OKALOOSA COUNTY LOCAL MITIGATION STRATEGY 2026





























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Section 1.01 Executive Summary

As defined by the Federal Emergency Management Agency (FEMA), a hazard mitigation plan is a long-term strategy for reducing disaster losses. In Florida, a Local Mitigation Strategy (LMS) is a local government plan that is designed to reduce or eliminate risks to people and property from natural hazards. The plan is required to include three major elements: public participation, risk assessment, and mitigation actions. Under the Disaster Mitigation Act of 2000, state and local governments are required by federal law to have a FEMA-approved hazard mitigation plan in order to receive pre- and post-disaster mitigation grants.

Okaloosa County's first Local Mitigation Strategy was adopted in 1998 pursuant to Okaloosa County Ordinance 98-24. In addition to adopting the LMS, Ordinance 98-24 designates the Comprehensive Plan Committee, a previously-existing body formed to coordinate the comprehensive planning efforts of the county and municipalities, as the Local Mitigation Strategy Committee, and charges it with development and maintenance of the LMS, including annual and 5-year updates. Pursuant to this directive, the LMS Committee developed the 2011, 2016, and 2021 Local Mitigation Strategies and, under this directive, the 2026 Local Mitigation Strategy, as well.

All nine of the County's incorporated municipalities, and the County itself, participated in the development of and will adopt this 2026 LMS. The municipalities and their representatives are as follows:

Municipality	Represented By
The City of Crestview	Planning Department
The City of Fort Walton Beach	Planning Department
The City of Destin	Public Services
The City of Laurel Hill	City Clerk
The City of Mary Esther	Code Enforcement Department
The City of Niceville	Public Works; Planning Department
The City of Valparaiso	City Administrator
The Town of Shalimar	Town Manager
The Town of Cinco Bayou	Town Manager
Okaloosa County	Growth Management Department, Public Safety Department, Public Works Department

The Okaloosa County Public School District and US Air Force are also invited to participate in the meetings and activities of the LMS Committee. In order to maintain grant eligibility, local governments must review and update their Local Mitigation Strategies every five (5) years to reflect changes in development trends, monitor progress in mitigation efforts and make note of priority changes. Okaloosa County updated its LMS in 2011, 2016, 2021 and so this plan serves as the necessary five (5)-year plan update as required by FEMA. The 2026 LMS plan addresses each of the required elements of public participation, risk assessment, and mitigation actions, but also includes a vulnerability assessment. The plan was approved by Okaloosa County Board of

County Commissioners on _____. The municipalities' approvals of the 2026 LMS are found in Appendix H.

Okaloosa County is exposed to a variety of natural hazards: hurricanes and tropical storms; storm surge; flooding; dam safety; land erosion; severe storms; heat wave and drought; wildfire; sea level rise, and beach erosion. The purpose of this Local Mitigation Strategy (LMS) is to identify the risks associated with each hazard and identify corresponding mitigation actions to reduce the human, environmental, and economic costs of those natural disasters. The 2026 LMS assesses the problems associated with each hazard in a comprehensive three (3)-step process: 1) risk assessment; 2) vulnerability assessment, and 3) mitigation actions. The 2026 LMS Plan is a reflection of the joint effort between the public, state and local agencies, the private-sector and all members of the LMS Committee in creating a plan that makes Okaloosa County and its residents resilient to natural hazard damage. The comprehensive planning process behind the 2026 LMS update has culminated in the publication of this document: "The Okaloosa County 2026 Local Mitigation Strategy (LMS) Update."

Chapter 1 Executive Summary and History

The first section of the 2026 LMS update is devoted to explaining the procedural history behind the creation of the plan, public participation and private-sector involvement and the incorporation of the LMS with existing plans.

Chapter 2 LMS Committee Organization

Chapter 2 of the LMS establishes the purpose of the Local Mitigation Strategy Committee and the committee by-laws.

The committee's purpose is to develop, in accordance with Section 322 of the Robert T. Stafford Disaster Relief Act, a Local Mitigation Strategy that reduces the vulnerability of Okaloosa County's citizens, governments, businesses, and institutions to the future human, economic and environmental costs of natural disasters.

The committee's by-laws establish a membership which is open to all jurisdictions, organizations and individuals supporting its purposes with at least one representative from each jurisdiction and other individuals from the general public. Committee officer's duties and responsibilities include conducting the LMS Committee meetings; assisting the LMS planning support staff; establishing formation of temporary sub-committees; and distributing general LMS Committee outreach information.

The LMS Committee will be responsible for development and maintenance, including future annual updates and revisions, of the Multi-Jurisdictional Local Mitigation Strategy as required by Section 322 of the Robert T. Stafford Disaster Relief Act. For continuity, every effort will be made to involve the same members who participated in the development of this 2026 LMS, though membership on the LMS committee will be subject to some change as individual members change employment or they are assigned new responsibilities by their employers.

Meetings of the LMS Committee are conducted at least quarterly, and includes a minimum of two (2) advertised public meetings during the preparation of the LMS Plan and its subsequent up-dates as required by FEMA Region IV Minimum Standards of Acceptability and 44 CFR Part 201.

Chapter 3 Goals, Objectives, Policies and Project Ranking Criteria

The mitigation goals, objectives and policies listed in Chapter 3 of the 2026 LMS Plan are designed to reduce the impacts of future natural disasters in Okaloosa County and meet the requirements of 44 CFR 201.6(c)(3).

Chapter 4 Risk Assessments and Vulnerabilities

A major process behind development of the LMS is identifying the types of natural hazards that impact Okaloosa County and its nine (9) municipalities. The risk assessment section of this plan defines the types of natural hazards to which Okaloosa County, the unincorporated areas, and its municipalities are susceptible. The section also discusses historical occurrences of each hazard, extent of damage, and the probability of future occurrence.

The vulnerability assessment of this plan provides an estimate of the potential damage and resulting economic loss to buildings and structures in Okaloosa County that are susceptible to damage from a natural disaster. The section assesses estimated damage for a wide range of residential structures, commercial buildings, and critical facilities and explains the methodology behind the estimates.

Chapter 5 Jurisdictions

The intent of this section is to provide each jurisdiction with specific hazards, vulnerabilities and mitigation actions, as required by the following Code of Federal Regulations:

> 44 CFR 201.6(c) 3: *The plan shall include a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, polices, programs, and resources, and its ability to expand on and improve these existing tools. This section must include:*
>
> (i) A description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.
>
> (ii) A section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans approved by FEMA after October 1, 2008, must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate.
>
> (iii) An action plan describing how the actions identified in paragraph (c)(3)(ii) of this section will be prioritized, implemented, and administered by the local jurisdiction.

Prioritization will include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.

(iv) For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

(4) A *plan maintenance process* that includes:

(i) A section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.

(ii) A process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.

(iii) Discussion on how the community will continue public participation in the plan maintenance process.

Each jurisdiction's section includes a brief, summary description of the identified hazard area, vulnerability to the identified hazards, and the degree of impact each hazard has on the jurisdiction. The section also describes vulnerability in terms of the types and numbers of repetitive loss properties and notes the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard area. The specific mitigation actions listed were developed by each jurisdiction in response to the particular hazards to which they are vulnerable. The mitigation actions included in the 2026 LMS coincide with the mitigation goals and objectives defined by the LMS Committee and set forth an approach for implementing activities that are cost effective, technically feasible, and environmentally sound. The actions range from community awareness programs about natural hazards, to building code enforcement to flood plain management. The actions are both proactive and reactive: meaning, some of the actions prepare in advance for hazards, while others are actions to be taken following a natural disaster.

Appendices

The Appendices to the 2026 LMS Update include: the project list and project submittal sheets for all jurisdictions compiled according to the criteria established in Chapter 3 of the 2026 LMS Update; a list of changes to the LMS for documentation; the 2026 Annual outreach letter and mail out list are referenced here, along with the current member list; minutes of the 2025 & 2026 LMS Committee meetings and other support documentation; the 2025 Okaloosa County Vulnerability Analysis and Action Plan, and the 2025 City of Destin Vulnerability Analysis and Action Plan.

This document details the work of the Okaloosa County LMS Committee over the past several months to develop the planning organization, to undertake the required technical analyses, and coordinate the mitigation initiatives that have been proposed by the participating jurisdictions and organizations. Through publication of this local mitigation plan, the committee continues to solicit

the involvement of the entire community to make the residents, neighborhoods, businesses and institutions of Okaloosa County safer from the impacts of future disasters.

Okaloosa County Planning Staff would like to acknowledge the following participants in the 2026 LMS update:

Citizens of Okaloosa County
The City of Crestview
The City of Destin
The City of Fort Walton Beach
The City of Laurel Hill
The City of Mary Esther
The City of Niceville
The City of Valparaiso
The Town of Cinco Bayou
The Town of Shalimar
Okaloosa County Department of Public Safety
Okaloosa County Department of Public Works
Okaloosa County Department of Growth Management

Section 1.02 Planning Process

1.02.01 Procedural History

The Okaloosa County Board of County Commissioners first adopted a Local Mitigation Strategy in July 1998. The original (1998) document included natural hazards as well as anthropogenic hazards (i.e. coastal oil spills, civil disturbance, mass immigration, nuclear power plant incidents, exotic pests and diseases, and terrorist action). In compliance with the Disaster Mitigation Act of 2000, Okaloosa County and its nine incorporated municipalities established the *Okaloosa County 2005 Local Mitigation Strategy (LMS) Plan* that was prepared by the West Florida Regional Planning Council. This document was adopted by each jurisdiction in April 2005. According to the Federal Regulations, the LMS plan requires documentation of the planning process, public participation, hazard identification, mitigation strategies, coordination with other plans, and formal adoption by the governing board in order to be eligible for hazard mitigation grants.

The LMS document has a designed process which allows changing conditions, in terms of mitigation actions, needs, and development trends, to be addressed through continual revisions. In May of 2010, the five (5)-year update of the County's LMS plan begun by the Okaloosa County Department of Growth Management with assistance from two interns provided by Florida State University through a grant with the Florida Division of Emergency Management and FEMA.

While the 2011 LMS Plan was a complete revision of the 2005 and earlier documents, the 2016 Plan; the 2021 Plan, and this 2026 Plan are substantial updates done in compliance with the State of Florida Division of Emergency Management LMS requirements.

The timeline, below, provides the history of ordinances affecting Okaloosa County's LMS:

Ordinance 98-24: Adopted the first Local Mitigation Strategy.
Ordinance 99-27: Established the Citizen's Advisory Committee (now referred to as the "LMS Committee) and further defined the mitigation goals. Also, project ranking criteria and a list of projects were included.
Ordinance 01-08: Replaced the old list of ranked mitigation initiatives.
Ordinance 04-40: Amended Ordinance 99-27; Established Guiding Principles.
Ordinance 05-39: Adopted the second Local Mitigation Strategy.
Ordinance 06-61: Amended Ordinance 99-27; 5 Year Update.
Ordinance 11-09: Adopting 2011 LMS Plan
Ordinance 16-10: Adopting 2016 LMS Plan
Ordinance_21-28 Adopting 2021 LMS Plan
Ordinance 26-___ : Adopting 2026 LMS Plan

Section 1.02.02 Planning Process

The LMS Committee is comprised of local stakeholders and representatives from each of the nine (9) jurisdictions within in the county as well as representatives from Eglin Air Force Base. Each jurisdiction in Okaloosa County, identified in the chart below, is a participating member of this plan, and has been, since the LMS formal adoption in 2005, and no new jurisdictions have been incorporated. The LMS Committee members include the following entities.

Organization/Department
Okaloosa County/Growth Management Dept.
Okaloosa County/Public Works Dept.
Okaloosa County/Public Safety
City of Cinco Bayou
City of Crestview/Planning Dept.
City of Destin/Community Development Dept.
City of Destin/Engineering Dept.
City of Fort Walton Beach/Community Development Services
City of Fort Walton Beach/Public Works Dept.
City of Laurel Hill/City Clerk
City of Mary Esther/Code Enforcement
City of Niceville/ Public Works
Town of Shalimar/Clerk
City of Valparaiso/City Administrator
Eglin Air Force Base
Hurlburt Air Force Base
North West Florida Water Management District
Okaloosa County School Board
Gulf Power Company
Choctawhatchee Electric Co-op
Emerald Coast Regional Planning Council

The revision process began in July 2025 when the current (2021) LMS document was reviewed by Okaloosa County Planning Coordinator Sherry Cadenhead, who has 41 years of experience with Okaloosa County in planning and is a Certified Floodplain Manager; Okaloosa County Deputy Director, Randy Woodruff, AICP, and Okaloosa County Strategic Planning and Projects Manager, Elliot Kampert, AICP.

Ms. Cadenhead Mr. Woodruff, and Mr. Kampert evaluated the 2021 LMS to determine whether the requirements of the Stafford Act and other governing rules were adequately met as well as the State of Florida Division of Emergency Management LMS requirements. This evaluation indicated that the analysis of disaster events and the jurisdictions' responses thereto would need to be updated, along with updates of the base maps to reflect municipal annexations. The evaluation indicated that the ranking criteria needed adjusting to better meet the grant application requirements and encourage broader participation among municipalities and special districts.

The results of the initial review were shared with the municipalities' representatives and other members of the LMS Committee via email who were invited to provide comments and suggestions for consideration as the update got underway. The municipal representatives and other members of the LMS Committee concurred with the Okaloosa staff conclusions and began the process of updating their jurisdiction-specific portions of the LMS. As with the 2016 and 2021 Plan, this 2026 Plan is an update, not a complete re-write of the document.

Each jurisdiction is required to have at least one (1) mitigation action for each hazard to which their community is vulnerable. The purpose of the mitigation actions is to work towards achieving the overall mitigation goals and objectives established by the LMS Committee. Each jurisdiction must also list a status of the action, (ongoing, no funding, etc.).

In addition to the actions (some of which are programmatic, such as implementing the Florida Building Code or floodplain management activities), this LMS Plan also includes a list of projects that are intended to further mitigate the jurisdictions' vulnerability to the identified hazards. The project ranking criteria presented in the 2021 Plan establish a point-based system of prioritization based on each proposed project's consistency with mitigation goals, objectives and other planning documents, and if the actions considered such things as environmental impacts, project cost and available funding, feasibility, and beneficiaries. These criteria are included in this 2026 LMS Plan. A benefit-cost review is also used to determine which projects derive the most benefits while minimizing costs. This benefit-cost review has been used in the 2021 LMS Plan criteria to assign prioritization in the case of tie scores and is continued in this 2026 LMS Plan. All the jurisdictions are responsible for submitting an updated list of mitigation projects to the Okaloosa County Staff.

As Okaloosa County Staff revised sections of the LMS plan, they were sent out to the LMS Committee for comments. This was a continual process throughout the duration of the update and comments and revisions were actively sought.

The final draft of the 2026 LMS Plan was presented to the LMS Committee and made available for public comments at a public meeting held on February 26, 2026

Section 1.02.03 Public and Private-Sector Participation

During the development of the 2026 LMS Plan Update, the public was allowed to participate in the discussions of the LMS Committee meetings. The public was encouraged to ask questions, give comments, and become a LMS Committee member. The County representatives email addresses and contact information were provided so that the meetings' participants, whether municipal representatives or members of the public (cumulatively the stakeholders), could ask questions or provide comments or information after the meetings, as well. The public will be encouraged to participate in the future as well, as the LMS will be periodically updated as required by Federal law and as conditions (annexations, storm or other events, new data, regulatory updates, etc.) change over time. The proper procedures for public notification regarding LMS Committee meetings will be followed. The meeting time, location, and date will be posted to the County website in a timely manner as meeting dates and times are established by the LMS Committee Chair.

1.02.04 Review and Incorporation of Existing Plans

As previously mentioned, the Okaloosa County Planning Staff reviewed and revised each section of the plan throughout the update process and incorporated suggestions from the LMS Committee members. Also, when new or better data was available it was added to the document, especially if it made the document align more closely with the LMS requirements.

The 2026 LMS update incorporates existing plans, studies, reports and technical information throughout the document. The 2011 LMS Plan served as the basis for the 2016 LMS plan and the 2016 plan has served as the basis for the 2021 update and the 2021 LMS plan served as the basis for the 2026 update. The 2026 LMS plan was critically examined to see how the contents compared to the Crosswalk requirements and necessary elements were revised. The 2026 LMS mitigation actions and overall goals were compared to the Okaloosa County Comprehensive Plan, Land Development Code, Florida Building Code, National Electrical Code, Fire and Life Safety Code, and other relevant County and municipal ordinances to ensure their consistency. As stated previously, the 2026 Plan retains the 2011, 2016, and 2021 Plans' ranking criteria along with various updates for better grant funding capabilities for projects that are consistent with other plans or planning documents, and provides for the prioritization of projects in the event of a tie.

The 2026 LMS Plan also incorporates provisions from the 2025 Okaloosa County Vulnerability Study and Action Plan as well as the City of Destin Vulnerability Study and Action Plan. The documents are also included as Appendices E and F, respectively.

While the LMS incorporates a great deal of information from a variety of other documents as mentioned above, it is itself incorporated wholly or in part into other planning documents. It is referenced in the County's Comprehensive Emergency Management Plan, including specific reference to the function of the LMS Committee and projects. As the LMS is formally adopted by each city as well as the county, it is part of the framework that forms the basis of the jurisdictions' underlying growth management plans. The LMS is incorporated into the local governments' comprehensive plans as part of the "best available data" on which the goals, objectives and policies of their Coastal Management and Future Land Use elements are based, and are also integral to the statutorily mandated Comprehensive Plan Evaluation and Appraisal Report process. Local Comprehensive Plans and Comprehensive Plan Evaluation and Appraisal

Reports, are subject to a rigorous planning process that includes substantial opportunities for public input culminating in adoption through public hearings.

1.02.04.01 Community Rating System

All jurisdictions as well as the County are members of the National Flood Insurance Program (NFIP) and, with the exception of Laurel Hill, participate in the Community Rating System (CRS); therefore, special attention was given during the drafting of the 2026 LMS plan so that it fulfills the requirements above and beyond the NFIP. The CRS is a voluntary incentive program that encourages community flood plain management activities that exceed the minimum NFIP requirements. Numerous aspects of the LMS plan fulfill requirements of the CRS Crosswalk, which benefits participating communities by reducing their flood insurance premiums.

Listed below is a simple explanation of who is responsible for the implementation of the CRS requirements as part of the 2026 LMS plan:

Who: All participating jurisdictions.

What: Incorporate the CRS requirements into the 2026 LMS; ensure the LMS and mitigation actions are implemented.

When: Time frame in which the mitigation actions and projects will take place; this is specific to each action or project. For example, some might be ongoing actions such as requiring building setbacks in coastal areas, while others might be a single event, such as structural engineering project.

Where: This refers to where the mitigation actions and projects will occur. Since each jurisdiction is responsible for submitting a list of mitigation actions for each hazard to which they are vulnerable and must provide project forms to mitigate against hazards, the location of the actions and projects will take place in each individual jurisdiction or in Okaloosa County as indicated in the project list.

How: How the projects are implemented, and to what extent, will depend on available funding. Some actions may be carried out through grants, while others may be funded through annual budgets as determined by the local governing board. Funding will be dependent on each jurisdiction's available funding and project priority.

1.02.04.02 Development, Redevelopment, and Population Trends

Due to the Eglin Reservation which bisects the County along an east to west axis, non-military development in Okaloosa County occurs in two geographic areas referred to as north Okaloosa (north of the Eglin Reservation) and south Okaloosa (south of the Eglin Reservation).

In north Okaloosa, most of the residents live in or near the City of Crestview, which is the fastest growing city in Okaloosa County. It is expected that Crestview and the immediately surrounding area will grow due to the amount of undeveloped land available for development, particularly in the areas closest to the Eglin Reservation which is the County's main economic engine. This area

has seen an increase in development activity for the time period of this update compared to the previous update periods (February 2011 to January 2021):

Residential Permits (detached single family, mobile home, duplex, and townhomes):

Feb 2011 thru Jan 2016: 1,488
Feb 2016 thru Jan 2021: 1,768
Feb 2021 thru Jan 2026: 2,792

Commercial Permitting (square feet, includes multifamily greater than 3 units):

Feb 2011 thru Jan 2016: 217,230
Feb 2016 thru Jan 2021: 322,807
Feb 2021 thru Jan 2026: 385,972

In south Okaloosa, the majority of the residents live in the incorporated areas, notably the City of Destin, the City of Niceville, the City of Fort Walton Beach, and the immediately surrounding areas. However, there are significant population centers on Okaloosa Island which remains unincorporated as well as areas west of the city of Mary Esther, and in some parts of eastern Okaloosa County in the Destin area. Unlike the area north of Eglin, there has been an decrease increase in development activity for the time period of this update (February 2021 to January 2026) compared to the previous update period (February 2016 to January 2021), with residential activity returning to the level seen during the 2011-2016 period, and commercial development seeing an overall decline:

Residential Permits (detached single family, mobile home, duplex, and townhomes):

Feb 2011 thru Jan 2016: 863
Feb 2016 thru Jan 2021: 1488
Feb 2021 thru Jan 2026: 857

Commercial Permitting (square feet, includes multifamily greater than 3 units):

Feb 2011 thru Jan 2016: 1,439,975
Feb 2016 thru Jan 2021: 1,959,576
Feb 2021 thru Jan 2026: 787,988

Many jurisdictions in south Okaloosa such as the Town of Cinco Bayou, Town of Shalimar, City of Valparaiso, City of Fort Walton Beach, and City of Destin are substantially built out, meaning there is very little vacant, undeveloped land, and so redevelopment represents the most common type of development in these areas.

Due to the essentially built-out nature of the area south of Eglin, there are no discernable changes in development trends (re-development typically follows established patterns) that would drive

changes to this Local Mitigation Strategy in these areas. However, as noted in Section 1.02.04.03, below, the information included in this Plan and other documents has influenced local governments' land development regulations in an effort to reduce the effects of growth and redevelopment in flood prone areas such as the Coastal A zones. In addition, other limiting factors, such as traffic problems and roadway capacity, development restrictions in the coastal high hazard areas and floodplains will also affect growth.

The greatest opportunity for new development in south Okaloosa is within the City of Niceville which annexed approximately 1.72 square miles along its northeastern border in 2010. While the majority of the property is currently undeveloped, its access to major roads and proximity to both Eglin Air Force Base and the employment, tourism, and entertainment opportunities of the coastal areas dictate that this area will develop.

To characterize the general development trends of Okaloosa County, the south end will primarily see new growth and development in and around the City of Niceville, while redevelopment will be the dominant form in the other areas due to their substantially built out nature. In north Okaloosa County, development and population growth is anticipated in and around the City of Crestview as well as close to the northern boundary of the Eglin Reservation, while the remaining areas of north Okaloosa County will remain largely rural in character, though some growth will occur in the unincorporated, rural communities of Baker and Holt.

Increases in population, whether in the form of re-development in the areas south of Eglin or new development in the areas north of Eglin, will unavoidably result in larger numbers of people being exposed to the various hazards to which Okaloosa County is vulnerable. While this is probably most pronounced in the coastal areas that are especially vulnerable to the highest winds and storm surges associated with hurricanes and tropical storms, increasing populations north of Eglin will remain vulnerable to hazards such as riverine flooding caused by rain events (tropical or otherwise) and wildfire. It is incumbent on the County and its municipalities to undertake planning efforts as well as enact reasonable land development regulations to address these concerns.

1.02.04.03 Implementation

The 2026 LMS provides a bounty of current, professionally developed data which will be incorporated into the County's and municipalities' local comprehensive plans and land development codes.

Collectively, the comprehensive plan, land development code, ordinances, policies and LMS will work towards promoting the safety of all Okaloosa County residents, reduce the structural damage to buildings, and prevent property damage. Because the LMS is a multijurisdictional document, the planning departments or city governments within each jurisdiction will necessarily incorporate the LMS into their individual planning mechanisms, which in addition to the jurisdictions' comprehensive plans and land development codes, may also include, as appropriate, capital improvement programs and re-development plans.

The updated 2026 LMS plan includes a process by which Okaloosa County and the municipalities will incorporate the information contained in the plan, such as in the risk assessment, into other planning mechanisms when appropriate. The record of historical occurrences and extent of damage identified for each hazard in the risk assessment section of the LMS will influence the

county and municipalities land development codes. For example, the findings of the 2026 LMS might reinforce set-back requirements for structures within storm surge and flood zones. The Florida Building Code, which already includes requirements for wind resistant windows and doors, can be amended by the Florida Building Code Commission at the request of a local government if further strengthening is warranted. Okaloosa County and the municipalities, in conjunction with their respective code enforcement and building inspection divisions, can ensure those requirements are met.

In 2022, Okaloosa County substantially revised its floodplain management regulations intended to implement the new flood insurance rate maps which took effect in Okaloosa County in March of 2021. The new floodplain regulations (which closely follow the model code promulgated by the Florida Division of Emergency Management). In addition, the Okaloosa County Land Development Code requires development to maintain a minimum of one (1) foot of freeboard above the crowns of adjacent roads even in areas outside of designated flood zones. Similarly, the City of Destin's land development regulations require three (3) feet of freeboard for structures in flood zones, and include rigorous stormwater management requirements for even single family homes and additions.

The updated 2026 LMS allows for continued public participation. The LMS Committee will hold meetings throughout the year, as determined by the LMS Committee Chair. Once a meeting date, time, and place has been set, the proper public notices will be posted on the county website. Notices of public hearings will be advertised in the local newspaper. During the meetings, the public will have the opportunity to participate in the discussions of the meeting, ask questions, give comments, and even become a member of the LMS Committee.

The table below shows the annual timeline and process for updating the LMS plan on a continual basis.

Month	Activity
April - May	Revisions to Annual Update to include project goals achieved and any changes to the LMS.
June	Updated LMS Annual Update to LMS/Comp Plan Committee Meeting.
July	Submit agenda item to be placed on the Board of County Commission (BCC) meeting schedule. Present LMS Annual Update to BCC as informational item. Annual update includes latest Project Priority List.
	Following presentation to BCC, advertise availability of current LMS Annual update in the Northwest Florida Daily News.
	Forward copies of LMS Annual Update with Project Priority List to all parities listed in the advertisement. Send memo to "Newsroom" to NWFDN and copies in both North and South Growth Management Offices. Copy should be available to the public year round.
	Have LMS Annual Update posted on the Growth Management website.
	Obtain "Proof of Publication" from NWFDN, forward to appropriate Flood Plain manager for CRS points. -Mike Ruzowski
	Email to LMS Committee with notification of date presented to BCC: LMS Annual Update and "Flood Notes" documents.

