosahatchee Dist. Office
X(V)	Kelli DeFedericis	City of Marco Island, Community. Affairs (Floodplain Manager)
X (V)	Chris Byrne	City of Marco Island
X (IP)	Reg Buxton	Citizen Corps/N. Naples Journal
NP	Terry Smallwood/Dottie Smallwood	Everglades City
X (V)	Christa Carrera	City of Naples (Floodplain)
X (V)	Stefanie Rochow/Phil Snyderburn/**Tom Bates**	Collier C. Public Util. Dept., Solid & Hazardous Waste
E	Chris Mason	Collier County (Floodplain Coordinator)
E	VACANT	Collier Co. Growth Management Department
X (V)	**Robert Wiley**/Gerald Kurtz/Liz Gosselin	Collier Co. Growth Mgt. Dept. (Stormwater)
X (IP)	Ilonka Washburn	Collier County Parks & Recreation Division
X (V)	**Tricia Dorn**/Bob Atkins	Lee County Electric Coop
NP	Marc Rouleau/Marc MacDonald	Collier Co. Public Schools
X (IP)	James von Rinteln	Interested Citizen
X (V)	Mark Grajewski	Collier Mosquito Control District
X (V)	W. Martin/A. McLaughlin	Greater Naples Fire Rescue District
X (V)	Sal D'Angelo	North Collier Fire & Rescue District
X (V)	Rita Greenberg	Immokalee Fire Control District
E	Ashley Jones	The Salvation Army
X (V)	Mike Lalbachan	Collier Community & Housing Services Division [1]

Visitors		
Name	Affiliation	Email Address
Lisa Loren (V)	The Salvation Army	Lisa.Loren@Aol.com

[1] **"IP" represents In-Person attendees | "V" represents Virtual GoToMeeting Attendees | "NP" represents Not Present**

1. **Minutes Approval:** The 17 Jul 2020 Regular Meeting Minutes were unanimously approved. **(Attachment 1)**

2. **Project(s) for Review:** No projects submitted. Meeting began at 9:33 AM in person and virtually via GoToMeeting. July 17, 2020 LMSWG Minutes (previous minutes) approved.

3. **Quorum for meeting, virtually (E.O.20-246)** – LMSWG approved Regarding Quorum, the LMSWG agreed to "virtual attendance" based on the GoToMeeting roster showing more than 50% attendance of the meeting for attendance and quorum crediting. Additionally, we are going to check w/county atty about a requirement to record and maintain the meeting's recorded record.

4. **Nomination/Election of Chair & Vice Chair for 2020:** Unanimous approval for William Lang as new Chair and Christopher Mason as Vice-Chair, with Rick Zyvoloski still assigned as staff liaison.

5. **Annual Project Priority Listing Review** (Section/Para 4.1.6): Regarding the annual Priority Project Review. (Remember, projects being removed from the active priority listing will either go to the "Deleted & Deferred Project/Action Listing" or to "Success Stories"):
    a. Remove- Success Story – 8 – generator being installed
    b. Remove - 12.3 Success Story – Generator being installed
    c. Modify - 19 – Riverpark generator is a success story
    d. ADD after last project – County Wildfire Mitigation – establishing defensible spaces Desc: Roller chop or mow approx. 50'-wide defensible space corridors from roadside to roadside and behind properties. Haz: Wildfire New/Exist: Both Benefit: WUI Residents Est Cost: $756K Potential Funding: HMGP/FMAG Office Resp: FFS, GNFRD, NCFRD and/or IFRD Timeframe Status: Indefinite/Ongoing

6. **Membership** – Lisa Loren joining the LMSWG as a Salvation Army (TSA) alternate to Ashley Jones (TSA Primary). Lisa works both in Disaster Response for TSA and work for the Immokalee Unmet Needs Coalition. LMSWG unanimous approval for Lisa Loren to become TSA alternate!

7. **Grant Opportunity** –

    a. Fire Mitigation Assistance Grant (FMAG)
        i. Tentative NOFA: TBD

    b. Hurricane Dorian HMGP Tier 3 funding may soon be available for us.
        i. Tentative NOFA: TBD

    c. Building Resilient Infrastructure and Communities (BRIC) and Flood Mitigation Assistance (FMA) Grants
        i. Application Start Date: 09/30/2020
        ii. Application Submission Deadline: 01/29/2020 at 3:00 PM EST
        iii. FEMA NOFO webinar series: https://www.fema.gov/grants/mitigation/fy2020-nofo/webinars
        iv. Introduction to FEMA GO portal: See recordings of all 6 training modules on the FEMA YouTube channel:

        https://www.youtube.com/playlist?list=PL720Kw_OojlIoKKliEE3oWaHOl3cVXb35

8. **LMS Update** – LMS update was approved by FEMA on May 7, 2020. The LMS expires on April 13, 2025.

9. **Other News** –

    a. **Collier County's Comprehensive Emergency Management Plan (CEMP)** – Sent to the State for approval, but still accepting comments.

    b. 2020 Flood Exercise was held 21-23 July 2020 for CRS 610 Credit.

    c. Flood News
        - Marco Island advised that their Flood Damage Prevention Ordinance was successfully updated in October 2020.
        - City of Naples advised their update occurred in March and they are currently working to re-incorporate higher regulatory standards that were removed at that time.
        - Collier County Floodplain Management Section provided their recent CRS LMS Score. Mr. Lang shared with the group.

    d. Wildfire News
        - Melinda Avni mentioned potential for early dry season conditions.
        - Mr. Zyvoloski mentioned an upcoming Miami National Weather Service Office's webinar that will focus on the dry season outlook. The date and time of the webinar is Wednesday, October 28th from 10:30 AM to 11:30 AM. No link yet for the webinar. More to follow.

    e. Any Other News

10. Meeting adjourned at 10:16 AM

11. Next regular meeting: **15 January** 2020, 0930hrs. Location To Be Determined (TBD).

ATTACHMENTS

17 Jul 2020 Summary Minutes

Collier County LMS Sign-In Sheet

Members

10/16/20 Initial	Name	Affiliation Participating Jurisdiction
✓	Rick Zyvoloski, Chair	Collier C. Emergency Mgt.
WEC	William Lang, Vice Chair	Collier C. Emergency Mgt.
✓	Melinda Avni/Tom Gonzalez	Florida Forest Service Caloosahatchee Dist. Office
✓	Kelli DeFedericis	City of Marco Island, Cmty. Affairs (Floodplain Mgr.)
✓	Chris Byrne	City of Marco Island
✓	Reg Buxton	Citizen Corps/N. Naples Journal
X	Terry Smallwood/Dottie Smallwood	Everglades City
✓	Christa Carrera	City of Naples (Floodplain)
✓	~~Stefanie Rochow/Phil Snyderburn~~ Tom Bates	Collier C. Public Util. Dept., Solid & Haz. Waste
X E	Chris Mason	Collier County (Floodplain Coordinator)
	VACANT	Collier Co. Growth Mgt Dept.
✓	Robert Wiley/Gerald Kurtz/Liz Gosselin	Collier Co. Growth Mgt Dept. (Stormwater)
✓	Ilonka Washburn	Collier C. Parks & Recreation Div.
✓	Tricia Dorn/Bob Atkins	Lee County Electric Coop
X NG	Marc Rouleau/Marc MacDonald	Collier Co. Public Schools
✓	James von Rinteln	Interested Citizen
✓	Mark Grajewski	Collier Mosquito Control District
✓	W. Martin/A. McLaughlin	Greater Naples Fire Rescue District
✓	Sal D'Angelo	North Collier Fire & Rescue District
✓	Rita Greenberg	Immokalee Fire Control District
X	Ashley Jones	The Salvation Army
✓	Mike Lalbachan	Collier Community & Housing Services Div.
✓	Lisa Loren	SA

Visitors

Name	Affiliation	Email Address
Lisa Loren	TSA (virtual)	Lisa.Loren@aol.com

2021
January 15, 2021 - Regular Meeting

Regular Quarterly Meeting Agenda
Collier County Local Mitigation Strategy (LMS) Working Group
Conference Room 118, S. Regional Library
8065 Lely Cultural Pkwy, Naples, FL 34113
and/or GoToMeeting
0930hrs, January 15, 2021

Members		
01/15/21 Initial	Name	Affiliation Participating Jurisdiction
X (IP)	William Lang, Chair	Collier C. Emergency Mgt.
X (IP)	Chris Mason, Co-Chair	Collier County (Floodplain Coordinator)
E	Rick Zyvoloski, EM Coordinator	Collier C. Emergency Mgt.
X (V)-MA	Melinda Avni/Tom Gonzalez	Florida Forest Service Caloosahatchee Dist. Office
X (V)	Kelli DeFedericis	City of Marco Island, Cmty. Affairs (Floodplain Mgr.)
X (V)	Chris Byrne	City of Marco Island
X (IP)	Reg Buxton	Citizen Corps/N. Naples Journal
NP	Terry Smallwood/Dottie Smallwood	Everglades City
X (V)	Christa Carrera	City of Naples (Floodplain)
X(IP)-PS	Stefanie Rochow/Phil Snyderburn/Tom Bates	Collier C. Public Util. Dept., Solid & Haz. Waste
	VACANT	Collier Co. Growth Mgt Dept.
X (V)-RW	Robert Wiley/Gerald Kurtz/Liz Gosselin	Collier Co. Growth Mgt Dept. (Stormwater)
E	Ilonka Washburn	Collier C. Parks & Recreation Div.
X (V)-TD	TriciaDorn/Bob Atkins	Lee County Electric Coop
NP	MarcRouleau/Marc MacDonald	Collier Co. Public Schools
X(IP)	James von Rinteln	Interested Citizen
NP	Mark Grajewski	Collier Mosquito Control District
NP	W.Martin/A. McLaughlin	Greater Naples Fire Rescue District
E	Sal D'Angelo	North Collier Fire & Rescue District
X (V)	Rita Greenberg	Immokalee Fire Control District
X (V)	Ashley Jones	The Salvation Army
	VACANT	Collier Community & Housing Services Div.

Visitors		
Name	Affiliation	Email Address
John McCormick/Tim Rygiel/Damon Grant	Facilities Management X (V)	

[1] **"IP" represents In-Person attendees | "V" represents Virtual GoToMeeting Attendees | "NP" represents Not Present**

Collier County Local Mitigation Strategy Working Group (LMSWG) Agenda and Prior Minutes

Taylor Sawatzky	SHWMD/PUD X (V)	Taylor.Sawatzky@colliercountyfl.gov

1. **Minutes Approval:** The 16 Oct 2020 regular meeting minutes were unanimously approved. (Attachment 1)

2. **Project(s) Reviewed and Approved:** The following four (4) projects were reviewed and approved.

    a. Collier County Solid and Hazardous Waste Division, Public Utilities Department (Taylor Sawatzky, FGCU Project Manager)
        - Two re-roof projects (separate properties)
            - North Collier Regional Water Treatment Plant (NCRWTP), 8005 Vanderbilt Beach RD
                - Re-roofing five (5) flat roofs
            - North County Water Reclamation Facility, 10500 Goodlette-Frank RD
                - Electrical building-New metal roof
        - Two generator installs (same property/parcel)
            - SHWMD Hazard Materials Collection Center Generator, 3728 White Lake BLVD
                - Install new stationary generator at the Household Hazardous Waste Center
            - SHWMD, 3730 White Lake BLVD
                - Install new stationary generator at Master Lechate pump station and deep injections well

3. **Quorum for meeting, virtually** – LMSWG previously approved optional in-person or virtual attendance via pre-established GoToMeeting invite by Collier County Emergency Management. Just as with the 16OCT20 meeting, the meeting was recorded via GoToMeeting.

4. **Annual Project Priority Listing:** The Collier County LMS Project Priority Listing was updated per the 15JAN21 LMS meeting. It is posted online at https://www.colliercountyfl.gov/home/showpublisheddocument?id=91244.

5. **Membership** –

    a. Lisa Loren (previously represented Salvation Army) informed Mr. Lang and Mr. Zyvoloski via email on 12/24/20 that she is no longer working for the Salvation Army.

    b. Mike Lalbachan is no longer with the Community and Human Services Division (CHS). He is now with Monroe County Building Department.

    c. Collier County Facilities Management Project Managers, John McCormick and Timothy Rygiel were voted in as primary and alternate representatives for Collier County Facilities Management (Division).

Collier County Local Mitigation Strategy Working Group (LMSWG) Agenda and Prior Minutes

6. **Grant Opportunity** –

a. Fire Mitigation Assistance Grant (FMAG | FM-5307) will soon be advertised. Collier is one of the three counties for Tier 1 funding. Estimate approximately $600.0K available for us.
   i. Tentative NOFA: Late January to early February, per 01/13/21 email update from Florida Division of Emergency Management (FDEM)

b. Hurricane Dorian (DR-4468) HMGP Tier 3 funding may soon be available for us.
   i. Tentative NOFA: Late January to early February, per 01/13/21 email update from FDEM

c. Hurricane Sally (DR-4564) Tier 3 funding
   i. Tentative NOFA: Unknown-estimated February-March 2021, per 01/13/21 email update from FDEM

d. Building Resilient Infrastructure and Communities (BRIC) and Flood Mitigation Assistance (FMA) Grants
   i. Application Start Date: 09/30/2020
   ii. Application Submission Deadline: 01/29/2021 at 3:00 PM EST
   iii. FEMA NOFO webinar series: https://www.fema.gov/grants/mitigation/fy2020-nofo/webinars
   iv. Introduction to FEMA GO portal: See recordings of all 6 training modules on the FEMA YouTube channel:

   https://www.youtube.com/playlist?list=PL720Kw_OojlIoKKliEE3oWaHOl3cVXb35

7. **LMS Update** – LMS update was approved by FEMA on May 7, 2020. The LMS expires on April 13, 2025.

8. **Other News** –
   a. **Collier County's Comprehensive Emergency Management Plan (CEMP)** – Sent to the State for approval, but still accepting comments.

   b. Flood News

      - Floodplain Managers mentioned receiving notice of publishing to Federal Register regarding the 90-day notice for upcoming PMRs.
      - Christa Carrera (City of Naples) advised her next Cycle Visit (CRS) will be in 2022.
      - Kelli DeFedericis (Marco Island) is still awaiting the Cycle Visit results.

   c. Wildfire News

      - Melinda Avni (FFS) advised that due to COVID-19 restrictions, they have benefited from more of focus from their Regional Mitigation Team on mechanical fuel reduction, via Collier clearing efforts.

Collier County Local Mitigation Strategy Working Group (LMSWG) Agenda and Prior Minutes

d. Other News

9. Next regular meeting: **16 April** 2021, 0930hrs, at the S. Regional Library

ATTACHMENT(S)

1. 16 October 2020 Summary Minutes
2. PUD Four (4) Project Worksheets
    a.

Collier County LMSWG Sign-In Sheet

Members

01/15/21 Initial	Name	Affiliation Participating Jurisdiction
WEL	William Lang, Chair	Collier C. Emergency Mgt.
CM	Chris Mason, Co-Chair	Collier County (Floodplain Coordinator)
E	Rick Zyvoloski, EM Coordinator	Collier C. Emergency Mgt.
/E	Melinda Avni/Tom Gonzalez	Florida Forest Service Caloosahatchee Dist. Office
V	Kelli DeFedericis	City of Marco Island, Cmty. Affairs (Floodplain Mgr.)
V E	Chris Byrne	City of Marco Island
der	Reg Buxton	Citizen Corps/N. Naples Journal
NP	Terry Smallwood/Dottie Smallwood	Everglades City
V	Christa Carrera	City of Naples (Floodplain)
	Stefanie Rochow/Phil Snyderburn/Tom Bates	Collier C. Public Util. Dept., Solid & Haz. Waste
	VACANT	Collier Co. Growth Mgt Dept.
V	Robert Wiley/Gerald Kurtz/Liz Gosselin	Collier Co. Growth Mgt Dept. (Stormwater)
E	Ilonka Washburn	Collier C. Parks & Recreation Div.
V	TriciaDorn/Bob Atkins	Lee County Electric Coop
NP	MarcRouleau/Marc MacDonald	Collier Co. Public Schools
JvR	James von Rinteln	Interested Citizen
	Mark Grajewski	Collier Mosquito Control District
NP	W.Martin/A. McLaughlin	Greater Naples Fire Rescue District
E	Sal D'Angelo	North Collier Fire & Rescue District
V	Rita Greenberg	Immokalee Fire Control District
V	Ashley Jones	The Salvation Army
	VACANT	Collier Community & Housing Services Div.

Visitors

Name	Affiliation	Email Address
V John McCormick/Tim Rygiel/~~Damon Grant~~	Facilities Management	John.McCormick@colliercountyFL.gov Timothy.Rygiel@colliercountyFL.gov
V Taylor Sawatzky	SHWMD/PUD	Taylor.Sawatzky@colliercountyfl.gov

March 19, 2021 - Special Meeting

Special Meeting Minutes
Collier County Local Mitigation Strategy (LMS) Working Group
Suite 326 (Policy Room-EOC), Emergency Services Center
8075 Lely Cultural Pkwy, Naples, FL 34113
and/or GoToMeeting
0930hrs, March 19, 2021

Members		
03/19/21 Initial	Name	Affiliation Participating Jurisdiction
X (IP)	William Lang, Chair	Collier C. Emergency Mgt.
X (IP)	Chris Mason, Co-Chair	Collier County (Floodplain Coordinator)
X (IP)	Rick Zyvoloski, EM Coordinator	Collier C. Emergency Mgt.
X (V)	Melinda Avni/Tom Gonzalez	Florida Forest Service Caloosahatchee Dist. Office
X (V)	Kelli DeFedericis	City of Marco Island, Cmty. Affairs (Floodplain Mgr.)
E	Chris Byrne	City of Marco Island
E	Reg Buxton	Citizen Corps/N. Naples Journal
NP	Terry Smallwood/Dottie Smallwood	Everglades City
E	Christa Carrera	City of Naples (Floodplain)
X (V-PS)	Stefanie Rochow/Phil Snyderburn/Tom Bates	Collier C. Public Util. Dept., Solid & Haz. Waste Division
	VACANT	Collier Co. Growth Mgt Dept.
X (V-RW)	Robert Wiley/Gerald Kurtz/Liz Gosselin	Collier Co. Growth Mgt Dept. (Stormwater)
E	Ilonka Washburn	Collier C. Parks & Recreation Division
NP	Tricia Dorn/Bob Atkins	Lee County Electric Coop
NP	Marc Rouleau/Marc MacDonald	Collier Co. Public Schools
X (IP)	James von Rinteln	Interested Citizen
E	Mark Grajewski	Collier Mosquito Control District
NP	W.Martin/A. McLaughlin	Greater Naples Fire Rescue District
E	Sal D'Angelo	North Collier Fire & Rescue District
X (V)	Rita Greenberg	Immokalee Fire Control District
X (V)	AshleyJones	The Salvation Army
X (V-TR)	John McCormick/Timothy Rygiel	Collier County Facilities Management Division

Visitors		
Name	Affiliation	Email Address
Matthew Fortune (Virtual)	CC PUD	Mathew.Fortune@colliercountyfl.gov
Howard Critchfield (Virtual)	CC GMD	Howard.Critchfield@colliercountyfl.gov

X = Present | (IP) = In Person | (V) = Virtual via GoToMeeting | E = Excused | NP = Not Present and Not Excused

1. **Approval** of 15 January 2021 Meeting minutes. (Attachment 1) – ***Unanimously approved by LMSWG on 03/19/2021.***

2. **Project(s) for Review: - <u>IFCD project approved</u> by Collier LMSWG after review and update to Risk section and BCA-Loss Costs Associated without this Mitigation Project Sections.**

    a. Immokalee Fire Control District/IFCD-Chief Rita Greenberg (Attachment 2)
        - Station 31-1107 Carson RD, Immokalee, FL 34143
            - Facility Hardening-wind resistant bay and pedestrian doors, and protective shutters for windows.
            - See 3(e) and 3(f) below for more details regarding FM-5307.

3. FM-5307 (Post-Fire HMGP NOFA)-Project(s) for Project Priority Ranking and Endorsement Letter to FDEM – **<u>IFCD and PUD projects ranked, with IFCD as first project and PUD as second project on FDEM Project Submission (Endorsement) Letter</u>.**
    a. NOFA was released on 02/08/2021.
    b. Application Period Deadline: 05/10/2021
    c. Collier County has Tier 1 funding eligibility ($629,681.00)
    d. This Special Meeting has been called to review any potential projects/existing projects that being considered for this Tier 1 funding opportunity.
    e. The following agencies have expressed interest in pursuing funding associated with FM-5307.
        - Collier County Solid Hazardous Waste Division (Public Utilities Department)-see 3(f) below. This project was already reviewed and approved in the last LMSWG Regular Meeting on 01/15/2021
        - Immokalee Fire Control District (IFCD)-see 3(f) below. Ranking contingent upon approval by LMSWG during this same meeting (see 2(a) above).

4. **Quorum for meeting, virtually** – LMSWG previously approved optional in-person or virtual attendance via pre-established GoToMeeting invite by Collier County Emergency Management. Just as with the 16OCT20 meeting, this meeting will be recorded via GoToMeeting.

5. **Annual Project Priority Listing:** The Collier County LMS Project Priority Listing was updated per the ***<u>19MAR2021 LMS meeting</u>***. If any new projects are reviewed and accepted by the group for this meeting, the project priority listing will be updated accordingly.

6. **Membership** –
    a. No current membership changes proposed prior to this meeting.

7. **Grant Opportunity** –
    a. The HMGP is providing 100% digital submission option for FM-5307 and DR-4668
        - Sub-applicants must request access to the filesharing site prior to the application deadline to avoid late submissions.
        - Hard copy submissions are still accepted, but a copy must still be uploaded to the filesharing site as a sub applicant's required digital submission.
        - More details can be found in the NOFA(s) and on the State HMGP website: https://www.floridadisaster.org/dem/mitigation/hazard-mitigation-grant-program/

b. Fire Mitigation Assistance Grant (FMAG | FM-5307)
   - NOFA
     - Announced/dated 02/08/2021.
     - This Special Meeting is in reference to this NOFA.
     - **Application Deadline Period: 05/10/2021**
     - See NOFA for more details.
   - Collier has Tier 1 funding opportunity.
   - $629,681.00 allocated to Collier County (per 36th Ave Fire)

c. Hurricane Dorian (DR-4468)
   - NOFA:
   - Announced/dated 02/23/2021.
   - **Application Period Deadline: 05/24/2021**
   - Collier has Tier 3 funding opportunity.

d. **Future process for potential project prioritization (need final vote by LMSWG during this meeting)**
   - If one or more projects are proposed for consideration, the LMSWG will meet to review/approve the project(s) and possibly rank and endorse for FDEM submittal.
     - If one or more projects are interested in a specific NOFA, and are not yet reviewed by the LMSWG, a meeting must be called to properly review and vote for approval or denial.
   - *If one or more projects are already reviewed and approved by the LMSWG (meaning they are eligible for the LMS Project Priority Listing), and they are interested in a specific NOFA, a meeting does not need to be held, and the LMS Chair or his/her designee can send a project submission/endorsement letter directly to FDEM.*
     - ***The LMSWG unanimously approved this approach for future projects.***

e. Hurricane Sally (DR-4564) Tier 3 funding
   - Tentative NOFA: Unknown-estimated February-March 2021, per 01/13/21 email update from FDEM

f. Building Resilient Infrastructure and Communities (BRIC) and Flood Mitigation Assistance (FMA) Grants
   - Application Submission Deadline has passed: 01/29/2021 at 3:00 PM EST.
   - State approved 17 FMA projects (total $6,127,496) and 20 BRIC projects (total $195,370,361)

   - FEMA NOFO webinar series: https://www.fema.gov/grants/mitigation/fy2020-nofo/webinars

   - Introduction to FEMA GO portal: See recordings of all 6 training modules on the FEMA YouTube channel: https://www.youtube.com/playlist?list=PL720Kw_OojlIoKKliEE3oWaHOl3cVXb35

g. Hurricane Loss Mitigation Program (HLMP)
- HLMP is up for reauthorization this year
- SB 168 Hurricane Loss Mitigation Program introduced to Florida Senate on 03/02/2021
  - https://www.flsenate.gov/Session/Bill/2021/168

8. **LMS Update** – LMS update was approved by FEMA on May 7, 2020. The LMS expires on April 13, 2025.

9. **Other News** –
   a. **Collier County's Comprehensive Emergency Management Plan (CEMP) –**
      - State approved our CEMP.
      - Scheduled to go in front of BCC for final resolution on 13 April 2021
   b. Flood News
      - Collier County has entered the appeal period for the coastal preliminary DFIRM, which will run though early June 2021 (90 days)
      - Recertification is ready to submit.
      - Moving soon into the three-year verification visit
   c. Wildfire News
      - Two communities coming up on their FIREWISE Community Designation anniversaries
   d. Other News
      - Salvation Army-Ashley Jones
        - Working various grants for family assistance
          - Most funding is COVID-based.
        - Some families no longer have an active lease for where they live, so the moratorium is no longer protecting them.
        - If local match dollars are needed, TSA may be able to assist upon request.

10. Next regular meeting: **16 April** 2021, 0930hrs, at the Emergency Services Center.

ATTACHMENT(S)

1) 15 January 2021 Summary Minutes (For Approval)

2) 19 March 2021 Project for Review (IFCD-1107 Carson RD, Immokalee, FL 34142-Facility Hardening)

Virtual Collier LMSWG-Special Meeting (FM-5307) Attendees

Summary

Meeting Date	Meeting Duration	Number of Attendees	Meeting ID
March 19, 2021 9:20 AM EDT	80 minutes	10 4 in person	160-367-141

Details

Name	Email Address	Join Time	Leave Time
Ashley Jones	Ashley.Jones@uss.salvationarmy.org	9:28 AM	10:40 AM
Collier County Emergency Manag	emergman@colliergov.net	9:20 AM	10:40 AM
Howard Critchfield	ho.critchfield@hotmail.com	9:27 AM	10:40 AM
Kelli DeFedericis	kdefedericis@cityofmarcoisland.com	9:38 AM	10:40 AM
Melinda Avni	melinda.avni@fdacs.gov	9:29 AM	10:40 AM
Matthew Fortune	Matthew.Fortune@colliercountyfl.gov	9:31 AM	10:40 AM
Phil Snyderburn	Phil.Snyderburn@colliercountyfl.gov	9:32 AM	10:40 AM
Rita Greenberg	rgreenberg@immfire.com	9:27 AM	10:40 AM
Robert Wiley	Robert.Wiley@colliercountyfl.gov	9:39 AM	10:40 AM
Tim Rygiel	Timothy.Rygiel@colliercountyfl.gov	9:32 AM	10:40 AM
William Lang	In-Person	9:20 AM	10:40 AM
Christopher Mason	In-Person	9:20 AM	10:40 AM
Richard Zyvoloski	In-Person	9:20 AM	10:40 AM
James Von Rinteln	In-Person	9:20 AM	10:40 AM

April 16, 2021 - Regular Meeting

Regular Quarterly Meeting Agenda
Collier County Local Mitigation Strategy (LMS) Working Group
Suite 326 (Policy Room-EOC), Emergency Services Center
8075 Lely Cultural Pkwy, Naples, FL 34113
and/or GoToMeeting
0930hrs, April 16, 2021

Collier LMSWG Members

04/16/21 Initial	Name	Affiliation Participating Jurisdiction
IP	William Lang, Chair	Collier C. Emergency Mgt.
IP	Chris Mason, Co-Chair	Collier County (Floodplain Coordinator)
IP	Rick Zyvoloski, EM Coordinator	Collier C. Emergency Mgt.
V	Melinda Avni/Tom Gonzalez	Florida Forest Service Caloosahatchee Dist. Office
E	Kelli DeFedericis	City of Marco Island, Cmty. Affairs (Floodplain Mgr.)
NP	Chris Byrne	City of Marco Island
NP	Reg Buxton	Citizen Corps/N. Naples Journal
NP	Terry Smallwood/Dottie Smallwood	Everglades City
E	Christa Carrera	City of Naples (Floodplain)
V (PS)	Stefanie Rochow/Phil Snyderburn/Tom Bates	Collier C. Public Util. Dept., Solid & Haz. Waste Division
	VACANT	Collier Co. Growth Mgt Dept.
V (RW)	Robert Wiley/Gerald Kurtz/Liz Gosselin	Collier Co. Growth Mgt Dept. (Stormwater)
V	Ilonka Washburn	Collier C. Parks & Recreation Division
NP	Tricia Dorn/Bob Atkins	Lee County Electric Coop
IP (MR)	Marc Rouleau/Marc MacDonald	Collier Co. Public Schools
E	James von Rinteln	Interested Citizen
NP	Mark Grajewski	Collier Mosquito Control District
NP	W.Martin/A. McLaughlin	Greater Naples Fire Rescue District
V	Sal D'Angelo	North Collier Fire & Rescue District
V	Rita Greenberg	Immokalee Fire Control District
V	AshleyJones	The Salvation Army
V	John McCormick/Timothy Rygiel	Collier County Facilities Management Division

X = Present | (IP) = In Person | (V) = Virtual via GoToMeeting | E = Excused | NP = Not Present and Not Excused

Collier LMS 04-16-21 Visitors

Name	Affiliation	Email Address
Taylor Sawatzky (V)	Collier SHWMD (PUD)	Taylor.Sawatzky@colliercountyfl.gov
Howard Critchfield (V)	Growth Management Department	Howard.Critchfield@colliercountyfl.gov

1. Approval of 19 March 2021 Special Meeting Minutes (FM-5307). (Attachment 1) **Unanimously approved.**

2. Project(s) for Review: **All projects reviewed and approved.**

    a. Collier County Facilities Management Division (PUD)-Tim Rygiel/John McCormick (Attachment 2)
        - 3319/3347 Tamiami Trail E, Bldg. J1/J2 Naples FL 34112
            - Essential Facility Retrofit-Reroof and hardening of roof elements.
            - If approved, recommending for DR-4468 (Hurricane Dorian) Tier 3 Funding to FDEM

    b. Collier County Public School (CCPS) – Marc Rouleau (Attachment 3)
        - Generators install for school lift station.
            - Avalon Elementary School
                - 3300 Thomasson DR, Naples, FL 34112
            - Everglades City School
                - 415 School DR E, Everglades City, FL 34141
            - Naples High School
                - 1100 Golden Eagle CIR, Naples, FL 34102
            - Shadowlawn Elementary School
                - 2161 Shadowlawn DR, Naples, FL 34112
        - 1.8MW Emergency Generator Install
            - Golden Gate High School
                - 2925 Titan WAY, Naples, FL 34116
            - Gulf Coast High School
                - 7878 Shark WAY, Naples, FL 34119

3. Quorum for meeting, virtually – LMSWG previously approved optional in-person or virtual attendance via pre-established GoToMeeting invite by Collier County Emergency Management. Just as with the 16OCT20 meeting, this meeting will be recorded via GoToMeeting.

4. Annual Project Priority Listing**:** The Collier County LMS Project Priority Listing was updated per the 19MAR21 LMS special meeting. If any new projects are reviewed and accepted by the group for this meeting, the project priority listing will be updated accordingly.

5. Membership – **Mr. Sawatzky unanimously approved as new LMSWG member, representing PUD.**
    a. Taylor Sawatzky-Solid & Hazardous Waste Division, Public Utilities Department
        - Nominated by Phil Snyderburn via email on 01/27/2021.

6. Grant Opportunity –
    a. The HMGP is providing 100% digital submission option for FM-5307 and DR-4668
        - Sub-applicants must request access to the filesharing site prior to the application deadline to avoid late submissions.
        - Hard copy submissions are still accepted, but a copy must still be uploaded to the filesharing site as a sub applicant's required digital submission.
        - More details can be found in the NOFA(s) and on the State HMGP website: https://www.floridadisaster.org/dem/mitigation/hazard-mitigation-grant-program/

    b. Fire Mitigation Assistance Grant (FMAG | FM-5307)
        - NOFA
            - Announced/dated 02/08/2021.
            - Application Deadline Period: 05/10/2021
        - Collier has Tier 1 funding opportunity.
        - $629,681.00 allocated to Collier County (per 36th Ave Fire)
            - Project priority letter sent to FDEM on 03/19/2021 for two LMSWG-approved projects (IFCD and PUD projects)

    c. Hurricane Dorian (DR-4468)-**Collier County Jail Structure Hardening-Reroof approved for project priority submission to the Florida Division of Emergency Management.**
        - NOFA:
            - Announced/dated 02/23/2021.
            - Application Period Deadline: 05/24/2021
        - Collier has Tier 3 funding opportunity.

    d. Hurricane Sally (DR-4564) Tier 3 funding
        - Tentative NOFA: Unknown-estimated April-May2021, per 04/14/21 email update from FDEM.

    e. Building Resilient Infrastructure and Communities (BRIC) and Flood Mitigation Assistance (FMA) Grants
        - Application Submission Deadline has passed: 01/29/2021 at 3:00 PM EST.
        - State approved 17 FMA projects (total $6,127,496) and 20 BRIC projects (total $195,370,361)
        - FEMA NOFO webinar series: https://www.fema.gov/grants/mitigation/fy2020-nofo/webinars
        - Introduction to FEMA GO portal: See recordings of all 6 training modules on the FEMA YouTube channel: https://www.youtube.com/playlist?list=PL720Kw_OojlIoKKliEE3oWaHOl3cVXb35

    f. Hurricane Loss Mitigation Program (HLMP)
        - HLMP is up for reauthorization this year.
        - SB 168 Hurricane Loss Mitigation Program introduced to Florida Senate on 03/02/2021
            - https://www.flsenate.gov/Session/Bill/2021/168

7. LMS Update
    a. Collier County Public Schools (CCPS) adopted the LMS at their 04/13/2021 Regular School Board Meeting.
    b. LMS update was approved by FEMA on May 7, 2020. The LMS expires on April 13, 2025.

8. Other News –
    a. Collier County's Comprehensive Emergency Management Plan (CEMP) –
        - Approved by the Florida Division of Emergency Management (FDEM) on 02/28/2021.
        - Approved by BCC at the 04/13/2021 Regular Meeting.
    b. Flood News
        - Collier County submitted its Annual Recertification packet one month early.
    c. Wildfire News
        - Current Risk is at level two.
        - Drought monitor is indicating drier conditions.
    d. Other News

9. Next regular meeting: **16 July 2021**, 0930hrs, location TBD.

ATTACHMENT(S)

1) 19 March 2021 Summary Minutes.

2) 16 April 2021 Project for Review-Facilities Management – Essential Facility Hardening -Jail Reroof.

3) 16 April 2021 Projects for Review-CCPS-four school lift station generator installs and two school generator installs.

Virtual Collier LMSWG Regular Meeting-04/16/2021 Attenc

Summary

Meeting Date	Meeting Duration	Number of Attendees
April 16, 2021 9:31 AM EDT	120 minutes	12

Details

Name	Email Address	Join Time
+12393151152	John Mccormick	9:30 AM
+12399861771	Rita Greenberg	9:30 AM
Ashley Jones	Ashley.Jones@uss.salvationarmy.org	9:31 AM
Collier County Emergency Manag	emergman@colliergov.net	9:31 AM
Howard Critchfield	howard.critchfield@colliercountyfl.gov	9:31 AM
Ilonka Washburn	Ilonka.Washburn@colliercountyfl.gov	9:31 AM
M. Avni	Melinda.Avni@fdacs.gov	9:32 AM
Phil Snyderburn	phil.snyderburn@colliercountyfl.gov	9:31 AM
Robert Wiley	Robert.Wiley@colliercountyfl.gov	9:36 AM
Salvatore DAngelo	sdangelo@northcollierfire.com	9:31 AM
Taylor Sawatzky	Taylor.Sawatzky@colliercountyfl.gov	9:31 AM
Tim Rygiel	Timothy.Rygiel@colliercountyfl.gov	9:31 AM
William Lang (In person)	CCEM	
Richard Zyvoloski (in person)	CCEM	
Christopher Mason (in person)	GMD	
Marc Rouleau (In person)	CCPS	

July 16, 2021 - Regular Meeting

Collier County LMS Sign-In Sheet

Table 1 Collier LMSWG Members

07/16/21 Initial	Name	Affiliation Participating Jurisdiction
X (IP)	William Lang, Chair	Collier C. Emergency Mgt.
X (IP)	Chris Mason, Co-Chair	Collier County (Floodplain Coordinator)
X (IP)	Rick Zyvoloski, EM Coordinator	Collier C. Emergency Mgt.
X (V) MA	Melinda Avni/Tom Gonzalez	Florida Forest Service Caloosahatchee Dist. Office
X (IP)	Kelli DeFedericis	City of Marco Island, Cmty. Affairs (Floodplain Mgr.)
X (V)	Chris Byrne	City of Marco Island
X (V)	Reg Buxton	Citizen Corps/N. Naples Journal
NP	Terry Smallwood/Dottie Smallwood	Everglades City
X (V)	Christa Carrera	City of Naples (Floodplain)
X (V) TS/(E) PS	Taylor Sawatzky /Phil Snyderburn/Tom Bates	Collier C. Public Util. Dept., Solid & Haz. Waste Division
	VACANT	Collier Co. Growth Mgt Dept.
X (V) RW	Robert Wiley/Gerald Kurtz/Liz Gosselin	Collier Co. Growth Mgt Dept. (Stormwater)
X (V)	Ilonka Washburn	Collier C. Parks & Recreation Division
X (V)	Tricia Dorn/Bob Atkins	Lee County Electric Coop
E	Marc Rouleau/Marc MacDonald	Collier Co. Public Schools
X (IP)	James von Rinteln	Interested Citizen
X (V)	Mark Grajewski	Collier Mosquito Control District
X (V)	Alan McLaughlin	Greater Naples Fire Rescue District
X (V)	Michael Jimenez	North Collier Fire & Rescue District
E	Rita Greenberg	Immokalee Fire Control District
NP	Ashley Jones	The Salvation Army
X (V) TR	John McCormick/Timothy Rygiel	Collier County Facilities Management Division

Table 2 Collier LMS Visitors

Name	Affiliation	Email Address
Kimberly Grant	CC OVS (PSD)	Kimberly.Grant@colliercountyfl.gov
Tanya Williams	CC Library (PSD)	Tanya.Williams@colliercountyfl.gov
Jeffrey Newman	CC OVS (PSD)	Jeffrey.Newman@colliercountyfl.gov

X = Present | (IP) = In Person | (V) = Virtual via GoToMeeting | E = Excused | NP = Not Present and Not Excused

Regular Quarterly Meeting Agenda
Collier County Local Mitigation Strategy (LMS) Working Group
Conf Room 118, South Regional Library
8065 Lely Cultural Pkwy, Naples, FL 34113
and/or GoToMeeting
0930hrs, July 16, 2021

1. Approval of 16 April 2021 Regular Meeting Minutes.
    a. Unanimously approved
2. Project(s) for Review:
    a. **Four (4) Projects For Review**
        - Kim Grant, Director, Operations and Veteran Services, Public Services Department
            - **Generator Install-Port of the Islands Marina Store-525 Newport DR**.
                - Suitability # 3- Changed from 5 to 3.
                - Mark Grajewski (Collier County Mosquito Control) suggested adding "Contract Rental Costs" to the BCA calculation.
                - Taylor Sawatzky (PUD) recommended addressing the existing generator (GNFD) hardening-making sure that the install for the other portion of the building is clear, and why it is different from the existing generator.
                - Kelli DeFedericis suggested validating potential to elevate and/or GFCI-Disconnect protection of all electrical elements/utilities.
                - Robert Wiley questioned Risk(2)-Rating 5. After discussion, recommendation was made to at minimum, calculate GNFD equipment type recurring interval use for fuel estimation.
                - LMSWG collectively recommended a Memorandum of Understanding/Agreement between GNFD and Collier County regarding fuel supply priorities for GNFD, as well as the potential for other first responder services (all local and mutual aid), with the acknowledgement that there may be limitations based on supply on hand in a disaster environment.
                - Robert Wiley expressed concerns regarding existing operational plans for fueling for fire station 61.
                - Alan McLaughlin (GNFD) stated that the current locations for fuel for Station 61 may not have backup generator power, with the next closest location being in or around east Naples.
                - Mr. Wiley requested the location of the fuel storage tank and fuel pump, along with their elevation in relation to the Base Flood Elevation (recommendation to Director Grant for follow-up research).
                - Christa Carrera, Ilonka Washburn expressed the importance of this location for fuel needs to the community, both via first responder activities and potential to provide to general public, depending on supply available.

- **Chris Byrne made motion to approve project. Group approved, with Robert Wiley opposing based on noted concerns.**
- Group recommended to determine the individual structure value for the building.
- BCA recommendations included adding contract/rental costs for a temporary generator.
- Last recommendation was to check with FDEM regarding potential for project to fall under the upcoming BRIC grant cycle via the Notice of Intent (NOI) document, recently provided by FDEM for potential BRIC/FMA projects.

- **Generator Install-South Regional Library-8065 Lely Cultural PKWY**
  - Risk-#6 changed from 5 to 3
  - Cost # 1 changed from 1 to 3
  - Jim VR suggested looking into existing portable generator hookup and potential for cost-savings during quote for new stationary generator.
  - Within Cost # 5, group suggested that is no flood elevation data is on file with the existing flood policy, an analysis of the associated SFWMD Environmental Resource Permit (ERP) may provide a design elevation for the current finished floor.
  - Group also discussed amending Cost # 5 to either:
    - Adding to 0 (zero) "Not a NFIP insured structure AND/OR does not improve a NFIP insured structure; or
    - Removing the word "Improves" from 1, to just read "NFIP flood insured."
  - BCA recommendations
    - Remove $2,500,000 furnishings/equipment losses.
    - Add Alternate facility costs valuation.
    - Add contract rental costs for alternate generator options.
    - Project approved with condition that changes would be considered and addressed.
- **Generator Install-University Extension Building-14700 Immokalee RD**
  - Suitability # 1-changed from 3 to 5
  - Risk # 3 – changed from 3 to 5
  - Cost # 1 – changed from 1 to 3
  - Cost # 4 – changed from 4 to 5
  - Group collectively agreed that the use of the FEMA BCA calculator, at times, can contradict the intent and design of the LMSWG scoresheet.
    - **Group advised to remove "Mental stress and anxiety" and "Low productivity" calculations within BCA.**
    - **"Loss of wastewater" calculation will be dependent if utility is gravity system or pump**

system. Group requesting that this be determined for future calculation inclusion or exclusion (if gravity system, then loss not applicable).

- Group recommended "Alternate Facility Costs" if this facility were not available.
- Group recommended to only reference facility for alternate EOC function, not additionally as a public emergency shelter.

- **Permeable Surface Parking Lot Upgrade-University Extension Building-14700 Immokalee RD**
  - Risk # 3 – Changed from 3 to 5
  - BCA
    - Director Grant advised that this parking lot was previously submitted for 406-Public Assistance funding.
    - Mr. Wiley stated he was not understanding if parking lot were to be repaired, why would it need additional repair, based on 15 year projection (with potential repairs being estimated at 3 different forecasted events that would result in future damages).
    - **Group recommended to provide an historical evidence of damage events that would justify 15-year, three time estimation from FEMA BCA calculator**
    - **Mr. Lang advised that after this LMSWG meeting, this project should be immediately submitted to FDEM, via the BRIC Grant Notice of Intent (NOI) form, which was recently provided to communities (by FDEM) to assist in determining if a project would qualify for BRIC grant funding as an eligible mitigation project.**
    - Group agreed that this project would possibly not qualify as a mitigation type for HGMP, unless it possibly qualified as infrastructure retrofit.
  - Group voted, with all in favor, based on FDEM NOI review. Mr. Wiley opposed based on referenced concerns.

b. Successfully added Marco Island's Marco/Collier Watermain Project to FM-5307 (Post-Wildfire Grant) Project Priority List via updated Project Priority Letter to FDEM on 04/21/2021
   - This project is currently ranked # 1 on our Project Priority Listing
   - Submitted as priority 3 of 3 projects (behind IFCD's Station 31 hardening, and PUD's landfill lechate backup generator project), per LMSWG's 19MAR21 unanimous vote to prioritize projects after the March meeting, based on submittal for consideration.
   - Per the LMSWG 19MAR21 Meeting, LMSWG agreed that if a previous project was interested in FM-5307 (Tier 1 funding), it could be added with no additional

special meeting, if the project was already approved by the LMSWG.
- This project was previously reviewed and approved by the LMSWG on 19 July 2019
- Previously submitted to FDEM for Hurricane Dorian Tier 3 funding consideration

3. Quorum for meeting, virtually – LMSWG previously approved optional in-person or virtual attendance via pre-established GoToMeeting invite by Collier County Emergency Management. Just as with the 16OCT20 meeting, this meeting will be recorded via GoToMeeting.

4. Annual Project Priority Listing**:** The Collier County LMS Project Priority Listing was updated per the 16APR21 LMS special meeting. If any new projects are reviewed and accepted by the group for this meeting, the project priority listing will be updated accordingly.

5. Membership – **No new membership requests**
   a. Annual Chair/Co-Chair
      - Group discussion and potential vote
        - No group discussion at this meeting. Will be on next meeting agenda in October, 2021.
6. Grant Opportunity –
   a. The HMGP is providing 100% digital submission option for FM-5307 and DR-4668
      - Sub-applicants must request access to the filesharing site prior to the application deadline to avoid late submissions.
      - Hard copy submissions are still accepted, but a copy must still be uploaded to the filesharing site as a sub applicant's required digital submission.
      - More details can be found in the NOFA(s) and on the State HMGP website: https://www.floridadisaster.org/dem/mitigation/hazard-mitigation-grant-program/

   b. Hurricane Sally (DR-4564) Tier 3 funding
      - NOFA:
        - Announced 05/10/2021
        - Collier County is Tier III (3) Funding Priority
        - ***Application Deadline: 08/13/2021***
        - https://portal.floridadisaster.org/mitigation/HMGP%20Project%20Tracker/External/Hurricane%20Sally/NOFA%20DR-4564.pdf

   c. Building Resilient Infrastructure and Communities (BRIC) and Flood Mitigation Assistance (FMA) Grants
      - **2021 NOFAs have not been announced as of the present.**
      - White House Announcement (May 24, 2021)
        - Doubled annual grant amount from $500 Million to $1 Billion.
        - https://www.whitehouse.gov/briefing-room/statements-releases/2021/05/24/fact-sheet-biden-administration-invests-1-billion-to-protect-communities-families-and-businesses-before-disaster-strikes/

   d. Hurricane Loss Mitigation Program (HLMP)
      - HLMP was up for reauthorization in SB 168
        - SB 168 HLMP "Died in Messages"

- HLMP was then included in the SB 2500 Appropriations and SB 2502 Implementing the 2021-2022 General Appropriations Act
  - https://www.flsenate.gov/Session/Bill/2021/2500
  - https://www.flsenate.gov/Session/Bill/2021/2502

7. Legislative Update
   a. Senate Bill 1954
      - Comprehensive legislation regarding Florida's coastal and inland resiliency
      - Includes
        - $12.5 million for the Resilient Coastlines Initiative for resilience projects and coral reef protection
        - $29 million for establishment and planning efforts of the Resilient Florida Grant Program.
        - $500 million in federal funding for implementation of statewide resilience projects through the Statewide Flooding and Sea Level Rise Resilience Plan.
        - $100 million for Resilient Florida Grant Program projects in partnership with local communities, beginning in 2022.
      - https://www.flgov.com/2021/05/12/governor-ron-desantis-signs-bill-to-further-strengthen-floridas-resiliency-efforts/

   b. Senate Bill 2006
      - Became Chapter No. 2021-8 Emergency Management
        - https://flsenate.gov/Session/Bill/2021/2006

8. LMS Update
   a. LMS update was approved by FEMA on May 7, 2020. The LMS expires on April 13, 2025.

9. Other News –
   a. Collier County's Comprehensive Emergency Management Plan (CEMP) –
      - Approved by the Florida Division of Emergency Management (FDEM) on 02/28/2021.
      - Approved by BCC at the 04/13/2021 Regular Meeting.

   b. Flood News
      - Appeal period ended for coastal RISKMAP product. A few private groups have submitted appeals to FEMA
      - City of Naples – Received CRS Recertification Letter – Remaining a CRS Class 5 Community
      - Marco Island – Received CRS Recertification Letter – Downgrading from CRS Class 5 – 6

   c. Wildfire News
      - FFS is seeing a large uptick in nationwide

- Firewise
    - Fiddlers' Creek receiving recognition for ten years as a Fire Wise Community
    - Upcoming for Naples Lake

d. Other News

10. Next regular meeting: **15 Oct 2021**, 0930hrs, location TBD.
    a. Meeting adjourned at around 11:36 am

ATTACHMENT(S)

1) 16 April 2021 Summary Minutes.
2) Project for Review (1 of 4): Generator Install-Port of the Islands Marina Store-525 Newport DR.
3) Project for Review (2 of 4): Generator Install-South Regional Library-8065 Lely Cultural PKWY
4) Project for Review (3 of 4): Generator Install-University Extension Building-14700 Immokalee RD
5) Project for Review (4 of 4): Permeable Surface Parking Lot Upgrade-University Extension Building-14700 Immokalee RD

Collier County Local Mitigation Strategy Working Group (LMSWG

Summary

Meeting Date	Meeting Duration	Number of Attendees	Meeting ID
July 16, 2021 9:21 AM EDT	140 minutes	16	448-169-997

Details

Name	Email Address	Join Time	Leave Time
12395720051		9:28 AM	9:56 AM
Alan McLaughlin	amclaughlin@gnfire.org	9:33 AM	11:41 AM
Chris Byrne	cbyrne@cityofmarcoisland.com	9:28 AM	11:41 AM
Christine Carrera	ccarrera@naplesgov.com	9:26 AM	11:41 AM
Collier County Emergency Manag	emergman@colliergov.net	9:21 AM	11:41 AM
Ilonka Washburn	Ilonka.Washburn@colliercountyfl.gov	9:28 AM	10:58 AM
Chief Michael Jimenez NCFR	academy@northcollierfire.com	9:30 AM	11:41 AM
John McCormick	john.mccormick@colliercountyfl.gov	10:21 AM	11:41 AM
John T. McCormick	john.mccormick@colliercountyfl.gov	9:36 AM	10:13 AM
M. Avni	Melinda.Avni@fdacs.gov	9:55 AM	11:41 AM
Mark Grazewski - CMCD	MGrazewski@cmcd.org	9:30 AM	11:41 AM
Robert Wiley	robert.wiley@colliercountyfl.gov	9:30 AM	11:41 AM
Taylor Sawatzky	Taylor.Sawatzky@colliercountyfl.gov	9:21 AM	11:28 AM
Tim Rygiel	timothy.rygiel@colliercountyfl.gov	9:33 AM	11:41 AM
Tricia Dorn LCEC	Tricia.Dorn@lcec.net	9:29 AM	9:55 AM

October 15, 2021 - Regular Meeting

Collier County Local Mitigation Strategy Working Group (LMSWG) Draft Minutes and Prior Approved Minutes

Regular Quarterly Meeting Agenda
Collier County Local Mitigation Strategy (LMS) Working Group
Conf Room 118, South Regional Library
8065 Lely Cultural Pkwy, Naples, FL 34113
and/or GoToMeeting
0930hrs, October 15, 2021

1. Approval of 16 July 2021 Regular Meeting Minutes**. Minutes unanimously approved.**

2. Project(s) for Review**:** No projects submitted for BRIC or DR-4486 as of the present.

3. Quorum for meeting, virtually/In-Person Option – LMSWG previously approved optional in-person or virtual attendance via pre-established GoToMeeting invite by Collier County Emergency Management. Just as with the last meeting, this meeting will be recorded via GoToMeeting.

4. Annual Project Priority Listing**:** The Collier County LMS Project Priority Listing was updated per the 16APR21 LMS special meeting. If any new projects are reviewed and accepted by the group for this meeting, the project priority listing will be updated accordingly.