Nov-Dec	Begin Annual update of Project Priorities at LMS/Comp Plan Committee Meeting.
December - January	Finalize at LMS/Comp Plan Committee Meeting Project Priority List. Forward copy of list to DCA with cover letter by January 31 of each year to comply with 9G-22 Compliance.

1.02.05 Procedures for Plan Maintenance

The 2026 LMS has specific procedures for plan maintenance. The plan will be monitored, evaluated, and updated annually to accommodate changes in growth trends, vulnerability, project status, and goals. The LMS Committee Chair and the Okaloosa County Growth Management Department are responsible for monitoring changes throughout the county, accounting for these changes within the plan, and notifying the LMS Committee of any changes that are made. The LMS Committee Chair is also responsible for coordinating all LMS Committee meetings and sending out proper notification to all committee members and the public. The LMS Committee Chair will keep in contact with each of the municipalities in Okaloosa County and actively request information concerning any changes within their municipality that might be relevant to the LMS plan. Every year the LMS Committee Chair will be responsible for submitting a report to Florida Commerce which captures any changes within the 2026 LMS plan.

Every five (5) years, all components of the LMS plan will be completely updated and comprehensively evaluated. Therefore, looking ahead, this 2026 LMS plan which is a substantial revision and update of the 2021 LMS Plan, will be substantially revised and a new LMS plan will be submitted to the Florida Division of Emergency Management in 2031. The LMS Committee Chair will be responsible for carrying out all the necessary tasks to ensure that the 2031 plan is completed and consistent with state and federal requirements. The LMS working group will begin its review of the 2026 LMS for substantial update in 2030 no later than June 2029.

In June 2029, the LMS committee will conduct a public kick-off meeting that will begin the re-evaluation process. Throughout 2030, the LMS Committee (which includes representatives from each city and the School Board as well as Okaloosa County) will evaluate the LMS based on with input from the general public as well as affected parties such as Eglin Air Force Base, the independent fire districts, Hurlburt Field, the U. S. Coast Guard Station at Destin, the U.S. Army 7th Special Forces Group (relocated from Fort Bragg North Carolina beginning in 2011 as a result of the 2005 Base Realignment and Closure Legislation), the Florida Forest Service, the Northwest Florida Water Management District, and others as may be identified during the process. The evaluation will specifically include:

- a substantial update of the hazard assessments to include up-to-date data;
- a review of the goals and objectives for each jurisdiction to determine whether they need to be updated to reflect changed conditions, new information, or other factors;
- a review of the outcomes of projects (did they achieve their mitigation goals);
- the continued participation of each agency; and
- a review of the public input process to determine whether it needs to be improved or expanded.

The results of this evaluation, as well as any new data and information that become available during the update process, will form the basis for the revised LMS which will be completed in December 2030.

Local Mitigation Strategy (LMS) Committee Organization

Section 2.01 By-Laws

2.01.01 Purpose of the Local Mitigation Strategy Committee

The purpose of the Okaloosa County Local Mitigation Strategy (LMS) Committee is to develop, implement, and as necessary revise the multi-jurisdictional, County-wide Local Mitigation Strategy to ensure that it accurately reflects conditions throughout the County and provides the necessary policy and programmatic guidance to enable the jurisdictions to prepare and respond to disasters, thereby reducing the vulnerability of Okaloosa County's citizens, governments, businesses, and institutions to the future human, economic and environmental costs of natural disasters. To this end, the LMS Committee will develop, monitor, implement, and maintain the Local Mitigation Strategy as provided in Section 322 of the Robert T. Stafford Disaster Relief Act that is intended to accomplish this purpose and to promote sustainable, disaster-resistant, and resilient communities.

2.01.02 Membership

2.01.02.01 Membership in General

Membership of the LMS Committee is open to all jurisdictions, organizations, and individuals supporting its purposes with representatives from the following:

- At least one appointed LMS Committee member and alternate from the government of Okaloosa County and each participating incorporated municipality, and
- Other individuals from the general public (including private citizens and businesses, stakeholder organizations, and community groups) as deemed appropriate by the LMS Committee to ensure well-balanced representation on the LMS Committee.

2.01.02.02 Initial Membership

Based on long-standing LMS Committee status prior to the establishment of these By-laws, representatives from the following departments/organizations will serve as members of the initial LMS Committee under these By-laws. Additional LMS Committee members will be added as the group grows in membership and as representation is needed to maintain a well-conceived and well-balanced LMS Committee. The current, updated membership list shall be kept as an addendum to these Bylaws.

Okaloosa County LMS Working Group 2026
Okaloosa County/Growth Management Dept.
Okaloosa County/Public Works Dept.
Okaloosa County/Public Safety/Emergency Management
City of Cinco Bayou/City Administrator
City of Crestview/Planning Department
City of Destin/Community Development Dept

City of Destin/Engineering Dept.
City of Fort Walton Beach/Community Development Services
City of Fort Walton Beach/Public Works Dept.
City of Laurel Hill/City Clerk
City of Mary Esther/Code Enforcement
City of Niceville/Planning Department
Town of Shalimar/Clerk
City of Valparaiso/City Administrator
Eglin Air Force Base & Hurlburt Field
North West Florida Water Management District
Okaloosa County School Board
Northwest Florida State College
Emerald Coast Regional Planning Council

Subsequent to the effective date of these By-laws, membership shall be accomplished through the completion of a Member Information Form (see Section 2.02, below). The Member Information Form shall be submitted to the Chair of the LMS Committee for a signature of acknowledgement. The Chair shall cause a record to be kept of all Member Information Forms to serve as the LMS Committee Membership Database. LMS Committee alternate members shall also be required to submit a Member Information Form which shall be kept as part of the database.

2.01.02.03 Recruitment of New Members

The LMS Committee shall actively solicit membership and participation from private citizens and businesses through direct mail outs to current and past members, stakeholder organizations (Association of Realtors, Building Industry Association, etc.), and community groups; notification on the County website, and other measures as appropriate and available. The LMS Committee Chairman shall keep a record of all membership solicitation activities. Ideally, LMS Committee members should have responsibility and authority for implementing proposed mitigation initiatives on behalf of their agencies when resources to do so become available.

2.01.02.04 Maintenance of Standing

To maintain good standing, members of the LMS Committee must not have more than three (3) unexcused absences from meetings during the course of a year. An absence may be excused if the member's alternate attends in his/her place. If the member's alternate cannot attend in the member's place, the Chairperson may excuse the member's absence if the member notifies the chairperson prior to the meeting that a conflict will not permit attendance at the specified meeting. Criteria for Member Alternates: Each member of the LMS Committee may designate one alternate to assist them in fulfilling their roles and responsibilities on the LMS Committee and the Working Group as a whole. The alternate member may have one (1) vote only when the primary member is absent. To maintain a well-balanced membership, the designated alternate should represent the same entity as the primary member. Alternate members of individual citizens shall also be individual citizens and not represent any other entity. An LMS Committee member cannot serve as an alternate member for another member. The roles and responsibilities of the LMS Committee members are described in Sections 2.01.03 through 2.01.04.02

2.01.03 LMS Committee Officers

Any member in good standing of the LMS Committee is eligible for election as an officer. The LMS Committee will have a chair and a vice-chair. The chair and vice-chair shall be elected by a majority vote of a quorum of the LMS Committee members. Each officer will serve a term of one (1) year, and be eligible for re-election for an unlimited number of terms.

The chair of the LMS Committee will preside at each meeting of the LMS Committee as well as establish temporary subcommittees and assign personnel to them. The vice chair will fulfill the duties and responsibilities of the chair in his or her absence.

Duties and Responsibilities of the LMS Committee Officers will include, but shall not be limited to:

- Conducting the LMS Committee Meetings as outlined in the agenda and maintaining decorum.
- Assist the LMS planning support staff in setting meeting agendas.
- Establish formation of temporary sub-committees and assign members to serve.
- Distribute minutes, meeting notices, and general LMS Committee outreach.

2.01.04 Responsibilities

2.01.04.01 LMS Committee

The LMS Committee will be responsible for development of the multi-jurisdictional Local Mitigation Strategy as required by Section 322 of the Robert T. Stafford Disaster Relief Act, including:

- Developing the data and technical analysis of the LMS, including hazard identification and all other necessary research, including annual and five (5) year updates as required by the Robert T. Stafford Disaster Preparedness Act and all other applicable laws.
- Developing and approving the mitigation initiatives for incorporation into the LMS, the priority of those initiatives, and the removal or termination of initiatives.
- Setting guidelines for the total mitigation planning effort.
- Serving as the official body to represent the overall planning process.
- Serving as the official liaison of the LMS Committee to the community, including public Information responsibilities as specified in CFR 44 Part 201, FEMA Region IV Minimum Standards of Responsibilities, 9G-22 FAC or any other federal and state mitigation requirements. These responsibilities include, but are not limited to securing public input and comment on the efforts of the LMS Committee; informing the public about the activities of the LMS Committee; conducting public information and education programs regarding hazard mitigation, and informing the community about the vulnerability to future disasters and effective hazard mitigation actions; conducting surveys to gather information on community needs and attitudes; assisting with the conduct of public meetings; providing a venue to receive comments from the public who cannot attend public meetings, and

preparing the community for issuance of the LMS and promoting public acceptance of the strategy developed by the Working Group.
- Presenting the plan to communities and the local elected bodies.

Temporary Subcommittees – The LMS Committee Chairman may, with the affirmative vote of a majority of a quorum present at the time of the vote, appoint temporary subcommittees, including subcommittees comprised of citizens, for the accomplishment of specific tasks. The specific tasks and responsibilities of temporary subcommittees will be defined at the time they are established.

2.01.04.02 LMS Planning Support Staff

The Okaloosa County Growth Management Department or other agency as so designated by the Board of County Commissioners will serve as the LMS Program's planning support staff for the LMS Committee, and assist in the facilitation, coordination and support of the Committee's activities.

Roles and responsibilities that support the general and primary responsibility stated above include, but are not limited to, the following:

- Serve as initial point of contact for all matters relating to mitigation planning and implementation and when appropriate confer with the chair and/or vice chair, the authority specified in Article VI, or other member(s) of the Task.

- Document the planning process in the mitigation plan as required by FEMA criteria in CFR 44 Part 201, and FEMA Region IV Minimum Standards of Acceptability (and any other subsequent State and Federal requirements).

- Obtain and utilize technical assistance and/or training support from the State and FEMA or other agencies as needed by the LMS planning support staff and/or the LMS Committee.

- Read, interpret, and keep current on State and Federal mitigation planning requirements and accordingly guide the planning activities of the LMS Committee as necessary to ensure the community's eligibility for State and Federal mitigation and disaster funding remains in good standing.

- Work with the LMS Committee to collect, compile, organize, and analyze needed information for plan development. Prepare the LMS as a document.

- Coordinate with the County's website staff in the posting of meeting documentation, agendas, and other items to promote public information, participation, and feedback. Maintain public review documentation.

- Attend State and Federal workshops on behalf of the LMS Committee.

- Provide logistical and administrative support to the LMS Committee.

2.01.05 Authorized County Point of Contact

The Okaloosa County Growth Management Director shall be the LMS Committee's designated county point of contact.

2.01.06 Actions by the LMS Committee

2.01.06.01 Meetings, Voting, and Quorum

Meetings of the LMS Committee will be conducted in accord with Robert's Rules of Order, if and when deemed necessary by chair of the meeting.

Regular meetings of the LMS Committee will be scheduled at least quarterly with a minimum of seven (7) days' notice which shall consist of posting on the Public Notices Webpage of the County's website Subcommittees and other working groups, if established, may conduct additional and separate meetings with appropriate notice as required by law, as needed to complete tasks.

All final actions and decisions made in the name of the LMS Committee will be by affirmative vote of a simple majority of the LMS Committee members present. The LMS Committee shall take no formal actions unless a quorum is present. A quorum shall be 50 percent plus one (1) of the members or their alternates of the LMS Committee in good standing physically present at the time of the vote. A member and alternate from the same organization shall not be counted as two members for purposes of determining whether a quorum is present. Each member or alternate of the LMS Committee will have one vote. Under no circumstances shall both a member and an alternate from the same organization or interest cast a vote. When both a member and his/her alternate are present, the member shall vote unless the vote by the alternate is approved by a simple majority vote of a quorum of the LMS Committee. When the LMS Committee approves the vote of an alternate when the member is also present, the member shall not vote on the issue for which the alternate's vote is cast.

2.01.06.02 Public Meetings

The LMS Committee shall hold a minimum of two (2) advertised public meetings during the preparation of the LMS Plan as required by FEMA Region IV Minimum Standards of Acceptability and CFR 44 Part 201.

When required by statute or the policies of Okaloosa County, or when deemed necessary by the LMS Committee, a public meeting regarding actions under consideration for implementation by the LMS Committee will be held.

2.01.06.03 Public Notice

As stated previously, notice of meeting time and location listed on the Okaloosa County website. A copy of such notice shall be kept available for public inspection during regular business hours

at the office of the Growth Management Department. The notice shall state the time, date, and place for each hearing; the title(s) of the proposed action(s); the place(s) where the action under consideration may be inspected by the public, and; a general statement advising that all interested parties may appear at the meeting and be heard with respect to the proposed ordinance(s).

2.01.06.04 Documentation of Actions

All meetings and other forms of action by the LMS Committee will be documented and made available for inspection by the public at one or more of the following county locations: the County's website and/or link to any consultant's website, and/or the Department of Growth Management. Documentation may include minutes, handouts, and sign-in sheets. In addition, the LMS planning support staff will maintain public review documentation.

2.01.07 Adoption of and Amendments to the Bylaws

The Bylaws of the LMS Committee may be adopted and/or amended by a two-thirds majority vote of the members in good standing of the LMS Committee. All proposed changes to the Bylaws will be provided to each member of the LMS Committee not less than ten (10) days prior to such a vote. Voting can be accomplished at a regularly scheduled meeting, a special meeting, or via electronically utilizing email or fax so that a written confirmation of the vote can be generated.

2.01.08 Dissolution of the Committee

The LMS Committee may be dissolved by affirmative vote of 100% of a quorum of members in good standing of the LMS Committee at the time of the vote, by order of a court of competent jurisdiction, and/or by instruction of the Okaloosa County Board of County Commissioners. Voting can be accomplished at a regularly scheduled meeting, a special meeting, or via electronically utilizing email or fax so that a written confirmation of the vote can be generated. At the time of dissolution, all remaining documents, records, equipment and supplies belonging to the LMS Committee will be transferred to the Okaloosa County position specified as the LMS Committee's Point of Authority in Article V for disposition.

Section 2.02 Member Form

OKALOOSA COUNTY
LOCAL MITIGATION STRATEGY AND/OR COMPREHENSIVE PLAN COMMITTEE

Committee Member Information

Member Name _____
Agency Represented _____
Department Represented _____
Job Title _____
Mailing Address _____
City _____State ____Zip _____
E-Mail _____
Telephone _____ Fax _____
Circle one:
Member Alternate Public

Committee Chair Approval _____

Section 3.01 Introduction

The intent of this section is to provide a list of mitigation goals for Okaloosa County, as required by the Code of Federal Regulations as follows:

> 44 CFR 201.6(c) 3: *The plan shall include a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, polices, programs, and resources, and its ability to expand on and improve these existing tools. This section shall include:*
>
> *(i.) A description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards. See Section 3.02 Goals*
> *(ii.) A section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. See Chapter 5 for each jurisdictions mitigation actions and see the Appendix B for the project list.*
> *(iii.) An action plan describing how those actions will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs. See Section 3.03 Project Ranking Criteria*
> *(iv.) For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan. See Chapter 5 for each jurisdiction's actions.*

The purpose of Okaloosa County's goals and objectives is to support the reduction or evidence of long-term vulnerabilities to the hazards that are identified in the overall County's Risk Assessment, Chapter 4. Each jurisdiction within Okaloosa County is responsible for generating mitigation actions, including an assessment of actions they are already taking, to address each hazard by which they are affected. The mitigation actions are to align with the goals and objectives that were defined by the LMS Committee. From these actions, the jurisdictions generate projects that assist in achieving the overall mitigation goals and objectives, and are in conjunction with their current mitigation actions.

In recent years, the LMS Committee has noted that, when ranking proposed projects, the existing goals (to which proposed projects must correlate) lacked specificity and appear to be more directed at the operation of the LMS committee as a governmental function and did not truly address the kinds of actions that would mitigate vulnerabilities and help build resiliency through implementation. Research indicated that other jurisdictions' goals more directly referenced actual actions and even projects which helps where they fit in priority. After careful consideration, the Goals for the 2026 LMS have been revised to:

1. emphasize projects that are practical and feasible, so when funding becomes available they will receive a high priority (*Note* Project Ranking Criteria is further explained in Section 3.02);
2. more specifically identify the actual types of projects that would be prioritized for the funding as available;

3. enable broader participation by special government districts (e.g., independent fire districts, water districts, etc.), the school district, and even private businesses that are integral to emergency preparedness and response; and
4. give emphasis to projects that implement the Action Plans developed as part of the 2025 Vulnerability Assessments developed by the County (see Appendix E) and city of Destin (see Appendix F).

The LMS Committee has utilized and incorporated into this 2026 LMS relevant components of existing County plans and documents which address the identified hazard, including: the Vulnerability Assessment and Adaptation plans for Okaloosa County and City of Destin, the 1998 Okaloosa County Local Mitigation Strategy, 2005 Okaloosa County Local Mitigation Strategy, 2011 Local Mitigation Strategy, 2016 Local Mitigation Strategy, Okaloosa County Comprehensive Plan, Municipal Comprehensive Plans, County and Municipal Land Development Codes and the Okaloosa County Comprehensive Emergency Management Plan. These existing plans and documents collectively assist in accomplishing the overall purpose of reducing or avoiding long-term vulnerabilities from the identified hazards and reinforce implementation of the LMS. For example, Objective 2.6 of the Coastal Management Element of the Okaloosa County Comprehensive Plan specifically references the Local Mitigation Strategy, and recognizes the guiding principles of the LMS as follows:

1. Protect human life and private property from the effects of disaster events;
2. Reduce public expenditures due to damage from disaster events;
3. Adopt land use regulations that support sustainable communities;
4. Protect environmentally sensitive areas;
5. Monitor and protect the natural resources of Okaloosa County;
6. Mitigate potential losses through administrative measures; and
7. Coordinate with private sector to mitigate losses.
8. Address lot coverage, vegetated buffers, stormwater management, and erosion and sedimentation controls.

Section 3.02 Goals

Listed below are the mitigation goals that have been adopted by the LMS Committee.

Goal 1 – Continually provide mechanisms for local government jurisdictions and the public to accomplish mitigation activities in Okaloosa County.	
Accomplish by:	
	-Maintaining bylaws that define membership and public participation methods.
	-Holding regularly scheduled LMS Committee and Working Committee meetings. Committee meetings will be held quarterly at minimum.
	-Forming Working Groups for sub-regions, municipalities, or for specific hazards named in the plan to reduce or eliminate vulnerability.
	-Maintaining a staffing presence to the LMS Committee through contract or through staff hire or appointment.
	-Providing communications to county and municipal contacts and through media outlets to advertise opportunities to attend and participate in mitigation functions, consistent with the Florida Sunshine Law.

	-Holding meetings throughout the County and in various municipalities to encourage local participation.
Goal 2 – Maintain communication within the LMS Committee and between all levels of key County and Municipal departments to coordinate intra- and inter-departmental mitigation activities among various jurisdictions, and with the public.	
Accomplish by:	
	-Ensuring all interests of various departments are represented by the appointed staff to the LMS Committee
	-Ensuring all interests are aware of Working Groups and a need to represent their own interests concerning various geographical areas or to address various hazards.
	-Maintaining up-to-date e-mail and postal addresses and phone numbers to ensure communication.
	-Establishing websites on the County's and municipalities' web servers that discuss the LMS program.
Goal 3 – Update the LMS plan, as necessary, to identify changes to hazards, vulnerability, goals, initiatives/priorities accomplishments/withdrawal/additions/pending, update of funding sources, current disaster declarations, and adoption of revisions.	
Accomplish by:	
	-Having the LMS Committee direct staff to update plan sections, tables, maps, etc., based upon current activities, trends, or issues.
	-Providing LMS staff feedback that provides localized information that is current.
	-Continually reviewing the plan and comparing it to other planning requirements (emergency management plans, comprehensive land use plans, community rating system plans) that contain mitigation provisions or may otherwise help to assert or hinder mitigation initiatives.
	-Notifying staff to the committee regarding issues that arise that may need their consideration or to solicit opinion.
	-Identifying and documenting potentially new hazards, including technological and homeland security issues not otherwise analyzed as a result of the Disaster Mitigation Act of 2000.
Goal 4 – Assist property owners, residents, businesses, local jurisdictions, special government districts, non-profits and others in understanding and knowing of their eligibility for grants, loans and services that may help to mitigate hazards that directly affect their interests.	
Accomplish by:	
	-Working with existing programs within the County and municipalities (building inspections, local Community Rating System/National Flood Insurance Program, Public Safety and emergency operations, Community Emergency Response Teams, etc.) as well as special government districts (fire protection and water service), and civic organizations such as the chambers of commerce to connect mitigation to these efforts.
	-Being perceptive of and proactively engage new opportunities to promote mitigation interests.
	-Maintaining websites that provide updated information about mitigation activities on a continual basis, including grant and other funding opportunities.
	-Staying abreast of available funding and service opportunities through participation in meetings, conferences, seminars, and research.

	-Maintaining initiatives/priorities and contact persons lists to facilitate rapid notification of assistance availability.
Goal 5 – Reduce or eliminate vulnerability to winds, flooding, storm surge, and other hazards throughout the County and its municipalities and enhance resiliency by implementing the following mitigation actions.	
Accomplish by:	
-	Implementing Stormwater improvements by including within the County's and municipalities' adopted Capital Improvements Programs (CIP) projects that alleviate known areas of flooding, and which improve existing stormwater treatment systems.
-	Utilize grant funds when available to improve drainage systems, elevate structures, purchase property for passive use and, when necessary, demolish structures and return the property to a natural state when doing so eliminates the risk of severe repetitive loss or repetitive loss
-	Hardening and otherwise making County, municipal, School District, and special government district facilities more resistant and resilient to storms and other hazards
-	Help private property owners obtain grant funding to elevate, harden, or otherwise improve their properties' resilience to disasters
Goal 6 – Improve essential facilities' ability to withstand emergency events	
Accomplish by:	
-	Hardening emergency operations centers, emergency shelters, fire stations, and other facilities essential to the protection of life and provision of services during an emergency event
-	develop safe rooms within essential facilities to enable the stationing of personnel during emergency events
-	ensure provision of generators or other means of alternative power at essential facilities (fire stations, emergency shelters, etc.) and infrastructure locations (water treatment plants, lift stations, etc.)
Goal 7 – Implement the recommendations of the 2025 Okaloosa County Vulnerability Assessment and Adaptation Plan and 2025 City of Destin Vulnerability Assessment and Adaptation Plan	
Accomplish by:	
-	Ensuring that this LMS Plan recognizes and incorporates as appropriate the provisions of the County and Destin VAs and APs
-	Maintaining within this LMS' ranking criteria and point system categories for projects within the AP's project lists

Section 3.03 Ranking Criteria

The following criteria were approved by the LMS Committee to rank each proposed mitigation project in a uniform, objective manner to meet the goals of the LMS. Within each criterion, points are assigned based on the project's ability to address the concern of the criterion. For example, the criteria recognize the importance of the National Flood Insurance Program's Community Rating System (CRS – see 3.03.01, below). Within the CRS criteria, points are awarded based on how well a project addresses the CRS priorities of reducing flooding, facilitation of accurate insurance ratings, and promoting the awareness of flood insurance. The more of these priorities a project

addresses, the higher the score. Other criteria include, but are not limited to, consistency with other planning efforts (e.g., consistency with not only this LMS' goals, but also the goals, objectives, and policies of local governments' comprehensive plans, comprehensive emergency management plans, resiliency plans, vulnerability assessment adaptation plans, and capital improvement plans, etc.), cost and the ability to obtain grant or other outside funding, as well as potential community benefits. The overall intention is to achieve the greatest benefit to cost ratio by ensuring that projects serve the greatest number of people possible in relation to the local dollars spent in combination with other funds. The ranking criteria give credit for meeting CRS requirements, potential community benefits, consistency with the LMS and other community rules and regulations, environmental impacts, the prevention of the loss of life, and cost.

3.03.01 The Community Rating System

The Community Rating System (CRS) is a voluntary program of the National Flood Insurance Program (NFIP) which encourages local floodplain management and flood damage prevention. The intent of the CRS is to reduce the amount a jurisdiction has to pay for federal flood insurance. The points are awarded based on flood prevention measures and if they meet the goals of the CRS requirements:

- Reduce flood losses;
- Facilitate accurate insurance rating; and
- Promote the awareness of flood insurance.

For CRS participating communities, flood insurance premium rates are discounted in increments of 5%; i.e., a Class 1 community would receive a 45% premium discount, while a Class 9 community would receive a 5% discount (a Class 10 is not participating in the CRS and receives no discount). The CRS classes for local communities are based on 18 creditable activities, organized under four categories:

- Public Information,
- Mapping and Regulations,
- Flood Damage Reduction, and
- Flood Preparedness.

Ranking criteria:

This project criteria is met solely by whether or not it qualifies to meet the requirements of the Community Ratings System (CRS) element. Points are awarded 0 to 5:

0 pts= Does not meet the criteria
2 pts= Meets the Public Information element for CRS credit
3 pts= Meets the Maps and Regulations element for CRS credit
4 pts= Meets the Flood Damage Reduction element for CRS credit
5 pts= Meets the Flood Preparedness element for CRS credit

Supporting documentation is required regarding the project's fulfillment of the requirements of the CRS element(s).

3.03.02 Potential Community Benefits

The points associated with this category are based on infrastructure investments and facility investments, and infrastructure and facility improvements which alleviate concerns over public safety. Included in this category are projects such as highway expansion, roadway improvements, critical facility armoring, natural resource management, and shelter designation and creation. The

improvements associated with these infrastructure upgrades not only provide hazard mitigation and disaster prevention, but provide basic community benefits through enhanced services.