5. Membership –
   a. Chief Joshua (Josh) Bauer-Immokalee Fire Control District
   -Unanimously voted as primary for IFCD, with Chief Rita Greenberg serving as alternate until she retires next year
   b. Annual Chair/Co-Chair
      - Group discussion and potential vote
      -Unanimously voted to continue William Lang as Chair and Christopher Mason as Co-Chair
6. Grant Opportunity –

   a. FEMA-4486-DR-FL: COVID-19 Pandemic HMGP
   -LMSWG acknowledged that if any future interest for projects, a Special LMS Meeting would need to be scheduled to review, approve and endorse any potential projects, before the FDEM application deadline. Marco Island, Immokalee Fire Control District, North Collier Fire, and PUD-SHWMD expressed potential interest
      - FDEM announced on 09/28/2021
      - Given the impact of this unique event, every county in the state is eligible for Tiers 1 & 2
      - There will not be a Tier 3
      - Collier County Allocation:
        - HMGP Funding: $2,306,154.07
        - 25% Match Required: $768,718.02
      - Application Deadline: 12/21/2021 at 5:00 pm (electronic) or 11:59 pm (hardcopy)
      - https://www.floridadisaster.org/dem/mitigation/hazard-mitigation-grant-program/
      - FDEM POC: Jared Jaworski (Jared.Jaworski@em.myflorida.com | 850-544-8372)

b. Building Resilient Infrastructure and Communities (BRIC) and Flood Mitigation Assistance (FMA) Grants
-LMSWG Chair clarified that BRIC projects require LMSWG approval. Although FMA projects do not, it is highly encouraged that FMA projects be submitted to LMSWG for endorsement. If not, FMA would need at least Notice of Interest Form completed for FDEM submittal.
- 2021 NOFAs announced on August 13, 2021
- Application Period Begins: September 30, 2021
- Application Deadline to FDEM: November 12, 2021, by 5:00 pm
- Application Deadline to FEMA: January 28, 2022, by 3:00 pm

c. FDEM is providing 100% digital submission option for DR-4486
- Sub-applicants must request access to the filesharing site prior to the application deadline to avoid late submissions.
- Hard copy submissions are still accepted, but a copy must still be uploaded to the filesharing site as a sub applicant's required digital submission.
- More details can be found in the NOFA(s) and on the State HMGP website: https://www.floridadisaster.org/dem/mitigation/hazard-mitigation-grant-program/

d. Hurricane Loss Mitigation Program Retrofit Grant (HLMP)
- HLMP was up for reauthorization in SB 168
  - SB 168 HLMP "Died in Messages"
- HLMP was then included in the SB 2500 Appropriations and SB 2502 Implementing the 2021-2022 General Appropriations Act
  - https://www.flsenate.gov/Session/Bill/2021/2500
  - https://www.flsenate.gov/Session/Bill/2021/2502

e. For more information on the HLMP, visit https://www.floridadisaster.org/dem/mitigation/hurricane-loss-mitigation-program/

f. Hurricane Sally (DR-4564) Tier 3 funding (Deadline Expired)
- NOFA:
  - Announced 05/10/2021
  - Collier County is Tier III (3) Funding Priority
  - Application Deadline Closed: 08/13/2021

https://portal.floridadisaster.org/mitigation/HMGP%20Project%20Tracker/External/Hurricane%20Sally/NOFA%20DR-4564.pdf

7. Florida Department of Environmental Protection (FDEP) Resilient Florida Program
-LMSWG discussed how this may need to be addressed at the local permitting level.
-Robert Wiley (Collier County Stormwater) asked if SLIP would apply to stormwater Capital Improvement Projects, funded through South Florida Water Management District Grant Funding or Budget. Mr. Lang advised he would inquire with FDEP to obtain an answer.
   a. Sea Level Impact Projection (SLIP) Studies
      - Requires state agencies, municipalities, counties, special districts, authorities, or other corporate bodies of the state, which commission or manage a construction

project within the coastal building zone using funds appropriated from the state to conduct a sea-level impact projection ("SLIP") study

- The SLIP study must be conducted, submitted to the Department, and published on the Department's website before construction can commence. The Department will maintain a copy of all SLIP studies on this website for 10 years after receipt.
- The SLIP tool is now available to help complete SLIP studies quickly, easily, and at no cost. There are many resources and references on the SLIP tool website that will help you understand how to use the tool to better understand sea level rise and flooding risks.
- For more information, visit https://floridadep.gov/rcp/florida-resilient-coastlines-program/content/sea-level-impact-projection-slip-study

b. Resilient Florida (Section 380.093, F.S.)
   - 5 Major Sections
     - Resilient Florida Grant Program" Planning + Critical Asset Adaptation Grants (s. 380.093 (1)(3), F.S.)
       - **Mr. Lang advised that Richard Zyvoloski, Christopher Mason, Howard Critchfield (GMD Floodplain Management), and he spoke with Whitney Gray (FDEP Project Lead for Resilient Florida Program) earlier in the week.**
       - **Grant program was originally designated only for planning grants, but later incorporated projects**
     - Comprehensive Statewide Flood Vulnerability Data Set and Assessment (s. 380.093 (1)(4), F.S.)
     - Statewide Flooding and Sea Level Rise Resilience Plan (s. 380.093 (1)(5), F.S.)
       - **Whitney Gray (FDEP) indicated that this includes Sea Level Rise, King tides, urban flooding, etc.**
       - **Based on a three-year rolling trust fund**
       - **Projects need to be identified as being vulnerable to flooding (specific to flooding)**
       - **If no vulnerability study exists, then Sea Level Rise projection still need to be incorporated into project submittals**
     - Regional Resilience Entities (s. 380.093 (1)(6), F.S.)
     - Florida Flood Hub (s. 380.093 (2), F.S.)

8. LMS Update
   a. LMS update was approved by FEMA on May 7, 2020. The LMS expires on April 13, 2025.

9. Other News –
   a. Collier County's Comprehensive Emergency Management Plan (CEMP) –

      - Approved by the Florida Division of Emergency Management (FDEM) on 02/28/2021.

- Approved by BCC at the 04/13/2021 Regular Meeting.

b. Flood News

- **Mr. Lang and Ms. DeFedericis (Marco Island Floodplain/CRS Coordinator) provided information to LMSWG regarding the National Flood Insurance Program's Risk Rating 2.0, which became effective Oct 1, 2021**
    - **Discussed the importance of still obtaining an Elevation Certificate for rating, the importance of understanding the ability to transfer an existing NFIP policy when selling/buying a home, and that the Community Rating System (CRS) discount is being pro-rated until the policy reaches the full risk premium**
- **Ms. DeFedericis advised that Marco Island is currently working towards re-obtaining a Class 5 rating in their CRS Program**

c. Wildfire News

d. Other News

10. Next regular meeting: 21 Jan 2022, 0930hrs, location TBD.
    a. Meeting adjourned at 10:12 a.m.

ATTACHMENT(S)

1) 16 July 2021 Summary Minutes.

Collier County LMS Sign-In Sheet

Table 1 Collier LMSWG Members

10/15/21 Initial	Name	Affiliation Participating Jurisdiction
WL	William Lang, Chair	Collier C. Emergency Mgt.
E	Chris Mason, Co-Chair	Collier County (Floodplain Coordinator)
	Rick Zyvoloski, EM Coordinator	Collier C. Emergency Mgt.
	Melinda Avni/Tom Gonzalez	Florida Forest Service Caloosahatchee Dist. Office
	Kelli DeFedericis	City of Marco Island, Cmty. Affairs (Floodplain Mgr.)
	Chris Byrne	City of Marco Island
	Reg Buxton	Citizen Corps/N. Naples Journal
	Terry Smallwood/Dottie Smallwood	Everglades City
	Christa Carrera	City of Naples (Floodplain)
	Taylor Sawatzky /Phil Snyderburn/Tom Bates	Collier C. Public Util. Dept., Solid & Haz. Waste Division
	VACANT	Collier Co. Growth Mgt Dept.
	Robert Wiley/Gerald Kurtz/Liz Gosselin	Collier Co. Growth Mgt Dept. (Stormwater)
	Ilonka Washburn	Collier C. Parks & Recreation Division
	Tricia Dorn/Bob Atkins	Lee County Electric Coop
	Marc Rouleau/Marc MacDonald	Collier Co. Public Schools
	James von Rinteln	Interested Citizen
	Mark Grajewski	Collier Mosquito Control District
	Alan McLaughlin	Greater Naples Fire Rescue District
	Michael Jimenez	North Collier Fire & Rescue District
	Rita Greenberg	Immokalee Fire Control District
	Ashley Jones	The Salvation Army
	John McCormick/Timothy Rygiel	Collier County Facilities Management Division

Table 2 Collier LMS Visitors

Name	Affiliation	Email Address
Joshua Baur	Immokalee Fire Control District	jbauer@immfire.com

X = Present | (IP) = In Person | (V) = Virtual via GoToMeeting | E = Excused | NP = Not Present and Not Excused

Collier County Local Mitigation Strategy Working Group (L

Summary

Meeting Date	Meeting Duration	Number of Attendees
October 15, 2021 9:16 AM EDT	57 minutes	10

Details

Name	Email Address	Join Time
+12395720051	Reggie Buxton	9:32 AM
+12399861771	Rita Greenberg (IFCD)	9:30 AM
+12399861771	Rita Greenberg (IFCD)	9:32 AM
Ashley Jones	Ashley.Jones@uss.salvationarmy.org	9:21 AM
Ian Ohlin	Ian.Ohlin@em.myflorida.com	9:23 AM
Josh Bauer	jbauer@immfire.com	9:29 AM
Kris Thomas	kThomas@northcollierfire.com	9:27 AM
Mark Grazewski - CMCD	mgrazewski@cmcd.org	9:28 AM
Melinda Avni	Melinda.Avni@FDACS.gov	9:16 AM
Tim Rygiel	timothy.rygiel@colliercountyfl.gov	9:30 AM
William Lang	emergman@colliergov.net	9:16 AM

December 9, 2021 - Special Meeting

DR-4486 Special Meeting Agenda
Collier County Local Mitigation Strategy (LMS) Working Group
Conf Room 118, South Regional Library
8065 Lely Cultural Pkwy, Naples, FL 34113
and/or GoToMeeting
0930hrs, December 09, 2021

1. Approval of Minutes - **Both unanimously approved; meeting began at 9:37 am**
   a. 03 November 2021 Emergency Meeting Minutes
   b. 15 October 2021 Regular Meeting Minutes

2. Project(s) for Review: Three projects submitted for DR-4486 (COVID-19 HMGP)

   a. North Collier Fire Station 10 Generator Replacement
      - 13240 Immokalee RD, Naples, FL 34120
      - **Approved**

   b. Naples Community Health Dry-Floodproofing-Flood Shields
      - 350 7th Street North, Naples, FL 34102
      - **Approved (one "nay") with recommendations including**
        - Potential for structural connection, and subsequent Florida Building Code/ASCE 24-14 Flood Design requirements for Dry-Floodproofing
        - Potential for need to analyze building envelope integrity if flood shields cause increased flood loads on exterior walls
        - Potential for increased project costs based on these recommendations and possible future requirement to bring the project back to the LMS Working Group due to increased project costs

   c. Marco Island-Wind/Flood Retrofit
      - 1310 San Marco RD, Marco Island, FL 34145
      - **Approved with edits to Risk (Scope of Benefits), increased project costs and increased damage costs projections**

3. Quorum for meeting, virtually/In-Person Option – LMSWG previously approved optional in-person or virtual attendance via pre-established GoToMeeting invite by Collier County Emergency Management. Just as with the last meeting, this meeting will be recorded via GoToMeeting.

4. Annual Project Priority Listing: The Collier County LMS Project Priority Listing was updated per the 16APR21 LMS special meeting. If any new projects are reviewed and accepted by the group for this meeting, the project priority listing will be updated accordingly.

5. Membership – **All referenced were successfully voted in as new members**
   a. Chief Kris Thomas/Chief Michael Jimenez - North Collier Fire Rescue District to serve as primary or alternate (determine in meeting) for NCFRD.
   b. Liz Gosselin, PE – Currently serves as alternate for Collier County Stormwater. Robert Wiley will be retiring in February 2022 and wants to go ahead and have Liz assigned as primary for future meetings.
   c. Jennifer Smith – Naples Community Hospital – Public Safety/Emergency Management to serve as primary for NCH representation, with possible alternate identified and present

during meeting

d. VACANT-Parks & Recreation – Ilonka Washburn advised Mr. Lang, via email on 10/27/2021, that she had resigned from her position with the County and will no longer be participating in the LMSWG. She expressed her gratitude in serving with the group and wished everyone the best

6. Grant Opportunity –

   a. FEMA-4486-DR-FL: COVID-19 Pandemic HMGP
      - FDEM announced on 09/28/2021
      - Given the impact of this unique event, every county in the state is eligible for Tiers 1 & 2
      - There will not be a Tier 3
      - Collier County Allocation:
        - HMGP Funding: $2,306,154.07
        - 25% Match Required: $768,718.02
      - Application Deadline: 12/21/2021 at 5:00 pm (electronic) or 11:59 pm (hardcopy)
      - https://www.floridadisaster.org/dem/mitigation/hazard-mitigation-grant-program/
      - FDEM POC: Jared Jaworski (Jared.Jaworski@em.myflorida.com | 850-544-8372)

   b. FDEM is providing 100% digital submission option for DR-4486
      - Sub-applicants must request access to the filesharing site prior to the application deadline to avoid late submissions.
      - Hard copy submissions are still accepted, but a copy must still be uploaded to the filesharing site as a sub applicant's required digital submission.
      - More details can be found in the NOFA(s) and on the State HMGP website: https://www.floridadisaster.org/dem/mitigation/hazard-mitigation-grant-program/

   c. Hurricane Loss Mitigation Program Retrofit Grant (HLMP)
      - HLMP was up for reauthorization in SB 168
        - SB 168 HLMP "Died in Messages"
      - HLMP was then included in the SB 2500 Appropriations and SB 2502 Implementing the 2021-2022 General Appropriations Act
        - https://www.flsenate.gov/Session/Bill/2021/2500
        - https://www.flsenate.gov/Session/Bill/2021/2502

   d. For more information on the HLMP, visit https://www.floridadisaster.org/dem/mitigation/hurricane-loss-mitigation-program/

7. LMS Update
   a. LMS update was approved by FEMA on May 7, 2020. The LMS expires on April 13, 2025.

8. Other News –
   a. Collier County's Comprehensive Emergency Management Plan (CEMP) –

- Approved by the Florida Division of Emergency Management (FDEM) on 02/28/2021.
- Approved by BCC at the 04/13/2021 Regular Meeting.

b. Florida Public Assistance Thresholds increased per 2020 Decennial Census Population Data

- State Threshold increased by nearly $6 Million to $35,107,245
- Collier Threshold increased to $1,540,583.20 (375,752 x $4.10)

c. Flood News

- Mr. Wiley provided an update regarding Collier County's Preliminary Flood Map Revisions
  - He advised that FEMA, the County, and the County's flood map consultant (Tomasello Consulting Engineers, Inc.) are working on the final basin. He was not sure if this will result in the RiskMAP coastal product being incorporated into the County's Physical Map Revisions for one final product, or if the two will be separated and released as such

d. Wildfire News

e. Other News

- Mr. Lang advised that the Florida Division of Emergency Management (FDEM) has provided the 4th Quarter HMGP totals for all Florida Counties
  - Mr. Lang advised he would be providing an email to the group (after the meeting) regarding Collier's HMGP projects

9. Next regular meeting: **21 Jan 2022**, 0930hrs, location TBD.
   a. Meeting adjourned at 11:25 am

ATTACHMENT(S)

1) North Collier Fire Station 10 Generator Replacement Project Scoresheet
2) Naples Community Health Dry-Floodproofing-Flood Shields Project Scoresheet
3) Marco Island-Wind/Flood Retrofit
4) 03 Nov 2021 Emergency Summary Minutes
5) 15 Oct 2021 Regular Summary Minutes

Collier County LMS Sign-In Sheet

Table 1 Collier LMSWG Members

12/09/21 Initial	Name	Affiliation Participating Jurisdiction
IP	William Lang, Chair	Collier C. Emergency Mgt.
E	Chris Mason, Co-Chair	Collier County (Floodplain Coordinator)
E	Rick Zyvoloski, EM Coordinator	Collier C. Emergency Mgt.
V (MA)	Melinda Avni/Tom Gonzalez	Florida Forest Service Caloosahatchee Dist. Office
IP	Kelli DeFedericis	City of Marco Island, Cmty. Affairs (Floodplain Mgr.)
IP	Chris Byrne	City of Marco Island
V	Reg Buxton	Citizen Corps/N. Naples Journal
NP	Terry Smallwood/Dottie Smallwood	Everglades City
V	Christa Carrera	City of Naples (Floodplain)
V (TS)/IP (PS)	Taylor Sawatzky /Phil Snyderburn/Tom Bates	Collier C. Public Util. Dept., Solid & Haz. Waste Division
	VACANT	Collier Co. Growth Mgt Dept.
IP (RW/LG)	Robert Wiley/Gerald Kurtz/Liz Gosselin	Collier Co. Growth Mgt Dept. (Stormwater)
	VACANT	Collier C. Parks & Recreation Division
NP	Tricia Dorn/Bob Atkins	Lee County Electric Coop
IP (MR)	Marc Rouleau/Marc MacDonald	Collier Co. Public Schools
E	James von Rinteln	Interested Citizen
E	Mark Grajewski	Collier Mosquito Control District
E	Alan McLaughlin	Greater Naples Fire Rescue District
NP	Michael Jimenez	North Collier Fire & Rescue District
V (JB)	Joshua Bauer/Rita Greenberg	Immokalee Fire Control District
IP	Ashley Jones	The Salvation Army
V (JM/TR)	John McCormick/Timothy Rygiel	Collier County Facilities Management Division

Table 2 Collier LMS Visitors

Name	Affiliation	Email Address
Jennifer Smith	NCH	Jennifer.Smith@nchmd.org
Kristopher Thomas	North Collier Fire	kThomas@northcollierfire.com

X = Present | (IP) = In Person | (V) = Virtual via GoToMeeting | E = Excused | NP = Not Present and Not Excused

2022
January 21, 2022 - Regular Meeting

Regular Meeting Agenda
Collier County Local Mitigation Strategy (LMS) Working Group
Conf Room 118, South Regional Library
8065 Lely Cultural Pkwy, Naples, FL 34113
and/or GoToMeeting
0930hrs, January 21, 2022

1. Approval of
   a. 09 December 2021 Special Meeting Minutes (DR-4486) – **Unanimously approved.**

2. Project(s) for Review**:** No current projects for review.

3. Quorum for meeting, virtually/In-Person Option – LMSWG previously approved optional in-person or virtual attendance via pre-established GoToMeeting invite by Collier County Emergency Management. Just as with the last meeting, this meeting will be recorded via GoToMeeting.

4. Annual Project Priority Listing (PPL): The Chairperson transmitted the most up-to-date Project Priority List to the LMSWG on 01/07/2022 via email. The LMSWG was requested to provide an update to any agency-applicable projects on the PPL, to include the POC (email/phone) and a status code. Code options included (see below). **PPL update approved, along with status coding below.**

   a. NS: Not Submitted
   b. IP-NS: In progress, not submitted to State
   c. FDEM-UR: Submitted to State, Under Review
   d. IE: Ineligible
   e. FEMA-UR: FEMA, Under Review
   f. AWD: Awarded
   g. WIP: Work in Progress
   h. COMPLETE: Project is finished and needs to be removed from PPL and added to success stories (my task after you indicate this code)
   i. REMOVE: Remove (you can provide reasoning briefly in column)
   j. WITHDRAWN: Voluntarily withdrawn from FDEM or FEMA, BUT still want the project to stay on the PPL for future HMA consideration

5. Membership – No new memberships at this time.

6. Grant Opportunity – No current grant opportunities

   a. FDEM POC: Jared Jaworski (Jared.Jaworski@em.myflorida.com | 850-544-8372)

   b. FDEM is requiring 100% digital submission for grant submissions

      - FDEM Portal
        - Register at www.fdemportal.com/grants
        - Sub-applicants must request access prior to the application deadline to avoid late submissions.
        - Hard copies submissions are still accepted, but a copy must still be uploaded to the FDEM Portal for a complete submission.

c. Hurricane Loss Mitigation Program Retrofit Grant (HLMP)
   - 215.559, F.S. Hurricane Loss Mitigation Program
     - Set to expire on June 30, 2022
   - Florida Senate 2022 – SB 578
     - Delays repeal of 215.559, F.S. to June 30, 2032
     - Filed 10/20/2021
     - HLMP RFP will be postponed pending approval of the proposed bill

d. For more information on the HLMP, visit https://www.floridadisaster.org/dem/mitigation/hurricane-loss-mitigation-program/

7. LMS Update
   a. LMS update was approved by FEMA on May 7, 2020. The LMS expires on April 13, 2025.

8. Other News –
   a. 2021 Annual LMS update was transmitted from FDEM to LMS Chairs on 12/01/2021
      - The update requires
        - Updated LMS Work Group Membership List
        - **Updated LMS Project List**
        - Any significant changes to the plan
      - Update is due to FDEM no later than 1/31/2022

   b. 2021 4th Quarter HMGP Totals (FDEM)
      - LMS Chairperson shared FDEM's 4th Quarter data with LMSWG via email on 01/11/2022
      - Includes HMGP data, Hurricane Wilma to present

   c. Collier County's Comprehensive Emergency Management Plan (CEMP) –
      - Approved by the Florida Division of Emergency Management (FDEM) on 02/28/2021
      - Approved by BCC at the 04/13/2021 Regular Meeting.

   d. Flood News
      - Currently working with FEMA, Region IV to obtain updated Information Sharing Access Agreements (ISAA) with the County and municipalities to obtain updated NFIP Rep Loss/Severe Rep Loss data. **Discussed future approach of requesting RL/SRL in a unified approach via the LMSWG Chairperson, via Florida Administrative Code (F.A.C.) 27P-22**
      - **Collier County is still awaiting RISKMAP/PMR finalized map, which will need final BCC approval once published (either second or third quarter 2022)**
      - **Collier County 3-year CRS verification cycle visit on June 16, 2022**

- **City of Naples 3-year CRS verification cycle visit on June 14, 2022. City of Naples also mentioned upcoming National ASFPM conference will be held in Orlando this year.**
- **City of Marco Island CRS verification cycle visit scheduled for February 8, 2022.**

e. Wildfire News

- **Florida Forestry Service preparing for an active fire season this year, due to predicted cool/dry weather, which will quickly change to warm/dry weather. There have been a number of lightning-induced fires in the last few weeks.**

f. Other News

- **Shared 01/13/22 Citizen Corps Advisory Committee 2021 LMSWG Summary report. Advised LMSWG that annual summary report will be provided to the Citizen Corps going forward.**

9. Next regular meeting: **15 April 2022**, 0930hrs, location TBD.
   a. Meeting adjourned at **10:03 AM**

ATTACHMENT(S)

1) 09 December 2021 DR-4486 (COVID HMGP) Special Meeting Summary Minutes

April 15, 2022 - Regular Meeting

Regular Meeting Draft Minutes
Collier County Local Mitigation Strategy (LMS) Working Group
Conf Room 118, South Regional Library
8065 Lely Cultural Pkwy, Naples, FL 34113
and/or GoToMeeting
0930hrs, April 15, 2022

1. Approval of
   a. 21 January 2022 Special Meeting Minutes (DR-4486) – **Approved.**

2. Project(s) for Review**:** No current projects for review.

3. Quorum for meeting, virtually/In-Person Option – LMSWG previously approved optional in-person or virtual attendance via pre-established GoToMeeting invite by Collier County Emergency Management. Just as with the last meeting, this meeting will be recorded via GoToMeeting.

4. Membership –

   a. Florida Forest Service (FFS)
      - Melinda Avni has is no longer the local FFS PIO/LMSWG Liaison
      - Tom Gonzalez was previously the alternate for FFS
      - Sean Allen, Caloosahatchee Forestry Center Manager, FFS needs to be voted in as FFS LMSWG alternate – **Vote approved**

   b. Naples Community Hospital (NCH)
      - Need to vote Nathan Oliver as alternate for Jennifer Smith – **Mr. Oliver attended via phone call. Chairperson was not aware of telephonic attendance. Will vote in on next meeting.**

5. Grant Opportunities –

   a. Florida Department of Environmental Protection's (FDEP) Resilient Florida Grant Program
      - *Guest Speaker: Eddy Bouza, Planning & Policy Administrator, Office of Resilience and Coastal Protection, FDEP*
        - Mr. Bouza will provide general information regarding the grant program, to include
          - Eligible Entities
          - Project Types
          - Funding Duration
          - Annual Project Availability
          - Funding Source
          - Cost Match
          - General Q&A
      - **Mr. Bouza provided information on the referenced grant program and answered questions afterwards via GoToMeeting. Mr. Bouza provided the following links in the chat:**
        - https://floridadep.gov/sites/default/files/AdaptationPlanningGuidebook.pdf
        - Contact Email: resilience@floridadep.gov

b. HMGP-
   - H.R. 2471 Consolidated Appropriations Act of 2022
     - Federal cost share increased to 90 percent
     - Applicable Florida disasters include
       - Hurricane Sally (DR-4564)
       - COVID-19 Pandemic (DR-4486)
   - No Current Grant Opportunities
     - FDEM HMGP POC: Jared Jaworski (Jared.Jaworski@em.myflorida.com | 850-544-8372)
     - FDEM is requiring 100% digital submission for grant submissions
     - FDEM Portal
       - Register at www.fdemportal.com/grants
       - Sub-applicants must request access prior to the application deadline to avoid late submissions.
       - Hard copies submissions are still accepted, but a copy must still be uploaded to the FDEM Portal for a complete submission.
   - **Chairperson advised that PPL Project # 1 (Marco Island/Collier Co. Watermain Project) was recently picked up via Tier 3 Hurricane Sally monies. Additionally, PPL Project # 30 (North Collier Fire Generator Replacement) was submitted under DR-4886 (COVID-19 HMGP). Both of these projects may be eligible for the updated 90/10 cost share based on H.R. 2471 guidance.**

c. Hurricane Loss Mitigation Program Retrofit Grant (HLMP)
   - 215.559, F.S. Hurricane Loss Mitigation Program
     - Set to renew on July 1, 2022
   - Legislative Update
     - Bill passed House on 03/02/2022 and Senate on 03/04/2022
     - For more information on the HLMP, visit https://www.floridadisaster.org/dem/mitigation/hurricane-loss-mitigation-program/
     - FDEM HLMP Program Manager
       - Grant Goodwin
         - 850-815-4516
         - Grant.Goodwin@em.myflorida.com
   - Mobile Home Tie Down Program
     - Per the 2020-2021 Annual Report, the program completed 686 homes statewide, of which, 47 homes were completed in the Crystal Lake RV Resort (14960 Collier BLVD)
     - 2021 HLMP Annual Report
       - https://portal.floridadisaster.org/mitigation/HLMP/Internet%20Documents/Reports/2021%20HLMP%20Annual%20Report.pdf

6. LMS Update
   a. LMS update was approved by FEMA on May 7, 2020. The LMS expires on April 13, 2025.

7. Other News –
    a. 2021 Annual LMS Update was approved on 01/31/2022 (**see Attachment 1)**
    b. Collier County's Comprehensive Emergency Management Plan (CEMP) –
        - Approved by the Florida Division of Emergency Management (FDEM) on 02/28/2021
        - Approved by BCC at the 04/13/2021 Regular Meeting.
    c. Flood News
        - **Collier County (Unincorporated)**
            - **RISKMAP Coastal Physical Map Revision (PMR) projected to be finalized late 2022 – early 2023**
                - **FEMA timeline extended due to appeals that they have received**
            - **CRS 3-Year Verification scheduled for June 2022**
        - **Marco Island**
            - **Currently appealing portions of RISKMAP Coastal PMR**
        - **Naples**
            - **Reminded LMSWG of 2022 ASFPM Conference, which will be hosted in Orlando, FL this year (last time ASFPM conference was held in Florida was 2009)**
    d. Wildfire News
        - **Fire risk for Collier is still very high**
        - **Season expected to (hopefully) slow by late May – early June**
    e. Other News
        - **Ashley Jones (Salvation Army) advised that Lisa Loren has rejoined the team and we will need to vote her in as an LMSWG alternate for the Salvation Army at the next meeting**
        - **Ashley Jones also advised that the Salvation Army is currently working towards training three staff (two in Naples area and one bilingual staff member in the Immokalee area) to operate their mobile canteen, which they plan on deploying at least twice a month in order to keep the canteen active and keep volunteers active**

8. Next regular meeting: **15 July 2022**, 0930hrs, location TBD.
   a. Meeting adjourned at **10:19 a.m.**

ATTACHMENT(S)

1) 2021 FAC 27P-22 LMS Compliance Letter
2) 21 January 2022 Regular Meeting Summary Minutes

Attachment 1 to the 21 January 2022 Agenda/Minutes

STATE OF FLORIDA

DIVISION OF EMERGENCY MANAGEMENT

Ron DeSantis
Governor

Kevin Guthrie
Director

January 31, 2022

Dan Summers, Director
Collier County Emergency Management
8075 Lely Cultural Parkway
Naples, FL 34113

Re: Florida Administrative Code 27P-22 Compliance

Dear Director Summers,

The Florida Division of Emergency Management's Mitigation Planning Unit received your updated 27P-22.004 information for the 2021 calendar year. After reviewing the information received, it has been determined that your update is complete, and your Local Mitigation Strategy complies with F.A.C. 27P-22.004.

If you have any questions regarding this matter, or if our office can be of any further assistance, please contact your LMS Liaison Ian Ohlin at Ian.Ohlin@em.myflorida.com or 850-815-4316.

Respectfully,

Laura Dhuwe

Digitally signed by Laura Dhuwe
DN: cn=Laura Dhuwe, o=DEM, ou=Mitigation, email=Laura.Dhuwe@em.myflorida.com, c=US
Date: 2022.02.10 13:21:16 -05'00'

Miles E. Anderson,
Bureau Chief, Mitigation
State Hazard Mitigation Officer

MEA/io

DIVISION HEADQUARTERS
2555 Shumard Oak Boulevard
Tallahassee, FL 32399-2100

Telephone: 850-815-4000
www.FloridaDisaster.org

STATE LOGISTICS RESPONSE CENTER
2702 Directors Row
Orlando, FL 32809-5631

July 15, 2022 - Regular Meeting

Regular Meeting Agenda
Collier County Local Mitigation Strategy (LMS) Working Group
Conf Rooms A/B, South Regional Library
8065 Lely Cultural Pkwy, Naples, FL
34113
0930hrs, July 15, 2022

1. Approval of
   a. 15 April 2022 Regular Meeting Minutes-**Unanimously approved**
   b. 24-27 May 2022 Emergency Meeting (Marco Island Watershed Grant) Minutes-- **Unanimously approved**

2. Project(s) for Review**:** No current projects for review.

3. Quorum for meeting (In-Person): **Quorum achieved**

4. Membership –

   a. The Salvation Army
      - Lisa Loren (Program Manager, Veteran & Emergency Disaster Services) needs to be voted in to represent The Salvation Army-**Voted in as alternate**

   b. Collier County Stormwater
      - Liz Gosselin (Collier County Stormwater Engineer) will be transitioning to Public Utilities. Her last day with stormwater will be 07/29/2022
      - The membership spot will technically become VACANT
      - LMSWG Chair will reach out to Stormwater Division Director, Beth Johnssen, to determine vacancy replacement

   c. Naples Community Hospital (NCH)
      - Tentative: Need to vote Nathan Oliver as alternate for Jennifer Smith-**Voted in as alternate until further guidance from NCH**

5. Grant Opportunities –

   a. HMGP-
      - H.R. 2471 Consolidated Appropriations Act of 2022
        - Federal cost share increased to 90 percent on 03/18/2022
        - Applicable Florida disasters include
          - Hurricane Sally (DR-4564)
            - PPL Project # 1
              - CMI/Collier Watermain Interconnect-Mainsail Drive
          - COVID-19 Pandemic (DR-4486)
            - PPL # 30
              - Generator Replacement – North Collier Fire – Immokalee RD
            - PPL # 31 – Facility Retrofit – CMI – San Marco RD
        - June 6, 2022 Florida Division of Emergency Management (FDEM) Update (see Attachment 1)
          - Project applications that have been sent to FEMA for award,

or that will be in the future, will be adjusted to 90/10 cost share for as far as the available federal award allows for the disaster
- 90/10 adjustments will be made with BOTH tier funding order AND LMS funding priority, in mind

- No Current Grant Opportunities
  - FDEM HMGP POC: Jared Jaworski (Jared.Jaworski@em.myflorida.com | 850-544-8372)
  - FDEM is requiring 100% digital submission for grant submissions
  - FDEM Portal
    - Register at www.fdemportal.com/grants
    - Sub-applicants must request access prior to the application deadline to avoid late submissions.

b. Hurricane Loss Mitigation Program Retrofit Grant (HLMP)
- 215.559, F.S. Hurricane Loss Mitigation Program
  - Sunset repealed to 2032
  - Project proposals are being evaluated for FY22-23
  - FY 21-22 Projects offered six-month extension
  - https://www.floridadisaster.org/dem/mitigation/hurricane-loss-mitigation-program/
  - FDEM HLMP Program Manager
    - Grant Goodwin
      - 850-815-4516
      - Grant.Goodwin@em.myflorida.com
- Gulf Coast State College Mobile Home Tie Down Program
  - https://www.floridadisaster.org/dem/mitigation/hurricane-loss-mitigation-program/
  - Contact Gulf Coast State College at 850-872-3807

6. LMS Update
   a. LMS update was approved by FEMA on May 7, 2020. The LMS expires on April 13, 2025.

7. Other News –
   a. Collier County's Comprehensive Emergency Management Plan (CEMP) –
- Approved by the Florida Division of Emergency Management (FDEM) on 02/28/2021
- Approved by BCC at the 04/13/2021 Regular Meeting.

b. Flood News
- FEMA/FDEM Substantial Damage and Post-Disaster Training for Floodplain Administrators Webinar Course
  - 10am – 3pm, July 26, 2022
  - https://fdem.webex.com/fdem/j.php?RGID=r8b8a267c6f52ce5affcedfdedcb6b17

- **Collier County**
  - **Currently awaiting 3-year verification visit results**
    - **May need to produce a new Repetitive Loss Analysis (RLA)**
    - **Working with FEMA, Region IV to rectify repetitive loss property information discrepancies**
  - **Letter of Final Determination for Collier RISKMAP product still not published**
- **City of Naples**
  - **Also awaiting 3-year verification visit results**
- **City of Marco Island**
  - **Awaiting determination if CMI will return to Class 5**

c. Wildfire News
- **ReadySetGo (RSG) Wildfire Fuels Reduction Grant**
  - **Deadline: 07/31/22 (11:59 PM)**
  - https://app.smarterselect.com/programs/82375-Iafc-

d. Other News
- The Salvation Army provided information on:
  - Florida Homeowners Assistance Fund
    - https://flhomeownersassistance.org/
  - Low-Income Home Energy Assistance Program (LIHEP)
    - https://alpi.org/

8. Next regular meeting: **21 October 2022**, 0930hrs, location TBD.
   a. Meeting adjourned at **10:31 AM**

ATTACHMENT(S)

1) FDEM 06/06/2022 Memorandum – Update to FEMA Announcement for 90/10 Cost Share Adjustment
2) 05/24/22-05/27/22 FEMA/FDEM HMGP Watershed Planning Initiative Grant Opportunity for City of Marco Island Emergency Meeting
3) April 15, 2022 Collier LMSWG Regular Meeting Minutes

Attachment 1 to the 15 July 2022 Agenda/Minutes

STATE OF FLORIDA

DIVISION OF EMERGENCY MANAGEMENT

Ron DeSantis
Governor

Kevin Guthrie
Director

TO: All County Local Mitigation Strategy Working Group Chairs

FROM: Kathleen Marshall, Hazard Mitigation Grant Program Administrator

THROUGH: Laura Dhuwe, Mitigation Bureau Chief Laura Dhuwe

RE: FEMA Announcement for 90/10 Cost Share Adjustment - Update

DATE: June 6, 2022

On March 18, 2022, FEMA released an advisory regarding President Biden's signing into law "H.R. 2471, Consolidated Appropriations Act, 2022." This law will effectively raise the federal cost-share from 75 percent to no less than 90 percent for those emergencies or major disaster declarations with an incident period beginning between January 1, 2020 and December 31, 2021. For the Hazard Mitigation Grant Program in Florida, this includes Hurricane Sally (DR-4564) and the COVID-19 Pandemic (DR-4486). On March 22, 2022, FDEM sent out a memorandum announcing this change. This is an update to that release with additional information with how this change will be implemented.

For those disasters affected, the change in cost-share will be applied to the same grant award lock-in, as there will be no automatic increase in the federal award amount. Other than DR-4486, any increase in the lock-in needs to be requested by the state, with justification, and is at the state's discretion to do so, if the situation warrants it. As for DR-4486, the lock-in is fixed and FEMA has stated that no additional funding has been authorized for this disaster, so no request for review from the states will be considered.

Concerning the applications submitted for both DR-4486 and DR-4564, those that have been sent to FEMA for award, or that will be in the future, will be adjusted to reflect a 90/10 cost-share for as far as the available federal award allows for the relevant disaster. These adjustments will be made with the tier funding order, as well as LMS funding priority, in mind. This is to stay in line with our administrative rule, Florida Administrative Code 27P-22. At this time, there is no additional information or action needed on the part of the sub-applicants/recipients. Should any be needed, you will be contacted by your respective project managers with further instructions.

We thank you for your patience in this matter and we look forward to using this new development to continue our mitigation efforts in Florida.

DIVISION HEADQUARTERS
2555 Shumard Oak Boulevard
Tallahassee, FL 32399-2100

Telephone: 850-815-4000
www.FloridaDisaster.org

STATE LOGISTICS RESPONSE CENTER
2702 Directors Row
Orlando, FL 32809-5631

Attachment 2 to the 15 July 2022 Agenda/Minutes

FEMA/FDEM HMGP Watershed Planning Initiative Grant Emergency Meeting
Collier County Local Mitigation Strategy Working Group
Email Correspondence Summary

1. Project for Review – Approved via email vote 16-0 and 13-0, respectively (05/24 – 05/27)
    a. FEMA/FDEM HMGP Watershed Initiative Grant Opportunity
        i. Opened: 04/08/2022
        ii. Closes: Originally 06/03/2022, but extended to 07/17/2022 after emergency meeting
        iii. City of Marco Island (CMI)
    b. Timeline
        i. 05/24/2022
            1. CMI Floodplain/CRS Coordinator, Kelli DeFedericis, emailed LMSWG Chair, William Lang, to request a LMSWG Endorsement Letter
            2. Mr. Lang called Ms. DeFedericis to discuss request, procedures to obtain the requested letter, etc.
            3. Mr. Lang reviewed the LMS guidelines and advised of the emergency procedures option (Annex H) to the LMSWG via email
            4. Mr. Lang advised LMSWG to vote on the following NLT 06/01/2022 by 3:00 pm
                a. Vote for endorsement for City of Marco Island to pursue FEMA/FDEM WMPI Notice of Proposal
                b. Vote to allow any other interested jurisdiction to request an endorsement letter directly through me, instead of another emergency email protocol meeting
            5. Mr. Lang provided LMSWG with link to vote via take.quiz=maker.com
        ii. 05/27/2022
            1. After receiving a majority vote of 16-0 for 4(a) and 13-0 for 4(b), Mr. Lang emailed the LMSWG and informed them of the results
            2. Mr. Lang provided a LMSWG Endorsement Letter to the FDEM Mitigation Branch Chief, Laura Dhuwe
        iii. 05/30/2022
            1. FDEM Mitigation Branch Chief Dhuwe acknowledge receipt via email

----------END----------

October 21, 2022 - Regular Meeting (Cancelled)

November 10, 2022 - Regular Meeting

Regular Meeting Minutes
Collier County Local Mitigation Strategy (LMS) Working Group
Joint Information Center (JIC), 3rd Floor, Emergency Services Center (ESC)
8075 Lely Cultural Pkwy, Naples, FL
34113
0930hrs, November 10, 2022

1. Approval of
   a. 15 July 2022 Regular Meeting Minutes-**Unanimously Approved**

2. Project(s) for Review:
   a. City of Naples (Utilities)
      - 375 13TH ST N
      - Equipment Services 375 13TH ST N # EQP/MGT– Harden Building and Windows
      - POC: Kevin Swisher |
   b. **Project approved with condition that flood hazards would be addressed, and Public Assistance (406-Repairs) would first be addressed via a consultant/contractor along with CON grant management/finance oversight**
   c. **Project scored at 67.886 and added to Project Priority List (# 42 of 45)**

3. Quorum for meeting (In-Person): **Quorum accomplished via in-person attendance**

4. Membership –
   a. City of Naples
      - Christa Carrera resigned from the City of Naples as of 10/07/22
      - CON may have representative attend this meeting to be VOTED in
      - **Miguel Flores (CON Public Works) voted in as interim representative**
   b. Florida Forestry Service (FFS)
      - Spoke with Sean Allen on 11/09/22 regarding new mitigation specialist hire at FFS for our area
      - FFS may have representative attend this meeting to be VOTED in
      - **Michael Joel (FFS PIO/Mitigation) voted in as FFS representative**
   c. Collier County Stormwater
      - Vacancy still exists
      - Spoke with Director, Beth Johnssen on 10/02/22 regarding need to fill vacancy
      - **Chris Mason (GMCDD/LMSWG Co-Chair) serving as interim stormwater representative, no voting capability for stormwater**
5. Grant Opportunities –
   a. HMGP-
      - Hurricane IAN (DR-4673-FL)
        - HMGP Timeline attached
        - Tentative NOFA Open: Week of January 30, 2023
        - Tentative NOFA Close: Week of May 1, 2023
        - Unknown County Allocation Estimate at this time
        - Jurisdictions need to consider 404-Mitigation and 406-Public Assistance Consultants
          - For 404-Mitigation, homeowners must be sponsored by a local government entity or non-profit entity

- BRIC/FMA – **No projects submitted for 2022-2023 BRIC/FMA NOFA**
  - NOFA Open: 09/30/2022
  - NOFA FDEM Deadline: 11/14/2022

- FDEM Grant Contact Information
  - FDEM HMGP POC: Jared Jaworski (Jared.Jaworski@em.myflorida.com | 850-544-8372)
  - FDEM is requiring 100% digital submission for grant submissions
  - FDEM Portal
    - Register at www.fdemportal.com/grants
    - Sub-applicants must request access prior to the application deadline to avoid late submissions.

b. Hurricane Loss Mitigation Program Retrofit Grant (HLMP)
- 215.559, F.S. Hurricane Loss Mitigation Program
  - Sunset repealed to 2032
  - Project proposals are being evaluated for FY22-23
  - FY 21-22 Projects offered six-month extension
  - https://www.floridadisaster.org/dem/mitigation/hurricane-loss-mitigation-program/
  - FDEM HLMP Program Manager
    - Grant Goodwin
      - 850-815-4516
      - Grant.Goodwin@em.myflorida.com
- Gulf Coast State College Mobile Home Tie Down Program
  - https://www.floridadisaster.org/dem/mitigation/hurricane-loss-mitigation-program/
  - Contact Gulf Coast State College at 850-872-3807

6. LMS Update
   a. LMS update was approved by FEMA on May 7, 2020. The LMS expires on April 13, 2025.

7. Other News –
   a. Collier County's Comprehensive Emergency Management Plan (CEMP) –
      - Approved by the Florida Division of Emergency Management (FDEM) on 02/28/2021
      - Approved by BCC at the 04/13/2021 Regular Meeting.
   b. Flood News
   c. Wildfire News
   d. Other News

8. Next regular meeting: 20 Jan 2022, 0930hrs, location TBD.
   a. Meeting adjourned at **10:29 AM**

Collier County Local Mitigation Strategy Working Group (LMSWG) Agenda and Prior Minutes

ATTACHMENT(S)

1) FDEM Hurricane IAN Mitigation Flyer
2) FDEM Hurricane IAN HMGP Timeline
3) PROJECT WORKSHEET FOR REVIEW: Equipment Services 375 13TH ST N # EQP/MGT– Harden Building and Windows
4) July 15, 2022 Collier LMSWG Regular Meeting Minutes

Attachment 1 to the 10 November 2022 Agenda/Minutes

2023
January 20, 2023 - Regular Meeting

Regular Meeting Agenda
Collier County Local Mitigation Strategy (LMS) Working Group
Conference Rooms A/B, South Regional Library
8065 Lely Cultural Pkwy, Naples, FL
34113
0930hrs, January 20, 2023

1. Approval of
   a. 10 November 2022 Regular Meeting Minutes – **Unanimously approved.**
   b. 2022 Project Priority List (PPL) and motion to approve any additional projects for annual recertification – **Unanimously approved.**

2. **Project(s) for Review:**
   a. Breanne Yacono Project – **Project approved with amended scoresheet included within these draft minutes. Final project score 251.883. Project placed on PPL.**
      - 112 Pago Pago W, Naples, FL 34113 (Lot 227, Isles of Capri, No. 2, Collier County)
      - Residential Elevation Project
      - POC: Shanti Smith-Copeland | Email: shanti.smith-copeland@iParametrics.com | 850-443-3896

   b. Riverbend Mobile Home Park Sanitary Sewer Project – **Project not approved. Based on presentation, LMSWG had concerns about the validity of the proposed gravity system being a true mitigation project. Presenters also mentioned a low-pressure system, but no information was provided via the project scoresheet. Project was also presented with elevation of units as a factor for the need for the gravity system, but the Co-Op MHP had no consensus regarding collective elevation of all MHP units. LMSWG recommended that the Riverbend MHP Co-Op contact Florida Department of Environmental Protection to determine if project is feasible (regardless if considered mitigation or not) AND contact Florida Division of Emergency Management, Mitigation Bureau (contact info previously provided by LMSWG Chairperson) to determine if gravity or low-pressure system could be considered as mitigation. If yes for both, bring the updated project back to the LMSWG for future consideration.**
      - 777 Walkerbilt Road Naples FL 34110
      - POC: Dennis McCabe | denmccabe@gmail.com | 978-394-2373

3. Quorum for meeting (In-Person): **Quorum achieved**

4. Membership – **Two new members voted in. Michael Harris with Florida Forestry voted in as an alternate and Gabriel Torres with Collier Public Schools voted in as a primary.**

5. Grant Opportunities –

   a. HMGP-
      - Hurricane IAN (DR-4673-FL)
        - HMGP Timeline attached
        - Tentative NOFA Open: Week of January 30, 2023
        - Tentative NOFA Close: Week of May 1, 2023
        - Unknown County Allocation Estimate currently
        - **Jurisdictions need to consider 404-Mitigation and 406-Public**

Assistance Consultants
- **For 404-Mitigation, homeowners must be sponsored by a local government entity or non-profit entity**

- BRIC/FMA
  - Next cycle – September 2023 (estimated)

- FDEM Grant Contact Information
  - FDEM HMGP POC: Jared Jaworski (Jared.Jaworski@em.myflorida.com | 850-544-8372)
  - FDEM is requiring 100% digital submission for grant submissions
  - FDEM Portal
    - Register at www.fdemportal.com/grants
    - Sub-applicants must request access prior to the application deadline to avoid late submissions.

b. Hurricane Loss Mitigation Program Retrofit Grant (HLMP)
- 215.559, F.S. Hurricane Loss Mitigation Program
  - Sunset repealed to 2032
  - https://www.floridadisaster.org/dem/mitigation/hurricane-loss-mitigation-program/

  - FDEM HLMP Program Manager
    - Grant Goodwin
      - 850-815-4516
      - Grant.Goodwin@em.myflorida.com
- Gulf Coast State College Mobile Home Tie Down Program
  - https://www.floridadisaster.org/dem/mitigation/hurricane-loss-mitigation-program/
  - Contact Gulf Coast State College at 850-872-3807

6. LMS Update
   a. LMS update was approved by FEMA on May 7, 2020. The LMS expires on April 13, 2025.

7. Other News –
   a. Collier County's Comprehensive Emergency Management Plan (CEMP) –

   - Approved by the Florida Division of Emergency Management (FDEM) on 02/28/2021
   - Approved by BCC at the 04/13/2021 Regular Meeting.

   b. Flood News

   - **Unincorporated Collier County – Currently managing liaison services for FEMA Direct Housing Mission (Hurricane Ian), 50 percent rule permitting, and awaiting FEMA RISKMAP final product.**

   - **Marco Island – Technical Appeal to RISKMAP has been adjust to different review type to help expedite final decision. No exact date yet on decision.**

- **City of Naples – Still working towards hiring a new floodplain coordinator.**

c. Wildfire News

- **Florida Forestry Service advised they are continuing to work on obtaining new grant monies for fire mitigation activities.**

d. Other News

- **LMSWG Chair advised group that annual LMS recertification is due 01/31/2023. Chair is finalizing Repetitive Loss Property reviews with jurisdictions. Final recertification report will then be transmitted to FDEM.**

8. Next regular meeting: **21 April 2023**, 0930hrs, location TBD, **OR future LMS Special Meetings will be called if required for Hurricane Ian HMGP opportunities.**

a. Meeting adjourned at **11:05am**

ATTACHMENT(S)

1) FDEM Hurricane IAN Mitigation Flyer
2) FDEM Hurricane IAN HMGP Timeline
3) PROJECT WORKSHEET FOR REVIEW: Breanne Yacono Project Scoresheet
4) PROJECT WORKSHEET FOR REVIEW: Riverbend MHP Sanitary Sewer Project
5) November 10, 2022 Collier LMSWG Regular Meeting Minutes

Collier County LMS Sign-In Sheet

Table 1 Collier LMSWG Members

01/ 20/23 Initial	Name	Affiliation Participating Jurisdiction
X(IP)	William Lang, Chair	**Collier C. Emergency Mgt.**
X(IP)	Chris Mason, Co-Chair	**Collier County (Floodplain Coordinator)**
X(IP)	Rick Zyvoloski, EM Coordinator | Liaison	**Collier C. Emergency Mgt.**
X(IP) MH	Michael Joel | Michael Harris | Tom Gonzalez | Sean Allen	**Florida Forest Service Caloosahatchee Dist. Office**
X (IP)	Kelli DeFedericis	**City of Marco Island, Cmty. Affairs (Floodplain Mgr.)**
X (IP)	Chris Byrne	**City of Marco Island**
E	Reg Buxton	**Citizen Corps | N. Naples Journal**
X(IP) TS	Terry Smallwood | Dottie Smallwood	**Everglades City**
X(IP) PS	Phil Snyderburn | Tom Bates	**Collier C. Public Util. Dept., Solid & Haz. Waste Division**
E	Tricia Dorn | Bob Atkins	**Lee County Electric Coop**
X (IP) MR	Marc Rouleau | Marc MacDonald	**Collier Co. Public Schools**
X (IP)	James von Rinteln	**Interested Citizen**
E	Mark Grajewski	**Collier Mosquito Control District**
X (IP) AM	Chris Wolfe | Alan McLaughlin	**Greater Naples Fire Rescue District**
E	Kristopher Thomas | Michael Jimenez	**North Collier Fire & Rescue District**
E	Joshua Bauer	**Immokalee Fire Control District**
X (IP) LL	Ashley Jones | Lisa Loren	**The Salvation Army**
X (IP) TR	John McCormick | Timothy Rygiel	**Collier County Facilities Management Division**
X (IP)	Jennifer Smith	**Naples Community Hospital (NCH)**
X (IP)	Miguel Flores	**City of Naples**
	VACANT	**Collier Co. Growth Mgt Dept. (Stormwater)**
	VACANT	Collier C. Parks & Recreation Division
	VACANT	Collier Co. Growth Mgt Dept.