The greater the number of people the project benefits, the greater the number of points. The highest ranking points are awarded to projects that provide the desired benefits to 40-50% of the community. Projects that provide desired benefits to 20-30% of the community are awarded a medium point score, and those that provide the fewest benefits are awarded the lowest number of points. If the project has no perceived community benefits, it is considered not applicable and given zero points, recognizing that not all projects considered as LMS mitigation strategies will be inherently directed towards providing community benefits. Points are awarded 0 to 5:

Ranking criteria:

0 pts= Not Applicable
1 pts= An improvement that provides minimal benefits (≤ 20%)
3 pts= Improvements that provide a moderate increase in benefits (≥ 20% but ≤ 39%)
5 pts= Improvements that provide a high amount of community benefits (≥ 40%)

3.03.03 Consistency with adopted hazard mitigation plans and strategies

The points associated with this category are awarded based on how consistent the projects are with LMS goals, objectives, and mitigation actions, and other planning documents, such as local governments' comprehensive plans and capital improvements plans and programs, vulnerability assessment adaptation plans, emergency management plans, etc. The purpose of this ranking criteria is to ensure that individual projects meet the intended goals and specific hazard mitigation strategies identified by each municipality in the county.

Ranking criteria:

0 pts= Not consistent or referenced in the goals and objectives of the LMS and other governmental documents

3 pts = Is consistent with or referenced in with the goals, objectives, or program/project lists of either the LMS or other governmental documents but not both

5 pts = Is consistent with or referenced in the goals, objectives, or programs/project lists of the LMS and is referenced in other governmental documents

7 pts = is specifically listed as a project in the County or City of Destin Adaptation Plan priority projects list (this applies even if the project is not listed in the goals, objectives, or programs/project lists of the LMS or other government documents)

Supporting documentation is required to demonstrate the project's consistency with a referenced plan.

Comprehensive Plan Goals and Objectives: Relevant Chapter and Section
Capital Improvements: Relevant Chapter and Section
LMS Goals and Objectives: Relevant Chapter and Section
Other governmental documents: Relevant Chapter and Section

3.03.04 Environmental Impacts

The points associated with this category are intended to protect the natural environment of Okaloosa County, with particular concern on environmentally sensitive areas as defined by the Comprehensive Plans of each municipality (Comp Plan). Environmental and natural resource protection are explicitly stated in the Comp Plans, and the highest priority ranking points will be awarded to those projects that mitigate for environmental impacts or provide environmental benefits.

The ranking assessment will incorporate a multiplier effect on the points earned in Section IV by a multiple of 2 if the project takes place in the environmentally sensitive areas. It will create a weighed effect on the value in this section: if the impact is positive the project is rewarded and if the impact is negative the project loses extra points from its total score. Points are awarded -3 to 3 based on the results of the project's environmental impact assessment:

Ranking criteria:

-3 pts = The project will have negative environmental impacts

1 pts = The project will have little (or neutral) environmental impacts

3 pts = The project will have positive environmental impacts

Supporting documentation and information required regarding the project's environmental impact.

3.03.05 Prevention of Loss of Life

This category is broken into highly hazardous, moderately hazardous, and minimally hazardous areas depending on what location-specific mitigation actions the project provides for areas most susceptible to a specific hazard. For example, the coastal and bay areas are located in highly hazardous areas susceptible to storm surge; if the project prevents a high number of deaths from this hazard, it will be awarded the highest number of points. To illustrate another example, a more inland area moderately susceptible to storm surge activity will be awarded lesser points for the same type of preventive results. It is recognized that different projects will provide various degrees

of prevention based on the type of hazard and location-specific susceptibility. However, this scale will only award points based on whether the project can be reasonably assumed to prevent the loss of life and in what type of hazardous area it is located in. Points are awarded 0 to 5:
Ranking criteria:

0 pts = Does not have a perceived effect on the prevention of loss of life for the population which the project is directed towards

1 pts = There is a perceived positive effect on the prevention of loss of life for the intended population in a minimally hazardous area (no surge zone, no floodplain, no readily identifiable natural hazards)

3 pts = There is a perceived positive effect on the prevention of loss of life for the intended population in a moderately hazardous area (Category 2 or lower storm surge, Flood zone A or AE)

5 pts = There is a perceived positive effect on the prevention of loss of life for the intended population in a highly hazardous area (Category 3 or higher storm surge, Coastal High Hazard Area, Flood zone V)

Supporting documentation and information required regarding the classification of the project's intended hazard area and its expected impact on the prevention of loss of life.

3.03.06 Cost

The category considers many of the aspects of cost associated with projects, such as the acquisition of repetitive loss properties and structures, initial cost of the project, current available funds, funding assistance (such as loans), grant availability, and unmet need. Points are award based on funding availability and grant programs. Priority should be given to projects that have a source of funding.

Ranking Criteria for Funding Availability:

0 pts = Does not qualify for a grant or grant program; does not have funding assistance; does not have locally allocated funds for the project

2 pts = Does qualify for a grant or grant program; does not have funding assistance; does not have locally allocated funds for the project

4 pts = Does qualify for a grant or grant program; does have funding assistance; does have locally allocated funds for the project

Supporting documentation and information is required regarding the specific available funds. Within this category the ranking criteria considers the cost of acquiring repetitive loss properties and severe repetitive loss structures. This is one specific example of cost-savings through property damage reduction. There are two (2) Hazard Assistance Mitigation Programs that provide grant funding for repetitive loss claims or severe repetitive loss structures. The Repetitive Flood Claims program awards funds to states and communities to reduce flood damages to insured properties that have one (1) or more claims to NFIP. The Severe Repetitive Loss Program provides funding to reduce the long-term risk of flooding damage to severe repetitive loss structures, as defined by FEMA, and insured under NFIP.

Ranking Criteria for Acquisition of Repetitive Loss Structure(s):

0 pts = Does not acquire Repetitive Loss Structure(s)

2 pts =Does acquire Repetitive Loss Structure(s), but not Severe Repetitive Loss

4 pts = Does acquire Severe Repetitive Loss Structure(s)

The points also consider the cost-savings associated with property damage reduction and awards points for preventive measures.

Ranking Criteria for Property Damage Reduction:

0 pts = Does not prevent property damage

4 pts = Does prevent property damage

Supporting documentation and information required regarding the qualifications of a structure(s) as a Repetitive Loss Structure(s).

Projects with Equal Points

In the event of a tie, projects will be assigned an alpha-numeric ranking. For example, two (2) projects with 35 points apiece that rank 7th on the overall list will be assigned rankings of 7a and 7b. The letter applied will be based on the number of people benefitting from a proposed project. Using the same example, one (1) of the 35 point projects benefitting 100 people, the other project benefits 50 people. The project benefitting 100 people would be assigned 7a. The project benefitting 50 people would be assigned 7b. Thus the 100 person project 7a would be considered a higher priority than 7b.

3.04 Ranking Criteria Sheet

Mitigation Projects: Ranking Criteria Sheet			
3.03.01 Community Ratings System (CRS)	No	Yes	If 'Yes,' explain
1. Flood Preparedness	0 pts	5 pts	
2. Flood Damage Reduction	0 pts	4 pts	
3. Maps and Regulations	0 pts	3 pts	
4. Public Information	0 pts	2 pts	
3.03.02 Potential Community Benefits	High (≥ 40%)	Medium (≥ 20% but ≤ 39%)	Low (≤ 20%)
	(Expected Impact)		
1. Infrastructure Investments	5 pts	3 pts	1 pt
2. Facility Improvement	5 pts	3 pts	1 pt
3. Resource Improvement	5 pts	3 pts	1 pt
3.03.03 Consistency	No	Yes	If 'Yes,' explain
1. Not consistent with/referenced in LMS **or** other government documents goals, objectives, and programs/projects	0 pts	N/A	
2. Is consistent with/referenced in LMS **or** other government documents goals, objectives, and programs/projects	N/A	3 pts	
3. Consistent with/referenced in LMS **and** other governmental documents' goals and objectives (i.e. Comprehensive Plan)	N/A	5 pts	
4. Is specifically listed as a project in the County or City of Destin Adaptation Plan priority projects list	N/A	7 pts	

3.03.04 Environmental Impacts	No	Yes	If 'Yes' to #4, explain
1. Negative Impact	0 pts	-3 pts	
2. No or Minimal Impact	0 pts	1 pt	
3. Positive Impact	0 pts	3 pts	
4. Environmentally Sensitive Areas (as defined in the Comp Plan)	pts x 1	pts x 2	
3.03.05 Prevention of Loss of Life	High	Medium	Low
		(Expected Impact)	
1. No Impact	0 pt	0 pt	0pt
2. Highly Hazardous Area	5 pts	4 pts	3 pts
3. Moderately Hazardous Area	4 pts	3 pts	2 pts
4. Minimally Hazardous Area	3 pts	2 pts	1 pt
3.03.06 Cost	No	Yes	If 'Yes,' explain
1. Acquisition of Repetitive Loss Structures Claims	0 pts	4 pts	
2. Property Damage Reduction	0 pts	4 pts	
3. Total Project Cost	$		
a. Current Funding	$		
	No	Yes	If 'Yes,' explain
b. Funding Availability			
i. Qualifies for a grant (grant programs)		$	
ii. Funding assistance		$	
iii. Locally Allocated Funds		$	
c. Unmet Need	$		

Section 4.01 Overall Risk Assessments

4.01.01 Introduction

The intent of this section is to provide information regarding the hazards threatening Okaloosa County. In this section, information relevant to the entire county is compiled and an overview of the analyses is provided.

The hazards that will be analyzed in this section are natural events and the analysis concentrates on the anthropogenic effects on those events as well as the effects of those events on mankind. However, this analysis is not an assessment of technological and/or societal hazards and, therefore, these types of events are not covered under this plan or in the analysis provided in this section.

Primary attention is given to hazards (with sub-sections) considered reasonably possible to occur in the County. These hazards include:

- Hurricane and Tropical Storm
- Storm Surge
- Flooding
- Dam Safety
- Land Erosion
- Severe Storms
    - Tornado and Waterspout
    - Thunderstorms and Lightning
    - Winter Storms
- Heat Wave and Drought
    - Heat Wave
    - Drought
- Wildfire
- Beach Erosion
- Sea Level rise

The following hazards are considered minimal or no risk to Okaloosa County: sinkholes, expansive soils, earthquakes, avalanches, land subsidence, landslides, volcanoes, and tsunamis. Therefore, these hazards are not analyzed in any depth in the hazard analysis. Further explanation is provided in the “Other Hazards” section.

Hazard Identification

The technical planning process begins with hazard identification. In this process, the LMS Committee has identified all of the natural hazards that may pose a potential threat to the county.

4.01.02 Hurricane and Tropical Storm

DEFINITIONS:
A tropical storm is defined as a tropical cyclone with maximum sustained winds between 39 miles per hour (or 34 knots) and 73 miles per hour (63 knots). One knot equals roughly 1.15 miles per hour.

A tropical cyclone is in turn defined as a large-scale circular flow occurring within the tropics or subtropics which has its strongest winds at low levels, including hurricanes, tropical storms and other weaker rotating vortices.

A hurricane is defined as a type of tropical cyclone with a well-defined circulation and sustained wind of 74 mph (roughly 64 knots) or higher (NOAA's Atlantic Oceanographic and Meteorological Laboratory). All of Okaloosa County is equally susceptible to hurricanes and tropical storms.

Table 4.01.02.1: Saffir-Simpson Hurricane Wind Scale

Category	Sustained Winds	Description
1	74-95	Minimal
2	96-110	Moderate
3	111-130	Extensive
4	131-155	Extreme
5	>155	Catastrophic

Source: NOAA's Atlantic Oceanographic Meteorological Laboratory

HISTORICAL OCCURRENCE:
As shown in Table 4.01.02.2, below, 16 hurricanes and 23 tropical storms have made landfall within 50 nautical miles of Okaloosa County between 1950 and 2025. Systems which, due to tracking (for example 1953's Hurricane Florence), are entered more than once on Table 4.01.02.2 are only counted as a single storm event. Four of these storms were recognized as major Category 3 storms on the Saffir-Simpson scale. These Category 3 storms include Eloise in 1975, Elena in 1985, Opal in 1995, and Dennis in 2005. One of the storms was recorded as a major Category 4 storm and then downgraded to a Category 3, which was hurricane Dennis in 2005. (See Table 4.01.02.2 below).

Table 4.01.02.2: Historical Record of Hurricanes and Tropical Storms, Okaloosa County 1950-2025

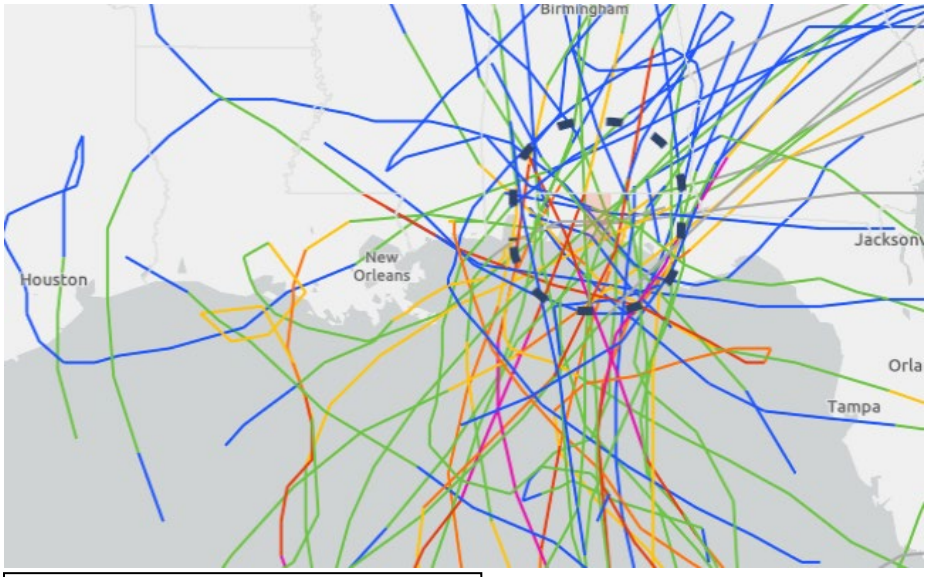
Year	Storm Name	Wind Speed (KTS)	Pressure (MB)	Category
1953	Baker	90	979	H2
1953	ALICE	40	0	TS
1953	FLORENCE	90	0	H2
1953	FLORENCE	70-80	0-985	H1
1956	FLOSSY	65-80	0-980	H1
1956	FLOSSY	45	0	TS
1957	DEBBIE	35	0	TS

1959	IRENE	45-50	0-1001	TS
1964	HILDA	120 (Highest wind 50kt)	Unknown	H4
1965	NOT NAMED	45	0	TS
1969	NOT NAMED	50	995	TS
1969	NOT NAMED	40 kt	999	TS
1970	BECKY	55 kt	1003	TS
1972	AGNES	75 kt	977	H1
1977	NOT NAMED	30 kt	-1	TD
1975	ELOISE	105-110	955-958	H3
1980	NOT NAMED	25 kt	-1	TD
1985	ELENA	110	953	H3
1985	JUAN	40-55	982-984	TS
1985	KATE	105	954	H3
1987	UNNAMED	40 kt	1007	TS
1994	ALBERTO	45-55	993-1000	TS
1994	BERYL	50 kt	999	TS
1995	ERIN	65-80	974-985	H1
1995	OPAL	110	938	H3
1995	OPAL	80	950	H1
1997	DANNY	65	986	H1
1997	DANNY	35-60	991-1001	TS
1998	EARL	70-80	985-987	H1
1998	GEORGES	135 (35 kt highest Okaloosa)	998	H4 (TD Okaloosa)
2000	HELENE	35-50	1001-1006	TS
2001	ALLISON	50 (20 Okaloosa)	1000	TS
2001	BARRY	60	991-992	TS
2002	HANNA	50 (20 Okaloosa)	1001	TS
2004	IVAN	130 (120 at landfall)	964	H4
2005	ARLENE	50-55	990-991	TS
2005	DENNIS	120	930	H4
2005	DENNIS	110	942	H3
2005	TAMMY	45 (12 kt)	1001	TS
2007	TEN	25 kt	1005	TD
2008	FAY	40	998-999	TS
2009	CLAUDETTE	40-50	1005-1008	TS
2009	IDA	90 (25 kt Okaloosa)	975	H2 (ET Okaloosa)
2010	FIVE	25 kt (Looped around Okaloosa)	1007	TD
2018	ALBERTO	45	994	TD
2018	MICHAEL	160 (Highest Wind 60mph Okaloosa County)	919	H4
2019	NESTOR	50 (local wind and rain)	996	TS
2020	FAY	50 (20 local)	998	TS
2020	SALLY	39 (Cat 2 for center of storm only TD for Okaloosa County, Heavy rain)	965	TD
2021	FRED	55 (local wind and rain)	991	TS

Source: NOAA Coastal Services Center, 2025

Figure 4.01.02.1 below shows the path of each tropical storm and hurricane which landed within 50 nautical miles of Okaloosa County from 1950-2025.

Figure 4.01.02.1: Historical Hurricane Tracks, 1851- 2025 within 50 miles of Okaloosa



Source: NOAA Coastal Services Center, 2025

It is acknowledged that even hurricanes landing greater than 50 nautical miles from Okaloosa County may have an impact on its infrastructure, homes, and businesses. An example of this is Hurricane Ivan in 2004. Although Ivan made landfall 54 miles to the west of Okaloosa County at Gulf Shores, Alabama, its impact on Florida's Panhandle was one of the strongest and most destructive since Hurricane Opal in 1995 (FDEP's Bureau of Beaches and Coastal Systems, Hurricane Ivan Damage Assessment, 2004). Hurricane Ivan's 120 mph wind at landfall and associated storm surge caused severe structural damage and beach erosion in Okaloosa County. In contrast, 2018's Hurricane Michael made landfall 58 miles east of Okaloosa County (between Mexico Beach and Tyndall Air force Base) and caused only minimal damage in Okaloosa County despite its 160 mph winds at time of landfall. The difference in damage illustrates the effect of being on the west side of a landfalling Atlantic hurricane (Ivan) versus the east side (Michael) due to the direction of the wind (over water as opposed to overland) and the effect on storm surge.

Other storms have caused damage, as well. During hurricane Opal, U.S. Highway 98 was washed out between Fort Walton Beach and Destin; thus, causing major traffic issues as this is a major east-west corridor. Many homes were damaged due to storm surge and high winds. Road systems in the northern portion of the county were impassable due to power lines being down from numerous trees on them. Hurricane Ivan with its high winds and long duration brought many of the same issues along with numerous damages to individual roof systems. The U.S. Army Corps of Engineers brought temporary assistance with roof protection by giving out large tarps

that offered temporary protection for roofs until the individuals could get them repaired. . Unlicensed contractors solicited services from residents which led to scams and fraud, significant financial, legal, and safety concerns for homeowners and business owners within the county. It is important to note that out of state and non-local contractors should be familiar with and comply with local codes and ordinances.

Historically, Okaloosa County has experienced a peak 5% chance of hurricane or tropical storm landfall as indicated in Table 4.01.02.3, below. This peak percentage occurs during the month of September; the typical expectation being that the month of September falls right in the center of peak hurricane season between mid-August to late October. The official, nationally recognized Atlantic Hurricane Season starts June 1st and spans to November 30th.

Table 4.01.02.3: Historical Trends of Tropical Storm/Hurricane Impacts by Percentage Odds.

Month	Named Storm	Hurricane	Major Hurricane
June	4%	<2%	<1%
July	4%	<2%	<1%
August	7%	2%	<1%
September	15%	5%	1%
October	4%	<2%	<1%
November	1%	<1%	<1%

Source: Atlantic Oceanographic and Meteorological Laboratory, NOAA, Miami

EXTENT:
High winds from hurricanes are a substantial threat to all homes, especially manufactured housing and mobile homes. Category 3 or higher force winds would likely cause substantial damage throughout the County. Winds in excess of 155 MPH could be experienced in a major Category 5 hurricane in some locations. Traditional stud and brick veneer or siding homes and businesses are vulnerable, as well, especially when hurricane shutters are not used. Relatively few businesses and homes have hurricane shutters in the County, although shelters and some critical facilities are shuttered.

In a worst-case scenario of a Category 5 hurricane, there will be significant to catastrophic damage to homes and buildings, trees, service utilities, and signage. There would be extensive, widespread damage to the County's above-ground electric utility system, including transmission lines and substations. It is anticipated that an overwhelming majority of mobile homes will be completely destroyed, and a substantial number of frame homes will receive substantial to catastrophic damage due to wind causing structural collapse. The Category 5 winds in excess of 155 MPH will cause significant damage to all buildings, with loss of roof sheathing, broken windows, and in some cases wall failure resulting in a structural collapse. The majority of trees will be snapped and power poles downed. In some cases, this will result in power outages that could last for weeks or months. People and animals would be at an extremely high risk of injury or death as a result of the strong, forceful winds causing flying or falling debris. Evacuation is recommended prior to the Category 5 hurricane making landfall. In addition, the expected storm surge level of up to 21 feet associated with a Category 5 hurricane, per the Northwest Florida

Regional Planning Council, will substantially impact the unincorporated coastal and bay areas in Okaloosa County. This will cause beach erosion in the coastal areas; however, this will be discussed further in another section. Also, severe flooding will occur and likely cause polluted water, storm sewer overflow, and damage to roadways. Storm surge will be examined in greater depth in the following section. (NOAA, 2015)

PROBABILITY:
According to Colorado State University's United States Landfalling Hurricane Probability Project, Okaloosa County has the following future probabilities in a 50-year time period.

Table 4.01.02.4: 50-Year Probabilities of Named Storm, Tropical Storm, and Hurricane Making Landfall in Okaloosa County

1 or More Named Storms Making Landfall	1 or More Hurricanes Making Landfall	1 or More Intense Hurricanes Making Landfall	Tropical Storm-Force (≥ 40 mph) Wind Gusts	Hurricane-Force (≥ 75 mph) Wind Gusts	Intense Hurricane-Force (≥115 mph) Wind Gusts
90.90%	68.60%	40.50%	>99.9%	99.60%	82.30%

Source: The United States Landfalling Hurricane Web Project, 2024; Tropical Meteorology Project at Colorado State University

4.01.03 Storm Surge

DEFINITION:
According to the National Oceanographic and Atmospheric Administration (NOAA), storm surge is defined as water that is pushed toward the shore by the force of the winds swirling around the storm. Residents living in the coastal areas of the county are most vulnerable to storm surge. These jurisdictions include the City of Destin, City of Fort Walton Beach, Town of Shalimar, City of Niceville, Town of Cinco Bayou, City of Valparaiso, and City of Mary Esther. Storm surge for the coastal area of Okaloosa County is shown in Figure 4.01.03.1, below.

Table 4.01.03.1: Potential Tide Height (above Mean Sea Level)

Storm Surge Strength	Height
Category 1	Up to 4 ft
Category 2	Up to 9 ft
Category 3	Up to 12 ft
Category 4	Up to 17 ft
Category 5	Up to 21 ft

Note: Surge heights based on the SLOSH Maximum of MEOW (Maximum Envelope of Water)
Source: Emerald Coast Regional Council

HISTORICAL OCCURRENCE:
As previously mentioned, storm surge is strongly connected to the intensity and wind speeds of hurricanes and tropical storms. As shown in Table 4.01.03.2, below, the most significant surge recorded for Okaloosa County was associated with Hurricane Opal of 1995. Damage associated

with Opal's surge included the complete destruction of US 98 on Santa Rosa Island, downed power lines across the island, and damage to numerous homes and other structures. The surge also overtopped US 98 in the Mary Esther area, causing damage to the road system as well as homes and other structures. Residents of Okaloosa Island were not allowed to return to their homes for weeks, prompting the County to set up a public bus system to access the impacted areas so that residents could assess damage and salvage what they could. US 98 on Santa Rosa Island is also a major east-west corridor along the coast. Its destruction proved a major impediment to travel, requiring travelers to utilize longer alternative routes.

In order to help prevent such catastrophic damage in future events, the rebuilding of US 98 on the island included hardening of the edges of the causeway. In addition to the loss of highway infrastructure, Opal also caused major damage to the island's natural systems, including the removal of over a mile of well-established dunes which were in places as much as 26 feet high. Dunes are important natural systems that not only provide a first line of defense against coastal storms but also provide habitat for a large variety of plants and wildlife adapted to the typically xeric, saline environment. They are also a key element in the tourism component of the County's economy.

Except for Opal and Ivan, damage from the surge events noted in Table 4.01.03.2, below, was typically minor, consisting primarily of localized beach erosion and road flooding. Hurricane Michael while a Cat 4 storm had little impact on Okaloosa County as the storm turned east prior to landfall with the highest wind recorded was 60mph in Destin with a storm surge of 4 feet. Hurricane Sally, a Cat 2 Hurricane that made landfall on September 16, 2020, near Gulf Shores, Alabama, immediately west of the Alabama/Florida state line, caused a storm surge of approximately 4 feet as measured in Destin. There have been no storm surge events in Okaloosa County since Hurricane Sally.