Table 2 Collier LMS Visitors

Name	Affiliation	Email Address
Gabriel Torres	Collier Public Schools	torreg@collierschools.com
Shanti Smith	Consultant-Yacono Project – iParametrics	Shanti.smith-copeland@iparametrics.com
BreAnne Yacono	Homeowner-Yacono Project	brebarrett_pt@aol.com
Dennis McCabe | Phillip Lutze	Riverbend MHP Co-Op Board Members – Presenter	denmccabe@gmail.com | pjlutzi@hotmail.com

X = Present | (IP) = In Person | (V) = Virtual via GoToMeeting | E = Excused | NP = Not Present and Not Excused

March 24, 2023 - Special Meeting

Special Meeting Minutes (DR-4673-FL)
Collier County Local Mitigation Strategy (LMS) Working Group
Conference Rooms A/B, South Regional Library
8065 Lely Cultural Pkwy, Naples, FL
34113
0930hrs, March 24, 2023

1. Approval of
   a. 20 January 2023 Regular Meeting Minutes – **Approved**

2. **Project(s) for Review:**
   a. Greater Naples Fire Rescue District (GNFRD) – **Approved with corrections to potential loss values**
      - Stations 20, 22, 23, 71, 72, 73, & 90
        - Station 20 – 4798 Davis BLVD, 34104
        - Station 22 – 4375 Bayshore DR, 34112
        - Station 23 – 6055 Collier BLVD, 34114
        - Station 71 – 100 13th ST SW, 34117
        - Station 72 – 3820 Beck BLVD, 34114
        - Station 73 – 14565 Collier BLVD, 34119
        - Station 90 – 175 Capri BLVD, 34113
      - Wind Mitigation Projects (Combined)
      - POC: Alan McLaughlin | Email: Amclaughlin@gnfire.org | 239-961-2549
   b. Naples Community Hospital (NCH) – **Approved as combined project**
      - NCH Downtown - 350 7th ST N, 34102
      - NCH North Naples Campus - 11190 Health Park BLVD, 34110
      - Wind Mitigation Projects
      - POC: Jennifer Smith | Email: Jennifer.Smith@nchmd.org | 239-624-1528
        - **LMSWG approved with request to address windows at both locations**
   c. City of Marco Island (CMI) – **Approved**
      - 1280 San Marco RD, Marco Island, FL 34145
        - Fire Station 50 – Raising electrical equipment BFE + 3 (LCEC equipment supporting fire station/EOC)
3. Quorum for meeting (In-Person): **Quorum achieved**

4. Membership – No new membership inquires

5. Grant Opportunities –

   a. HMGP-
      - Hurricane IAN (DR-4673-FL)
        - HMGP Timeline attached
        - Tentative NOFA Open: Week of January 30, 2023
        - Tentative NOFA Close: Week of May 1, 2023
        - Unknown County Allocation Estimate currently
        - Jurisdictions need to consider 404-Mitigation and 406-Public Assistance Consultants
          - For 404-Mitigation, homeowners must be sponsored by a local government entity

- **State Webinar scheduled for March 28, 2023 – 1:00pm – 4:00pm**
- **County Virtual Workshop – March 25, 2023 – 9:00am – 12:00pm**

- BRIC/FMA
  - Next cycle – September 2023 (estimated)

- FDEM Grant Contact Information
  - FDEM HMGP POC: Jared Jaworski (Jared.Jaworski@em.myflorida.com | 850-544-8372)
  - FDEM is requiring 100% digital submission for grant submissions
  - FDEM Portal
    - Register at www.fdemportal.com/grants
    - Sub-applicants must request access prior to the application deadline to avoid late submissions.

b. Hurricane Loss Mitigation Program Retrofit Grant (HLMP)
- 215.559, F.S. Hurricane Loss Mitigation Program
  - Sunset repealed to 2032
  - https://www.floridadisaster.org/dem/mitigation/hurricane-loss-mitigation-program/

  - FDEM HLMP Program Manager
    - Grant Goodwin
      - 850-815-4516
      - Grant.Goodwin@em.myflorida.com
- Gulf Coast State College Mobile Home Tie Down Program
  - https://www.floridadisaster.org/dem/mitigation/hurricane-loss-mitigation-program/
  - Contact Gulf Coast State College at 850-872-3807

6. LMS Update
   a. LMS update was approved by FEMA on May 7, 2020. The LMS expires on April 13, 2025.
   b. **Next 5-Year Update Cycle Begins Soon with expiration letters being sent out from FDEM in six-month cycle (18, 12, 6 months prior)**
   c. Kick-off meetings (18-24 months prior to expiration)
   d. Updated Florida Review Tool and LMS Crosswalk
   e. FL-391 "LMS Update Manual Training" will be offered in the near future

7. Other News –
   a. Collier County's Comprehensive Emergency Management Plan (CEMP) –

      - Approved by the Florida Division of Emergency Management (FDEM) on 02/28/2021
      - Approved by BCC at the 04/13/2021 Regular Meeting.

   b. Flood News

   c. Wildfire News

d. Other News

- 2022 LMS Annual Recertification approved 01/31/2023
- Safeguarding Tomorrow through Ongoing Risk Mitigation (STORM) Revolving Loan Fund
  - https://www.floridadisaster.org/dem/mitigation/safeguarding-tomorrow-through-ongoing-risk-mitigation-storm-revolving-loan-fund/
- **NEW FEMA HMA Guidance released on 03/23/2023**
  - https://www.fema.gov/grants/mitigation/hazard-mitigation-assistance-guidance
- **South Florida Water Management District (SFWMD) planning on adopting the Collier County 2020 LMS on 04/13/2023, with future project submittals at next meeting (04/21/2023)**

8. Next regular meeting: **21 April 2023**, 0930hrs, location **South Regional Library**.
   a. Meeting adjourned at 10:57 am

ATTACHMENT(S)

1) PROJECT WORKSHEET FOR REVIEW: GNFRD Project Scoresheet (Combined)
2) PROJECT WORKSHEET FOR REVIEW: NCH Downtown Project Scoresheet
3) PROJECT WORKSHEET FOR REVIEW: NCH North Naples Project Scoresheet
4) PROJECT WORKSHEET FOR REVIEW: CMI Fire Station 50 Project Scoresheet
5) January 20, 2023, Collier LMSWG Regular Meeting Minutes

Collier County LMS Sign-In Sheet

Table 1 Collier LMSWG Members

03/24/23 Initial	Name	Affiliation Participating Jurisdiction
WL	William Lang, Chair	Collier C. Emergency Mgt.
CM	Chris Mason, Co-Chair	Collier County (Floodplain Coordinator)
	~~Rick Zyvoloski~~, EM Coordinator | Liaison	Collier C. Emergency Mgt.
	Michael Joel | Michael Harris | Tom Gonzalez | Sean Allen	Florida Forest Service Caloosahatchee Dist. Office
KD	Kelli DeFedericis	City of Marco Island, Cmty. Affairs (Floodplain Mgr.)
	Chris Byrne	City of Marco Island
E	Reg Buxton	Citizen Corps | N. Naples Journal
	Terry Smallwood | Dottie Smallwood	Everglades City
	Phil Snyderburn | Tom Bates	Collier C. Public Util. Dept., Solid & Haz. Waste Division
	Tricia Dorn | Bob Atkins	Lee County Electric Coop
	Marc Rouleau | Marc MacDonald | Gabriel Torres	Collier Co. Public Schools
	James von Rinteln	Interested Citizen
	Mark Grajewski	Collier Mosquito Control District
	Chris Wolfe | Alan McLaughlin	Greater Naples Fire Rescue District
	Kristopher Thomas | Michael Jimenez	North Collier Fire & Rescue District
	Joshua Bauer	Immokalee Fire Control District
E	Ashley Jones | Lisa Loren	The Salvation Army
	John McCormick | Timothy Rygiel	Collier County Facilities Management Division
	Jennifer Smith	Naples Community Hospital (NCH)
	Miguel Flores	City of Naples
	VACANT	Collier Co. Growth Mgt Dept. (Stormwater)
	VACANT	Collier C. Parks & Recreation Division
	VACANT	Collier Co. Growth Mgt Dept.

Table 2 Collier LMS Visitors

Name	Affiliation	Email Address
Bretnne Yacono	Home owner	Brebarrett_PT@aol.com

X = Present | (IP) = In Person | (V) = Virtual via GoToMeeting | E = Excused | NP = Not Present and Not Excused

April 21, 2023 - Regular Meeting

Collier County Local Mitigation Strategy Working Group (LMSWG) Meeting Minutes

Regular (Q2) Meeting Minutes (DR-4673-FL)
Collier County Local Mitigation Strategy (LMS) Working Group
Conference Rooms A/B, South Regional Library
8065 Lely Cultural Pkwy, Naples, FL
34113
0930hrs, April 21, 2023

1. Approval of
   a. 24 March 2023 Special Meeting Minutes – **Approved**

2. **Project(s) for Review:**
   a. Riverbend MHP Sewer Reconstruction Mitigation Project – **Approved | No Sponsor Identified**
      - POC: Phil Lutzi | pjlutzi@hotmail.com | (607) 257-0777

   b. Port of the Isles (PIO) Community Improvement District (CID) – **LMSWG reviewed and approved CONTINGENT on POI CID adopting 2020 LMS via resolution, along with FEMA approval**
      - Backup Water Storage -
      - WWTP Water Filter
      - 6 x Mobile Generators for Lift Station Power Backup – **Recommended that non-SFHA location be established for mobile generators to be stored when not in use**
      - Road Elevation/Waterline Hardening/Well Head Elevation
      - POC: Dan Truckey | dtruckey@poicid.com | (920) 737-1345

   c. Naples Community Hospital (NCH) – **Projects approved**
      - Downtown (Baker) Window -Wind Retrofit
      - Downtown & North Naples Flood Mitigation (Combined)
      - POC: Jennifer Smith | Jennifer.Smith@nchmd.org | 239-624-1528

   d. Lee County Electric Cooperative (LCEC) – **3 of 6 approved. See notes below.**
      - **Fred Smith/Bostic-CMI projects (4 total) all combined as of 05/19/2023**
        - Fred Smith/Bostic-City of Marco Island (CMI) Substation (Combined)
        - Fred Smith-CMI-Circuit Breakers (Combined)
      - ~~Everglades City – Saferoom –~~ **Determined not feasible after meeting due to preliminary Collier RiskMAP product indicating area being within LiMWA Coastal A Zone**
      - Belle Meade – Saferoom – **Re-evaluating to address LMSWG concerns regarding associated on-site equipment during an event**
      - ~~Pad Mount/Underground Utility – CMI – **LMSWG requested more information –**~~ **Project not approved and not moving forward with Collier LMSWG as of 05/19/2023**
      - Carnestown/CMI Looping Transmission System-19 miles
      - POC: Karen Vivian | Karen.Vivian@lcec.net | 239-656-2236

   e. South Florida Water Management District (SFWMD) – **Project approved after verification that tower would have a supporting onsite stationary generator that would be built to compliance. Approved CONTINGENT upon FEMA approval of SFWMD Resolution adopting 2020 LMS.**

- Big Cypress Basin Microwave Tower
- POC: Carolina Maran | Email: cmaran@sfwmd.gov | 561-682-6868

3. Quorum for meeting (In-Person):

4. Membership

   a. Storm Gewirtz – Project Manager III (Licensed) – Stormwater Management – TMSD (Collier BCC) - **Approved**
   b. Robert (Bob) Dorta – Floodplain Coordinator – City of Naples – **Approved**
   c. Karen Vivian – Supervisor, Financial Planning & Analysis – LCEC – **Approved**
   d. Carolina Maran – Chief Resiliency Officer – SFWMD - **Approved**

5. Grant Opportunities –

   a. HMGP-
      - Hurricane IAN (DR-4673-FL)
        - HMGP Timeline attached
        - NOFA Open: February 24, 2023
        - NOFA Close: May 31, 2023
        - $36,063,710
        - Jurisdictions need to consider 404-Mitigation and 406-Public Assistance Consultants
          - For 404-Mitigation, homeowners must be sponsored by a local government entity
          - **County Virtual Workshop – March 25, 2023 – 9:00am – 12:00pm**
      - BRIC/FMA
        - Next cycle – September 2023 (estimated)

      - FDEM Grant Contact Information
        - FDEM HMGP POC: Jared Jaworski (Jared.Jaworski@em.myflorida.com | 850-544-8372)
        - FDEM is requiring 100% digital submission for grant submissions
        - FDEM Portal
          - Register at www.fdemportal.com/grants
          - Sub-applicants must request access prior to the application deadline to avoid late submissions.
   b. Hurricane Loss Mitigation Program Retrofit Grant (HLMP)
      - 215.559, F.S. Hurricane Loss Mitigation Program
        - Sunset repealed to 2032
        - https://www.floridadisaster.org/dem/mitigation/hurricane-loss-mitigation-program/

        - FDEM HLMP Program Manager
          - Grant Goodwin
            - 850-815-4516
            - Grant.Goodwin@em.myflorida.com
      - Gulf Coast State College Mobile Home Tie Down Program
        - https://www.floridadisaster.org/dem/mitigation/hurricane-loss-

mitigation-program/
- Contact Gulf Coast State College at 850-872-3807

6. LMS Update
   a. LMS update was approved by FEMA on May 7, 2020. The LMS expires on April 13, 2025.
   b. **Next 5-Year Update Cycle Begins Soon with expiration letters being sent out from FDEM in six-month cycle (18, 12, 6 months prior)**
   c. Kick-off meetings (18-24 months prior to expiration)
   d. Updated Florida Review Tool and LMS Crosswalk
   e. FL-391 "LMS Update Manual Training" will be offered in the near future

7. Other News –
   a. Collier County's Comprehensive Emergency Management Plan (CEMP) –
      - Approved by the Florida Division of Emergency Management (FDEM) on 02/28/2021
      - Approved by BCC at the 04/13/2021 Regular Meeting.
   b. Flood News
   c. Wildfire News
   d. Other News
      - 2022 LMS Annual Recertification approved 01/31/2023
      - Safeguarding Tomorrow through Ongoing Risk Mitigation (STORM) Revolving Loan Fund
        - https://www.floridadisaster.org/dem/mitigation/safeguarding-tomorrow-through-ongoing-risk-mitigation-storm-revolving-loan-fund/
      - **NEW FEMA HMA Guidance released on 03/23/2023**
        - https://www.fema.gov/grants/mitigation/hazard-mitigation-assistance-guidance

8. Next regular meeting: **21 July 2023**, 0930hrs, location **South Regional Library**.
   a. Meeting adjourned at **11:45AM**

ATTACHMENT(S)

1) PROJECT WORKSHEET FOR REVIEW: Riverbend MHP Sewer Reconstruction Mitigation Project

2) PROJECT WORKSHEETS FOR REVIEW: Port of the Isles (PIO) Community Improvement District (CID)
   a) Backup Water Storage
   b) WWTP Water Filter
   c) 6 x Mobile Generators for Lift Station Power Backup
   d) Road Elevation/Waterline Hardening/Well Head Elevation

3) PROJECT WORKSHEETS FOR REVIEW: Naples Community Hospital (NCH)
   a) Downtown (Baker) Window -Wind Retrofit
   b) Downtown & North Naples Flood Mitigation (Combined)

4) PROJECT WORKSHEETS FOR REVIEW: Lee County Electric Cooperative (LCEC)
   a) Fred Smith/Bostic-City of Marco Island (CMI) Substation (Combined)/ Fred Smith-CMI-Circuit Breakers (Combined) – **Projects (2 + 2) combined by LCEC, but same end cost as of 05/19/2023**
   ~~b) Everglades City – Saferoom –~~**Not approved and LCEC will not proceed as of 05/19/2023**
   c) Belle Meade – Saferoom – **Future meeting per LMSWG RFI**
   ~~d) Pad Mount/Underground Utility – CMI – **Future meeting per LMSWG RFI**~~ **Not approved and LCEC will not proceed as of 05/19/2023**
   e) Carnestown/CMI Looping Transmission System-19 miles – **LCEC agreed to have listed last for Collier's Hurricane Ian HMGP PPL ranking due to high cost. Potentially will move to Tier two (2) funding in the future.**

5) PROJECT WORKSHEETS FOR REVIEW South Florida Water Management District (SFWMD) - Big Cypress Basin Microwave Tower

6) March 24, 2023, Collier LMSWG Special Meeting Minutes

7) **SEPARATE ATTACHMENT** – SFWMD Resolution 2023-0409 – Collier LMS Adoption – 04/13/2023

Collier County LMS Sign-In Sheet

Table 1 Collier LMSWG Members

04/ 21/23 Initial	Name	Affiliation Participating Jurisdiction
X (IP)	William Lang, Chair	**Collier C. Emergency Mgt.**
X (IP)	Chris Mason, Co-Chair	**Collier County (Floodplain Coordinator)**
X (IP) MJ/MH	Michael Joel | Michael Harris | Tom Gonzalez | Sean Allen	**Florida Forest Service Caloosahatchee Dist. Office**
X (IP)	Kelli DeFedericis	**City of Marco Island, Cmty. Affairs (Floodplain Mgr.)**
E	Chris Byrne	**City of Marco Island**
E	Reg Buxton	**Citizen Corps | N. Naples Journal**
NP	Terry Smallwood | Dottie Smallwood	**Everglades City**
X (IP) PS	Phil Snyderburn | Tom Bates	**Collier C. Public Util. Dept., Solid & Haz. Waste Division**
X (IP) KV	Karen Vivian | Tricia Dorn | Bob Atkins	**Lee County Electric Coop**
X (IP) GT	Gabriel Torres | Marc Rouleau | Marc MacDonald	**Collier Co. Public Schools**
X (JVR)	James von Rinteln	**Interested Citizen**
NP	Mark Grajewski	**Collier Mosquito Control District**
NP	Chris Wolfe | Alan McLaughlin	**Greater Naples Fire Rescue District**
E	Kristopher Thomas | Michael Jimenez	**North Collier Fire & Rescue District**
NP	Joshua Bauer	**Immokalee Fire Control District**
X (IP) LL	Ashley Jones | Lisa Loren	**The Salvation Army**
X (IP) TR	John McCormick | Timothy Rygiel	**Collier County Facilities Management Division**
X (IP)	Jennifer Smith	**Naples Community Hospital (NCH)**
X (IP) RD	Robert Dorta | Miguel Flores	**City of Naples**
X (IP)	Storm Gewirtz	**Collier Co. Growth Mgt Dept. (Stormwater)**
X (IP)	Carolina Maran	South Florida Water Management District (SFWMD)
	VACANT	**Collier Co Emergency Management Staff Liaison**
	VACANT	Collier C. Parks & Recreation Division
	VACANT	Collier Co. Growth Mgt Dept.

Table 2 Collier LMS Visitors

Name	Affiliation	Email Address
Adam Ferguson	LCEC	Not Provided
Dan Truckey	POI CID	antruckey@gmail.com
Wendy & Pete Stamnas	Riverbend MHP Co-Op	WPStamnas@aol.com
Kevin Carter	POI CID	kevin@dmgfl.com

X = Present | (IP) = In Person | (V) = Virtual via GoToMeeting | E = Excused | NP = Not Present and Not Excused

July 21, 2023 - Regular Meeting

Regular (Q3) Meeting Agenda (DR-4673-FL)
Collier County Local Mitigation Strategy (LMS) Working Group
Conference Rooms A/B, South Regional Library
8065 Lely Cultural Pkwy, Naples, FL
34113
0930hrs, July 21, 2023

1. Approval of
   a. 21 April 2023 Regular Meeting Minutes – **Unanimously Approved.**

2. Quorum for meeting (In-Person) – **Quorum Achieved**

3. Membership

   a. Jennifer Schmidt, Multi-Hazard Planner, Collier County Emergency Management
      - Proposing to elect as "CCEM Staff Liaison"
   b. Conduct Annual Vote for new LMSWG Chairperson & Co-Chairperson

4. Project(s) for Review:
   a. Yacono Residential Elevation (Existing) Project – RESUBMITTAL – **Unanimously Approved**
      - 112 Pago Pago W, Naples, FL 34113 (Lot 227, Isles of Capri, No. 2, Collier County)
      - Resubmittal due to increased project cost
      - POC: Shanti Smith-Copeland | Email: shanti.smith-copeland@iParametrics.com | 850-443-3896

   b. Greater Naples Fire Rescue District (GNFRD) – RESUBMITTAL – **Unanimously Approved**
      - Stations 20, 22, 23, 71, 72, 73, & 90
        - Station 20 – 4798 Davis BLVD, 34104
        - Station 22 – 4375 Bayshore DR, 34112
        - ~~Station 23 – 6055 Collier BLVD, 34114~~
        - Station 71 – 100 13th ST SW, 34117
        - Station 72 – 3820 Beck BLVD, 34114
        - Station 73 – 14565 Collier BLVD, 34119
        - Station 90 – 175 Capri BLVD, 34113
      - Wind Mitigation Projects (Combined)
      - Resubmittal Due to increased project costs
      - POC: Alan McLaughlin | Email: Amclaughlin@gnfire.org | 239-961-2549

   c. Lee County Electric Cooperative (LCEC) – RESUBMITTAL – **Unanimously Approved**
      - Belle Meade – Saferoom
        - Lat/Long (Decimal Degrees)
          - 26.035600 / -81.702969, Due South of 5735 Collier BLVD, Naples, FL 34114
        - Resubmittal based on RFI from LMSWG to determine feasibility of placement at indicated site location
        - Finished Floor Elevation Requirement (Category 5 SLOSH)
          - 23.5' NAVD

- POC: Karen Vivian | Karen.Vivian@lcec.net | 239-656-2236

5. Grant Opportunities –

   a. HMGP-
      - Hurricane IAN (DR-4673-FL)
        - NOFA Open: February 24, 2023
        - **NOFA Close: August 29, 2023**
        - $36,063,710

      - Hurricane IAN (DR-4680-FL)
        - NOFA Open: May 19, 2023
        - **NOFA Close: 10/20/2023**
        - $75,984.36

      - BRIC/FMA
        - Next cycle – September 2023 (estimated)
        - Notice of Interest (NOI) Form will be required for ALL subapplicants
        - POC: Susan Harris-Council, Program Manager
          - Non-DisasterPrograms@em.myflorida.com
          - (850) 815-4532

      - FDEM Grant Contact Information
        - FDEM HMGP POC: Jared Jaworski (Jared.Jaworski@em.myflorida.com | 850-544-8372)
        - FDEM is requiring 100% digital submission for grant submissions
        - FDEM Portal
          - Register at www.fdemportal.com/grants
          - Sub-applicants must request access prior to the application deadline to avoid late submissions

   b. Hurricane Loss Mitigation Program Retrofit Grant (HLMP)
      - 215.559, F.S. Hurricane Loss Mitigation Program
        - Planning Kickoff Meetings as of 06/13/2023
        - https://www.floridadisaster.org/dem/mitigation/hurricane-loss-mitigation-program/
        - FDEM HLMP Program Manager
          - Grant Goodwin
            - 850-815-4516
            - Grant.Goodwin@em.myflorida.com
      - Gulf Coast State College Mobile Home Tie Down Program
        - https://www.floridadisaster.org/dem/mitigation/hurricane-loss-mitigation-program/
        - Contact Gulf Coast State College at 850-872-3807

6. LMS Update
   a. LMS update was approved by FEMA on May 7, 2020. The LMS expires on April 13, 2025.

b. Next 5-Year Update Cycle Begins Soon with expiration letters being sent out from FDEM in six-month cycle (18, 12, 6 months prior)
c. Kick-off meetings (18-24 months prior to expiration)

7. Other News –
   a. Collier County's Comprehensive Emergency Management Plan (CEMP) –
      - Approved by the Florida Division of Emergency Management (FDEM) on 02/28/2021
      - Approved by BCC at the 04/13/2021 Regular Meeting.
   b. Flood News
      - All jurisdictions are awaiting their Letter of Final Determination regarding the 2019 Preliminary RiskMAP product. Scheduled for 08/08/2023 publish.
   c. Wildfire News
      - Florida Forestry discussed upcoming grant monies for fire mitigation
   d. Other News
      - NEW FEMA HMA Guidance released on 03/23/2023
        - https://www.fema.gov/grants/mitigation/hazard-mitigation-assistance-guidance
        - Guidance for Hurricane Ian and Hurricane Nicole is the historical 2015 HMA Guidance
          - https://www.fema.gov/sites/default/files/2020-04/HMA_Guidance_FY15.pdf
8. Next regular meeting: **20 October 2023**, 0930hrs, location **South Regional Library**.
   a. Meeting adjourned at _10:04 AM_____

ATTACHMENT(S)

1) PROJECT WORKSHEET FOR REVIEW:
   a) Yacono Residential Elevation Project
   b) GNFD 7 x Fire Station(s) Wind-Retrofit Projects
   c) Lee County Electric Cooperative (LCEC) - Belle Meade – Saferoom

2) April 21, 2023, Collier LMSWG Regular Meeting Minutes (PROJECT SCORESHEETS REMOVED)

Collier County LMS Sign-In Sheet

Table 1 Collier LMSWG Members

07/ 21/23 Initial	Name	Affiliation Participating Jurisdiction
WL	William Lang, Chair	Collier C. Emergency Mgt.
CM	Chris Mason, Co-Chair	Collier County (Floodplain Coordinator)
MH	Michael Joel | Michael Harris | Tom Gonzalez | Sean Allen	Florida Forest Service Caloosahatchee Dist. Office
E	Kelli DeFedericis	City of Marco Island, Cmty. Affairs (Floodplain Mgr.)
	Chris Byrne	City of Marco Island
	Reg Buxton	Citizen Corps | N. Naples Journal
	Terry Smallwood | Dottie Smallwood	Everglades City
PS	Phil Snyderburn | Tom Bates	Collier C. Public Util. Dept., Solid & Haz. Waste Division
W AF	Karen Vivian | Tricia Dorn | ~~Bob Atkins~~ Adam Ferguson	Lee County Electric Coop
	Gabriel Torres | Marc Rouleau | Marc MacDonald	Collier Co. Public Schools
JvR	James von Rinteln	Interested Citizen
	Mark Grajewski	Collier Mosquito Control District
AM	Chris Wolfe | Alan McLaughlin	Greater Naples Fire Rescue District
	Kristopher Thomas | Michael Jimenez	North Collier Fire & Rescue District
	Joshua Bauer	Immokalee Fire Control District
	Ashley Jones | Lisa Loren	The Salvation Army
	John McCormick | Timothy Rygiel	Collier County Facilities Management Division
	Jennifer Smith	Naples Community Hospital (NCH)
BD	Robert Dorta | Miguel Flores	City of Naples
~~ASG~~	Storm Gewirtz	Collier Co. Growth Mgt Dept. (Stormwater)
	Carolina Maran	South Florida Water Management District (SFWMD)
	VACANT	Collier Co Emergency Management Staff Liaison
	VACANT	Collier C. Parks & Recreation Division
	VACANT	Collier Co. Growth Mgt Dept.