Table 4.01.03.2: Tropical Storm and Hurricane Surge Levels, 1975-2020

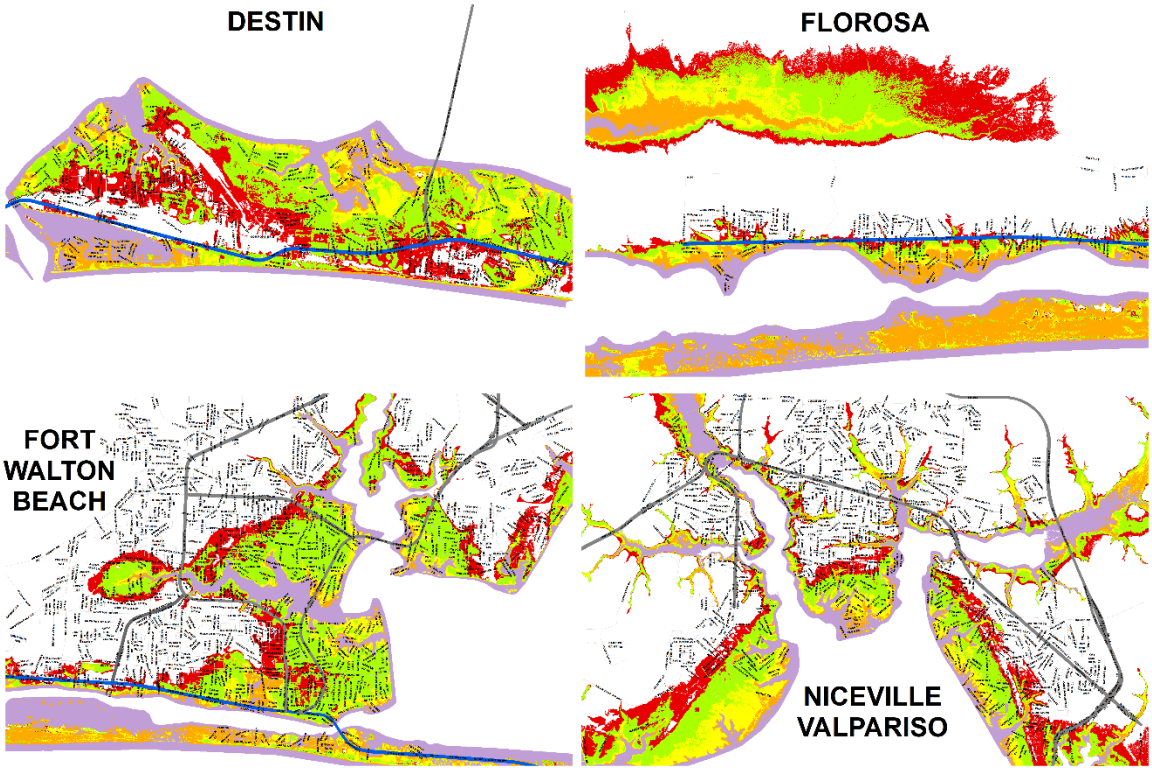
Year	Storm Name (Category)	Storm Surge Level/Range
1975	Eloise (H3)	0 feet
1985	Elena (H3)	0 feet
1985	Juan (TS)	0 feet
1994	Alberto (TS)	0 feet
1995	Erin (H1)	0 feet
1995	Opal (H3/H1)	10.0-20.0 feet
1997	Danny (H1/TS)	0 feet
1998	Earl (H1)	4.0 feet
2000	Helene (TS)	1.0 feet
2001	Barry (TS)	0 feet
2004	Ivan (H4)	9.0-13.0 feet
2005	Arlene (TS)	0 feet
2005	Dennis (H4/H3)	0 feet
2008	Fay (TS)	0 feet
2009	Claudette (TS)	1.70-2.32 feet
2018	Michael (H4) No direct impact to Okaloosa County	4 feet
2020	Sally (H2)	4 feet

Note: The Tropical Storms and Hurricanes listed above have landed in Okaloosa County or are within 50 nautical miles.

Eglin Air Force Base, which occupies nearly half of the county's land area, borders the southern portion of the county. This land is primarily forested with little to no anticipated impacts from storm surge activity.

EXTENT:
In the worst-case scenario, some of these areas may experience storm surge levels with an estimation of 21 feet above mean sea level during a Category 5 hurricane (see Figure 4.01.03.1). The high storm surge levels will cause significant flooding of residential and commercial structures, power outages, and storm sewer overflow. Also, beach erosion will be accelerated along the coastal areas causing significant damage to and/or the collapse of a majority of the homes and buildings, docks, and other structures along the coast. The hazard of beach erosion will be further examined in another section. The figure below displays the extent of the storm surge levels associated with each of the hurricane categories.

Figure 4.01.03.1: Southern Okaloosa County's Exposure to Storm Surge



Source: Emerald Coast Regional Council 2022

Some of the coastal areas, particularly on Okaloosa Island, may experience storm surge levels with an estimation of 21 feet above mean sea level during a Category 5 hurricane (see Figure 4.01.03.1). The areas of the county susceptible to storm surge are those portions lying adjacent to Choctawhatchee Bay and its associated bayous and tributaries as well as the Gulf. These areas include virtually the entire southern portion of the county, totaling roughly 123,963 people. This population estimate was extrapolated from 2020 Census data, which can be seen in Table 4.01.04.4 in the *Flooding* section.

The potential storm surge levels can be determined for each incorporated and unincorporated coastal area within the county (See Table 4.01.03.3).

Table 4.01.03.3: Potential Storm Surge Level for Hurricane Categories

HISTORY POINT (Description)	HURRICANE SURGE ELEVATION (in feet)				
	CAT 1	CAT 2	CAT 3	CAT 4	CAT 5
Santa Rosa Sound/Florosa	3.6	5.2	10.8	15.4	18
Santa Rosa Sound near Mary Esther	3.3	4.8	9.9	15.3	17.2
Santa Rosa Sound near FWB City Hall	3.6	5.3	8.7	14.5	17.1
Gap Creek	4.4	6.9	9.4	16	18.3
Cinco Bayou	4.2	6.4	8.8	14.4	17.4
Garnier Bayou (near EOC)	4.1	6.5	8.7	14.4	17.7
Choctawhatchee Bay	3.7	5.7	7.4	13.8	16.8
East Pass	4.9	8	11.6	13.5	16.7
Joe's Bayou	3.3	5.2	6.7	12.9	15.8
Indian Bayou	3.1	4.7	6.2	12.2	15
Piney Point	3.2	4.8	6.2	12	14.8
Mouth of Rocky Bayou	3.7	5.6	7.4	13.1	16.1
Upper Rocky Bayou	4.3	6.6	7.9	13.4	16.4
White Point	3.3	5	6.4	12.2	14.9

Source: Emerald Coast Regional Council, 2025

It is evident from Figure 4.01.03.1 that, regardless of the storms' levels of intensity, their associated surges vary greatly due to a variety of factors. A recent example is provided by Hurricane Charley. Despite being the strongest landfalling storm of the 2004 Atlantic Hurricane Season, the highest recorded surge associated with Category 4 Hurricane Charley was only 9.4 feet (*Hurricane Charley Characteristics and Storm Tide Evaluation* Florida Department of Environmental Protection Bureau of Beaches and Coastal Systems, April 2005). According to the Storm Surge Atlas for Lee County, Florida, (the location of the highest recorded surge), a Category 4 storm at that location should have had a surge between 16.5 and 28.7 feet. Factors commonly cited for this relatively mild surge are Charley's compact size and speed (*Hurricane Charley Characteristics and Storm Tide Evaluation* Florida Department of Environmental Protection Bureau of Beaches and Coastal Systems, April 2005). This fact is recognized in the updated Saffir-Simpson Hurricane Wind Scale where storm surge has been removed due to the difficulties in its prediction.

PROBABILITY:

Notwithstanding the storm-to-storm variability of potential surge heights, it is safe to assume that any given storm will have an associated surge. Therefore, for purposes of this LMS, the probably of storm surge occurring in Okaloosa County is considered the same as the probability of occurrence of a landfalling storm - 90.9% - as provided in Table 4.01.02.4: 50-Year Probabilities of Named Storm, Tropical Storm, and Hurricane making Landfall in Okaloosa County.

4.01.04 Flooding

DEFINITION:

According to the National Oceanic and Atmospheric Administration's National Severe Storms Laboratory, "flooding is an overflowing of water onto land that is normally dry. Floods can happen during heavy rains, when ocean waves come on shore, when snow melts quickly, or when dams or levees break." The Okaloosa County Watershed Master Plan (Collective Water Resources, LLC, Lori Lehr, Inc., and Erin Deady, PA; December 2025) completed in December 2025 and incorporated herein as Appendix G, divides flooding into five categories:

1. Classic rainfall-induced flooding that may intermingle with areas that flood due to tidal flooding and/or surge
2. Tidal flooding during sunny days (southern coastal areas of the County)
3. Storm surge of varying levels
4. Riverine flooding (the Watershed Master Plan recognizes that many conditions that affect this type of flooding are controlled upstream in Alabama)
5. Flooding that may impact bridges during larger storm events (this could be due to rainfall, storm surge or a combination of both.

Since snowfall is exceptionally rare in Okaloosa County, and storm surge is addressed in the previous section while dam safety is covered further on in this LMS, this section focuses on flooding that results from rainfall which includes heavy rains associated with a hurricane, tropical storm, or severe storm, sometimes over a period of several days. It should be noted that riverine

and bridge flooding, except when influenced by storm surge, are primarily caused by rainfall, consistent with the focus of this section.

All of Okaloosa County's jurisdictions are susceptible to localized flooding. It occurs primarily along the Blackwater, Yellow and Shoal Rivers and associated tributaries, sloughs, river oxbow lakes, and isolated swamps; locally called "bays". The areas of the county most susceptible to flooding are located north of I-10 and Eglin Air Force Base and occur from local flooding of the Shoal River, the Blackwater River, and Yellow River.

To help ameliorate the effects of flooding, all of Okaloosa County's municipalities as well as the County participate in the National Flood Insurance Program (NFIP) through which federally-backed flood insurance policies may be issued for properties in a regulated floodplains in return for the local government enforcing the standards of the program. A floodplain is perhaps most simply described as the area adjacent to a body of water that is subject to periodic inundation (i.e., flooding). The Federal Emergency Management Agency, among others, classifies floodplains according to the frequency with which flooding is expected to occur. Excerpted from FEMA publication 248 (*Unified National Program for Floodplain Management*, 1994, promulgated by the Interagency Floodplain Management Task Force), the description of the natural and beneficial functions of floodplains, below, provides a concise summary of the functions and benefits of Okaloosa County's floodplain areas.

Natural and Beneficial Floodplain Functions

Water Resources: resources and functions that are part of or provide a benefit to the hydrologic cycles on the earth's surface and below ground

Natural Flood and Erosion Control Water Quality Protection
- Provide flood storage and conveyance
- Filter nutrients and impurities from runoff
- Reduce flood velocities
- Process organic wastes
- Reduce flood peaks
- Moderate temperature fluctuations
- Reduce sedimentation

Groundwater Recharge/Discharge
- Promote infiltration and aquifer recharge
- Help to maintain natural base flows instream

Biological Resources: resources and functions that benefit plants and animals

Biological Productivity Fish and Wildlife Habitats
- Support high rate of plant growth
- Provide breeding and feeding grounds
- Maintain biodiversity
- Create and enhance waterfowl habitat
- Protect habitats for rare/endangered species

Societal Resources: resources and functions that directly benefit human society

Harvest of wild and cultivated products Recreational Opportunities
Enhance agricultural lands
Provide areas for active and passive uses
Provide sites for aquaculture
Provide open space
Restore and enhance forest lands
Provide aesthetic pleasure

Areas for Scientific Study and Outdoor Education
Contain cultural resources (historic and archaeological sites)
Provide opportunities for environmental and other studies

HISTORICAL OCCURRENCE:
Historically, Okaloosa County experienced major floods during the years of 1970, 1975, 1990, 1994, 1997, 2009, 2014, 2018, and 2020 (See Table 4.01.04.1). In 1975, the highest flood level was recorded at the Yellow River near Milligan. The flood level reached 62.71 feet per the National Geodetic Vertical Datum (NGVD). Other reported flooding and the source of flooding in Okaloosa County from the year 1994 to February 2010 are displayed in Table 4.01.04.2 and Table 4.01.04.03

Table 4.01.04.1: FEMA Declarations: History of Major Flooding in Okaloosa County, 1970-2020

Declaration Date	Incident Type	Title	Incident Begin Date	Incident End Date
7/3/1970	Flood	HEAVY RAINS & FLOODING	7/3/1970	7/3/1970
8/22/1975	Flood	FLOODING	8/22/1975	8/22/1975
9/26/1975	Flood	HIGH WINDS, HEAVY RAINS & FLOODING	9/26/1975	9/26/1975
4/3/1990	Flood	SEVERE STORMS & FLOODING	3/16/1990	4/9/1990
7/10/1994	Severe Storm(s)	SEVERE STORMS AND FLOODING (TROPICAL STORM ALBERTO)	7/2/1994	7/29/1994
1/6/1998	Severe Storm(s)	SEVERE STORMS, HIGH WINDS, TORNADOES, AND FLOODING	12/25/1997	4/24/1998
4/21/2009	Severe Storm(s)	SEVERE STORMS, FLOODING, TORNADOES, AND STRAIGHT-LINE WINDS	3/26/2009	5/5/2009
5/06/2014	Severe Storm(s)	SEVERE STORMS, FLOODING, AND STRAIGHT-LINE WINDS	4/28/2014	5/16/2014
10/09/2018	Hurricane Michael	HEAVY RAIN, LOCAL FLOODING	10/08/2018	10/10/2018
9/14/2020	Hurricane Sally	HEAVY RAINS, LOCAL FLOODING	9/14/2020	9/16/2020

Source: FEMA

Table 4.01.04.2: General Flooding and Flash-Flooding in Okaloosa County, 1994 – 2025

Date	Occurrences	Flood-Flash Flooding	Heavy Rains-Tropical Storms/Hurricanes
1994	1	1-0	0-1
1995	3	0-3	3-0
1997	2	0-2	2-0
1998	3	2-1	2-1
1999	1	0-1	1-0
2002	2	1-1	1-1
2003	3	0-3	2-1
2004	1	0-1	1-0
2005	7	0-7	5-2
2007	1	0-1	1-0
2008	1	0-1	1-0
2009	5	0-5	4-1
2010	2	0-2	2-0
2014	1	0-1	1-0
2015	1	0-1	0-1
2016	3	0-3	0-0
2017	6	0-6	0-1
2020	1	0-1	1-1
2021	11	0-10	10-1
2022	1	1-0	1-0
2023	7	0-7	7-0
2024	1	1-0	1-0
2025	1	1-0	1-0

Source: NOAA's National Climatic Data Center,

Table 4.01.04.3: Flood warning calls from Okaloosa County's Alert Okaloosa System, 2007- 2025

Blackwater River	Shoal River	Yellow River
2-5-2010	2-5-2010	12-17-2009
1-21-2010	1-21-2010	12-2-2009
3-28-2009	12-15-2009	3-28-2009
11-27-2007	12-2-2009	11-27-2007
9-5-2012	3-28-2009	2-25-2013
2-25-2013	12-10-2008	4-18-2014
4-18-2014	11-27-2007	12-26-2015
2-5-2020	10-19-2007	02-05-2020
3-4-2020	10-18-2007	03-04-2020
	2-23-2013	09-16-2020
	2-25-2013	09-18-2020
	4-18-2014	
	9-29-2015	
	11-2-2015	

	12-22-2019	
	02-05-2020	
	03-04-2020	
	04-24-2020	
	06-06-2020	
	09-16-2020	
	09-17-2020	

Source: Okaloosa County Department of Public Safety

Hurricane Georges inundated the Yellow and Shoal River floodplains around the Crestview area to the extent that travel and shipments in and out of the area were stopped for a number of days while waiting on roads and bridges to be approved for travel. Numerous homes built above the 100-year base flood were damaged.

Flooding impacts the agricultural community by ruining crops, hay supplies, and meat production operations. From 1996-2015, natural hazards caused over 3.986 billion dollars in damage to Florida crops based on data available from NOAA's National Weather Service Hazard Statistics. According to the Okaloosa County Comprehensive 2010 Plan, Agricultural and Timberland use accounts for nearly 37% of land use in the unincorporated county.

Public health is an immediate issue during and following flooding. Raw sewage from septic tanks and overflowing sewage treatment systems creates a high risk for the public and emergency responders. It should be noted that, whereas the causes of many of the wastewater system failures were not caused by natural disasters *directly*, they could inevitably be an unfortunate casualty as a result of other system failures. For example, Table 4.01.04.4, below, shows the number of wastewater spills caused by power outages and failure of the electric grid.

Table 4.01.04.4: Wastewater Overflows and Spills due to Power Outages, 2004- 2025

Date	Amount	Description
09/17/04	UNK	Unknown amount of wastewater released in the Valparaiso area from 4 to 5 lift stations due to a power outage from severe weather. No waterways affected.
09/18/04	10,000	10,000 gallons of wastewater spilled in Fort Walton Beach due to a power failure.
09/20/04	5,500	Approx. 5000 to 5500 gallons of wastewater spilled at Eglin Air Force Base due to a power outages from severe weather. No waterways affected.
10/11/04	874	Two wastewater spills were reported in Destin. The first spill was approx. 374 gallons of treated wastewater released due to a line separation. The second was approx. 500 gallons of untreated wastewater released due to a power failure. No waterways affected.
03/27/05	20,000	Lightning strike caused a transformer to blow. 20,000 gallons of treated water spilled onto the ground.
04/07/05	UNK	Approximately 1/2 dozen lift stations in Fort Walton have been having difficulty keeping up with flow. Power was lost to a couple locations. Generators have been put in place. An unknown amount of sewage has been spilled.
07/11/05	100	Power was lost due to the storm causing 100 gallons of wastewater to overflow from a manhole.
07/18/05	1,500	1500 gallons of wastewater spilled in Shalimar due to a loss of power. Some of the material drained into Shalimar Bay.

10/30/06	7,000	7000 gallons of untreated wastewater spilled in Niceville due to a blown fuse. No waterways affected.
4/16/2009	UNK	Unknown amount of wastewater released in the Destin area due to a power outage.
5/6/2009	150	150 gallons of wastewater spilled at Okaloosa Water and Sewer due to a switch failure as a result of a power outage.
3/3/2010	200	200 gallons of wastewater spilled at Okaloosa Water and Sewer due to a power outage.
2/25/2011		700 gallons of wastewater spilled at 57 Hidden Cove Drive, Valparaiso
6/6/2011	8,500	8500 gallons of untreated effluent spilled at corner of East Road, Mary Esther
7/18/2011	1,000 +	1000+ gallons of treated effluent spilled at 14 Industrial Park Lane (facility) Destin Water Users
9/27/2011	1,000	1000 gallons of untreated effluent spilled at 630 W. Sunset Blvd., Fort Walton Beach
2/16/2012	1,000	1000 gallons of untreated effluent due to hydraulic overload causing solids into RIB
5/11/2012	25	25 gallons of untreated at lift station at 274 Antiqua Way, Niceville caused by alternator not responding
5/29/2012	50	50 gallons of untreated Lift Station spill on Star Drive, Fort Walton Beach
10/31/2012	1,563	1563 gallons of untreated effluent Lift station overflow due to contractor interrupting high level alarm
1/27/2013	1,500	1250 James Lee Blvd., Crestview
2/7/2013	16,200	16,200 gallons of untreated effluent Rocky Bayou Lift Station power failure, onsite generator did not respond.
3/27/2014	5,000	5,000 gallons of untreated domestic wastewater spilled on-site at lift station #71 in Niceville due to an electrical short in a pump
5/23/2014	7,000	7,000 gallons of raw sewage released from a manhole due to a power failure
6/30/2014	200	200 gallons spill to the ground from lift station E-02, located at 4348 Stonebridge Road, and nearby manhole due to control panel short from a frog.
7/21/2014	25,000	25000 gallons of wastewater was released in Niceville due to a power failure.
10/27/2014	100	100 gallons sewer spill to the ground at the Shalimar #61 lift station located at 26 Shalimar
11/4/2015	1,500	Overflow at manhole due to power outage at lift station #1, A/C power failure. Back-up generator tripped out.
6/21/2017	3,500	West Sunset Lift Station, due to heavy rainfall and power outages associated with Tropical Storm Cindy; health advisory for Cinco Bayou
6/21/2017	1,500	Clifford Lift Station, due to heavy rainfall and power outages associated with Tropical Storm Cindy; no public body water affected
6/24/2017	250	Partridge Hills Lift Station, due to power outage; no public water body affected
12/9/2018	50	4th Avenue Lift Station, due to power outage; no public water body affected
6/14/2020	300	Water Street Lift Station, due to external power issue; health advisory for Cinco Bayou
9/16/2020	8,000	4th Avenue Lift Station, due to heavy rainfall and power outages associated with Hurricane Sally; affected Lake Lorraine
9/17/2020	110,000	West County Service Area, due to heavy rainfall and power outages associated with Hurricane Sally; affecting Santa Rosa Sound
9/18/2020	500	Star Drive Lift Station, due to heavy rainfall and power outages associated with Hurricane Sally; no public water body affected
4/30/2023	200	private lift station (1000 Bay Dr, Niceville), due to power outage; no public water body affected
8/14/2024	150	Caribbean Way West Lift Station, due to power outage; no public water body affected

Source: Florida Department of Environmental Protection, Wastewater Program, and Okaloosa County Water and Sewer Dept.

EXTENT:

Flooding can severely impact Okaloosa County's road network. There are approximately 301 miles of arterial and collector roads in Okaloosa County of which 275 miles are located in the NFIP X Zone (500 Year Flood Zone) and 27 miles located in the NFIP Special Flood Hazard Zone.

Many of the State and County roads in Okaloosa County may be susceptible to flooding during moderate to heavy rain events.

Temporary localized flooding can also severely impact roadways during moderate to heavy rain events, which could result in road-closures. It is particularly difficult to prepare transportation systems for "trailing" storm systems that tend to saturate land as well as overload drainage and retention systems. Flooding rain events on Highway 85 have resulted in lane closures or entire road segment closures. Arterial roads, dirt roads, and roads constructed prior to uniform standards and regulations are some of the roadways typically impacted by isolated heavy rain events. Unpaved roads are vulnerable to flooding and highly subject to washout. Culverts and small bridges can sometimes be undermined, causing people to be stranded and isolated until the repairs can be made. Some major roadways used for evacuation are subject to flooding.

Although localized flooding is common, nearly all of the urban areas in the county occur on areas of higher natural elevation to avoid any major, sustained flooding. This includes all the areas near the southern perimeter of Eglin Air Force Base and adjacent to Choctawhatchee Bay. The total incorporated population in these areas was estimated at 63,559 people in 2019.

Table 4.01.04.5: Population by Municipality, 2010, 2019 & 2025 Estimate

County/Municipality	2010 Census	Estimate Base	2019 Estimate	2025 Estimate
Okaloosa County	180,822	180,488	211,668	226,193
Cinco Bayou	383	380	457	447
Crestview	20,978	21,065	27,134	31,702
Destin	12,305	12,150	13,931	14,640
Ft. Walton Beach	19,507	19,635	20,922	21,553
Laurel Hill	537	526	584	746
Mary Esther	3,851	3,786	3,982	4,457
Niceville	12,749	12,978	15,772	17,119
Shalimar	717	717	737	733
Valparaiso	5,036	5,013	4,752	5,105

Source: U.S. Census Bureau, Population Division

Based on 2019 Census data, the vast majority of Okaloosa County's population (approximately 73%) is concentrated in the bay and coastal areas (See Table 4.01.04.5). To calculate this concentration, census tracts were used, with the tracts south of Eglin Air Force Base considered the bay and coastal areas.

Table 4.01.04.6: Okaloosa County Population Concentration, 2019

Area	Total
Total Population (Okaloosa County)	211,668
South Okaloosa (approx.)	151,338*
Eglin A.F.B. Census Area (CDP)	3,006

Census Tracts North of Eglin A.F.B. (approx.)	57,324*

Source: U.S. Census Bureau, 2020 Decennial Census (PL 94-171 Redistricting Data) and Census-designated place data for Eglin AFB. Total county population is 211,668 as of April 1, 2020. Eglin AFB CDP population is 3,006. Subarea totals marked with () are estimated allocations based on prior tract groupings and should be verified with GIS-based tract-level analysis for precise planning use.

Table 4.01.04.7: Flood Impacts for Blackwater River

Blackwater River Near Baker, FL on Hwy 4 at Cotton Bridge	
GAUGE HEIGHT	**FLOOD IMPACTS**
26.76	100 YEAR BASE FLOOD ELEVATION, BASED ON FLOW
24	HIGHWAY 4 BRIDGE IS CLOSED
23	WATER REACHES EAVES OF BUILDING IN COTTON RIVER BRIDGE PARK
16	SOME RESIDENTIAL FLOODING OCCURS DOWNSTREAM FROM BAKER WHEN THE RIVER LEVEL RISES ABOVE 16 FEET.
15	FLOODING OF WEST PARK AND EAST PARK IN BAKER WILL SUBSIDE AS THE RIVER DROPS BELOW 14 FEET.
14	FLOODING OF EAST PARK IN BAKER OCCURS AT 14 FEET AND WEST PARK BECOMES FLOODED AT 14.5 FEET.
12	FLOODING OF SECONDARY ROADS AND LOWLANDS WILL SUBSIDE AS THE RIVER DROPS BELOW 12 FEET.
11	FLOOD STAGE -SOME MINOR FLOODING OF SECONDARY ROADS AND LOWLANDS FROM AROUND BAKER DOWNSTREAM WILL OCCUR.
9.5	KENNEDY AND PEADEN BRIDGES FLOODED UPSTREAM.

Source: USGS

Table 4.01.04.8 Flood Impacts for Shoal River

Shoal River near Crestview, FL on Hwy 85	
GAUGE HEIGHT	**FLOOD IMPACTS**
21.4	WATER IN HOMES TREVOR CT AND ANTIOCH RD. BUILDINGS UNDER WATER HWY 85 ROADSIDE PARK, HWY 90 BRIDGE FLOODED
17.95	100 YEAR BASE FLOOD, BASED ON FLOW
14	RESIDENTIAL FLOODING IN THE TREVOR COURT AREA WILL LIKELY OCCUR AS THE RIVER RISES ABOVE 14 FEET.
11	FLOODING BECOMES A THREAT TO THE TREVOR COURT AND RATTLESNAKE BLUFF AREAS AS THE RIVER RISES ABOVE 11 FEET.
10.5	FLOODING TO TRAILERS NORTH OF THE OKALOOSA CORRECTIONAL INSTITUTE WILL SUBSIDE AS THE RIVER LEVEL FALLS BELOW 10 FEET.
10	LOWLAND FLOODING IN THE AREA WILL DIMINISH AS THE RIVER DROPS BELOW 8 FEET.
8.5	WATER CROSSES HIGHWAY 90, WEST END OF BRIDGE
8	**FLOOD STAGE** SOME MINOR FLOODING OF LOW LYING AREAS WILL OCCUR.