Table 2 Collier LMS Visitors

Name	Affiliation	Email Address
BreAgne Varono	Home Owner	brebarrett_PT@aol.com
Dan Symmons	CCBCS EM	dan.symmons@colliercountyfl.gov
Jennifer Schmidt	CCBCS EM	jennifer.schmidt@colliercountyfl.gov
Scott Kerens	Marco Church	scott@marcochurch.com

X = Present | (IP) = In Person | (V) = Virtual via GoToMeeting | E = Excused | NP = Not Present and Not Excused

August 25, 2023 - Special Meeting

Collier County Local Mitigation Strategy Working Group (LMSWG) Minutes

Special Meeting Minutes (DR-4673-FL)
Collier County Local Mitigation Strategy (LMS) Working Group
Conference Rooms A/B, South Regional Library
8065 Lely Cultural Pkwy, Naples, FL
34113
0930hrs, August 25, 2023

1. Approval of
   a. 21 July 2023 Regular Meeting Minutes - **Approved**

2. Quorum for meeting (In-Person) – **Quorum Achieved**

3. Membership – **3a. Vote Approved**

   a. Vote on nomination for Co-Chair (Kelli DeFedericis, City of Marco Island)
   b. Continue to transition Chairperson from GMCDD to CCEM – tentative for Q4 LMSWG meeting (10/20/2023)

4. Project(s) for Review:
   a. Lee County Electric Cooperative (LCEC) – RESUBMITTAL - **Approved**
      - Carnestown/Marco Island Looping of Transmission System
      - Cost increase from $27M to $38M - $9M increase
      - POC: Karen Vivian | Karen.Vivian@lcec.net | 239-656-2236

   b. City of Naples (CON) Public Beach End Barrier Hardening – **Approved with condition that CON apply for 2023-2024 BRIC via Notice of Interest Form prior to 08/2023 Deadline and provide LMSWG with updates regarding HMGP/BRIC application updates (LMSWG Chair tie-break vote for approval of project after concerns if project was mitigation or public assistance).**
      - Beach Access locations at
        - North Lake Dr
        - 3rd Ave S
        - 14th Ave S
        - 15th Ave S
        - 16th Ave S
      - POC: Miguel Flores | mflores@naplesgov.com | 239-213-5004
5. Project(s) Removed:
   a. City of Naples Utilities Building Retrofit (Wind & Flood) – Removed 08/02/23
      - Initially approved at 11/10/2022 LMSWG Q4 Meeting
      - Approval was contingent upon sub-applicant (CON) addressing flood mitigation of structure
      - After further review, CON determined flood mitigation was not feasible based on budget allocated (as of 08/02/2023)

6. Grant Opportunities –

   a. HMGP-
      - Hurricane IAN (DR-4673-FL)
        - NOFA Open: February 24, 2023

- **NOFA Close: August 29, 2023**
- $36,063,710

- Hurricane IAN (DR-4680-FL)
  - NOFA Open: May 19, 2023
  - **NOFA Close: 10/20/2023**
  - $75,984.36

- FDEM Grant Contact Information
  - FDEM HMGP POC: Jared Jaworski (Jared.Jaworski@em.myflorida.com | 850-544-8372)
  - FDEM is requiring 100% digital submission for grant submissions
  - FDEM Portal
    - Register at www.fdemportal.com/grants
    - Sub-applicants must request access prior to the application deadline to avoid late submissions

- BRIC/FMA
  - FY23 Cycle – September 2023 (estimated)
  - **Notice of Interest (NOI) Form will be required for ALL subapplicants**
  - NOI forms can be submitted to
    - Non-DisasterPrograms@em.myflorida.com
    - Submit by August 31, 2023
  - POC: Susan Harris-Council, Program Manager
    - (850) 815-4532

b. Hurricane Loss Mitigation Program Retrofit Grant (HLMP)
   - 215.559, F.S. Hurricane Loss Mitigation Program
     - https://www.floridadisaster.org/dem/mitigation/hurricane-loss-mitigation-program/
     - FDEM HLMP Program Manager
       - Grant Goodwin
         - 850-815-4516
         - Grant.Goodwin@em.myflorida.com
   - Gulf Coast State College Mobile Home Tie Down Program
     - https://www.floridadisaster.org/dem/mitigation/hurricane-loss-mitigation-program/
     - Contact Gulf Coast State College at 850-872-3807

7. LMS Update
   a. LMS update was approved by FEMA on May 7, 2020. The LMS expires on April 13, 2025.
   b. Next 5-Year Update Cycle Begins Soon with expiration letters being sent out from FDEM in six-month cycle (18, 12, 6 months prior)
   c. Kick-off meetings (18-24 months prior to expiration)

8. Other News –
    a. Collier County's Comprehensive Emergency Management Plan (CEMP) –
        - Approved by the Florida Division of Emergency Management (FDEM) on 02/28/2021
        - Approved by BCC at the 04/13/2021 Regular Meeting.
    b. Flood News
    c. Wildfire News
    d. Other News
        - **NEW FEMA HMA Guidance released on 03/23/2023**
            - https://www.fema.gov/grants/mitigation/hazard-mitigation-assistance-guidance
            - Guidance for Hurricane Ian and Hurricane Nicole is the historical 2015 HMA Guidance
                - https://www.fema.gov/sites/default/files/2020-04/HMA_Guidance_FY15.pdf
9. Next regular meeting: **20 October 2023**, 0930hrs, location **South Regional Library**.
    a. Meeting adjourned at 10:35am

ATTACHMENT(S)

1) PROJECT WORKSHEET FOR REVIEW:
    a) Lee County Electric Cooperative (LCEC) – Resubmittal – Carnestown/Marco Island Looping Transmission System
        i) Cost Increase
    b) City of Naples (CON) Public Beach End Barrier Hardening

2) July 21, 2023, Collier LMSWG Regular Meeting Minutes (PROJECT SCORESHEETS REMOVED)

Collier County LMS Sign-In Sheet

Table 1 Collier LMSWG Members

08/ 25/23 Initial	Name	Affiliation Participating Jurisdiction
X (IP)	William Lang, Chair	**Collier C. Emergency Mgt.**
X (IP)	Chris Mason, Co-Chair	**Collier County (Floodplain Coordinator)**
X (IP)	Jennifer Schmidt	**Collier Co Emergency Management Staff Liaison**
X (IP) - MJ	Michael Joel | Michael Harris	**Florida Forest Service Caloosahatchee Dist. Office**
X (IP)	Kelli DeFedericis	**City of Marco Island, Cmty. Affairs (Floodplain Mgr.)**
E	Chris Byrne	**City of Marco Island**
E	Reg Buxton	**Citizen Corps | N. Naples Journal**
NP	Terry Smallwood | Dottie Smallwood	**Everglades City**
X (IP) – TB	Phil Snyderburn | Tom Bates	**Collier C. Public Util. Dept., Solid & Haz. Waste Division**
X (IP) – KV	Karen Vivian | Tricia Dorn | Bob Atkins	**Lee County Electric Coop**
NP	Gabriel Torres | Marc Rouleau | Marc MacDonald	**Collier Co. Public Schools**
X (IP)	James von Rinteln	**Interested Citizen**
NP	Mark Grajewski	**Collier Mosquito Control District**
E	Chris Wolfe | Alan McLaughlin	**Greater Naples Fire Rescue District**
E	Kristopher Thomas | Michael Jimenez	**North Collier Fire & Rescue District**
NP	Joshua Bauer	**Immokalee Fire Control District**
X(IP)-LL	Ashley Jones | Lisa Loren	**The Salvation Army**
E	John McCormick | Timothy Rygiel	**Collier County Facilities Management Division**
NP	Jennifer Smith	**Naples Community Hospital (NCH)**
X (IP) – MF	Robert Dorta | Miguel Flores	**City of Naples**
X (IP) – SG	Storm Gewirtz	**Collier Co. Growth Mgt Dept. (Stormwater)**
NP	Carolina Maran	South Florida Water Management District (SFWMD)
	VACANT	Collier C. Parks & Recreation Division
	VACANT	Collier Co. Growth Mgt Dept.

Table 2 Collier LMS Visitors

Name	Affiliation	Email Address

X = Present | (IP) = In Person | (V) = Virtual via GoToMeeting | E = Excused | NP = Not Present and Not Excused

October 12, 2023 - Regular Meeting

Regular Meeting Agenda (DR-4673-FL)
Collier County Local Mitigation Strategy (LMS) Working Group
Conference Rooms A/B, South Regional Library
8065 Lely Cultural Pkwy, Naples, FL
34113
0930hrs, October 12, 2023

1. Approval of
   a. 25 August 2023 Special Meeting Minutes - **Approved**

2. Quorum for meeting (In-Person) – **Quorum Achieved**

3. Membership

   a. Vote on TENTATIVE nomination for representation from Naples Airport Authority (NAA) – **Final representation will be based on NAA adoption of current LMS via resolution**
   b. Ashley Jones is no longer representing Salvation Army. Lisa Loren is now the primary
   c. Port of the Isles (POI) CID needs to vote Dan Truckey in as primary
   d. Continue to transition Chairperson from GMCDD to CCEM

4. **Project(s) for Review: RESUBMITTAL COST INCREASES – All projects previously approved on 04/21/2023**
   a. Port of the Isles (PIO) Community Improvement District (CID) –
      - Backup Water Storage
      - WWTP Water Filter
      - 6 x Mobile Generators for Lift Station Power Backup
      - Road Elevation/Waterline Hardening/Well Head Elevation
      - POC: Dan Truckey | dtruckey@poicid.com | (920) 737-1345

5. **Project(s) Removed:**
   a. Riverbend MHP Sewer Reconstruction Mitigation Project –
      - POC: Wendy Stamnas | wpstamnas@aol.com | 617-842-2618
      - Removed due to outstanding determination from FEMA regarding Private Non-Profit (PNP) eligibility

6. Grant Opportunities –

   a. HMGP-
      - Hurricane Nicole (DR-4680-FL) – OPEN
        - NOFA Open: May 19, 2023
        - NOFA Close: 10/20/2023
        - $75,984.36
      - FDEM Grant Contact Information
        - FDEM HMGP POC: Jared Jaworski (Jared.Jaworski@em.myflorida.com | 850-544-8372)
        - FDEM is requiring 100% digital submission for grant submissions

- FDEM Portal
  - Register at www.fdemportal.com/grants
  - Sub-applicants must request access prior to the application deadline to avoid late submissions

- SB4-A Waiver Program - OPEN
  - During the 2022 Special Session, the Florida Legislature passed Senate Bill 4-A allocating $350 million dollars to provide one-half of the required match for FEMA's Public Assistance (PA) program to local governments impacted by Hurricane Ian (DR-4673) and Hurricane Nicole (DR-4680)
  - FEMA Local Match Requirements: Cover the local match cost share required for projects funded under the Hazard Mitigation Grant Program (HMGP), Building Resilient Infrastructure and Communities (BRIC), or Flood Mitigation Assistance (FMA)
  - Open: 08/23/2023
  - End: 06/30/2027, or until funds are completely depleted, whichever comes first

- BRIC/FMA – Closed as of 08/31/2023
  - FY23 Cycle – September 2023 (estimated)
  - Notice of Interest (NOI) Form will be required for ALL subapplicants
  - NOI forms can be submitted to
    - Non-DisasterPrograms@em.myflorida.com
    - Submit by August 31, 2023
  - POC: Susan Harris-Council, Program Manager
    - (850) 815-4532

b. Hurricane Loss Mitigation Program Retrofit Grant (HLMP)
   - 215.559, F.S. Hurricane Loss Mitigation Program
     - https://www.floridadisaster.org/dem/mitigation/hurricane-loss-mitigation-program/
     - FDEM HLMP Program Manager
       - **Position currently VACANT at FDEM**
   - Gulf Coast State College Mobile Home Tie Down Program
     - https://www.floridadisaster.org/dem/mitigation/hurricane-loss-mitigation-program/
     - Contact Gulf Coast State College at 850-872-3807

7. LMS Update
   a. LMS update was approved by FEMA on May 7, 2020. The LMS expires on April 13, 2025.
   b. Next 5-Year Update Cycle Begins Soon with expiration letters being sent out from FDEM in six-month cycle (18, 12, 6 months prior)
   c. Kick-off meetings (18-24 months prior to expiration)

8. Other News –
   a. Collier County's Comprehensive Emergency Management Plan (CEMP) –
      - Approved by the Florida Division of Emergency Management (FDEM) on 02/28/2021
      - Approved by BCC at the 04/13/2021 Regular Meeting.
   b. Flood News
   c. Wildfire News
   d. Other News
      - NEW FEMA HMA Guidance released on 03/23/2023
        - https://www.fema.gov/grants/mitigation/hazard-mitigation-assistance-guidance
        - Guidance for Hurricane Ian and Hurricane Nicole is the historical 2015 HMA Guidance
          - https://www.fema.gov/sites/default/files/2020-04/HMA_Guidance_FY15.pdf
9. Next regular meeting: 19 January 2024, 0930hrs, location South Regional Library.
   a. Meeting adjourned at **10:35am**_____

ATTACHMENT(S)

1) PROJECT WORKSHEET FOR REVIEW:
   a) POI-Backup Water Storage
   b) POI-WWTP Water Filter
   c) POI-6 x Mobile Generators for Lift Station Power Backup
   d) POI-Road Elevation/Waterline Hardening/Well Head Elevation
2) SB4-A Waiver Program FAQ Sheet
3) Collier 2020 LMS Plan 18-Month Expiration Notice
4) August 25, 2023, Collier LMSWG Special Meeting Minutes (PROJECT SCORESHEETS REMOVED)

Collier County LMS Sign-In Sheet

Table 1 Collier LMSWG Members

10/ 12/23 Initial	Name	Affiliation Participating Jurisdiction
WL	William Lang, Chair	Collier C. Emergency Mgt.
KD	Kelli DeFedericis, Co-Chair	City of Marco Island, Cmty. Affairs (Floodplain Mgr.)
JS	Jennifer Schmidt	Collier Co Emergency Management Staff Liaison
SK	Michael Joel | Michael Harris – SAM KROLL	Florida Forest Service Caloosahatchee Dist. Office
E	Chris Byrne	City of Marco Island
	Reg Buxton	Citizen Corps | N. Naples Journal
	Terry Smallwood | Dottie Smallwood	Everglades City
	Phil Snyderburn | Tom Bates	Collier C. Public Util. Dept., Solid & Haz. Waste Division
W	Karen Vivian | Tricia Dorn | Bob Atkins	Lee County Electric Coop
	Gabriel Torres | Marc Rouleau | Marc MacDonald	Collier Co. Public Schools
	James von Rinteln	Interested Citizen
	Mark Grajewski	Collier Mosquito Control District
	Chris Wolfe | Alan McLaughlin	Greater Naples Fire Rescue District
	Kristopher Thomas | Michael Jimenez	North Collier Fire & Rescue District
	Joshua Bauer	Immokalee Fire Control District
E	Lisa Loren	The Salvation Army
	John McCormick | Timothy Rygiel	Collier County Facilities Management Division
C.A	Jennifer Smith - CARL ALVAREZ-PROXY	Naples Community Hospital (NCH)
AD	Robert Dorta | Miguel Flores	City of Naples
SG	Storm Gewirtz	Collier Co. Growth Mgt Dept. (Stormwater)
	Carolina Maran	South Florida Water Management District (SFWMD)
	Dan Truckey	Port of the Isles (POI) CID
	VACANT	Collier C. Parks & Recreation Division
	VACANT	Collier Co. Growth Mgt Dept.

Table 2 Collier LMS Visitors

Name	Affiliation	Email Address
SAM KROLL	FLORIDA FOREST SERVICE	SAMUEL.KROLL@FDACS.GOV

X = Present | (IP) = In Person | (V) = Virtual via GoToMeeting | E = Excused | NP = Not Present and Not Excused

December 8, 2023 - Special Meeting

Special Meeting Agenda (DR-4673-FL)
Collier County Local Mitigation Strategy (LMS) Working Group
Conference Rooms A/B, South Regional Library
8065 Lely Cultural Pkwy, Naples, FL
34113
0930hrs, December 08, 2023

1. Approval of
   a. October 12, 2023 Regular Meeting Minutes – **Approved Unanimously**

2. Quorum for meeting (In-Person) – **Quorum achieved**

3. Membership

   a. Lisa Koehler – Primary for South Florida Water Management District (SFWMD) – **Approved Unanimously**

4. Project(s) for Review:
   a. Naples Airport Authority (NAA) Electrical Building Retrofit – **Project Approved**
      - POC: Justin Lobb | jlobb@flynaples.com | 239-643-0733

5. Project Priority List (PPL) Revalidation – 2023 – **PPL Approved as of 12/11/2023 (after meeting)**
   a. Need to vote on updated PPL for FDEM Annual LMS Update (2023)

6. Grant Opportunities –

   a. HMGP – Ian (DR-4673-FL) 12-Month Lock-In
      - 30-Day Estimate as of 11/08/2022 was $36,063,710.00 for Collier
      - 12-Month Lock-In as of 10/17/2023 was $46,198,985.01 for Collier
      - $46,198.985.01 - $36,063,7610.00 = $10,135,275.01 increase

   b. SB4-A Waiver Program - OPEN
      - During the 2022 Special Session, the Florida Legislature passed Senate Bill 4-A allocating $350 million dollars to provide one-half of the required match for FEMA's Public Assistance (PA) program to local governments impacted by Hurricane Ian (DR-4673) and Hurricane Nicole (DR-4680)
      - FEMA Local Match Requirements: Cover the local match cost share required for projects funded under the Hazard Mitigation Grant Program (HMGP), Building Resilient Infrastructure and Communities (BRIC), or Flood Mitigation Assistance (FMA)
      - **Open: 08/23/2023**
      - **End: 06/30/2027, or until funds are completely depleted, whichever comes first**
      - https://www.floridadisaster.org/globalassets/demes-sb4a-job-aid_external.pdf

- FDEM Grant Contact Information
  - FDEM HMGP POC: Jared Jaworski (Jared.Jaworski@em.myflorida.com | 850-544-8372)
  - FDEM is requiring 100% digital submission for grant submissions
  - FDEM Portal
    - Register at www.fdemportal.com/grants
    - Sub-applicants must request access prior to the application deadline to avoid late submissions

c. BRIC/FMA – Closed as of 08/31/2023
   - FY23 Cycle – September 2023 (estimated)
   - Notice of Interest (NOI) Form will be required for ALL subapplicants
   - NOI forms can be submitted to
     - Non-DisasterPrograms@em.myflorida.com
     - Submit by August 31, 2023
   - POC: Susan Harris-Council, Program Manager
     - (850) 815-4532

d. FEMA FMA "Swift Current"
   - Provides funding NFIP-insured structures AFTER a major disaster declaration for a major flood event
   - Total funding (nationwide) for Fiscal Year 2023 is $300 million
   - Initiated through the Infrastructure Investment and Jobs Act (IIJA), BKA Bipartisan Infrastructure Law (BIL)
   - SRL, RL, and properties deemed Substantially Damaged (SD) after the applicant's disaster declaration date
   - https://www.fema.gov/grants/mitigation/flood-mitigation-assistance/swift-current

e. Hurricane Loss Mitigation Program Retrofit Grant (HLMP)
   - 215.559, F.S. Hurricane Loss Mitigation Program
     - https://www.floridadisaster.org/dem/mitigation/hurricane-loss-mitigation-program/
     - FDEM HLMP **Interim** Program Manager
       - Jillian.Holzman@em.myflorida.com
   - Gulf Coast State College Mobile Home Tie Down Program
     - https://www.floridadisaster.org/dem/mitigation/hurricane-loss-mitigation-program/
     - Contact Gulf Coast State College at 850-872-3807

7. LMS Update
   a. LMS update was approved by FEMA on May 7, 2020. The LMS expires on April 13, 2025.
   b. Next 5-Year Update Cycle Begins Soon with expiration letters being sent out from FDEM

in six-month cycle (18, 12, 6 months prior)

c. Kick-off meetings (18-24 months prior to expiration)

8. Other News –
   a. Collier County's Comprehensive Emergency Management Plan (CEMP) –
      - Approved by the Florida Division of Emergency Management (FDEM) on 02/28/2021
      - Approved by BCC at the 04/13/2021 Regular Meeting.
   b. Flood News
      - Collier County & City of Naples adopting new DFIRM (Coastal) on 02/08/2024
      - City of Marco Island will be adopting the new DFIRM in coordination with the 2023 update to the FBC (12/31/2023)
   c. Wildfire News
   d. Other News
      - **NEW FEMA HMA Guidance released on 03/23/2023**
        - https://www.fema.gov/grants/mitigation/hazard-mitigation-assistance-guidance
        - Guidance for Hurricane Ian and Hurricane Nicole is the historical 2015 HMA Guidance
          - https://www.fema.gov/sites/default/files/2020-04/HMA_Guidance_FY15.pdf

9. Next regular meeting: **19 January 2024**, 0930hrs, location **South Regional Library**.
   a. Meeting adjourned at **10:06 am**

ATTACHMENT(S)

1) PROJECT WORKSHEET FOR REVIEW:
   a) Naples Airport Authority (NAA) Electrical Building Retrofit
2) October 12, 2023, Collier LMSWG Regular Meeting Minutes (PROJECT SCORESHEETS REMOVED)

Collier County LMS Sign-In Sheet

Table 1 Collier LMSWG Members

12/ 08/23 Initial	Name	Affiliation Participating Jurisdiction
WL	William Lang, Chair	Collier C. Emergency Mgt.
	Kelli DeFedericis, Co-Chair	City of Marco Island, Cmty. Affairs (Floodplain Mgr.)
JS	Jennifer Schmidt	Collier Co Emergency Management Staff Liaison
MH	Sam Kroll | Michael Joel | Michael Harris	Florida Forest Service Caloosahatchee Dist. Office
KD	Chris Byrne	City of Marco Island
RB	Reg Buxton	Citizen Corps | N. Naples Journal
	Terry Smallwood | Dottie Smallwood	Everglades City
	Phil Snyderburn | Tom Bates	Collier C. Public Util. Dept., Solid & Haz. Waste Division
	Karen Vivian | Tricia Dorn | Bob Atkins	Lee County Electric Coop
	Gabriel Torres | Marc Rouleau | Marc MacDonald	Collier Co. Public Schools
JER	James von Rinteln	Interested Citizen
	Mark Grajewski	Collier Mosquito Control District
	Chris Wolfe | Alan McLaughlin	Greater Naples Fire Rescue District
	Kristopher Thomas | Michael Jimenez	North Collier Fire & Rescue District
	Joshua Bauer	Immokalee Fire Control District
	Lisa Loren	The Salvation Army
	John McCormick | Timothy Rygiel	Collier County Facilities Management Division
C.A	Jennifer Smith | Carl Alvarez	Naples Community Hospital (NCH)
MF	Robert Dorta | Miguel Flores	City of Naples
SG	Storm Gewirtz	Collier Co. Growth Mgt Dept. (Stormwater)
	Carolina Maran	South Florida Water Management District (SFWMD)
	Dan Truckey	Port of the Isles (POI) CID
	VACANT	Collier C. Parks & Recreation Division
	VACANT	Collier Co. Growth Mgt Dept.

Table 2 Collier LMS Visitors

Name	Affiliation	Email Address
Lisa Koehler	SFWMD	LKoehler@sfwmd.gov

X = Present | (IP) = In Person | (V) = Virtual via GoToMeeting | E = Excused | NP = Not Present and Not Excused

2024
January 19, 2024 - Regular Meeting

Regular Meeting Agenda (DR-4673-FL)
Collier County Local Mitigation Strategy (LMS) Working Group
Conference Rooms A/B, South Regional Library
8065 Lely Cultural Pkwy, Naples, FL
34113
0930hrs, January 19, 2024

1. Approval of
   a. December 8, 2023 – Special Meeting Minutes - **Approved**

2. Quorum for meeting (In-Person) – **Quorum Achieved**

3. Membership

   a. Nothing to report - **Voted in new members**
      - **Robin Bain – Alternate SFWMD**
      - **Varlam Molina – Alternate for LCEC**

      - **2024 LMSWG Schedule (tentative)**
        - 1st Quarter: January 19th
        - 2nd Quarter: April 19th
        - 3rd Quarter: July 19th
        - 4th Quarter: October 18th

4. Grant Opportunities –

   a. HMGP-
      - **Hurricane Idalia (DR-4734-FL) – OPEN**
        - NOFA coming out early January 2024
      - **FDEM Grant Contact Information**
        - FDEM HMGP POC: Jared Jaworski (Jared.Jaworski@em.myflorida.com | 850-544-8372)
        - FDEM is requiring 100% digital submission for grant submissions
        - FDEM Portal
          - Register at www.fdemportal.com/grants
          - Sub-applicants must request access prior to the application deadline to avoid late submissions

      - **SB4-A Waiver Program - OPEN**
        - During the 2022 Special Session, the Florida Legislature passed Senate Bill 4-A allocating $350 million dollars to provide one-half of the required match for FEMA's Public Assistance (PA) program to local governments impacted by Hurricane Ian (DR-4673) and Hurricane Nicole (DR-4680)
        - FEMA Local Match Requirements: Cover the local match cost share required for projects funded under the Hazard Mitigation Grant

Program (HMGP), Building Resilient Infrastructure and Communities (BRIC), or Flood Mitigation Assistance (FMA)
- **Open: 08/23/2023**
- **End: 06/30/2027, or until funds are completely depleted, whichever comes first**

b. Hurricane Loss Mitigation Program Retrofit Grant (HLMP)
   - 215.559, F.S. Hurricane Loss Mitigation Program
     - https://www.floridadisaster.org/dem/mitigation/hurricane-loss-mitigation-program/
     - FDEM HLMP Interim Program Manager: Jillian Holzman (Jillian.Holzman@em.myflorida.com, 850-815-4515)
   - Gulf Coast State College Mobile Home Tie Down Program
     - https://www.floridadisaster.org/dem/mitigation/hurricane-loss-mitigation-program/
     - Contact Gulf Coast State College at 850-872-3807

5. LMS Update
   a. LMS update was approved by FEMA on May 7, 2020. The LMS expires on April 13, 2025.
   b. **Next 5-Year Update Cycle Begins Soon with expiration letters being sent out from FDEM in six-month cycle (18, 12, 6 months prior)**
   c. Kick-off meetings (18-24 months prior to expiration)

6. Other News –
   a. Collier County's Comprehensive Emergency Management Plan (CEMP) –
      - Approved by the Florida Division of Emergency Management (FDEM) on 02/28/2021
      - Approved by BCC at the 04/13/2021 Regular Meeting.
   b. Flood News
   c. Wildfire News
   d. Other News
      - **NEW FEMA HMA Guidance released on 03/23/2023**
        - https://www.fema.gov/grants/mitigation/hazard-mitigation-assistance-guidance

7. Next regular meeting: **19 April 2024**, 0930hrs, location **South Regional Library**.
   a. Meeting adjourned at 9:41am.

Collier County LMS Sign-In Sheet

Table 1 Collier LMSWG Members

01/ 19/24 Initial	Name	Affiliation Participating Jurisdiction
WL	William Lang, Chair	Collier C. Emergency Mgt.
	Kelli DeFedericis, Co-Chair	City of Marco Island, Cmty. Affairs (Floodplain Mgr.)
	Jennifer Schmidt	Collier Co Emergency Management Staff Liaison
	Sam Kroll | Michael Joel | Michael Harris	Florida Forest Service Caloosahatchee Dist. Office
	Chris Byrne	City of Marco Island
	Reg Buxton	Citizen Corps | N. Naples Journal
	Terry Smallwood | Dottie Smallwood	Everglades City
	Phil Snyderburn | Tom Bates	Collier C. Public Util. Dept., Solid & Haz. Waste Division
	Karen Vivian | Tricia Dorn | ~~Bob Atkins~~	Lee County Electric Coop
	Gabriel Torres | Marc Rouleau | Marc MacDonald	Collier Co. Public Schools
E	James von Rinteln	Interested Citizen
	Mark Grajewski	Collier Mosquito Control District
	Chris Wolfe | Alan McLaughlin	Greater Naples Fire Rescue District
	Kristopher Thomas | Michael Jimenez	North Collier Fire & Rescue District
	Lisa Loren	The Salvation Army
	John McCormick | Timothy Rygiel	Collier County Facilities Management Division
C.A	Jennifer Smith | Carl Alvarez	Naples Community Hospital (NCH)
MF	Robert Dorta ~~| Miguel~~ Flores	City of Naples
SG	Storm Gewirtz	Collier Co. Growth Mgt Dept. (Stormwater)
REB for	Carolina Maran	South Florida Water Management District (SFWMD)
KC	Dan Truckey	Port of the Isles (POI) CID
	VACANT	Collier C. Parks & Recreation Division
	VACANT	Collier Co. Growth Mgt Dept.
	VACANT	Immokalee Fire Control District

Table 2 Collier LMS Visitors

Name	Affiliation	Email Address
Lisa Koehler	SFWMD	LKOEHLER@SFWMD.GOV
Varlam Molina	LCEC	varlam.molina@lcec.net
Kevin Carter	POICID	Kevin@dmyfl.com
John Williams		johnlw1945@gmail.com
Robin Bain	SFWMD	rbain@sfwmd.gov

X = Present | (IP) = In Person | (V) = Virtual via GoToMeeting | E = Excused | NP = Not Present and Not Excused

Collier County LMS Sign-In Sheet

Name	Affiliation	Email Address
NOAH DIETRICH	NAPLES AIRPORT	NDIETRICH@FLYNAPLES.COM
Marissa Figueroa	Rookery Bay NERR	marissa.b.figueroa@floridadep.gov

X = Present | (IP) = In Person | (V) = Virtual via GoToMeeting | E = Excused | NP = Not Present and Not Excused

April 19, 2024 - Regular Meeting

Meeting Minutes

Meeting: Local Mitigation Strategy Working Group Meeting

Date: April 19, 2024; 9:30 AM

Location: Collier County South Regional Library; Meeting Room A/B (8065 Lely Cultural Pkwy; Naples, FL 34113)

Attendees: William Lang, Working Group Chair; Kelli Defedericis, Working Group Co-Chair; Amy Howard, Emergency Management Staff Liaison; Reg Buxton, Citizen Corps; Phil Snyderburn, Collier County Public Utilities & Solid Waste Division; Karen Vivian, LCEC; James Von Rinteln, Interested Citizen; Matt Trent, North Collier Fire Rescue (attending for Kris Thomas; Lisa Loren, Salvation Army; Tim Rygiel, Collier County Facilities Management; Carl Alvarez NCH Systems; Storm Gewirtz, Collier County Growth Management (Stormwater); Kevin Carter, Port of the Islands CID (for Dan Truckey); Noah Dietrich, Naples Airport.

Absent: Sam Kroll, Florida Forest Service (Caloosahatchee District); Chris Byrne, City of Marco Island; Terry Smallwood, City of Everglades; Gabriel Torres, Collier County Public Schools; Mark Grajewski, Collier County Mosquito Control District; Chris Wolfe, Greater Naples Fire District; Robert Dorta, City of Naples; Carolina Maran, South Florida Water Management District (SFWMD)

Committee Vacancies: Collier County Parks & Recreation District; Collier County Growth Management Department: Immokalee Fire Control District

I. Welcome and Introductions

The meeting began with introductions from all attendees. A quorum was achieved. Amy Howard was introduced as the new Emergency Management Staff Liaison, replacing Jennifer Schmidt. Storm Gewirtz was welcomed as the newly approved alternate member for the Public Utilities Department.

II. Review & Approval of Previous Meeting Minutes

- Approved (without changes or corrections) by Motion & Second from Jim Von Rinteln & Carl Alvarez

III. Local Mitigation Strategy (LMS) Update

The group discussed the ongoing process of updating the LMS to reflect current hazards and mitigation strategies. This update is crucial for maintaining FEMA and state approval for future HMGP funding.

- The LMS is being updated to reflect current hazards and mitigation strategies using a third-party contractor. Once the update is completed there will be opportunity for public review and comment.
- FEMA and the state of Florida review and approve LMS updates prior to adoption by the County Board of Commissioners.

Notes: These minutes are intended to capture the key points of the discussion. They do not necessarily reflect every detail or nuance of the conversation.

Meeting Minutes

IV. Project Update and Prioritization

The group reviewed two projects submitted for Hazard Mitigation Grant Program (HMGP) funding related to Hurricane Idalia. The Local Mitigation Strategy Working Group prioritizes projects for HMGP funding. Collier County has a tiered system for allocating HMGP funds based on hurricane impact. Both projects were thoroughly discussed and scored on the ranking sheet:

- **North Collier Fire District:** Project proposes retrofitting windows and doors at three fire stations for increased hardening against hurricanes.
    - **Motion:** A motion was made by Jim Von Rinteln and seconded by Tim Rygiel to approve.
    - **Vote:** The motion passed unanimously.
- **Port of the Islands Canal Irrigation Pump Station:** Project entails floodproofing the exterior, elevating electrical systems, and adding backup power.
    - **Motion:** A motion was made by Jim Von Rinteln and seconded by Carl Alvarez to approve.
    - **Vote:** The motion passed unanimously.

Additional Information:

- There is still time to apply for HMGP funding for Hurricane Idalia projects until June 7, 2024.

V. Public Comment:

A member of the public raised concerns (via email) about the potential impact of Electromagnetic Pulse (EMP) on the power grid. The group engaged in a discussion about EMP threats and potential costs for mitigation strategies. Will consider mentioning this in the risk assessment as a part of manmade hazards.

VI. Next Steps & Closing Remarks

- Meeting location: The group agreed to continue meeting at the current location.
    - 3rd Quarter Meeting scheduled for July 19, 2024, at 9:30 AM.
    - 4th Quarter Meeting scheduled for October 18, 2024, at 9:30 AM.
- The county's vulnerability assessment to identify critical infrastructure and their susceptibility to natural disasters, including sea level rise, was addressed.
    - The need for an updated critical infrastructure list was acknowledged. The subcommittee will develop the list by starting with the building department's list and refining it further.
    - A subcommittee of the Local Mitigation Strategy Working Group will be established to participate in the vulnerability assessment and critical infrastructure list development.

VII. Meeting Adjournment

The meeting adjourned at 10:29 AM.

Notes: These minutes are intended to capture the key points of the discussion. They do not necessarily reflect every detail or nuance of the conversation.

Collier County LMS Sign-In Sheet

Table 1 Collier LMSWG Members

04/ 19/24 Initial	Name	Affiliation Participating Jurisdiction
WC	William Lang, Chair	Collier County Community Planning & Resiliency Division
KD	Kelli DeFedericis, Co-Chair	City of Marco Island, Cmty. Affairs (Floodplain Mgr.)
ARH	Amy Howard	Collier Co Emergency Management Staff Liaison
	Sam Kroll | Michael Joel | Michael Harris	Florida Forest Service Caloosahatchee Dist. Office
	Chris Byrne	City of Marco Island
RB	Reg Buxton	Citizen Corps | N. Naples Journal
	Terry Smallwood | Dottie Smallwood	Everglades City
	Phil Snyderburn | Tom Bates	Collier C. Public Util. Dept., Solid & Haz. Waste Division
KW	Karen Vivian | Tricia Dorn | Bob Atkins	Lee County Electric Coop
	Gabriel Torres | Marc Rouleau | Marc MacDonald	Collier Co. Public Schools
JvR	James von Rinteln	Interested Citizen
	Mark Grajewski	Collier Mosquito Control District
	Chris Wolfe | Alan McLaughlin	Greater Naples Fire Rescue District
MT	Kristopher Thomas | Michael Jimenez	North Collier Fire & Rescue District
LL	Lisa Loren	The Salvation Army
JM	John McCormick | Timothy Rygiel	Collier County Facilities Management Division
C.A	Jennifer Smith | Carl Alvarez	Naples Community Hospital (NCH)
	Robert Dorta | Miguel Flores	City of Naples
ASG	Storm Gewirtz	Collier Co. Growth Mgt Dept. (Stormwater)
	Carolina Maran | Lisa Koehler	South Florida Water Management District (SFWMD)
DT	Dan Truckey	Port of the Isles (POI) CID Kevin Carter
		Collier C. Parks & Recreation Division
		Collier Co. Growth Mgt Dept.
		Immokalee Fire Control District

X = Present | (IP) = In Person | (V) = Virtual via GoToMeeting | E = Excused | NP = Not Present and Not Excused

Collier County LMS Sign-In Sheet

Table 2 Collier LMS Visitors

Name	Affiliation	Email Address
✓ Matthew Trent	North Collier Fire	MTrent@NorthCollierFire.com
✓ Karen Vivian	LCEC	Karen.Vivian@LCEC.net
✓ Tim Rygiel	Collier County	Timothy.Rygiel@CollierCountyFL.gov
✓ Noah Dietrich	Naples Airport	NDietrich@FlyNaples.com

X = Present | (IP) = In Person | (V) = Virtual via GoToMeeting | E = Excused | NP = Not Present and Not Excused

July 19, 2024 - Regular Meeting

Meeting Minutes

Meeting: Local Mitigation Strategy Working Group Meeting

Date: July 19, 2024; 9:30 AM

Location: Collier County South Regional Library; Meeting Room A/B (8065 Lely Cultural Pkwy; Naples, FL 34113)

Attendees: William Lang, Working Group Chair; Amy Howard, Emergency Management Staff Liaison; Phil Snyderburn, Collier County Public Utilities & Solid Waste Division; Karen Vivian, LCEC; Sam Kroll, Florida Forest Service Caloosahatchee District; James Von Rinteln, Interested Citizen; Carl Alvarez NCH Systems; Dan Truckey, Port of the Islands CID; Noah Dietrich, Naples Airport; Cal Jordan, Naples Airport; Kathy Eastley, Collier County Transportation; Tonia Selmeski, Collier County Resiliency; Andy Miller, Collier County Transportation

Absent: Representatives from the following Affiliation/Participating jurisdictions were absent: Citizen Corps, City of Marco Island, City of Naples, Collier County Public Schools, Collier County Facilities Management, Collier Mosquito Control District, Everglades City, Greater Naples Fire Control District, North Collier Fire & Rescue District, South Florida Water Management District, & Salvation Army

Committee Vacancies: Collier County Parks & Recreation District; Collier County Growth Management Department; Immokalee Fire Control District

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I. Welcome and Introductions

The meeting was called to order by William Lang at 9:33 AM. A quorum was established with seven voting members present. A large contingency of staff from the Collier County Community Planning & Resiliency Division were present.

II. Review & Approval of Previous Meeting Minutes

- The minutes from the April 19, 2024, regular meeting was distributed and reviewed.
    - **Motion:** Karen Vivian, motioned to approve the minutes from the April 19, 2024, regular meeting as presented without changes. The motion was seconded by Phil Snyderburn and approved unanimously.

III. Local Mitigation Strategy (LMS) Update

The group discussed the ongoing process of updating the LMS to reflect current hazards and mitigation strategies. This update is crucial for maintaining FEMA and state approval for future HMGP funding.

- **Local Mitigation Strategy Plan Update:** The group discussed the upcoming 6-month deadline of October 11, 2024, for the Local Mitigation Strategy Plan update. Preparation for initiating a Hazard Identification and Risk Assessment (HIRA) with outside vendor WSP was confirmed. There is a potential for a special meeting or an adjustment to the regular meeting schedule to allow the LMSWG time to review any changes/updates to the LMS Plan.
- **Vulnerability Assessment (VA) Steering Committee:** At the end of the LMSWG members not included in the assessment were excused, and those remaining reviewed the VA scope of

Notes: These minutes are intended to capture the key points of the discussion. They do not necessarily reflect every detail or nuance of the conversation.

Meeting Minutes

work guidance, which will incorporate both incorporated and unincorporated Collier County critical assets.

IV. Project Update and Prioritization

- **Grant Opportunities:** The group discussed various grant opportunities and their potential impact on local mitigation efforts.
- **Submitted Mitigation Project Determinations:** The group reviewed the determination letters for *HMGP – Hurricane Ian (DR-4673)* projects. The agenda had them listed as HMGP – Hurricane Idalia (DR-4734) in error.
    - The following applications were determined ineligible:
        - **4673-(397), City of Naples**, Public Beach End Barrier Hardening (Flood Risk Reduction) See Determination Letter.
            - Representative from the jurisdiction was not present.
        - **4673-(672), Port of the Islands Community Improvement District**, Wastewater treatment facility filters, (Other) See Determination Letter.
            - The jurisdiction requested that the project remain on the Project Priority List (PPL)
        - **4673-(632), Lee County Electric Coop, Inc. (LCEC)**, Marco Island Substation (2), Infrastructure Retrofit, See Determination Letter.
            - The jurisdiction requested that the project remain on the Project Priority List (PPL)
- **New Projects:** There were no new projects submitted to the working group for this quarter.

V. Public Comment:

There was no public comment.

VI. Next Steps & Closing Remarks

The group discussed upcoming meeting dates:

- Fourth Quarter: October 18, 2024, at South Regional Library at 9:30 AM
- First Quarter: January 17, 2025

VII. Meeting Adjournment

Upon motion by Karen Vivian, and second by Jim von Rinteln, the LMSWG meeting adjourned at 9:48 AM and the Vulnerability Assessment Steering Committee resumed.

Notes: These minutes are intended to capture the key points of the discussion. They do not necessarily reflect every detail or nuance of the conversation.

Collier County Local Mitigation Strategy Working Group
Quarterly Meeting 7/19/2024 - Sign In Sheet

Table 1: Collier LMSWG Members		
7/19/2024 Initials	**Name**	**Affiliation: Participating Jurisdiction**
	Buxton, Reg	Citizen Corps | N. Naples Journal
	Byrne, Chris	City of Marco Island
	DeFedericis, Kelli; *LMSWG Co-Chair*	City of Marco Island, Community Affairs (Floodplain Mgr.)
	Dorta, Robert	City of Naples
	Flores, Miguel	City of Naples
		Collier C. Parks & Recreation Division
ARH	Howard, Amy	Collier Co Emergency Management (LMSWG EM Staff Liaison) ✓
		Collier Co. Growth Mgt. Dept.
	Gewirtz, Storm	Collier Co. Public Utilities
	MacDonald, Marc	Collier Co. Public Schools
	Rouleau, Marc	Collier Co. Public Schools
	Torres, Gabriel	Collier Co. Public Schools
	Gewirtz, Storm	Collier Co. Public Util. Dept.
	Bates, Tom	Collier Co. Public Util. Dept., Solid & Haz. Waste Division
	Snyderburm, Phil	Collier Co. Public Util. Dept., Solid & Haz. Waste Division ✓
WL	Lang, William; *LMSWG Chair*	Collier County Community Planning & Resiliency Division ✓
	McCormick, John	Collier County Facilities Management Division
	Rygiel, Timothy	Collier County Facilities Management Division
	Grajewski, Mark	Collier Mosquito Control District
	Smallwood, Dottie	Everglades City
	Smallwood, Terry	Everglades City
	Harris, Michael	Florida Forest Service Caloosahatchee Dist. Office
	Joel, Michael	Florida Forest Service Caloosahatchee Dist. Office
	Kroll, Sam	Florida Forest Service Caloosahatchee Dist. Office ✓
	McLaughlin, Alan	Greater Naples Fire Rescue District
	Wolfe, Chris	Greater Naples Fire Rescue District
		Immokalee Fire Control District
	von Rinteln, James	Interested Citizen ✓
	Atkins, Bob	Lee County Electric Coop
	Dorn, Tricia	Lee County Electric Coop
	Vivian, Karen	Lee County Electric Coop ✓ ✓
	Alvarez, Carl	Naples Community Hospital (NCH) ✓
	Smith, Jennifer	Naples Community Hospital (NCH)
	Jiminez, Michael	North Collier Fire & Rescue District
	Thomas, Kristopher	North Collier Fire & Rescue District
	Truckey, Dan	Port of the Isles (POI) CID ✓
	Koehler, Lisa	South Florida Water Management District (SFWMD)
	Maran, Carolina	South Florida Water Management District (SFWMD)
	Loren, Lisa	The Salvation Army

Collier County Local Mitigation Strategy Working Group
Quarterly Meeting 7/19/2024 - Sign In Sheet

Table 2: Collier LMS Working Group Visitors		
Name	**Affiliation**	**Email Address**
KATHY EASTLEY	CC TRANSPORTATION	katherine.eastley@collierc...
TANIA SELWESKI	CC PLANNING	tania.selweski@colliercountyfl.gov
Cal Jordan	Naples Airport	CJordan@FlyNaples.com
ANDY MILLER	CC TRANSPORTATION	ANDREW.MILLER@COLLIERCOUNTY.GOV

November 8, 2024, Regular Meeting

Collier County
Local Mitigation Strategy Working Group
Meeting Minutes

Date: November 8, 2024
Time: 9:30 AM
Location: Meeting Rooms A/B, Collier County South Regional Library, 8065 Lely Cultural Parkway, Naples, FL

Members Present: Reg Buxton, Chris Byrne, Robert Dorta, Amy Howard, Gabriel Torres, William Lang (Chair), Michael Harris, Josh Bauer, James von Rinteln, Karen Vivian, Kevin Carter, Nicole Cortez, Thomas Cunningham, Natalie Hardman

Visitors: Tonia Selmeski

I. Welcome and Introductions

- **Chair:** Welcomed attendees and confirmed quorum with 18 members present, exceeding the 9-member threshold for quorum.
- **Introductions of New Members:**
    - **Lely Community Development District**: LMS adoption to be confirmed at their November meeting.
    - **City of Naples**: Natalie Hardman introduced as the primary for the City of Naples. Approved by motion, seconded, and carried.
    - **Immokalee Fire Control District**: Chief Tom Cunningham introduced, replacing Deputy Chief Josh Bauer. Motion to approve Chief Cunningham as primary member. Approved by motion, seconded, and carried.

II. Review and Approval of Previous Meeting Minutes

- The minutes from the **July 19, 2024**, meeting were reviewed.
- Motion to approve was made, seconded, and carried unanimously.

III. Local Hazard Mitigation Update

1. **LMS Plan Update:**
    - **HIRA Completion**: Contractor completed updates; merging into the LMS plan is underway.

NOTE: These minutes are intended to capture the key points of discussion. They do not necessarily reflect every detail or nuance of the conversation.

Collier County
Local Mitigation Strategy Working Group
Meeting Minutes

- Submission deadline extended due to hurricane impacts, with possible online review or special meeting.

2. **Tiger Dam Demonstration:**
    - Video and handouts shared on potential uses, including flood and beach erosion mitigation.
    - Discussion on state availability and pre-deployment requirements.

IV. Project Updates and Prioritization

1. **Grant Opportunities:**
    - Discussion on Hazard Mitigation Assistance (HMA) programs: BRIC, FMA, and HMGP.
    - Emphasis on shelf-ready projects for funding opportunities.
2. **Project Withdrawals:**
    - **NCH Wind Retrofit:** Withdrawn due to partial scope feasibility.
    - **NAA Airfield Lighting Vault:** Withdrawn due to location and lease constraints.
3. **New Projects:**
    - **LCEC Transmission System Looping:** Ongoing cost assessments.
    - **Port of the Islands Water Pump Mitigation:** Issues clarified, with special meeting proposed if needed before funding deadlines.

V. Public Comment

- No public comments were received.

VI. Other LMSWG Business

1. **Elections for Chair and Vice Chair:**
    - Nominations included Amy Howard and Kelly DeFedericis for Chair, with Ms. DeFedericis the preferred candidate.
    - Decision deferred to the next meeting or special session for further discussion and confirmation.
    - William Lang, nominated for Vice Chair.

NOTE: These minutes are intended to capture the key points of discussion. They do not necessarily reflect every detail or nuance of the conversation.

Collier County
Local Mitigation Strategy Working Group
Meeting Minutes

2. **Next Steps on Goals and Objectives:**
    - Updating objectives to address current mitigation needs and simplify project alignment.
    - Discussion deferred to 2025 for incremental updates during regular meetings.

VII. Next Steps and Closing Remarks

- **Action Items:**
    - LMS Plan updates to be completed by **April 2025** submission deadline.
    - Prepare updated repetitive loss data for **January 31, 2025**, state submission.
    - Schedule special meeting if required for project submissions and elections.
- **Next Meeting Dates:**
    - **January 17, 2025** (1st Quarter)
    - **April 18, 2025** (2nd Quarter)

Adjournment: Motion to adjourn by Mr. von Rinteln, seconded by Mr. Torres. Meeting adjourned at 10:20 AM.

Minutes Prepared By: Amy Howard, LMSWG EM Staff Liaison

NOTE: These minutes are intended to capture the key points of discussion. They do not necessarily reflect every detail or nuance of the conversation.

Collier County Local Mitigation Strategy Working Group
Quarterly Meeting 11/08/2024 - Sign In Sheet

Table 1: Collier LMSWG Members		
11/08/2024 Initials	**Name**	**Affiliation: Participating Jurisdiction**
RB	Buxton, Reg	Citizen Corps | ~~N. Naples Journal~~ Chamber of Commerce
CB	Byrne, Chris	City of Marco Island
	DeFedericis, Kelli; *LMSWG Co-Chair*	City of Marco Island, Community Affairs (Floodplain Mgr.)
RD	Dorta, Robert	City of Naples
	Flores, Miguel	
		Collier C. Parks & Recreation Division
ARH	Howard, Amy	Collier Co Emergency Management (LMSWG EM Staff Liaison)
		Collier Co. Growth Mgt. Dept.
	~~Gewirtz, Storm~~	~~Collier Co. Public Utilities~~ CCPS
	MacDonald, Marc	
	Rouleau, Marc	
	Torres, Gabriel	
	Gewirtz, Storm	Collier Co. Public Util. Dept.
	Bates, Tom	Collier Co. Public Util. Dept., Solid & Haz. Waste Division
	Snyderburm, Phil	
WL	Lang, William; *LMSWG Chair*	Collier County Community Planning & Resiliency Division
	McCormick, John	Collier County Facilities Management Division
	Rygiel, Timothy	
	Grajewski, Mark	Collier Mosquito Control District
	Smallwood, Dottie	Everglades City
	Smallwood, Terry	
MH	Harris, Michael	Florida Forest Service Caloosahatchee Dist. Office
	Joel, Michael	
	Kroll, Sam	
AM	~~McLaughlin, Alan~~ Retired Josh Bower	Greater Naples Fire Rescue District
	Wolfe, Chris	
	VACANT	Immokalee Fire Control District
JvR	von Rinteln, James	Interested Citizen
	Atkins, Bob	Lee County Electric Coop
	Dorn, Tricia	
KW	Vivian, Karen	
	Alvarez, Carl	Naples Community Hospital (NCH)
	Smith, Jennifer	
	Jiminez, Michael	North Collier Fire & Rescue District
	Thomas, Kristopher	
KR	Truckey, Dan / Kevin	Port of the Isles (POI) CID
	Koehler, Lisa	South Florida Water Management District (SFWMD)
	Maran, Carolina / Nicole Cortez	
		The Salvation Army

Collier County Local Mitigation Strategy Working Group
Quarterly Meeting 11/08/2024 - Sign In Sheet

Table 2: Collier LMS Working Group Visitors		
Name	**Affiliation**	**Email Address**
Tonia Selweski	Collier County	tonia.selweski@colliercountyfl.gov
HARRIS, MICHAEL	FFS	MICHAEL.HARRIS@FDACS.GOV
Natalie Hardman	City of Naples	nhardman@naplesgov.com
THOMAS CUNNINGHAM	IMMOKALEE FIRE	TCUNNINGHAM@IFRD.COM

G

ANNEX G: Local Mitigation Strategy Working Group Membership

ANNEX G
Local Mitigation Strategy Working Group
Participating Membership

Redevelopment of the Collier County Local Mitigation Strategy (LMS)
In December 2003, Collier County initiated the redevelopment of its Local Mitigation Strategy (LMS). This effort aimed to enhance the county's mitigation planning processes and better align with state and federal guidelines. To ensure broad participation and transparency, the public was invited through multiple outreach methods, including email notifications, newspaper advertisements, blast-fax announcements, and postings on the County's website (Collier County LMS Page).

The outreach extended to various stakeholders such as media representatives, business leaders, the medical community, and governmental agencies. These invitations were delivered via the same methods and supplemented with direct invitations to key participants.
At the kickoff meeting, the County Manager set the tone for the initiative with a welcoming address. The Florida Division of Emergency Management's Mitigation Specialist and the Collier County Emergency Management Director provided an overview of the program's purpose, emphasizing the importance of diligent planning, execution, and ongoing maintenance of the LMS. For detailed membership information, refer to **Section 1**.

Membership and Participation Updates
The listing below reflects those specifically invited to participate, their chosen level of involvement, and current membership. As membership evolves, this annex is updated to maintain accuracy. On October 18, 2013, the LMS Working Group voted to revise membership terminology, replacing "Voting" with "Participating" and eliminating the "Non-Voting" status entirely.

Public Notification of LMS Meetings
Each LMS Working Group meeting is announced through a press release, email notifications, and postings on the County's website. For sample documents related to meeting announcements, refer to **Annex G**.

ABBREVIATIONS:

VM = Voting Member
NJ = Non-Jurisdictional Voting Member
N = Non-Voting Member
Res = Interested resident
PNP = Private Non-Profit
CC = Unincorporated Collier County
EGC = City of Everglades
MI = City of Marco Island
Nap = City of Naples
CCPS = Collier County Public Schools
CDD = Community Development Dist.