Source: USGS

Table 4.01.04.9: Flood Impacts for Yellow River

Yellow River near Milligan, FL on Hwy 90	
GAUGE HEIGHT	**FLOOD IMPACTS**
26	SEVERE FLOODING WILL OCCUR IN MILLIGAN. WATER WILL BE 6 TO 8 FEET DEEP OVER PORTIONS OF U.S. HIGHWAY 90.
23.19	100 YEAR BASE FLOOD, BASED ON FLOW
20.32	SEVERAL HOMES ON BOTH SIDES OF RIVER FLOOD, (ANTIOCH & OLD MILLIGAN) 3" OF WATER IN SEVERAL HOMES ON ANTIOCH ROAD.
19.1	WATER CROSSES HIGHWAY 90 EAST END OF BRIDGE.
19	WIDESPREAD FLOODING IN OLD MILLIGAN WILL SUBSIDE AS THE LEVEL DROPS BELOW 18 FEET.
18.6	WATER CROSSES HIGHWAY 90, WEST END OF BRIDGE
18	WIDESPREAD FLOODING WILL OCCUR IN OLD MILLIGAN. FLOODING OF U.S. HIGHWAY 90 AND THE L & N RAILROAD BEGIN AROUND 18 FEET.
15	SEVERAL HOMES IN OLD MILLIGAN WILL OCCUR AND SOME EVACUATIONS WILL BE NECESSARY.
14.5	ANTIOCH ROAD IS FLOODED.
14.4	FLOODING IN OLD MILLIGAN WILL SUBSIDE AS THE LEVEL DROPS BELOW 14 FEET.
14	SOME HOUSES IN OLD MILLIGAN WILL BECOME FLOODED AND SOME EVACUATIONS COULD BECOME NECESSARY.
13	THREATENS HOME ON ELLIS AND ANTIOCH ROADS.
12.5	FLOODING OF LOWLANDS WILL GRADUALLY SUBSIDE AS THE RIVER LEVEL DROPS BELOW 12 FEET.
12	FLOOD STAGE-EXTENSIVE OVERFLOW OF LOWLANDS WILL OCCUR AND A FEW RURAL ROADS IN THE AREA WILL BECOME FLOODED.
11.5	WATER YARDS ON ELLIS ROAD.
9.9	SOME MINOR OVERFL OW OF LOW LYING AREAS WILL OCCUR. WATER WILL ENTER SOME YARDS ALONG ANTIOCH ROAD IN MILLIGAN.
5.9	WATER OVER ELLIS ROAD AT TRELLIS.
5	BANK FULL. RIGHT BANK OVERFLOWS, MAINLY INTO SWAMP AND MARSH LANDS.

Source: USGS

Due to Okaloosa County's varying height elevation from sea level to over 200 feet and varying base flood elevations from sea level to 88 feet, in the numbered A zones, it is impossible to give a set depth of flooding inundation for the 100-year base flood for the whole county. However, as shown in tables 4.01.04.7; 4.01.04.8; and 4.01.04.9 flooding impacts for the areas surrounding the river gauges for the Blackwater River, the Shoal River and Yellow River have been documented.

An example of a worst-case scenario for flooding would be if all the areas within the 100-Year Floodplain were to be inundated during a single event. This would result in the submergence of approximately 27 miles of arterial and collector roadways and flooding of 2,163 residential structures with a combined value of $814,551,816.00 (Source: Okaloosa County Property Appraiser) as well as 283 non-residential buildings with a value of $822,567,100.00 (Source: Okaloosa County Property Appraiser). If all the residential and non-residential structures were completely destroyed in a catastrophic flood, the damage would total in excess of $1.6 billion. Due to the unpredictability of damage to roadways caused by the velocity of the water it is impossible to accurately predict the damage and cost that would be associated with any flood

event. However, the cost of repairing roads and their associated infrastructure (culverts, etc.) would easily run into tens of millions of dollars. In addition to the cost of repair, additional costs would be incurred due to the impacts to commerce associated with road closures. Flooding of this magnitude could also cause millions of dollars of damage (or loss) of agricultural products, and severe erosion caused by this sort of flooding could impact the County's waterways, including the Choctawhatchee Bay estuary system, causing millions in additional damage to commercial, recreational and sport fishing industries, and causing environmental harm from which it would take years to recover.

PROBABILITY:
As previously mentioned in Table 4.01.04.1, from 1970-2020 there were seven 'Major Floods' in Okaloosa County. Based on this data, the future probability of a major flood occurring in the county is less than one major flood per year. Although there were 32 reported floods or flash floods (see Table 4.01.04.2), due to the localized nature of flash-flooding and because some of these floods are unrecorded, it is difficult to state a specific probability even though flash floods do occur in the County. As already noted, Okaloosa County and all its municipalities participate in the National Flood Insurance Program (NFIP); another indication of the area's vulnerability to flooding is provided in Section 4.05.05., below, which discusses repetitive loss and severe repetitive structures as such are designated by the NFIP.

4.01.05 Dam Safety

DEFINITION:
Although dam safety might be considered a man-made hazard, the primary concern is the potential for flooding downstream from a dam where flooding might not naturally occur. It is considered separate from the *Flooding* section of this chapter (dealing strictly with natural flood) because of the technological relation to a human-made structure and the regulatory framework in place for dam safety.

Dams are heavily concentrated in the northern portion of Okaloosa County, especially around the City of Crestview. However, in the southern portion, there are only a few dams. Dams are located in the following jurisdictions: City of Crestview, City of Laurel Hill, and throughout the unincorporated areas.

The Northwest Florida Water Management District is responsible for the permitting, inspection, and revocation of permits for dams in Okaloosa County that meet certain criteria, according to the guidance of Chapters 373.314 of the Florida Statutes, and Chapters 40A-4 and 40A-44 of the Florida Administrative Code (FAC). The numbers of dams, their types, and regulating authority under FAC for Okaloosa County are depicted in the table below. As of this update, no new Registered Dams have been permitted.

Table 4.01.05.1: Registered Dam Activity in Okaloosa County as of 2015.

Dam Type	Active Permits	Expired Permits	Permits Withdrawn/ Void/Revoked
Agricultural	119	14	7
Non-Agricultural	63	10	7
Total	182	24	14

Source: Northwest Florida Water Management District, 2025

Figure 4.01.05.1: Permitted Dams in Okaloosa County



Source: Northwest Florida Water Management District, 2025

HISTORICAL CONTEXT:
Since 2001, 2 out of 161 active, permitted dams have failed resulting in flooding in Okaloosa County. One of the failures occurred in the Old Bethel Road area north of Crestview but no homes were affected and no significant losses were reported. The other occurrence was in the southern portion of the county off of North Beal Extension. This occurred from an illegal dam that was constructed by a citizen. It did result in the adjoining community being affected (streets covered with water) but no homes were flooded. This data was obtained from the Okaloosa County Public Safety Department/Emergency Management Section.

Two dams in Okaloosa County, Stafford Dam 1 and Stafford Dam 2, are classified as High Hazard Potential Dams by the Florida Department of Environmental Protection (see https://geodata.dep.state.fl.us/datasets/FDEP::florida-dams). Both are owned by the surrounding area's homeowners' association and are listed as being in fair condition. The impoundments formed by these dams are used as private, recreational amenities (fishing, nature, and general aesthetics) by the surrounding homeowners and drain into Piney Woods Creek which flows into a largely wooded/wetland area before joining the Shoal River. Due to the predominantly undeveloped character of the properties downstream from the dams, very few structures are at risk. As of this writing, the County has not determined that it is necessary to participate in the High Hazard Potential Grant Program.

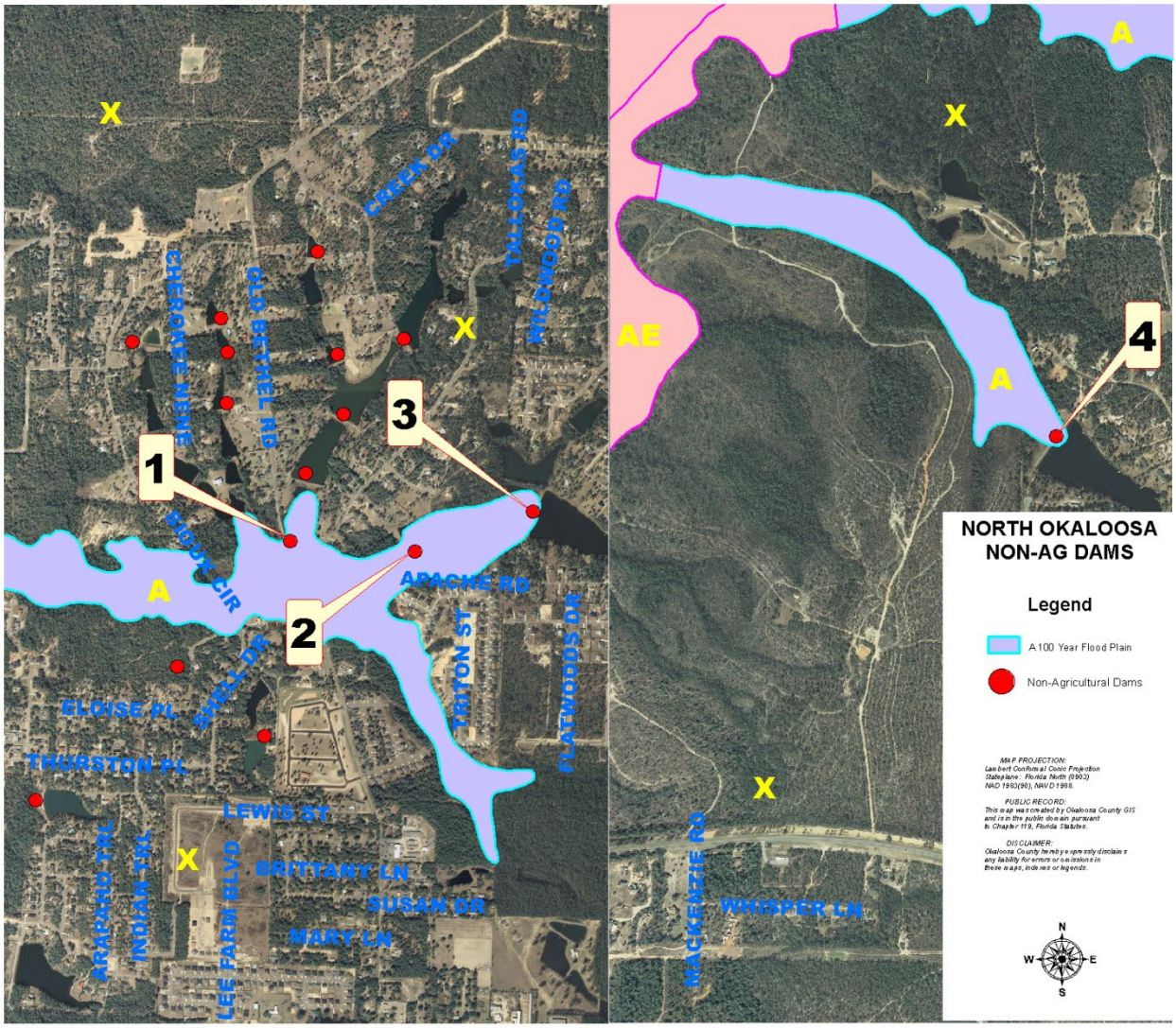
EXTENT:
The possible damages associated with dam failure are flooding of roads and properties and agricultural losses. Regarding dam failure, a worst-case scenario is difficult to determine due to the variability in dam specifications (i.e. dam size, storage capacity, and topography) and the surrounding areas' elevations and population.

As shown by Figure 4.01.05.2 and Figure 4.01.05.3, there are a total of 6 non-agricultural dams located within the unnumbered A flood zones throughout Okaloosa County.

In reference to Figure 4.01.05.2, dams 1, 2, and 3 are located in a fashion that cascades into the Yellow River. A total failure of these dams could potentially impact 10 single family homes with a just value of $1,719,009.00. The complete loss of all 10 single family homes would be considered a worst-case scenario for dam failure. However, due to the elevation of these homes, substantial damage is unlikely to occur.

Dam 4, located on a tributary to the Shoal River, is located in an unnumbered A flood zone. No homes are located downstream of this dam. The area of Shoal River downstream of the mouth of this tributary is primarily unpopulated agricultural timber lands and unpopulated Eglin Air Force Base Reservation. Due to this lack of development in the areas downstream, a failure of Dam 4 would result in little to no damage.

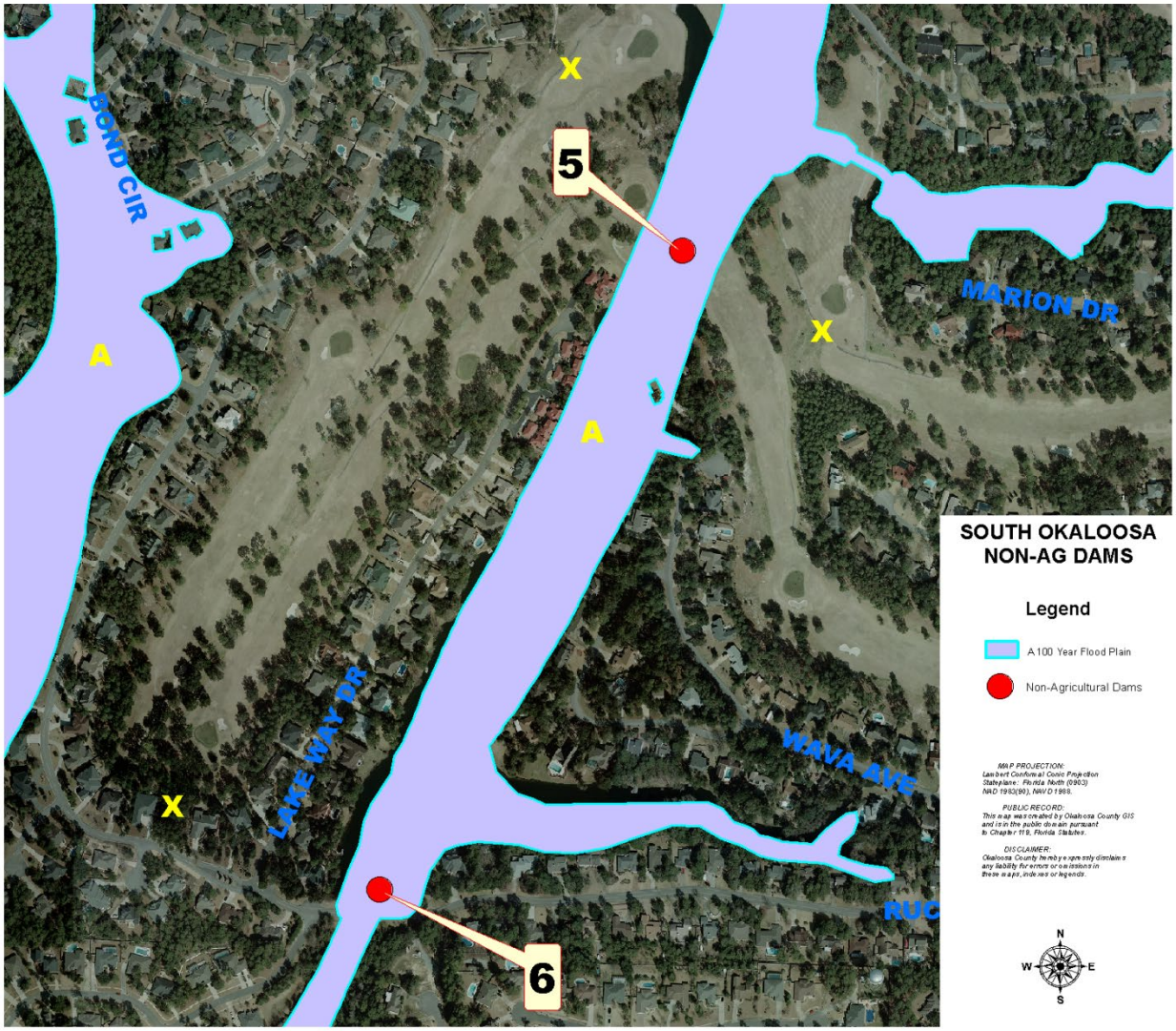
Figure 4.01.05.2: Non-Agricultural Dams North Okaloosa County



The last two dams, numbered 5 and 6 on Figure 4.01.05.3, are located in the unnumbered A zone associated with a tributary of Swift Creek which ultimately flows into Swift Bayou. There are 55 single family structures with a just value of $14,787,354.00 downstream from the dams. The complete loss of all 55 single family homes would be considered a worst-case scenario for dam failure. However, neither of these dams is classified by the NWFWMD as a high hazard dam. As all of the residential structures have been built in compliance to meet the minimum Okaloosa County requirement of being 5 feet above highest adjacent grade for a residential structure located in an unnumbered A flood zone as well as being 1 foot above the Base Flood Elevation in a numbered AE flood zone, substantial damage is unlikely to occur.

Any flooding associated with dams 1 through 6 would be less than 1 foot in depth.

Figure 4.01.05.3: Non-Agricultural Dams South Okaloosa County



PROBABILITY:
Due to the rarity of dam failure in Okaloosa County, the probability of future dam failure resulting in flooding is less than one per year.

4.01.06 Land Erosion

DEFINITION:
Land erosion, also known as soil erosion, is “the removal and thinning of the soil layer due to climatic and physical processes, such as high rainfall,” which can be greatly accelerated by human activities (Encyclopedia.com, 2010). All of Okaloosa County is susceptible to land erosion in some localized areas.

HISTORICAL OCCURRENCE:
The Gulf Coastal Plain consists of sands, clays, and silts that form the soils of the County. Limestone outcrops, although present in some locations (particularly along the Yellow and Shoal Rivers) are not common. The soft sediments that prevail can be vulnerable to erosion when topography, vegetation, and ability to absorb water combine to form energy to weather away soils.

Sheet erosion, rills, and gullies, are the most commonly observed types of erosion in the County. Most of these features are associated with disturbances in natural vegetation, poor management of agricultural lands, silvicultural operations, building construction, or road construction and maintenance projects.

Erosion along riverbanks is a much less common issue in the County. The major rivers in the County are the Shoal River, Blackwater River, and Yellow River. The majority of the floodplain of the Yellow River is owned by the Northwest Florida Water Management District and is not subject to development. The majority of the floodplain of the Blackwater River is owned by the State of Florida and is not subject to development. There are private parcels, however, that front Yellow River, Shoal River, Blackwater River, and other water bodies. These properties are generally on small bluffs over the river (five to ten feet above normal water level). At this time there are no reports of riverine erosion impacting structures along these water bodies. The most likely areas of riverine erosion potential include the southern portion of the Yellow River and the nearly the entire lower portion of the Shoal River.

Erosion can also be found where topography and slope increase away from rivers. Steeper topography, combined with road and homesite development, can cause sheet erosion, rilling and gullies where sediment can empty into creeks, bays, etc. According to the Okaloosa County Soil Survey (1995), out of the 55 identified soil types in the county, 34.7% possess characteristics of “Highly Erodible (HE)**” or “Potentially Highly Erodible (PHE)*” soil types (See Table 4.01.06.1). No erosion events occurred during 2021-2026.

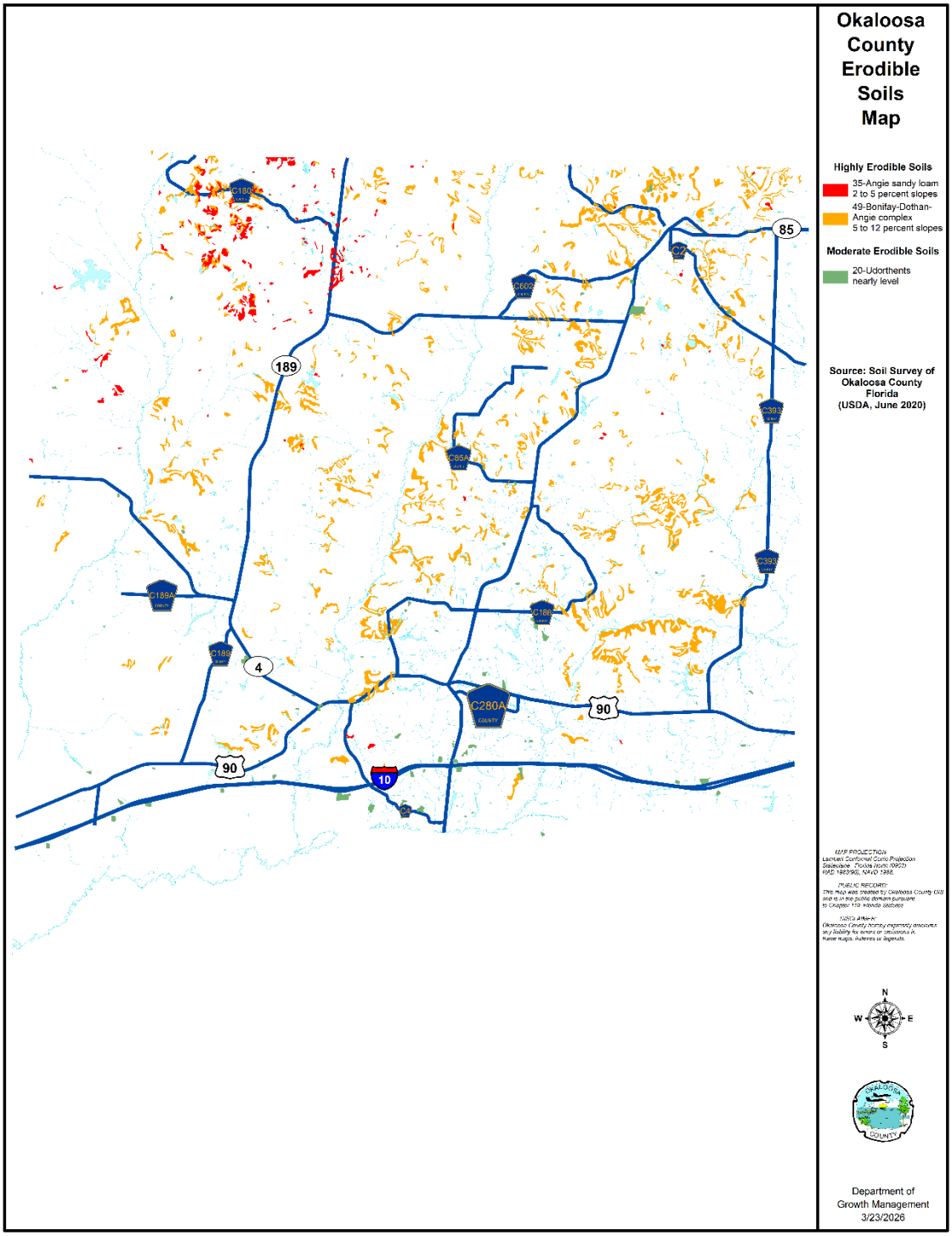
Table 4.01.06.1: Erodible Lands in the Okaloosa County.

Soil Type	PHE Soils*	HE Soils**	Total Acreage	Total Land Area
Total	20.2%	14.5%	208,961	34.7%

*Potentially Highly Erodible Soils **Highly Erodible Soils

Source: Okaloosa County Soil Survey, Natural Resource Conservation Service, 1995.

Figure 4.01.06.1 Erodible Soils Map



EXTENT:
The extent of Okaloosa County's Highly Erodible and Potentially Highly Erodible Soils is shown in Figure 4.01.06.1. Sheet erosion, if left unchecked, can damage drainage ditches, fill stormwater retention ponds with sediment, and cause erosion into property, including structures. Most erosion of this nature occurs in the agricultural areas of the County and along unpaved roadways in hilly areas. In this instance, the result is the deposition and buildup of soil/sand on the roadways and in the drainage systems.

In a worst-case scenario, soil erosion will cause land to be unusable for agriculture and other purposes because of the degraded soil quality, structure, stability and texture. Also, the yield, quality, and market value of crops will be reduced. Erosion along stream and ditch banks will cause loss of productive farmland, undermining of structures (bridges, etc.), and washing out of roads. Erosion can also result in sedimentation of natural streams and rivers which can lead to impacts in the receiving coastal waters such as Santa Rosa Sound and the Choctawhatchee Bay estuary.

As there is no record of any large erosion events in Okaloosa County, it is not possible to assign a reliable dollar value to the extent of damage. However, if an event were to occur that impacted homes, businesses, roads, and agricultural products, then damage could easily run into the tens of millions of dollars as evidenced by the discussions of the costs of infrastructure, and the value of housing and business structures as well as the value of agricultural products throughout this chapter.

PROBABILITY:
Erosion is a natural, ongoing process that shapes the landscape; whether by wind or water, Okaloosa County's soils are constantly moving. Not all erosion is catastrophic, and most natural and man-made systems function normally under day-to-day erosion conditions; however, it is with large or catastrophic events that this LMS is concerned. Unfortunately, while the extent of potentially highly erodible and erodible soils throughout Okaloosa County is known, there is no record of occurrences, and so it is impossible to provide a probability of occurrence at the time of this writing. However, it is safe to state that land erosion is occurring and will continue to occur. Over time, and as record-keeping and modeling improve, it may be possible to develop an estimate of the probability of occurrence of major or catastrophic erosion events.

4.01.07 Severe Storms

The Severe Storms segment of the LMS Hazards Assessment includes tornado and waterspout, thunderstorms and lightning, and winter storms (hurricanes and tropical storms are excluded from this section because they are covered in section 4.01.01).

4.01.07.01 Tornado and Waterspout

DEFINITION:
Tornadoes and waterspouts are small-scale weather phenomena caused by a vortex of rising air. Tornadoes occur over land and therefore the entire county is susceptible to tornadoes. Only the coastal and bay areas are susceptible to waterspouts because they only occur over water.

The Fujita Scale is the basis of measurement for the strength of tornadoes. The Fujita Scale has undergone slight modifications and improvements, in comparison to the years prior to 2007, including the addition of 28 Damage Indicators and adjustments to the Degree of Damage's estimated wind speed for each category. These changes can be viewed on the National Weather Service's Storm Prediction Center's "The Enhanced Fujita Scale" webpage. Although the scale has been updated, the original tornado database is still maintained (See Table 4.01.07.01.1).