Participating Jurisdiction (Formal Adoption of LMS)	Agency or Affiliation	Voting Privelege Status	Invited	Representative Name	Job Title	LMSWG Representation Role
City of Marco Island	City of Marco Island Fire	VM		Byrne, Chris	Fire Chief	Primary
City of Marco Island	City of Marco Island, Community Affairs (Floodplain Mgr.)	VM		Vacant	Floodplain Manager	Primary
City of Naples	City of Naples	VM		Hardman, Natalie	Natural Resources Manager	Primary
City of Naples	City of Naples	VM		Dorta, Robert	Floodplain Coordinator	Alternate
City of Naples	City of Naples	VM		Flores, Miguel	Project Manager	Alternate
Collier County Government	Communications, Government & Public Affairs		X	Vacant		
Collier County Government	Fleet Management		X	Vacant		
Collier County Government	Human Resources		X	Vacant		
Collier County Government	Information Technology		X	Vacant		
Collier County Government	Library		X	Vacant		
Collier County Government	County Manager's Office		X	Vacant		
Collier County Government	Economic Development & Housing		X	Vacant		
Collier County Government	Public Transit & Neighborhood Enhancement		X	Vacant		
Collier County Government	Road, Bridge & Stormwater Maintenance		X	Vacant		
Collier County Government	Risk Management		X	Vacant		
Collier County Government	Wastewater		X	Vacant		
Collier County Government	Water		X	Vacant		
Collier County Government	Transportation Engineering		X	Vacant		
Collier County Government	University Extension Service		X	Vacant		
Collier County Government	Parks & Recreation		X	Vacant		
Collier County Government	Emergency Management	VM		Summers, Dan	EM Director	Primary
Collier County Government	Emergency Management	N		Howard, Amy	EM Coordinator- Planning	LMSWG Staff Liaison
Collier County Government	Growth Management, Building Review & Planning	VM		McCormick, John	Division Director Building Review & Planning	Primary
Collier County Government	Community Planning & Resiliency Division	VM		Lang, William	Site Plans Reviewer III	Primary (LMSWG Chair)
Collier County Government	Community Planning & Resiliency Division	VM		Selmeski, Tania	Planner III	Alternate
Collier County Government	Emergency Medical Services (EMS)		X	Vacant		
Collier County Government	Facilities Management Division	VM		Rygiel, Timothy	Project Manager III	Primary
Collier County Government	Facilities Management Division			Vacant		Alternate
Collier County Government	Solid & Hazardous Waste Management Division	VM		Snyderburm, Phil	Manager	Primary
Collier County Government	Solid & Hazardous Waste Management Division	VM		Bates, Tom	Environmental Specialist	Alternate
Collier County Government	Engineering & Project Management	VM		Gewirtz, Storm	Project Manager III	
Collier County Mosquito Control District	Collier Mosquito Control District	VM		Grajewski, Mark	Accounting Specialist	Primary
Collier County Public Schools	Collier County Public Schools	VM		Torres, Gabriel		Primary
Collier County Public Schools	Collier County Public Schools	VM		MacDonald, Marc	Safety & Security Administrative Supervisor	Alternate
Collier County Public Schools	Collier County Public Schools	VM		Rouleau, Marc	Chief Facilities Officer	Alternate
Everglades City	Everglades City	VM		Smallwood, Dottie	City Clerk	Primary
Everglades City	Everglades City	VM		Smallwood, Terry	Planning & Zoning	Alternate
Greater Naples Fire Rescue District	Greater Naples Fire Rescue District	VM		Bauer, Josh	Deputy Fire Chief	Primary
Greater Naples Fire Rescue District	Greater Naples Fire Rescue District	VM		Wolfe, Chris	Fire Chief	Alternate
Immokalee Fire Control District	Immokalee Fire Control District	VM		Cunningham, Thomas	Deputy Fire Chief	Primary
Immokalee Fire Control District	Immokalee Fire Control District			Vacant		Alternate
North Collier Fire Control & Rescue District	North Collier Fire & Rescue District	VM		Jiminez, Michael	Deputy Fire Chief	Primary
North Collier Fire Control & Rescue District	North Collier Fire & Rescue District	VM		Thomas, Kristopher	Assistant Chief of Essential Services	Alternate
	CC Clerk of Courts		X	Vacant		[Not Specified]
	Citizen Corps / Chamber of Commerce	NJ		Buxton, Reg		Primary
	Community Redevelopment Agency		X	Vacant		[Not Specified]
	Conservancy of Naples		X	Vacant		[Not Specified]
	Fla. Gulf Coast Univ.		X	Vacant		[Not Specified]
	Fla.Div. of Law Enforcement		X	Vacant		[Not Specified]
Florida Forest Service	Florida Forest Service Caloosahatchee Dist. Office	NJ		Kroll, Sam	Forest Area Supervisor	Primary
Florida Forest Service	Florida Forest Service Caloosahatchee Dist. Office	NJ		Harris, Michael	Wildfire Mitigation Specialist	Alternate
Florida Forest Service	Florida Forest Service Caloosahatchee Dist. Office	NJ		Joel, Michael	Forestry Center Manager	Alternate
Hendry County Emergency Management	Hendry County Emergency Management		X	Vacant		[Not Specified]
	Hodges University		X	Vacant		[Not Specified]
	Interested Citizen	NJ		von Rinteln, James	Interested Citizen	Primary
Lee County Electric Copperative	Lee County Electric Coop	NJ		Vivian, Karen	Hazard Mitigation & Grants Program Manager	Primary
Lee County Electric Copperative	Lee County Electric Coop	NJ		Molina, Varlam	Hazard Mitigation & Grants Project Manager	Alternate
Lee County Emergency Management	Lee County Emergency Management		X	Vacant		[Not Specified]
Naples Airport Authority	City of Naples Airport Authority	VM		Deitrich, Noah	Project Manager	Primary
Naples Airport Authority	City of Naples Airport Authority	VM		Lobb, Justin	Deputy Director of Aviation	Alternate
Naples Comprehensive Health (NCH)	Naples Comprehensive Health (NCH)	NJ		Smith, Jennifer	System Director Emergency Management & Public Safety	Primary
Naples Comprehensive Health (NCH)	Naples Comprehensive Health (NCH)	NJ		Alvarez, Carl	Safety Coordinator	Alternate
Physicians Regional Medical Center (PRMC)	Physicians Regional Medical Center (PRMC)		X	Vacant		[Not Specified]
Port of the Isles	Port of the Isles (POI) CID	NJ		Truckey, Dan		Primary
Port of the Isles	Port of the Isles (POI) CID	NJ		Kevin Carter		Alternate
	Rookery Bay		X	Vacant		[Not Specified]
Seminole Tribe of Florida (STOF)	Seminole Tribe of Florida		X	Vacant		[Not Specified]
South Florida Water Management District (SFWMD)	South Florida Water Management District (SFWMD)	NJ		Koehler, Lisa	Big Cypress Basin Administrator	Primary
South Florida Water Management District (SFWMD)	South Florida Water Management District (SFWMD)	NJ		Maran, Carolina	Chief of District Resiliency	Alternate
South Florida Water Management District (SFWMD)	South Florida Water Management District (SFWMD)	NJ		Nicole Cortez	Resiliency Coordinator	Alternate
SW Fla. Regional Planning Council (RPC)	SW Fla. Regional Planning Council		X	Vacant		[Not Specified]
The Salvation Army	The Salvation Army	NJ		Vacant		Primary
Univ of Fla. (IFAS)	Univ of Fla. (IFAS)		X	Vacant		Primary

H

APPENDIX H: Project Scoring Criteria

ANNEX H

Initiative Scoring Criteria

A. Mitigation Initiatives: Criteria for Scoring and Prioritizing

The prioritization of mitigation initiative process begins with the sponsor(s) of each initiative then goes to the Local Mitigation Strategy Working Group.

The first step consists of the sponsoring governments, agencies, and departments developing their initiatives and then scoring each project using the matrix developed by the LMS Working Groups.

The sponsor's prioritized initiatives are then presented to the LMS Working Group via the Collier County Emergency Management Division who will put the initiative on the LMS meeting agenda. The Working Group then reviews, discusses, revises and votes on each of the initiatives, assigning each a score and a ranking using the scoring matrix. The LMS Chair will brief the Collier County Citizen Corps about new mitigation projects and activities LMS Working Group since the Citizen Corps last meeting.

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.

B. Special Grant Funding Opportunities & other exigent circumstances: Should an eligible entity have an opportunity to apply for a mitigation grant for a project not previously listed on the Project Priority Listing (Annex E) and not be able to apply for the grant because the next announced LMSWG meeting would preclude timely application, this procedure applies. The applicant will complete a project score sheet, below, and submit it to the Emergency Management Division. Emergency Management will transmit the score sheet to the LMS Chair. The LMS Chair will electronically transmit the score sheet to the voting members of the LMSWG along with an explanation of the exigent circumstances. The LMSWG voting members have **two** business-days to vote on the project acceptability to the project priority listing. At the conclusion of the two business-days a majority vote, with at least three votes agreeing, determines the initiative's status. A transcript of this exception will be entered in the minutes at the next scheduled meeting.

C. Mitigation Initiatives Scoring Matrix

The following table represents the scoring matrix used for the submission of initiatives for consideration for inclusion in the Collier County LMS. Submit the completed "Mitigation Initiative Evaluation Score Sheet" to Emergency Management Div. in MS Word format. (NOTE: See Section 4, para. 4.1.4 for situations which deal with initiatives that cannot be scored.)

Mitigation Initiatives Evaluation Score Sheet

Instructions: Applicant completes this score sheet for EACH Project. Information required in each of the SHADED AREAS. Submit this score sheet in MS Word format to the Emergency Management Office electronically: Richard.Zyvoloski@Colliercountyfl.gov . Questions, call: 252-3603

If a submitter does not agree with the final determination, he or she shall have the right to meet with the scoring committee to present compelling information to change the score.

PART I

Project Title:	
Project Location:	

TYPE PROJECT ("X" appropriate box, or explain)

Acquisition	Elevation	Relocation	Reconstruction	Essential Facility Retrofit	Non-Residential Retrofit	New Construction	Special Considerations or Impact Statement, if any:

What Goal or Objective does this address (See Sec. 3.0, LMS)?	
What hazard(s) does this project or initiative correct/mitigate?	
Who (what community) benefits from this project or initiative?	
Does this project or initiative address mitigation on **NEW** infrastructure or buildings?	
Does this project or initiative address mitigation on **EXISTING** infrastructure or buildings?	
Project or Initiative Description:	
Applicant and Responsible Agency:	

Agency Contact Information

NAME	E-Mail	PHONE

Potential Funding Source(s)		**Estimated Cost**	

Suitability			Score	For LMS WG only
1	Appropriateness of the Measure	**5- High:** Reduces vulnerability and is consistent with Local Mitigation goals and plans for future growth. **3- Medium:** Needed but isn't tied to an identified vulnerability. **1- Low:** Inconsistent with LMS goal or plans.		
2	Community Acceptance	**5- High:** Endorsed by most communities. **3- Medium:** Endorsed by most; may create burdens. **1- Low:** Not likely to be endorsed by the communities.		
3	Environmental Impact	**5- Positive** effect on the environment. **3- No effect** **1- Adverse** effect on the environment.		
4	Legislation	**5- High:** Consistent with the existing laws and regulations. **3- Medium:** New legislation or policy change. **1- Low:** Conflicts with existing laws and regulations.		
5	Consistent with Existing Plans and Priorities.	**5- High:** Consistent with existing plans. **3- Medium:** Somewhat consistent. **1- Low:** Conflicts with existing plans and policies.		

Risk			Score	For LMS WG only
1	Scope of Benefits	**5- High:** Benefits all municipalities and unincorporated area directly or indirectly **3- Medium:** Benefits half or more, but **not all** the municipalities and/or the unincorporated areas. **1-Low:** Benefits less than half of the municipalities and/or the unincorporated area.		
2	Potential to protect human lives	**5- High:** More than 1,000 lives **3- Medium:** Up to 1,000 lives **0- Low:** No lifesaving potential.		
3	Importance of Benefits	**5- High:** Need for essential services. **3- Medium:** Need for other services. **1- Low:** No significant implications.		
4	Inconvenience of Problem Correction	**5- None:** Causes no problems. **3- Moderate:** Causes few problems. **1- Significant:** Causes much inconvenience (i.e. traffic jams, loss of power, delays).		
5	Economic Loss (Effect of implementing the project on local economy)	**5- Minimal:** Economic loss has little effect during the project. **3- Moderate:** Economic loss (minimal disruption). **1- Significant:** Economic loss (businesses closed; jobs affected).		
6	Number of People to directly Benefit	**5- High**: More than 20,000 **3- Medium:** 4,000 –20,000 **1- Lower:** Fewer than 4,000		

Cost			Score	For LMS WG only
1	Initial Cost	**5- Low:** $0 to $250,000 **3- Moderate:** $251,000 to $1 million **1- High:** More than $1 million		
2	Maintenance /Operating Costs	**5- Lower costs:** Less than 5% per annum of the initial cost. **3- Moderate:** 5%-10% per annum of the initial cost. **1- High:** More than 10% per annum of the initial cost.		
3	Environmental Cost Impact	**5- Positive** effect on the environment. **3- No effect** **1- Adverse** effect on the environment.		
4	Financing Availability	**5- Good:** Readily available with grants and/or matching funds **3- Moderate:** Limited matching funds available **1- Poor:** No funding sources or matching funds identified		
5	Repetitive FLOOD damages corrected (applies ONLY to NFIP-insured structure(s) w/two paid flood losses).	**5- High:** Corrects repetitive loss/severe repetitive loss **3- Medium:** Possible repetitive loss mitigation, but not documented. **1- Low:** Improves NFIP flood insured. **0-** Not a NFIP insured structure.		

PART I I

Benefit Cost Analysis – QUICK WORKSHEET

This worksheet to be filled out by the applicant, is designed only for the Local Mitigation Strategy Working Group use only. This gives the group a flavor for the potential benefits that the project may yield. Here's your chance to quantitatively make the case for your project as COST EFFECTIVE. This BCA is not the same one as the FEMA BCA. The FEMA BCA requires a lot more detail and supporting documentation, but this one will help you to further develop the "official FEMA BCA" should your project go forward as a FEMA grant request. (Please note the asterisked "*" items below for the appropriate help.)

ESTIMATED PROJECT COST: _____

How many people directly are affected by this project? _____

ESTIMATED POTENTIAL DAMAGE AND LOSS COSTS:

Some possible costs are:

* Real Property Losses based on hazard mitigated: _____
** Furnishing/Equipment Losses: _____
** Alternate facility costs: _____
** Contract/rental costs: _____
** Other associated costs (list):
_____ _____
_____ _____
_____ _____

Total Cost for Future Damages & Associated Expenses: _____ (NOTE: This figure should be detailed above.)

Statement to support above costs/losses:

DAMAGE & LOSS COSTS, divided by PROJECT COST = QUICK BCA RATIO

DAMAGE COSTS: (_____)
_____divided by_____ = BCA _____
MITIGATION PROJECT $: (_____)

I

ANNEX I: Floodplain Management Plans

ANNEX I
Collier County's Floodplain Plans

Unincorporated Collier County has a Floodplain Management Plan. The City of Marco Island and the City of Naples do not possess a Floodplain Management Plan, nor are they required to adopt one. The Floodplain Management Plan is a part of the Collier County multi-jurisdictional, multi-hazard mitigation plan which addresses the jurisdictional flooding hazards. They are written according to FEMA regulations and Section 511 and 512 of the CRS Coordinator's Manual.

All jurisdictions are active participants in the NFIP. To ensure continued compliance with the NFIP, each participating community will:

1. Continue to enforce their adopted Floodplain Management Ordinance requirements, which include regulating all new development and substantial improvements in Special Flood Hazard Areas (SFHA).
2. Continue to maintain all records pertaining to floodplain development, which shall be available for public inspection
3. Continue to notify the public when there are proposed changes to the floodplain ordinance or Flood Insurance Rate Maps.
4. Maintain the map and Letter of Map Change repositories.
5. Continue to promote Flood Insurance for all properties.
6. Continue their Community Rating System outreach programs.

SUMMARY OF JURISDICTIONAL CRS PROGRAMS

Collier County: Collier County's NFIP participation commitments meet or exceed the following minimum requirements as set for by the NFIP.

- Issuance or denial of floodplain development/building permits
- Inspection of all development to assure compliance with the local ordinance
- Maintaining records of floodplain development
- Assisting in the preparation and revision of floodplain maps
- Aid residents in obtaining information on flood hazards, floodplain map data, flood insurance and proper construction measures

Collier County Floodplain Management

The County's Building Plan Review & Inspection Division (BPRID) is the agency responsible for the review and approval of all development order applications to the County. The application review process includes analysis for compliance with the County's Land Development Code, the County's Code of Laws and Ordinances (which includes the Floodplain Management Ordinance), the Florida Building Code, the South Florida Water Management District permitting rules (when applicable), the County's Growth Management Plan, and other related regulations for development compliance. The development and building permit approval processes consist of extensive reviews of the submitted applications to determine compliance before a recommendation for approval is given. Once a development project begins actual construction, there are periodic on-site inspections performed by trained inspection staff to ensure compliance before the construction can proceed toward completion.

All documents submitted to the County become part of the project's public record file and are available for the public to review upon request. Copies can be ordered if requested. Once a project is completed, the file is closed and archived and is available for record retrieval. The BPRID is also active in the preparation and revision of Flood Insurance Rate Maps (FIRM) and maintains the record of all map revisions and changes received from FEMA. As a part of the services offered to the public, the BPRID provides FIRM information, flood insurance program information, flooding hazards, and proper construction methods within the special flood hazard area. The BPRID also oversees the County's participation in the Community Rating System (CRS) program. The County is currently designated as a CRS Class 5 rated community for its efforts to promote activities that make the community more resistant to flood damage.

Collier County is currently in the process of to producing a new Digital Flood Insurance Rate Map (DFIRM) series through a CTP Partnership Agreement with the City of Naples, the South Florida Water Management District, and FEMA. On January 9, 2019 the County adopted a new Floodplain Management Ordinance that is compliant with the current State of Florida "Model" Flood Ordinance. The County has an active Floodplain Management Planning Committee to oversee the development and updating of the County's Floodplain Management Plan. As part of the CRS program the County provides flood hazard and flood insurance information to the public through a newsletter, mailings, and the internet.

City of Naples: The City of Naples's NFIP participation commitments meet or exceed the following minimum requirements as set for by the NFIP.

- Issuing or denying floodplain development/building permits
- Inspecting all development to assure compliance with the local ordinance
- Maintaining records of floodplain development
- Assisting in the preparation and revision of floodplain maps
- Helping residents obtain information on flood hazards, floodplain map data, flood insurance and proper construction measures

The City of Naples Building Department is the agency responsible for the review and approval of all development order applications to the City of Naples. The application review process includes an analysis for compliance with the Land Development Code, the Code of Laws and Ordinances (which includes the Flood Damage Prevention Ordinance), the Florida Building Code, the South Florida Water Management District permitting rules (when applicable), the Growth Management Plan, and other related regulations for development approval compliance. Both the development permit and building permit approval processes consist of extensive reviews of the submitted applications to determine compliance before a recommendation for approval is given. Once a development begins actual construction, there are a number of periodic on-site inspections performed by trained inspection staff to ensure compliance before the construction can proceed toward completion.

All documents submitted to the City become part of the development's public record file and are available to the public's review upon request. Copies can be ordered if requested. Once a development is completed, the file is closed and archived, but still available for record retrieval. The Building Department is also active in the preparation and revision of floodplain maps and maintains the record of all map revisions and changes received from FEMA. As a part of the services offered to the public, the Floodplain Coordinator provides FEMA floodplain mapping information, flood insurance program information, flooding hazards, and proper construction methods within the special flood hazard area. The Floodplain Coordinator also oversees the City's participation in the Community Rating System (CRS) program, and which currently holds a Class 5 rating for its efforts to promote activities to make the community more resistant to flood damage.

The City of Naples is currently in the final efforts to produce a new Digital Flood Insurance Rate Map (DFIRM) through a CTP Partnership Agreement with Collier County, the South Florida Water Management District, and FEMA. As part of the CRS program the City provides flood hazard and flood insurance information to the public through a newsletter, mailings, and the internet.

City of Marco Island: The City of Marco Island's NFIP participation commitments meet or exceed the following minimum requirements as set for by the NFIP.

- Issuing or denying floodplain development/building permits
- Inspecting all development to assure compliance with the local ordinance
- Maintaining records of floodplain development
- Assisting in the preparation and revision of floodplain maps
- Helping residents obtain information on flood hazards, floodplain map data, flood insurance and proper construction measures

One of the Growth Management Department responsibilities is to promote sound and effective Floodplain Management within the City of Marco Island. We continue to promote public awareness of natural disasters and the benefits of participation in the National Flood Insurance Program. Our intent is to reduce flood losses in accordance with the City's Floodplain Ordinance and participate in the Federal Emergency

Management Agency's Community Rating System (CRS) to lower insurance premiums for residents. Our staff works closely with residents, contractors, businesses, local, state, and federal agencies to facilitate cooperation and the exchange of information on floodplain management issues.

Substantial Improvement and Substantial Damage Process

Collier County and its jurisdictions participate in the National Flood Insurance Program (NFIP) and enforce regulations related to **Substantial Improvement (SI)** and **Substantial Damage (SD)** in accordance with NFIP guidelines and local floodplain management ordinances. These regulations are essential for ensuring compliance with FEMA requirements and reducing flood risk across the county.

Substantial Improvement (SI):
Substantial Improvement refers to any reconstruction, rehabilitation, addition, or other improvement to a structure, where the cost equals or exceeds **50% of the market value** of the structure before construction begins. Collier County requires that all substantial improvement projects comply with current Florida Building Code and local floodplain management regulations to ensure resilience to future flood events.
The SI process includes:

- Submission of a building permit application with cost estimates from a licensed contractor.
- Market value assessment using the Collier County Property Appraiser's valuation or an independent licensed appraisal.
- Compliance with updated floodplain requirements, including elevation and floodproofing, if applicable.

Substantial Damage (SD):
Substantial Damage occurs when the cost of restoring a structure to its pre-damage condition equals or exceeds **50% of its market value**, regardless of the cause (flood, fire, wind, etc.). Any structure determined to be substantially damaged within a Special Flood Hazard Area (SFHA) must be brought into compliance with current floodplain management regulations.
The SD process involves:

- Post-disaster damage assessments conducted by Collier County in coordination with FEMA and state agencies.
- Permit submission requirements similar to substantial improvements.
- Compliance with elevation or retrofitting requirements to meet or exceed Base Flood Elevation (BFE) standards.

Compliance and Enforcement:

Collier County's **Building Plan Review & Inspection Division** oversees the administration and enforcement of SI/SD regulations. Property owners are required to

submit detailed repair/improvement plans for review and approval before commencing construction. Appeals regarding substantial damage determinations can be submitted to the **Board of Building Adjustment and Appeals** for further consideration.

Challenges and Mitigation Strategies:
To address potential gaps and challenges in the SI/SD process, Collier County is committed to:

- Expanding public awareness efforts to inform residents of their responsibilities under NFIP regulations.
- Seeking funding opportunities through FEMA programs such as the Flood Mitigation Assistance (FMA) and Building Resilient Infrastructure and Communities (BRIC) grants to support mitigation efforts.
- Enhancing coordination with municipalities, including Naples, Marco Island, and Everglades City, to streamline floodplain management efforts.

By incorporating the SI/SD process into floodplain management strategies, Collier County aims to ensure compliance with federal regulations while enhancing community resilience to flood hazards.

While the fundamental SI/SD criteria are consistent across jurisdictions, variations exist in administrative procedures, documentation requirements, and enforcement practices. Each jurisdiction within Collier County enforces NFIP regulations through their respective floodplain management programs which may include:

- **Collier County:** The Building Plan Review & Inspection Division administers floodplain management activities and ensures SI/SD compliance through the county's floodplain ordinance and permitting process.
- **City of Naples:** The city's Building Department enforces SI/SD regulations and mandates compliance with local flood damage prevention regulations. Property owners are required to elevate structures to or above the designated BFE in cases of substantial improvement or damage.
- **City of Marco Island:** The Growth Management Department oversees SI/SD compliance, incorporating public outreach efforts and enhanced regulatory enforcement within the community.
- **Everglades City:** The Building Inspector manages floodplain regulations, with a focus on preserving the unique characteristics of the area while maintaining NFIP compliance.
- **Seminole Tribe of Florida:** The Environmental Resource Management Department is responsible for floodplain management and compliance with NFIP standards within tribal lands.

Challenges and Coordination Efforts
To ensure consistency in SI/SD determinations across jurisdictions, Collier County and its municipalities actively collaborate through:

- **Regular coordination meetings** to discuss updates to floodplain regulations and best practices.
- **Public outreach programs** to inform residents of the SI/SD process and compliance requirements.
- **Data sharing and technical assistance** among jurisdictions to standardize documentation and streamline enforcement efforts.

Understanding these jurisdictional nuances ensures a comprehensive approach to floodplain management and enhances Collier County's resilience to flooding events.

Appendix 1

Collier County's Floodplain Management Resources

Collier County:

- **Floodplain Management Section:** Provides information on the county's floodplain management strategies and ordinances.
  - Collier County Floodplain Management
  - Collier County's Floodplain Management Plan can be found on the internet at the following address:
  - https://www.colliercountyfl.gov/home/showdocument?id=58898

City of Naples:

- **Floodplain Information:** Offers details on floodplain management, building regulations in flood-prone areas, and related resources.
  - City of Naples Floodplain Information

City of Marco Island:

- **Floodplain Management:** Provides guidelines and resources related to floodplain management within the city.
  - City of Marco Island Floodplain Management

Everglades City:

- **Floodplain Management:** Contains information on the city's approach to managing floodplain areas.
  - Everglades City Floodplain Management

Seminole Tribe of Florida:

- **Environmental Resource Management:** Oversees floodplain management among other environmental initiatives.
  - Seminole Tribe of Florida Environmental Resource Management

The FEMA CRS Coordinator's Manual can be found on the internet at the following address:https://www.fema.gov/media-library-data/1493905477815-d794671adeed5beab6a6304d8ba0b207/633300_2017_CRS_Coordinators_Manual_508.pdf