Table 4.01.07.01.1: Fujita Scale (1971-2007) & Enhanced Fujita Scale (2007-Present)

F Number	Fastest 1/4-mile (mph)	3 Second Gust (mph)	Enhanced F Number	3 Second Gust (mph)
0	40-72	45-78	0	65-85
1	73-112	79-117	1	86-110
2	113-157	118-161	2	111-135
3	158-207	162-209	3	136-165
4	208-260	210-261	4	166-200
5	261-318	262-317	5	>200

Source: NOAA's National Weather Service

HISTORICAL OCCURRENCE:
Waterspout
According to the U.S. Storms Database, from 1996- 2025 there have only been ten (10) reported waterspouts in Okaloosa County with no known injuries, fatalities, or property damages (NCDC, 2020 www.ncdc.noaa.gov/stormevents/).

Tornado
Nationwide, seventy-six percent (76%) of all tornadoes are relatively weak F0 or F1 systems and account for 4% of total deaths. Twenty-five percent (25%) are F2 or F3 strong tornadoes, accounting for 29% of total nationwide tornado deaths. Finally, 1% are F 5 violent tornadoes and account for 67% of all tornado deaths nationwide.

From 1980 to 2020, the National Severe Storms Center has calculated Okaloosa County as having about 0.8 to 1.0 tornado days each year. This is the average number of days that tornadoes occur over the course of one (1) year. Table 4.01.07.01.2 below, summarizes the documented tornadoes in Okaloosa County from 1950 through 2025. Table and 4.01.07.01.3 which follows, provides the date of occurrence of tornadoes in Okaloosa County from 200-2025. Together, these tables illustrate that, as with the national averages, the majority of tornadoes occurring in Okaloosa County are of FO or F1 intensity, resulting in relatively few deaths and injuries, and mainly localized damage. Notable events include a 1989 tornado that caused over $5 million damage to Eglin Air Force Base, and a 1933 (pre-dates the tables, below) that traveled 35 miles through Okaloosa County, setting a state record up to that time.

On September 4, 2011, a tornado touched down in a subdivision off of John King Road just south of Interstate 10 in Crestview. At the start of the tornado path damage was observed to trees and property fences, with the windshield of an automobile knocked out by a tree limb. The tornado

moved north of Interstate 10 crossing another subdivision producing damage to several fences and the roofing of a few residences.

Table 4.01.07.01.2: Okaloosa County's Documented Tornadoes by Decade, 1950- 2025

Decade	Total	Total Dead	Total Injured	F-0	F-1	F-2	F-3	Category Unknown
1950's	1	0	-	-	-	1	-	-
1960's	12	2	87	-	2	5	1	4
1970's	26	1	17	11	8	4	-	3
1980's	18	-	1	10	7	1	-	-
1990's	21	1	4	18	1	2	-	-
2000's	22	0	15	19	3	-	-	-
2020's	5	0	0	1	2	1	-	1

Source: Tornado History Project

Table 4.01.07.01.3: Okaloosa County's Documented Tornadoes, 2000- 2025

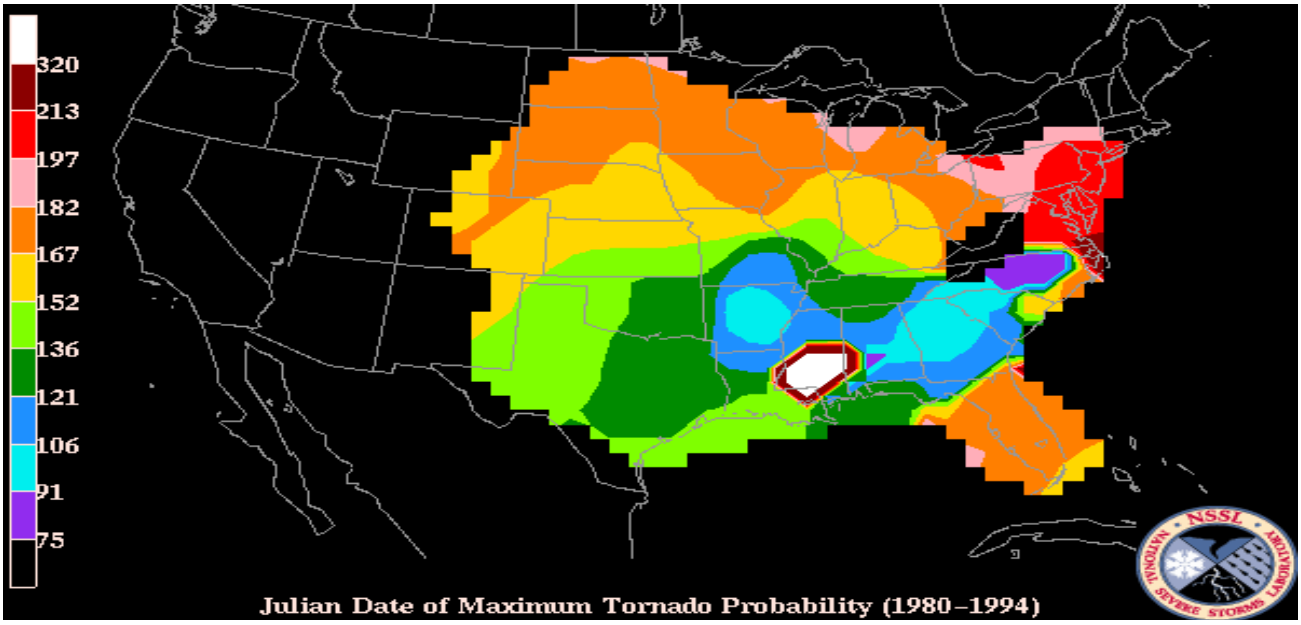
Date	Time (CST)	Dead	Injured	Fujita Scale
Aug 18,2000	14:15:00	0	0	F-0
Jul 24,2001	14:35:00	0	0	F-0
Sep 25,2002	13:30:00	0	0	F-0
Sep 25,2002	18:10:00	0	0	F-0
Oct 14,2002	18:00:00	0	0	F-0
Dec 31,2002	9:47:00	0	0	F-1
Apr 25,2003	3:55:00	0	0	F-0
Apr 25,2003	4:10:00	0	0	F-0
Dec 22,2004	17:45:00	0	0	F-0
Jul 06,2005	9:55:00	0	0	F-0
Aug 28,2005	20:30:00	0	0	F-0
Aug 29,2005	7:42:00	0	0	F-0
Jan 13,2006	10:41:00	0	13	F-0
Sep 01,2008	8:15:00	0	0	F-0
Sep 01,2008	8:45:00	0	0	F-0
Dec 02,2009	7:32:00	0	0	F-0
Sep 04, 2011	4:15:00	0	0	F-0
Jul 07, 2013	13:00:00	0	0	F-0
Nov 30, 2016	10:38:00	0	0	F-0
June 21, 2017	05:18:00	0	0	F-0
Apr 24, 2018	15:13:00	0	2	F-1
Nov 05, 2018	18:15:00	0	0	F-0
Apr 23, 2020	13:51:00	0	0	F-1
March 18, 2022	11:28:00	0	0	EF-1
October 29, 2022	11:35:00	0	0	EF-0
May 10th, 2024	15:01:00	0	0	EF-2
May 10th, 2024	15:16:00	0	0	EFU

May 10th, 2025	08:05:00	0	0	EF-1

Source: Tornado History Project

The greatest likelihood of tornado occurrence is during April and May (See Figure 4.01.07.01.1).

Figure 4.01.07.01.1: Probability of a tornado in North America. Okaloosa County's greatest probability for any tornado is in April and May of each year. The color depicted for the Okaloosa County area on this map shows Julian days 121-136 and the most vulnerable (May).



Source: National Severe Storms Laboratory.

EXTENT:
Waterspout
Because of the unpredictable nature of waterspouts, the minimal historical occurrences, and no historical damage reported in Okaloosa County, the worst possible scenario would be that of complete destruction of homes and businesses that were in a waterspout's path.

Tornado
Because of the unpredictable patterns of tornadoes, and because Okaloosa County has a relatively high frequency of occurrence, the entire County is vulnerable to tornado damage. The damage potential for a tornado increases as a function of population density. As the numbers of structures and people increase, the potential damage/injury rate increases. Manufactured housing, poorly constructed or substandard housing and apartment complexes are especially susceptible to damage from a tornado. Manufactured housing and substandard housing are exceptionally susceptible because of their lack of resistance to high winds, and apartment complexes because of their size and densities.

The worst possible scenario in terms of tornado damage would be if an F-5 tornado hit Okaloosa County. It is very unlikely that an F-5 tornado would strike the County, but if one did there would be complete destruction of homes and businesses that were in the tornado's path. Trees and power lines would be snapped, building debris scattered about, and severe structural damage would be evident on any building left standing.

The most common and active weather threat in Okaloosa County for the formation of tornadoes is severe thunderstorms associated with frontal boundaries. Frontal boundaries and summertime afternoon air mass thunderstorms can reach severe limits because of atmospheric uplift. High winds relating to gust fronts and microbursts can create high wind speeds up to 100 MPH. Buildings and highway traffic are vulnerable to these storms. For a single event Okaloosa County could expect an F-0 tornado.

PROBABILITY:
From 1950-2025 there have been a total of 105 reported tornadoes in Okaloosa County. Based on this data (See Tables 4.01.07.01.2 & 4.01.07.01.3), the future probability of a tornado in the unincorporated area of Okaloosa County has been determined to be less than two (2) per year. Also, since there were only ten (10) reported waterspouts from 1996- 2025, the future probability was determined to be less than two (2) waterspouts per year.

4.01.07.02 Thunderstorms and Lightning

DEFINITION:
The National Severe Storms Laboratory of the National Oceanic and Atmospheric Administration classifies a thunderstorm as severe when it contains one or more of the following phenomena:

- Hail 3/4" or greater
- Winds gusting in excess of 50 knots (57.5 mph)
- A tornado

The National Severe Storms Laboratory of the National Oceanic and Atmospheric Administration defines lightning as "a giant spark of electricity in the atmosphere between clouds, the air, or the ground." The definition goes on to say that lightning occurs when the positive and negative electrical charges in the cloud and between the cloud and the ground build up enough to overcome insulating capacity of the air, resulting in a rapid discharge of electricity (lightning). The flash of lightning temporarily equalizes the charged regions in the atmosphere until the opposite charges build up again. Lightning can occur between opposite charges within the thunderstorm cloud (intra-cloud lightning) or between opposite charges in the cloud and on the ground (cloud-to-ground lightning).

Thunderstorms also bring the threat of flooding through torrential, often prolonged, rainfall.

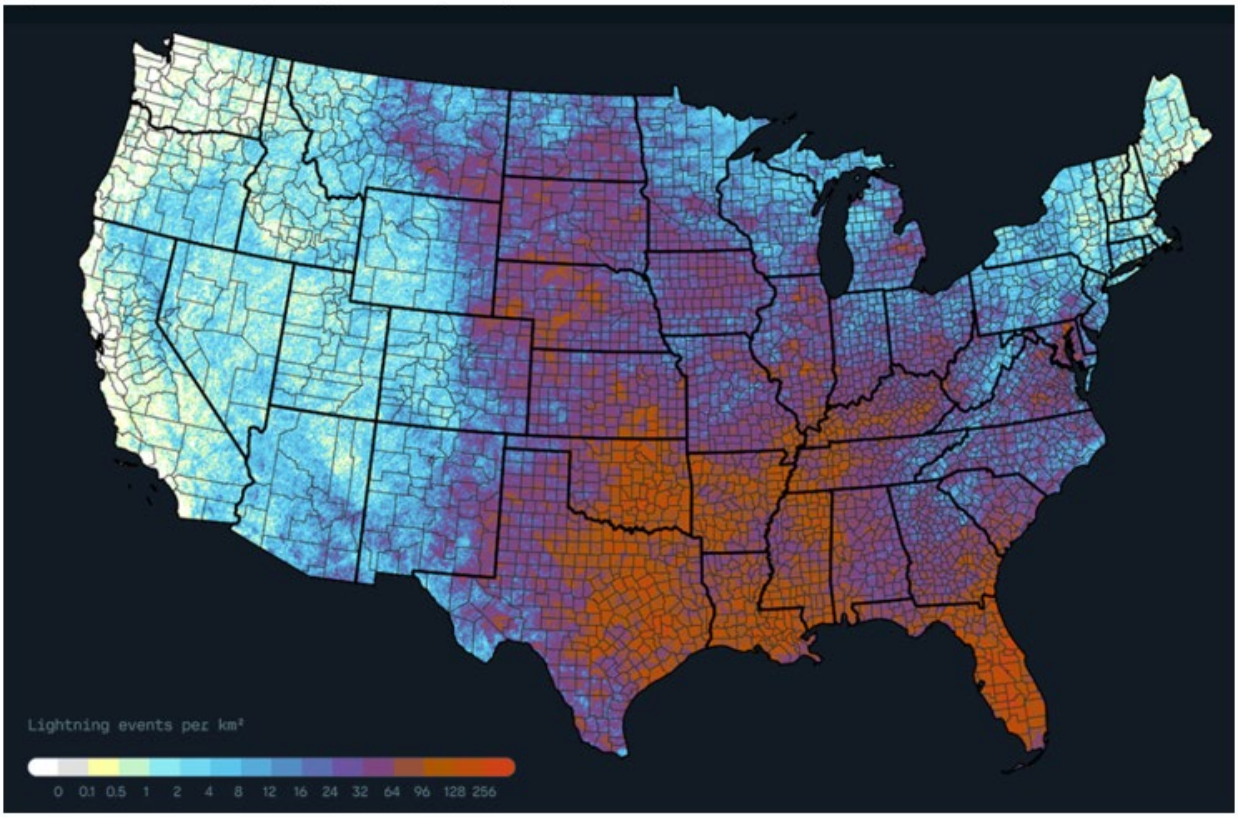
All areas of Okaloosa County are vulnerable to thunderstorms and lightning.

HISTORICAL OCCURRENCE:

According to Florida State University's Florida Climate Data Center (https://climatecenter.fsu.edu/topics/thunderstorms), Okaloosa County has, on average, 80 thunderstorm days each year. Consistent with averages from around the State of Florida, this is some of the highest frequency in the nation.

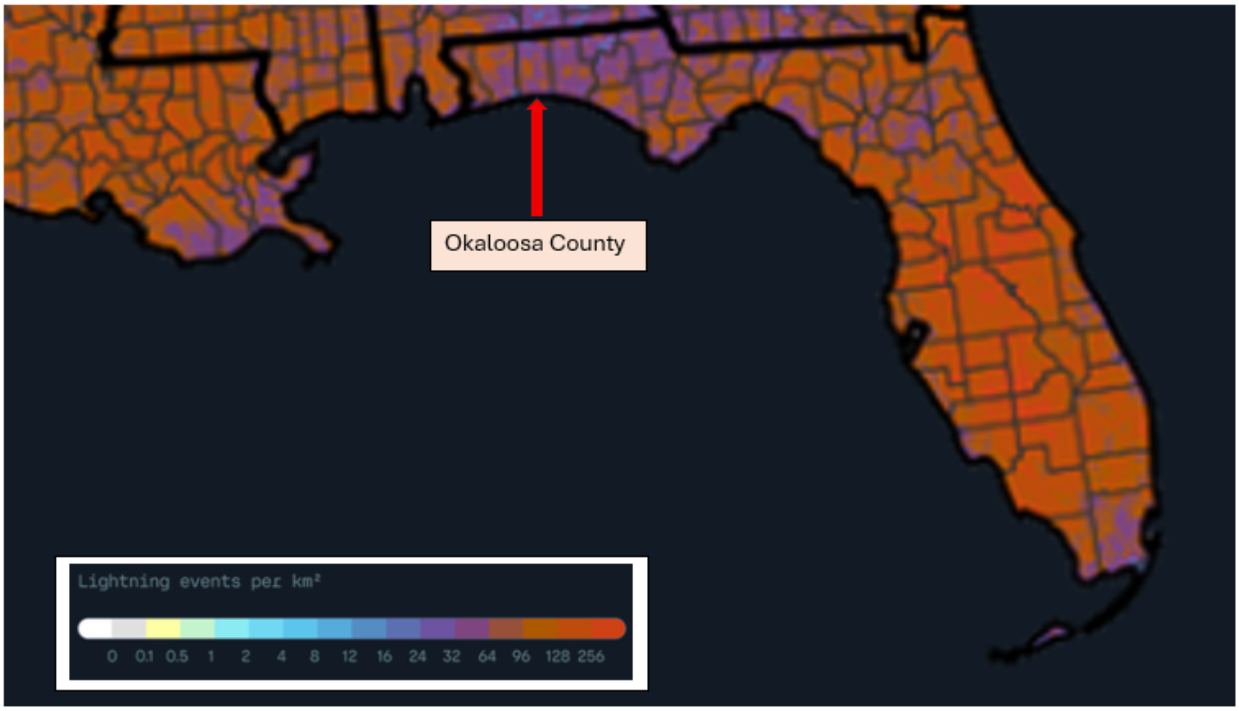
Though it is currently debated whether Oklahoma has assumed the top position, Florida has long held the dubious distinction of being "the lightning capitol of the US". When measured by density (strikes per square kilometer), Florida currently leads the United States according to the 2025 Annual Lightning Report published by VAISALA Xweather which also reports that Florida, with 20,034,067 strikes, is second only to Texas (47,361,143 strikes). Figures 4.01.07.02.1 and 4.01.07.02.1a, below, illustrate lightning activity in Florida relative to the rest of the continental United States in terms of density.

Figure 4.01.07.02.1. Lightning Flashes per Square Kilometer in the Continental United States



Source: VAISALA Xweather 2025 Annual Lightning Report

Figure 4.01.07.02.1a. 2025 Lightning Flashes per Square Kilometer in Florida

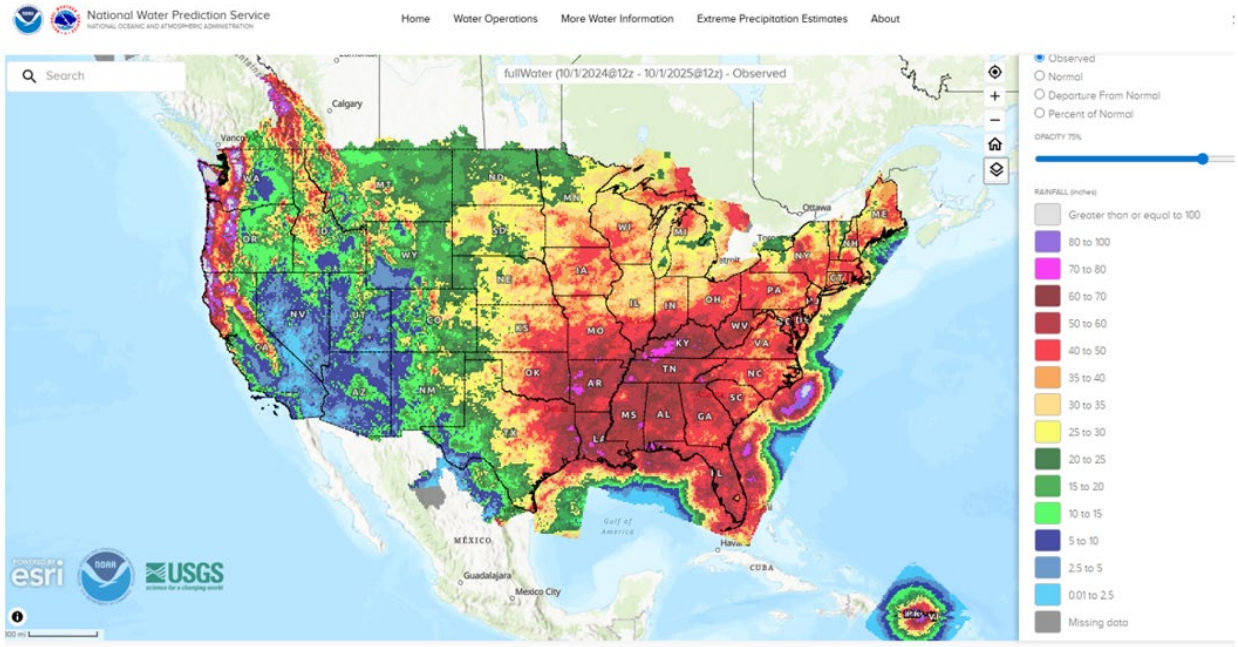


Source: VAISALA Xweather 2025 Annual Lightning Report

As discussed in Section 4.01.04, flooding is also a major threat to Okaloosa County and is often associated with storm thunderstorms. As shown in Figures 4.01.07.02.2 and 4.01.07.02.2a, below, Florida is among the wettest places in the Continental United States. Okaloosa County receives approximately 64 inches of precipitation per year.

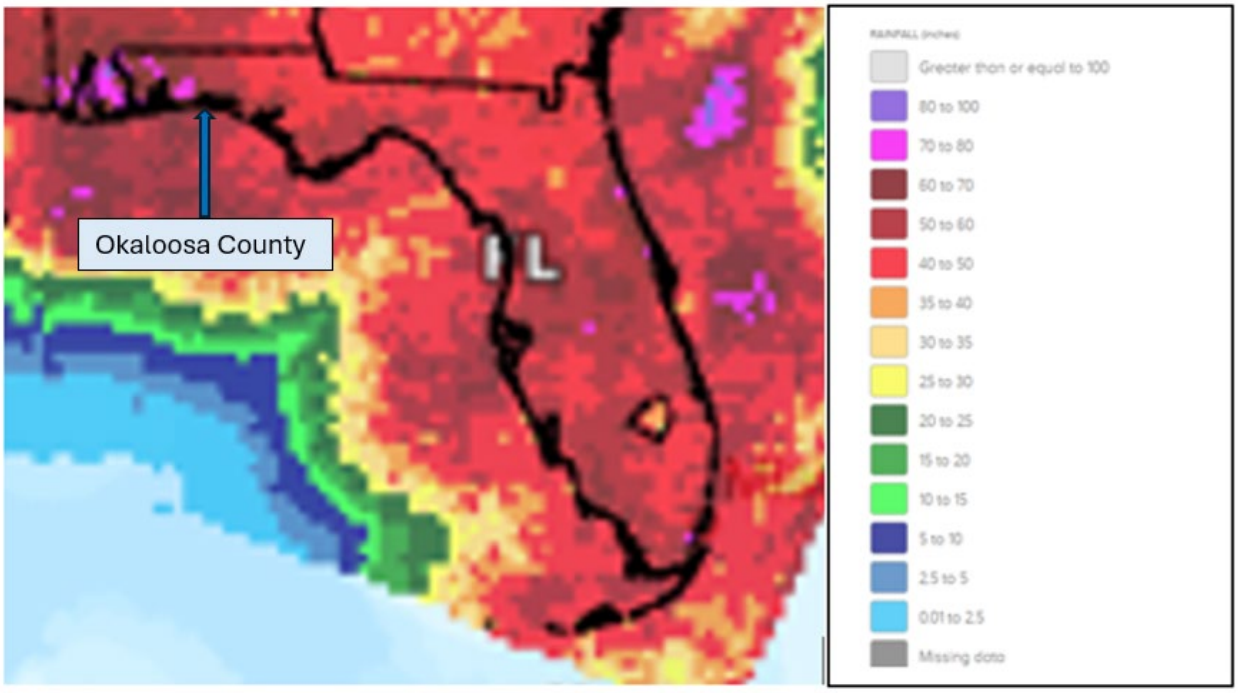
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Figure 4.01.07.02.2. One Year Annual Rainfall of Continental United States 10/1/2024 – 10/1/2025



Source: National Oceanic and Atmospheric Administration National Water Prediction Service

Figure 4.01.07.02.2a. One Year Annual Rainfall over Florida 10/1/2024 – 10/1/2025



Source: National Oceanic and Atmospheric Administration National Water Prediction Service

Wind is the main threat from thunderstorms in Okaloosa County and may occasionally be accompanied by hail. A severe thunderstorm is defined as having winds of 58 MPH or faster, or hailstones three-quarters of an inch or larger in diameter. A microburst is a severe type of downburst, i.e., winds that blast down from a thunderstorm and hit the ground causing it to reflect out from the center in all directions. Microbursts can generate wind speeds of 150 MPH or faster and create a starburst damage pattern on the ground. Though not common in Florida or Okaloosa County, derechos resulting from squall-line thunderstorms can create high-level straight-line winds and repeated downbursts.

Another wind hazard associated with severe thunderstorms is a strong, long-lived, straight-line windstorm known as a derecho that results from squall-line thunderstorms that create repeated downbursts. These types of storms are more frequent in the Midwest than in Florida.

Once of the primary types of damage associated with severe thunderstorms is trees falling on powerlines which is a major source of local power outages. Such outages are typically brief, lasting only 1-2 hours (Choctawhatchee Electric Cooperative, personal communication). Trees also fall on structures, resulting in damage ranging from slight to catastrophic.

Okaloosa County experiences thunderstorms regularly, especially in the summer months. While all of these events have the potential for causing damage, the following highlight severe damage events that have occurred in the past:

06/05/2012 - A thunderstorm produced wind damage in northwest Florida. Winds estimated at 60 mph downed several powerlines on State Road 189.

04/29/2014 - A strong storm system brought record flooding along with severe thunderstorms that produced damaging winds and tornadoes to the region. Winds estimated at 80 mph downed large trees and ripped a roof off a house at Duke Airfield.

01/22/2016 - A line of thunderstorms moved across the western Florida panhandle producing high winds which caused several reports of damage. Winds estimated at 70 mph peeled a gas station awning off and caused damage to a roof at Harbor Walk Village in Destin.

06/28/2018 – Wind damage was reported across portions of western Florida Panhandle on the evening of June 28th as a derecho that impacted much of the state of Alabama and moved south into the Panhandle. Winds estimated at 60 mph caused sporadic tree and power line damage in Laurel Hill.

04/20/2020 – A powerful storm system swept across the southeast states through the day and into the overnight on the 19th and 20th. Ahead of the system a warm front brought a very warm, moist and unstable air mass northward across the area. Numerous thunderstorms developed along and south of the warm front and became severe, producing wind damage tornados and large hail. A 58-mph gust was measured on Eglin AFB.

5/10/2024- A strong thunderstorm system moved across northwest Florida bringing straight line wind damage of approximately 100-110 mph winds and two tornadoes, one ESF-2. The

damage caused was parallel to SR-4 east of Munson and lifted to the northwest of Baker. There were no injuries or fatalities, however, clear damage was observed.

Between 1965 and 2020, Okaloosa County recorded 170 days with severe thunderstorms with 83 days with property damage. Most thunderstorms in the County occur due to air mass heating during hot summer days. Passage of cold fronts in autumn, winter, and spring can trigger lines of thunderstorms. (NWS NCDC). The vast majority of thunderstorm days are from May to September. However, thunderstorms may occur during any month of the year. The most severe thunderstorms reported from 1964-–2020 occur in the months of June and July (See Table 4.01.07.02.1).

Table 4.01.07.02.1: Total Reported Severe Storms in Okaloosa County by Month, 1964-2020

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Total:	6	4	8	16	10	14	24	8	10	7	5	7

Source: Arizona State University Spatial Hazard Events and Loss Data for the United States (calculations from data)

EXTENT:
Thunderstorm damage can include traffic accidents on wet roads, flash-flooding, lightning damage to electronics and structures, lightning strikes on people, and wind and hail damage. Aside from being able to produce tornadoes, thunderstorms can produce damaging high winds. Cold upper-level air descending from the top of a thunderstorm to the ground usually causes these winds. In a worst-case scenario, if the upper-level air speed of descent is rapid, these cold "microbursts" can fan out as they come in contact with the ground at a high rate of speed. This is sometimes referred to as "straight line winds" (see derecho discussion, above) These winds can cause significant property damage, injuries, and deaths similar to a F0 to F2 tornado or Category 1 or 2 hurricanes.

PROBABILITY:
Based on the data from Figure 4.01.07.02.2, Okaloosa County has a future probability of experiencing less than five (5) severe thunderstorms per year. Based on the data from Figure 4.01.07.02.3, Okaloosa County is likely to experience four (4) to sixteen (16) flashes of lightning per square kilometer per year.

4.01.07.03 Winter Storms

DEFINITIONS:
Winter weather in Okaloosa County can include snow, ice, sleet (freezing rain), hard freeze, and frost which, as used in this LMS have the following meanings:

For this LMS, the term SNOW means precipitation in the form of ice crystals, mainly intricately branched, hexagonal form and often agglomerated into snowflakes, formed directly from the freezing [deposition] of the water vapor in the air (National Oceanic and Atmospheric Administration, National Environmental Satellite, Data, and Information Service). If the air and ground temperatures are cold enough, snow may accumulate on the ground.

According to multiple sources, ICE refers to the solid state of water (H_2O) that forms in typical atmospheric pressure when temperatures are at 32° Fahrenheit/0° Celsius or below, though this may be affected by impurities in the water.

The word SLEET (aka “freezing rain”) refers to pellets of ice composed of frozen or mostly frozen raindrops or refrozen partially melted snowflakes. These pellets of ice usually bounce after hitting the ground or other hard surfaces. Heavy sleet is a relatively rare event defined as an accumulation of ice pellets covering the ground to a depth of approximately one-half inch or more (National Oceanic and Atmospheric Administration, National Environmental Satellite, Data, and Information Service).

The word FREEZE may refer to the process whereby a substance changes from a liquid to a solid state, typically when its temperature drops below its specific freezing point (for example, water freezes to ice at a temperature of 32° Fahrenheit or lower). It may also refer to the period of time and condition when the surface air temperature is, or is expected to be, 32° Fahrenheit or below over a widespread area for a climatologically significant period of time (National Oceanic and Atmospheric Administration, National Environmental Satellite, Data, and Information Service). Though the term is often restricted to advective situations or to occasions when wind or other conditions prevent frost, for this LMS, frost may also be present during a freeze.

A HARD FREEZE (sometimes called a “hard frost”) occurs when the surface air temperature reaches 28° Fahrenheit or lower for an extended period of time, killing most types of vegetation (National Oceanic and Atmospheric Administration, National Environmental Satellite, Data, and Information Service). The term "killing freeze" may be used during the growing season when the temperature is expected to be low enough for a sufficient duration to kill all but the hardiest herbaceous crops (Ibid).

The term FROST describes the formation of thin ice crystals on the ground or other surfaces in the form of scales, needles, feathers, or fans. Frost develops under conditions similar to dew, except the temperatures of the Earth's surface and earthbound objects fall below 32°F/0° Celsius (National Oceanic and Atmospheric Administration, National Environmental Satellite, Data, and Information Service). As used in this LMS, the term FROST also refers to the phenomenon of this form of ice covering the earth or other surfaces (generally thinly), including plants (significant, potentially but not always harmful, for agricultural production), buildings, and infrastructure.

All of Okaloosa County is vulnerable to winter weather, although some locations, such as the northern portions of the county, are at greater risk of experiencing winter weather, of which the most common event is frost, followed by hard freeze.

HISTORICAL OCCURRENCE:

As it is difficult to locate temperature data for the county as a whole, two cities – Niceville, located south of Eglin Air Force Base and Crestview, located north of Eglin Air Force Base - are used to represent the range of temperature difference throughout the county. From 2005-2009, Niceville had a total of 49 days where the temperature was below 32°F. In contrast, Crestview had a total of 160 days where the temperature was below freezing (Weather Underground, Inc., 2010). Crestview’s larger number of freezing days may be attributed to its higher elevation, which creates

a greater exposure to the cold, as well as its inland location away from the warming influence of the Gulf of America.

Freezes occur most every winter, mostly in January. The average winter low temperature during the month of January is 36.9° F or 2.7° C with some nightly temperatures reaching below freezing (*World Climate,* 2008). Generally, the second night following the passage of a strong cold front is the coldest night when skies are clear and humidity is lowest. Most low temperatures involving freezes occur at night and in the hours near dawn. In most instances, temperatures even on the coldest winter days rise above freezing during daylight hours. In the table below, the historical winter minimum average temperatures are shown for two cities. The City of Niceville, which is located in the southern part of the county near the Choctawhatchee Bay and the City of Crestview, which is located further inland and is north of Eglin Air Force Base. There were no days from 2009-2015 in either Niceville or Crestview where the *high* temperature was less than 32° F (i.e., there were no days in which the temperature did not rise above freezing).

Table 4.01.07.03.1: Monthly Mean Temperature Minimums in degrees Fahrenheit, 1971-2009

	Nov	Dec	Jan	Feb	Mar
Crestview FAA Airport, FL	38.3°	33.9°	29.6°	33.8°	40.2°
Niceville, FL	37.2°	31.7°	26.8°	30.2°	39.7°

Source: Southeast Regional Climate Center, 2024

Temperatures lower than 40° F (-9.4° C) for an extended period would likely cause cold weather shelters to be opened for those who had inadequate heating of their homes. During the 2009-2010 winter season, the cold weather emergency shelters were open for 18 days. There are three shelters open for Okaloosa County residents, one in the north end and two in the south end. (Okaloosa County Public Safety, 2025).

Since tropical or subtropical crops are generally not grown in northern and western Florida during the winter freeze season, agricultural damage so often associated with winter freezes in the state are all but absent in Okaloosa County. Icing, glaze, and sleet are rare, in fact there was no data found to provide a historical context to these types of occurrences, but they are a real possibility in the county.

Snow in Okaloosa County is considered very rare and generally melts off quickly. No historical, scientific data was found regarding snowfall in the county prior to 2010. In February 2010, local reports of snow flurries in the northern portion of the County were reported, although no official snowfall amount was recorded, as the snow flurries did not accumulate on the ground.

On January 29, 2014, an icing event occurred in the northern portion of the County. Roads and schools were closed, and citizens were advised to stay indoors. This disrupted commerce and caused people to alter work and other schedules in order to accommodate having children at home and in order to accommodate road closures. As Okaloosa County does not experience such events with any frequency, neither the County nor any of the municipalities had any road salt or other de-icing materials available to address the problem. On certain major roads, the County utilized clean sand to provide traction for the traffic that could not avoid using the road

system. While the sand did help alleviate the problem, it became something of an issue in and of itself when the temperatures rose above freezing and the ice melted, carrying the sand into drainage systems from which it had to be removed. Roads were opened as temperatures rose above freezing and ice did not cover any bridges.

Winter Storm Benji impacted the Gulf Coast on December 8-9, 2017, causing flurries resulting in accumulation of up to one-half of an inch of snow throughout the County. Over 300 miles of Interstate I-10 were closed west from its intersection with I-75. This resulted in school closures as well as economic impacts to commercial transportation.

Winter Storm Enzo brought over 9" of snow to Okaloosa County on January 21st-23rd, 2025. At its greatest extent, approximately 200 miles of Interstate I-10 from the Florida/Alabama state line to Exit 192 (the US 90 junction) in Gadsden County near Tallahassee were closed. No injuries or fatalities were reported; however, many vehicles were stuck in the snow despite warnings to avoid the roadways requiring 911 and emergency responses throughout the incident. Power outages occurred as well as some fires. It is important to note that generator safety is a common concern in winter weather storms. Many municipalities prepared stock for roadways. State and local assistance agencies were effective in communication and recovery was efficient within 48 hours post-storm due to preparedness efforts and warmer weather.

EXTENT:
A worst-case scenario in terms of winter storms in the County would be if freezing or below freezing temperatures lasted for a week or more, and if the storm responsible for such freezing temperatures knocked down power lines resulting in power loss, and the inability of residents to heat their homes. A freeze's greatest risk is generally unprotected or under-protected water pipes in homes, businesses and infrastructure. Outdoor irrigation systems and plumbing in homes where insulation is inadequate in walls or in off-grade homes where plumbing is exposed are most vulnerable. Unmitigated older structures and manufactured housing are probably the most vulnerable structures.

An icing, glaze, or sleet incident in Okaloosa County would likely result in severe traffic problems and safety concerns throughout the community and its roadways, including I-10. With no means of salting roadways or removing ice, emergency response would be severely slowed in iced areas. Electrical service would likely be interrupted or totally absent in many areas due to power line glazing and downed tree branches due to ice accumulation. Mitigation efforts would more likely focus on sheltering and ability to receive outside mutual aid assistance, rather than on equipment and ice buildup prevention due to the infrequency and inconsistency of such events.

PROBABILITY:
Based on the data of total below freezing days, the future probability of freezing temperature days in the county's southern region is estimated to be 55 days in a 5-year time frame. In the county's northern region, the future probability is estimated to be 100 days during that same time. Because a snow event in Okaloosa County is so rare, a single snow "event" over five or ten years is probably the average.

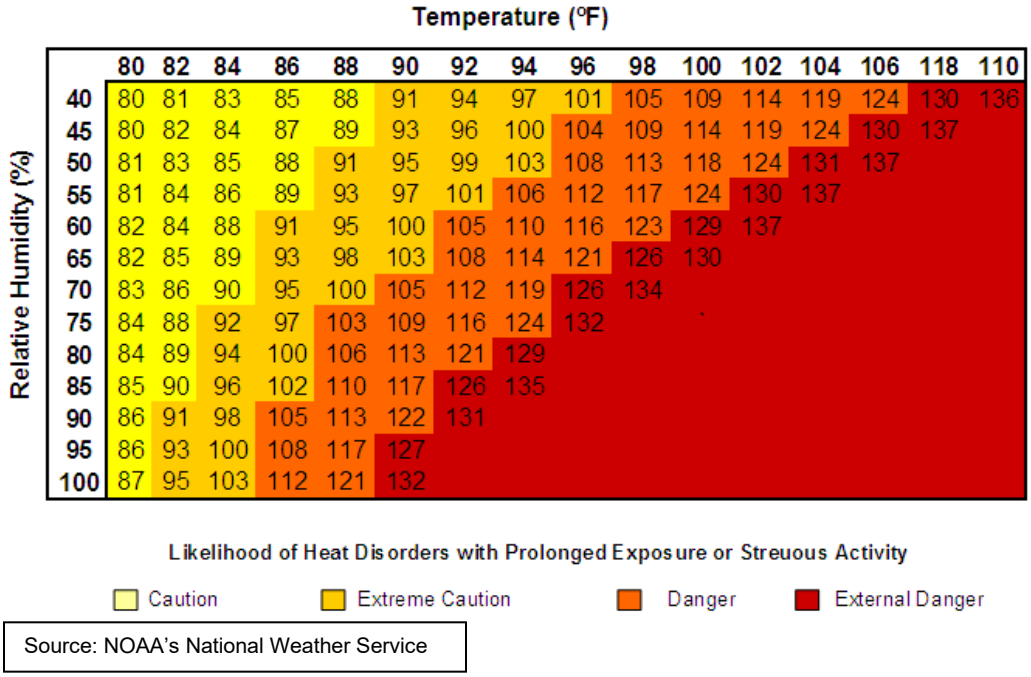
4.01.08 Heat Wave and Drought

While heat waves and droughts generally intertwine with one another, since separate data is available for each hazard, they are treated individually within this section. All of Okaloosa County is susceptible to both heat waves and drought.

4.01.08.01 Heat Wave

DEFINITION:
The National Weather Service (NWS) defines a heat wave as a "period of abnormally and uncomfortably hot and unusually humid weather. Typically, a heat wave lasts two or more days" (2026 National Weather Service https://forecast.weather.gov/glossary). Heat can build up in the summer months and cause temperatures to climb into the upper 90° F range or above. As recognized in the NWS definition, humidity affects how the temperature is felt or experienced. This phenomenon is measured as a "heat index". A high heat index can lead to health issues, particularly for the elderly or people with health conditions. Figure 4.01.08.01.1, below, illustrates the likeliness of heat disorders associated with a high heat index .

Figure 4.01.08.01.1: Heat Index and Health Disorders



Source: NOAA's National Weather Service

HISTORICAL OCCURRENCE:
Using the NWS definition, heat waves can be expressed in terms of absolute temperature or a relative measure (i.e., the heat index). Tables 4.01.08.01.1 and 4.01.08.01.2, below, developed by the Florida Climate Center within Florida State University's Center for Ocean-Atmospheric Prediction Studies using data from the Center for Disease Control's National Environmental Public Health Tracking Network (https://ephtracking.cdc.gov/DataExplorer/), illustrate heat wave events based both on absolute temperature (4.01.08.01.1) and heat index (4.01.08.01.2) in Okaloosa County from 1979 through 2023.

Table 4.01.08.01.1 Heat Waves in Okaloosa County 1979-2023 based on Daily Maximum Temperature

Heat Metric: Daily Maximum Temperature – Minimum Duration Days: 2 days – Relative Threshold: 90th Percentil								
StateFIPS	State	CountyFIP	County	Year	Value			
12	Florida	12091	Okaloosa	1979	4		Descriptive Statistics	
12	Florida	12091	Okaloosa	1980	28		Maximum (2011)	59
12	Florida	12091	Okaloosa	1981	19		Average per year	12.3
12	Florida	12091	Okaloosa	1982	9			
12	Florida	12091	Okaloosa	1983	7			
12	Florida	12091	Okaloosa	1984	0			
12	Florida	12091	Okaloosa	1985	6			
12	Florida	12091	Okaloosa	1986	15			
12	Florida	12091	Okaloosa	1987	8			
12	Florida	12091	Okaloosa	1988	3			
12	Florida	12091	Okaloosa	1989	6			
12	Florida	12091	Okaloosa	1990	11			
12	Florida	12091	Okaloosa	1991	2			
12	Florida	12091	Okaloosa	1992	9			
12	Florida	12091	Okaloosa	1993	10			
12	Florida	12091	Okaloosa	1994	0			
12	Florida	12091	Okaloosa	1995	18			
12	Florida	12091	Okaloosa	1996	10			
12	Florida	12091	Okaloosa	1997	3			
12	Florida	12091	Okaloosa	1998	32			
12	Florida	12091	Okaloosa	1999	14			
12	Florida	12091	Okaloosa	2000	30			
12	Florida	12091	Okaloosa	2001	0			
12	Florida	12091	Okaloosa	2002	7			
12	Florida	12091	Okaloosa	2003	0			
12	Florida	12091	Okaloosa	2004	4			
12	Florida	12091	Okaloosa	2005	4			
12	Florida	12091	Okaloosa	2006	19			
12	Florida	12091	Okaloosa	2007	24			
12	Florida	12091	Okaloosa	2008	0			
12	Florida	12091	Okaloosa	2009	21			
12	Florida	12091	Okaloosa	2010	34			
12	Florida	12091	Okaloosa	2011	59			
12	Florida	12091	Okaloosa	2012	10			
12	Florida	12091	Okaloosa	2013	0			
12	Florida	12091	Okaloosa	2014	17			
12	Florida	12091	Okaloosa	2015	24			
12	Florida	12091	Okaloosa	2016	4			
12	Florida	12091	Okaloosa	2017	4			
12	Florida	12091	Okaloosa	2018	2			
12	Florida	12091	Okaloosa	2019	16			
12	Florida	12091	Okaloosa	2020	10			
12	Florida	12091	Okaloosa	2021	6			
12	Florida	12091	Okaloosa	2022	8			
12	Florida	12091	Okaloosa	2023	38			

Source: Florida Climate Center within Florida State University's Center for Ocean-Atmospheric Prediction Studies using data from the Center for Disease Control's National Environmental Public Health Tracking Network

Table 4.01.08.01.2 Heat Waves in Okaloosa County 1979-2023 based on Daily Maximum Heat Index

Heat Metric: Daily Maximum Heat Index - Minimum Duration Days: 2 days - Relative Threshold: 90th Percentile						
StateFIPS	State	CountyFIPS	County	Year	Value	Descriptive Statistics
12	Florida	12091	Okaloosa	1979	2	Maximum (2023) 46
12	Florida	12091	Okaloosa	1980	20	Average per year 12.2
12	Florida	12091	Okaloosa	1981	20	
12	Florida	12091	Okaloosa	1982	4	
12	Florida	12091	Okaloosa	1983	10	
12	Florida	12091	Okaloosa	1984	0	
12	Florida	12091	Okaloosa	1985	3	
12	Florida	12091	Okaloosa	1986	9	
12	Florida	12091	Okaloosa	1987	9	
12	Florida	12091	Okaloosa	1988	2	
12	Florida	12091	Okaloosa	1989	6	
12	Florida	12091	Okaloosa	1990	7	
12	Florida	12091	Okaloosa	1991	4	
12	Florida	12091	Okaloosa	1992	5	
12	Florida	12091	Okaloosa	1993	11	
12	Florida	12091	Okaloosa	1994	0	
12	Florida	12091	Okaloosa	1995	12	
12	Florida	12091	Okaloosa	1996	6	
12	Florida	12091	Okaloosa	1997	7	
12	Florida	12091	Okaloosa	1998	17	
12	Florida	12091	Okaloosa	1999	12	
12	Florida	12091	Okaloosa	2000	19	
12	Florida	12091	Okaloosa	2001	3	
12	Florida	12091	Okaloosa	2002	5	
12	Florida	12091	Okaloosa	2003	0	
12	Florida	12091	Okaloosa	2004	8	
12	Florida	12091	Okaloosa	2005	10	
12	Florida	12091	Okaloosa	2006	11	
12	Florida	12091	Okaloosa	2007	20	
12	Florida	12091	Okaloosa	2008	4	
12	Florida	12091	Okaloosa	2009	16	
12	Florida	12091	Okaloosa	2010	35	
12	Florida	12091	Okaloosa	2011	32	
12	Florida	12091	Okaloosa	2012	7	
12	Florida	12091	Okaloosa	2013	6	
12	Florida	12091	Okaloosa	2014	13	
12	Florida	12091	Okaloosa	2015	37	
12	Florida	12091	Okaloosa	2016	19	
12	Florida	12091	Okaloosa	2017	8	
12	Florida	12091	Okaloosa	2018	14	
12	Florida	12091	Okaloosa	2019	28	
12	Florida	12091	Okaloosa	2020	18	
12	Florida	12091	Okaloosa	2021	10	
12	Florida	12091	Okaloosa	2022	13	
12	Florida	12091	Okaloosa	2023	46	

Source: Florida Climate Center within Florida State University's Center for Ocean-Atmospheric Prediction Studies using data from the Center for Disease Control's National Environmental Public Health Tracking Network

As shown by the tables above, the number of heatwave events varies somewhat depending on whether the actual temperature or the perceived temperature is used.

By themselves, heat waves do not typically produce any major impacts to infrastructure, crops, commerce, or the public health, although isolated cases of heat stroke and other heat-related health issues can occur as illustrated by Figure 4.01.08.01.1, above. The primary impacts associated with a heat wave are statements from the Health Department advising the elderly and infirm to remain indoors in air conditioning while temperatures remain high. Electrical system failures due to high demand are possible during excessive heat conditions. The general threat to the community is to agricultural crops, livestock, poultry, and individuals without adequate cooling systems in their homes, with emphasis on low income and the elderly. An electrical system failure caused by excessive demand would only enhance problems for all of these industries and populations. (NOAA Watch: Heat Wave).

In combination with a drought, however, a heat wave can be a more serious threat and can be linked to wildfires (discussed in greater detail later in this document), crop loss, and other impacts.

EXTENT: A worst-case scenario in terms of a heat wave would be if excessive heat and humidity lasted for a week or more. Dangerous conditions are present when both heat and high humidity combine to make outside temperatures feel in the 103-124° F range. External danger warnings are issued when high temperatures and humidity combine to make outside temperatures feel in the 126-137° F range. Heat disorders may develop in people who work outside for long periods of time, such as construction workers or agricultural workers. To combat the dangerous effects of excessive heat residents should dress appropriately, stay indoors, refrain from strenuous work during the hottest part of the day and stay hydrated.

PROBABILITY:
Based on the Niceville and Crestview heat wave data, it is predicted that the future probability of a heat wave occurring in Okaloosa County is on average three times during a 5-year period.

4.01.08.02 Drought

DEFINITION:
According to the U.S. Drought Monitor (2006), a drought is defined as a "deficiency of precipitation over an extended period of time, usually a season or more." The table below is the drought intensity categories from U.S. Drought Monitor.

Table 4.01.08.02.1: Drought Intensity Categories

Category	Possible Impacts	Palmer Drought Index
Abnormally Dry (D0)	Going into drought: short-term dryness slowing planting, growth of crops or pastures; fire risk above average. Coming out of drought: some lingering water deficits; pastures or crops not fully recovered.	-1.0 to -1.9
Moderate Drought (D1)	Some damage to crops, pastures; fire risk high; streams, reservoirs, or wells low, some water shortages developing or imminent, voluntary water use restrictions requested	-2.0 to -2.9
Severe Drought (D2)	Crop or pasture losses likely; fire risk very high; water shortages common; water restrictions imposed	-3.0 to -3.9
Extreme Drought (D3)	Major crop/pasture losses; extreme fire danger; widespread water shortages or restrictions	-4.0 to -4.9
Exceptional Drought (D4)	Exceptional and widespread crop/pasture losses; exceptional fire risk; shortages of water in reservoirs, streams, and wells, creating water emergencies	-5.0 or less

Source: U.S. Drought Monitor, 2025

HISTORICAL OCCURRENCE:
Droughts are relatively frequent and cyclical in the area. Seasonal climatological droughts occur in April and October. Table 4.01.08.02.2, below, displays the months from 2000-2025 during which Okaloosa County experienced various drought levels. The Drought Monitor maintained by the U.S. Geologic Survey provided the data and the classification scheme for the various drought levels.

Droughts impact the County in a number of ways. For example, declining water levels and altered hydro-periods in swamps can disrupt breeding cycles of fish and amphibians which can affect other species which prey on, or which are preyed upon, such fish and amphibians.

In addition to impacts on natural systems such as wetlands and estuaries, agricultural losses would be widespread. As shown by Table 4.01.08.02.3 Okaloosa County Agricultural Statistics below, Okaloosa County's cropland production totaled $4,791,000 in 2022 (the most recent year available). An exceptional drought lasting an extended period of time would have a catastrophic impact on crop production. Depending on the farmers' ability to access water via wells and pumps, crop losses could easily total millions of dollars. Similarly, livestock production (including aquaculture and fowl) in Okaloosa County had a gross value of $1,670,000 in 2022. Again, depending on the ranchers' and poulters' ability to provide water for their animals, losses could total in the millions. Even short of drought-increased mortality, droughts can cause animals to lose muscle and fat, and stress can lead to lower fecundity, all of which results in loss of value. Finally, forestry remains strong, with an economic output of $57.9M in 2023 (University of Florida Department of Food and Resource Economics, *Economic Contributions of the Florida Forest Industry in 2023*). As with crops and livestock, forestry production can also experience declines due to drought. However, unlike crops and stock for which the impacts are typically felt within the same season as the drought, forestry impacts can take several years to fully manifest and can linger for years after a drought has passed and other agricultural products have recovered.

In addition to impacts on natural systems and agricultural activities, increased demand created by drought conditions on public and private water supply systems that serve the public can and has caused some generators and pumps to fail, creating low or no pressure for critical facilities such as fire hydrants and medical centers.

Table 4.01.08.02.2: Drought Occurrence in Okaloosa County by Year & Month, 2000- 2025

D0-Abnormally Dry	D1-Moderate Drought	D2-Severe Drought	D3-Extreme Drought	D4-Exceptional Drought
2000 (Jan-Dec)	2000 (Apr-Dec)	2000 (May-Dec)	2000 (Jun-Sep & Nov)	2000 (Aug-Sep)
2001 (Jan-Mar & Jun)	2001 (Jan, Mar, Jun)	2002 (Jun & Jul)	2006 (Aug)	2011 (Jun-Jul)
2002 (Jan-Mar, May-Jul, & Sep)	2002 (Jun & Jul)	2006 (Jul-Sep)	2010 (Aug–Dec)	2012 (Feb-Dec)
2004 (Apr-Jul)	2006 (Jun-Oct)	2007 (Jul-Oct)	2011 (May, Aug-Dec)	2013 (Jan-Feb)
2006 (Apr-Dec)	2007 (Apr-Oct)	2010 (Jul)	2012 (Jan)	
2007 (Jan & Apr-Nov)	2010 (Jan, Apr-Jun)	2013 (Jun, Dec)	2013 (Mar-May)	
2008 (Jul-Aug & Oct)	2011 (Jan-Apr)			
2009 (Feb-Mar & Jul)	2013 (Jul, Sep-Nov)			
2014 (Jan-Mar)	2014 (Apr)	2014 (May-Aug)	2014 (Sep-Dec)	
2015 (Dec)	2015 (Jan-Mar, May, Oct-Nov)	2015 (Apr, Jun, Sep)	2015 (Jul-Aug)	
2016 (Sept – Dec)	2016 (Apr-May, Dec)	2016 (Nov-Dec)	2016 (Nov)	
2017 (Mar-May, Nov-Dec)	2017 (Apr-May, Dec)			
2018 (Jan-May)	2018 (Jan-Feb)	2018 (Jan-Feb)		

2019 (Mar-Dec)	2019 (Apr-Dec)	2019 (Jul, Oct)		
2020 (Mar-Jun, Dec)	2019 (May-Jun)			
2021 (Feb-May, Dec)				
2022 (Jan-Mar, Dec)	2022 (Oct-Nov)	2022(Nov-Dec)		
2023 (Jan-Apr, Nov-Dec)	2023 (Aug)	2023 (Sep)	2023 (Oct-Nov)	
2024 (Jan, Aug	2024 (Aug, Nov)	2024 (Sep-Oct	2024 (Oct-Nov)	
2025 (Jan-Apr, Oct	2025 (May, Oct	2025-(Nov)		

Source: The U.S. Drought Monitor

EXTENT:

A worst-case scenario in terms of drought would be if an exceptional drought (D4) lasted for months or years. Lakes, swamps, and other non-tidal bodies of water would see a drastic decline in natural water levels, with smaller, shallower systems drying up entirely. Estuaries, despite tidal exchange, would also see impacts to fish and wildlife populations due to increased salinity caused by decreased freshwater inflow. Also, the risk of wildfire increases as drought deepens. (U.S. Drought Monitor, 2010). Such a drought would have Countywide and almost certainly regional impacts on not only the health and productivity of natural systems, but also economic impacts due to crop damage or failure.

While it is impossible to determine a precise dollar value for the impacts a prolonged drought would have on Okaloosa County, it is reasonable to estimate that such a drought could result in millions of dollars of lost agricultural and resource commodities from which recovery could take years.

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Table 4.01.08.02.3 Okaloosa County Agricultural Statistics

Market Value of Agricultural Products Sold	**Sales** ($1,000)
Total	**6,461**
Crops	**4,791**
Grains, oilseeds, dry beans, dry peas	281
Tobacco	-
Cotton and cottonseed	1,712
Vegetables, melons, potatoes, sweet potatoes	213
Fruits, tree nuts, berries	1,254
Nursery, greenhouse, floriculture, sod	60
Cultivated Christmas trees, short rotation woody crops	4
Other crops and hay	1,267
Livestock, poultry, and products	**1,670**
Poultry and eggs	44
Cattle and calves	767
Milk from cows	-
Hogs and pigs	37
Sheep, goats, wool, mohair, milk	90
Horses, ponies, mules, burros, donkeys	644
Aquaculture	-
Other animals and animal products	88

Source: US Department of Agriculture/National Agricultural Statistics Service *2022 Census of Agriculture Okaloosa County Profile*

PROBABILITY:
Based on this data, the county has a future probability of experiencing on average less than five (5) abnormally dry months every year. The future probability of a moderate to severe drought occurring is on average five (5) months per year.

4.01.09 Wildfire

DEFINITION:
Florida Statutes 590.015 defines “wildfire” as any vegetative fire that threatens to destroy life, property, or natural resources.

HISTORICAL OCCURRENCE:
There are 665,646 acres of forest land in Okaloosa County. This includes the acreage of the state-owned Blackwater Forest, Eglin Air Force Base and Reservation, and privately-owned forest lands. The forests of Okaloosa County consist of natural vegetation and soils historically related to the Longleaf Pine or upland Southeastern forests. Natural fire plays an important role in the health of these forest types. Prescribed burning alleviates the potential for wildfire in much of the county.

Table 4.01.09.1 shows the record of wildfire outbreaks in Okaloosa County from 2011 through - 2025. The majority of the fire outbreaks have been relatively small in size, ranging from 0.3 to 9 acres. According to the Florida Forest Service, most of the fires were caused by human-induced action, such as escaped debris burns or controlled burns, campfires, cigarettes, and fireworks. The county has not experienced a massive wildfire (human-induced or natural) greater than 1,000 acres.

Though wildfire primarily impacts natural systems, it also poses a threat to structures as discussed in greater detail, below. The Florida Division of Forestry regularly issues warnings regarding the threat of wildfire and has published informational pamphlets and other materials advising property owners how to reduce the risk of wildfire to their homes and properties. Smoke from wildfires – and on occasion from controlled burns that do not behave as planned – can cause temporary closure of roads, resulting in the disruption of traffic patterns.

Okaloosa County has not experienced a wildfire in the unincorporated area or in any of the participating jurisdictions over the past 15 years. As shown by Table 4.01.09.1, below, there have been no wildfires in excess of 299 acres in Okaloosa County from 2011 through 2025. It is, however, possible that future wildfire occurrences could impact the county. Potential impacts could include evacuations of homes in the wildland urban interface, closure of arterial roadways particularly state roads 85 and 123 and smoke related illnesses. Furthermore, there can be impacts to tourism, traffic accidents related to smoke fog, and economic impacts related to loss of agricultural revenue.

Table 4.01.09.1: Wildfire Outbreaks in Okaloosa County, 2011- 2025

Size of fire (acres)	Number of outbreaks	Total acres burned
0.1-0.2	23	2.6
0.3-9	75	207
10.0-99	28	1009.1
100-299	2	433
300-999	0	0

Source: Florida Forestry Service, 2025

EXTENT:
Based on the Wildland Fire Risk Assessment of Okaloosa County, the worst-case scenario would be if the areas with the greatest Level of Concern (LOC) experienced a massive wildfire. These areas have a greater likelihood of danger and destruction due to their inadequate infrastructure, inaccessibility to critical facilities or firefighting resource locations, and located in the wildland-

urban interface which is defined by the Florida Division of Forestry as "the zone where structures and other human development meets/intermingles with undeveloped wildland fuels and other natural features." Fires could come into subdivisions and neighborhoods in urban and suburban areas, which could be a potentially catastrophic situation. Smoke and ash from dangerous wildfires could decrease visibility on highways and local roads.

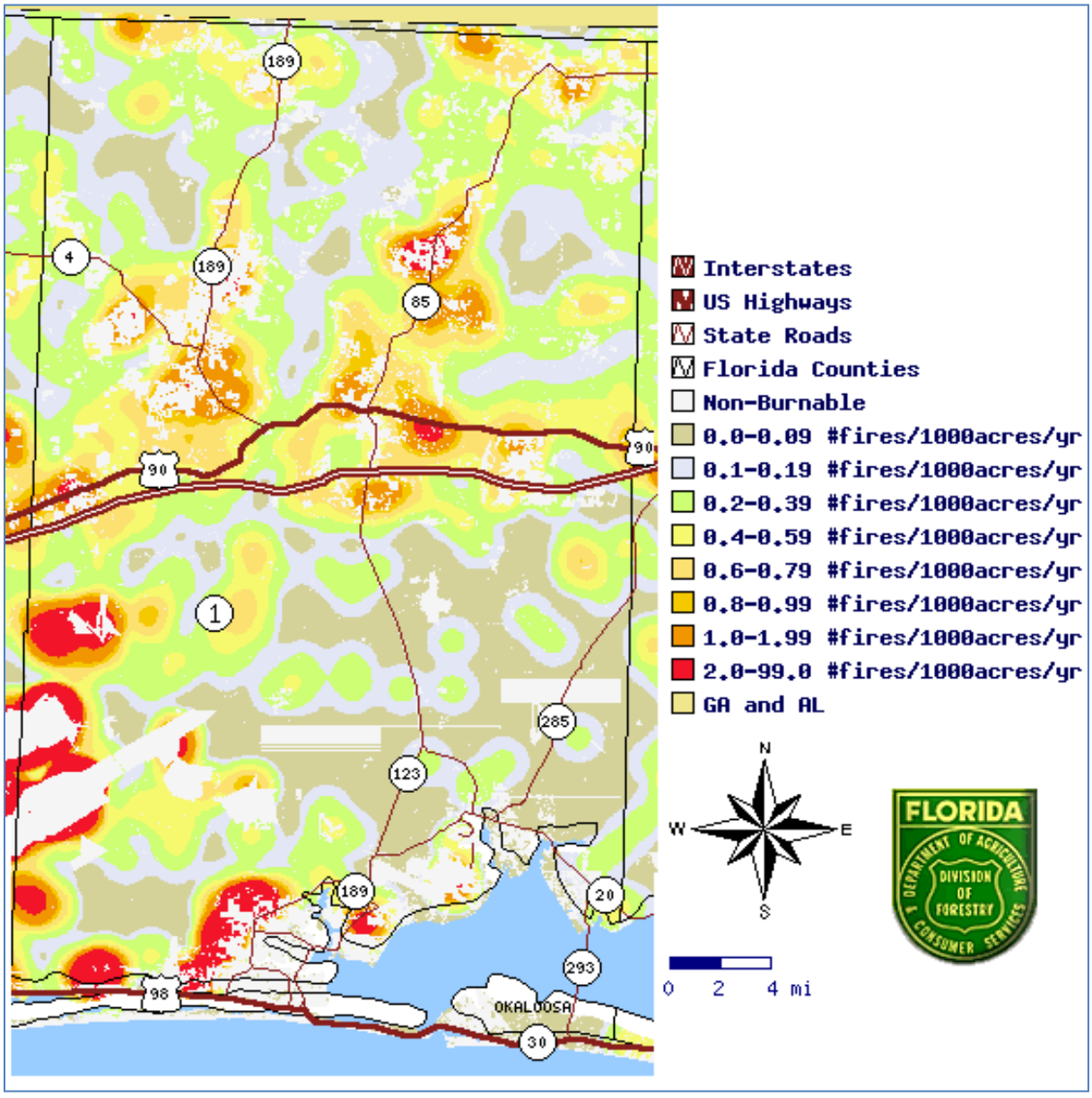
There are 109 residential and 20 non-residential structures with a total combined value of $113,981,264 located in the areas with the greatest Level of Concern as determined by the Florida Forestry Service (as illustrated by Figure 4.01.09.1) that would be destroyed under a true worst-case scenario for wildfire. To this figure must be added the loss of life and injuries that would likely occur during a catastrophic wildfire. In addition, secondary impacts such as loss of business and tax revenue would also run to millions of dollars.

PROBABILITY:
The Blackwater Forest will experience on average 160.9 small, human-induced wildfires per year. It will also experience on average 1.3 natural lightning fires per year.

The Wildland Fire Risk Assessment System of the Florida Division of Forestry provides a county-wide wildfire probability map specific to Okaloosa County. The number of potential wildfires per year in the county greatly varies due to a number of factors; such as intensity of urban development, vegetation and soil type, and forest management and practices. Figure 4.01.09.1 shows how many wildfires per year an area might reasonably expect per 1,000 acres. In a single wildfire event Okaloosa County could expect 0-9 acres to burn.

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Figure 4.01.09.1: Wildfire Risk Assessment for Okaloosa County



Source: Florida Division of Forestry (WRAS Mapping System)

4.01.10 Beach Erosion

DEFINITION:
According to the Rule 62B-33 of the Florida Administrative Code, the term *beach* refers to the "zone of unconsolidated material that extends landward from the mean low water line to the place where there is marked change in material or physiographic form or to the line of permanent vegetation" (62B-33.002). Additionally, the term *erosion* refers to the "wearing away of land or the removal of consolidated or unconsolidated material from the beach and dune system by wind, water, or wave action." Erosion includes:

a) Landward horizontal movement of the line of mean high water or beach and dune system profile.
b) Vertical lowering or volumetric loss of sediment from the beach and dune system or the offshore profile.

The issue of beach erosion is only a coastal issue, therefore only the coastal areas of the county are at risk of experiencing this type of natural hazard.

Since the intent of this plan is to focus on natural hazards, the discussion will center on the effects of storm events on the coastal sands. According to FDEP report number BCS-99-05, Shoreline Change Rate Estimates, background beach erosion can occur at increments from 1' to 8' per year. However, storm events can increase those measurements greatly and have done so in the past.

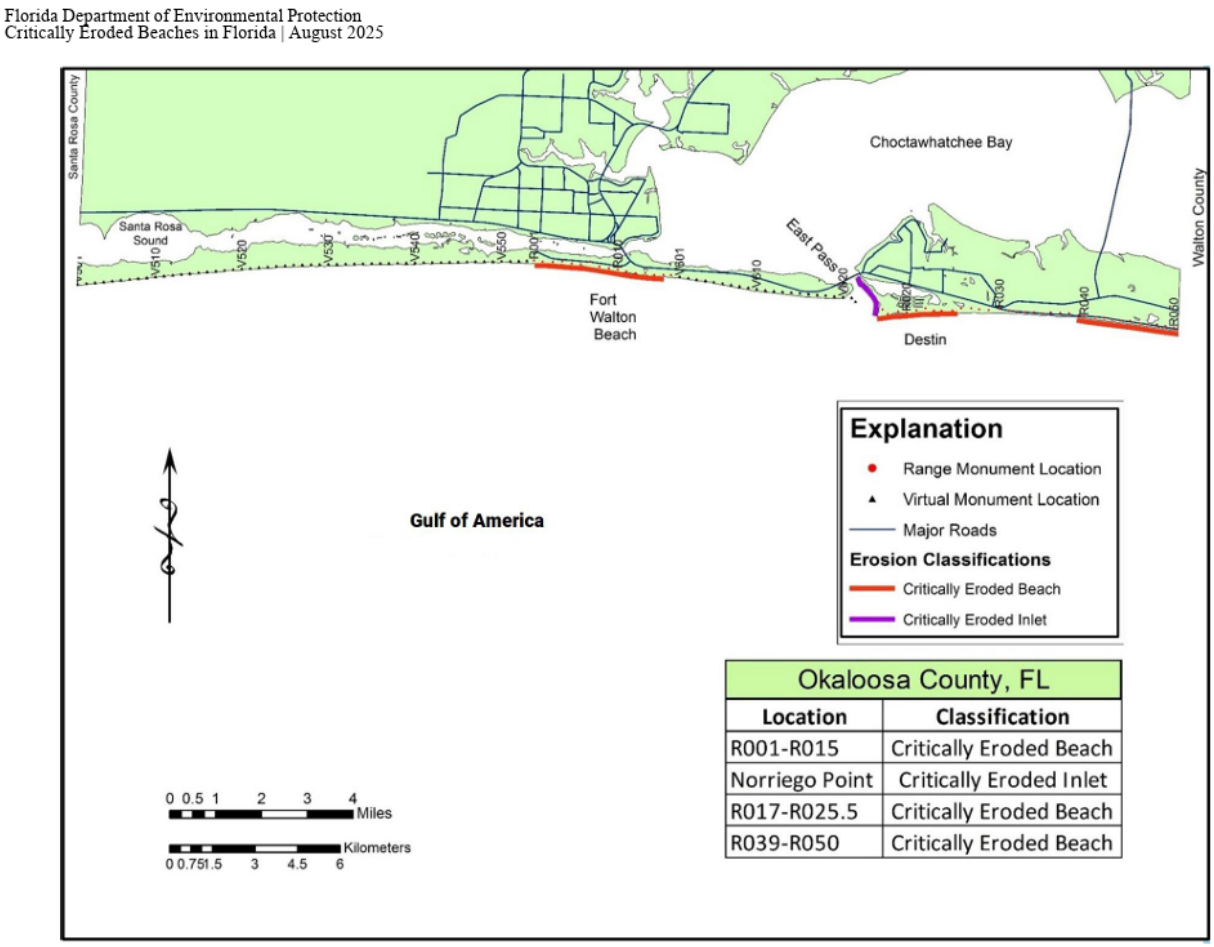
HISTORICAL OCCURRENCE:
As previously mentioned in the *Flooding* section, the vast majority of Okaloosa County's population is concentrated in the coastal areas. The issue of beach erosion is of concern due to the potential impact on infrastructure, such as roads, water, sewer, communications and gas transmission lines, as well as impacts to the tourist economy which in Okaloosa County is driven by the beaches. The effects of beach erosion are particularly difficult to plan mitigation for since background erosion can be accelerated by hurricanes and other weather events.

Hurricane Ivan (September 2004) caused major damage to the beach and dune systems of the county. As a result of beach erosion, approximately 59 dwelling units, 9 walls or revetments, and 20 other structures were either destroyed or deemed uninhabitable. Highway 98 between the City of Destin and City of Fort Walton Beach was washed-out during Ivan. A breach of Norriego Point occurred as well, which resulted in the loss of the beach area. This type of hurricane storm damage resulted in both the lowering of the beach profile and dune erosion.

In 2009, the Florida Department of Environmental Protection (FDEP) designated the shoreline between Reference Marker 17 (R-17) to and Reference Marker 20 (R-20), minus 180 feet west in Okaloosa County, as an "Emergency Area" due to the severe shoreline erosion from Tropical Storm Ida. Prior to T.S. Ida, between July 2005 and July 2007, the shoreline in this area had retreated approximately 55 feet. At R-18, between March 1996 and July 2007, the shoreline retreated 282 feet. (FDEP, 2010).

According to the Florida Department of Environmental Protection, Bureau of Beaches and Coastal Systems, there are 6.5 miles of critically eroded beaches in Okaloosa County. The location of these critically eroded areas include 2.8 miles of developed land on Santa Rosa Island near the City of Fort Walton Beach in the unincorporated area of the county, 1.6 miles in the City of Destin on the west side, and 2.1 miles in the City of Destin on the east side. The east end of Santa Rosa Island within the Eglin Air Force Base Property contains 1.7 miles of non-critically eroded beaches. This all can be seen in Figure 4.01.10.1.

Figure 4.01.10.1: Beach Erosion Classification in Okaloosa County.



Okaloosa County, FL	
Location	**Classification**
R001-R015	Critically Eroded Beach
Norriego Point	Critically Eroded Inlet
R017-R025.5	Critically Eroded Beach
R039-R050	Critically Eroded Beach

Source: FDEP Bureau of Beaches and Coastal Systems 2025

EXTENT:

A worst-case beach erosion scenario would be if a major storm with significantly strong winds and storm surge washed out the coastal areas. The resulting erosion would undermine the integrity of infrastructure, beachfront homes and businesses, and other structures by washing away the sediments that support the structural foundation, sometimes resulting in complete destruction. If all the structures fronting on the gulf beaches were destroyed due to a worst-case

erosion event, the damage would total $1,972,226,402. To this figure must be added the cost of road and other infrastructure repairs which would run into the tens if not hundreds of millions of dollars. Further, Okaloosa County's gulf beaches contribute millions of dollars annually in taxable sales to the local economy through restaurants, hotels, shopping areas and bed tax revenues. These revenues would be lost during the recovery and rebuilding period associated with a severe erosion event.

PROBABILITY:
Beaches are among the most dynamic, if not the most dynamic, systems on the planet. To the extent that beach erosion is the "wearing away of land or the removal of consolidated or unconsolidated material from the beach and dune system by wind, water, or wave action", it may be said that Okaloosa County's beaches are continually eroding and then accreting based on tides, waves, storms, and other factors, and that the probability of erosion occurring along some portion of Okaloosa County's beaches at any given time is nearly 100%. Certain segments totaling 6.5 miles have been designated by the Florida Department of Environmental Protection as critically eroded and illustrated by Figure 4.01.10.1; these areas in particular have been losing sand more quickly than accretion can replace it. Based on recent historical data, it appears that beach erosion will most certainly occur in the future. The frequency and extent of erosion are highly dependent on the frequency and intensity of tropical storms and hurricanes. Therefore, a numerical value will not be given for the estimated future amount of beach erosion.

4.01.11 Other Hazards

The hazards listed below have been analyzed and determined by the LMS Committee that the impact would be minimal or non-existent in Okaloosa County.

4.01.11.01 Sinkholes

The map and description prepared by the United States Geologic Survey (USGS) in its "Sinkhole, Type, Development and Distribution in Florida" (1985) indicates that Okaloosa County in its entirety is located in an area where sinkholes seldom, if ever, occur. The Florida Geologic Survey's statewide sinkhole database indicates no sinkholes in the County. Since there is no history of this hazard in the County, no further analysis or risk assessment will be conducted for this plan. However, should conditions change and geological features be discovered which contribute to the development of sinkholes, the LMS committee will include any new occurrence information in ongoing updates.

It should also be noted that, in August of 2025, the failure of a large drainage pipe located in the Beal Parkway right-of-way in Ft Walton Beach caused a washout in the northbound lanes. Though reported as a "sinkhole", the event was due to an infrastructure failure and was not due to underlying soils, hydrology, or geologic conditions.

The probability of a sinkhole occurring in the future is less than 1% based upon no documented sinkholes in the county and the soil strata is non-conducive to the formation of sinkholes.

4.01.11.02 Expansive Soils

According to the *Soil Survey of Okaloosa County Florida* (USDA, June 1995), two types of soil are considered vulnerable to expansion. These are known as shrinking and swelling or "expansive soils." Another way of describing expansive soils is the change of volume of a soil with a change of moisture content. All of the soils listed in the expansive class are also considered erodible soils. Okaloosa County may be susceptible to expansive soils in some localized areas. There have been no previous occurrences recorded of expansive soils in the County. Table 4.01.11.02.1 lists soils having moderate to high shrink swell potential in Okaloosa County. Only those soils with an associated risk of "High" are listed:

Table 4.01.11.02.1: Shrink/ swell potential of soils in Okaloosa County.

Soil Type	ME Soils*	HE Soils**	Total Acreage	% Total Land Area
#35-Angie (2 to 5 percent slopes)		X	1,073.26	.16
#49-Angie (5 to 12 percent slopes)		X	10,280.79	1.61
#20-Udorthents (nearly level)	X		655.31	.11
Total	.11	1.77	12,009.36	1.88

* Moderate Erodible Soils **Highly Erodible Soils

Note: Expansive soils and erodible soils are classified as the same.
Source: Soil Survey of Okaloosa County, Florida; June 1995.

Expansive soils can lessen the strength of building foundations, which could result in structural collapse or instability. In addition, these soils have limitations for use as local roads and streets because of lack of strength to support roadways and traffic. There is a possibility of shrink/swell potential or soil expansion based on the existence of moderately erodible soils and highly erodible soils in Okaloosa County. Although the specific amount of these soils in the county is known, the future probability of this occurring is minimal because this issue is addressed during the time of construction and there are no previous records of occurrence.

4.01.11.03 Earthquake

According to the U.S. Geological Survey Earthquake Probability Maps, Okaloosa County has between a 0.005 and 0.010% chance of experiencing a 5.0 magnitude earthquake within 100 years. This is considered a very minimal risk. Also, since there is no history of earthquakes in the county, no further analysis or risk assessment will be conducted for this plan. The future probability of an earthquake occurring in Okaloosa County has been determined to be less than 1 in 100 years.

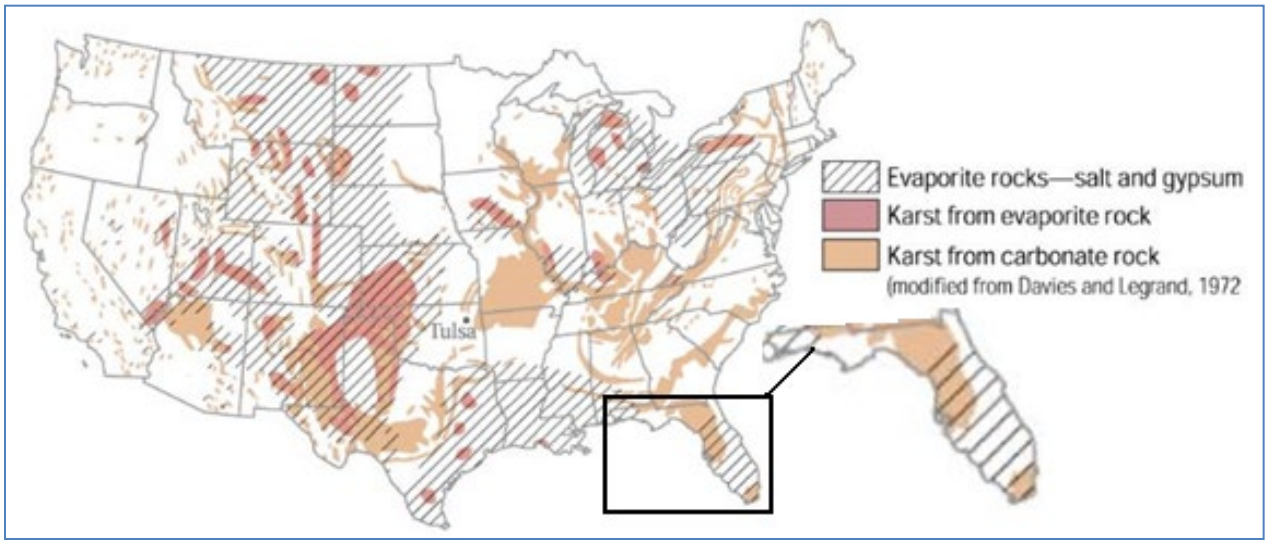
4.01.11.04 Avalanche

Okaloosa County does not have either the topography or the snowfall amounts that would create conditions for an avalanche. Since there is no history of this hazard in the county, no further analysis or risk assessment will be conducted for this plan. The future probability of an avalanche occurring in Okaloosa County has been determined to be less than 1 in 100 years.

4.01.11.05 Land Subsidence

According to the U.S. Geological Survey, “land subsidence occurs when large amounts of ground water have been withdrawn from certain types of rocks, such as fine-grained sediments. The rock compacts because the water is partly responsible for holding the ground up. When the water is withdrawn, the rock falls in on itself. Land subsidence is most often caused by human activities, mainly from the removal of subsurface water” (U.S. Geological Survey). Okaloosa County has a minimal amount of the most common rock types that are connected to land subsidence (Figure 4.01.11.05.1). Since there is no history of this hazard in the county, no further analysis or risk assessment will be conducted for this plan. The future probability of land subsidence occurring in Okaloosa County has been determined to be less than 1 in 100 years.

Figure 4.01.11.05.1: Rock types connected to collapse (subsurface cavities/sinkholes) in the U.S.



Source: U.S. Geological Survey

4.01.11.06 Landslide

According to U.S. Geological Survey Map of Relative Incidence and Susceptibility Map, Okaloosa County has a very low landslide incidence with less than 1.5% area susceptible to a landslide (USGS, 2010). Landslides are therefore considered to be a minimal risk to the county, and no further analysis or risk assessment will be conducted for this plan. The future probability of a landslide occurring in Okaloosa County has been determined to be less than 1 in 100 years.

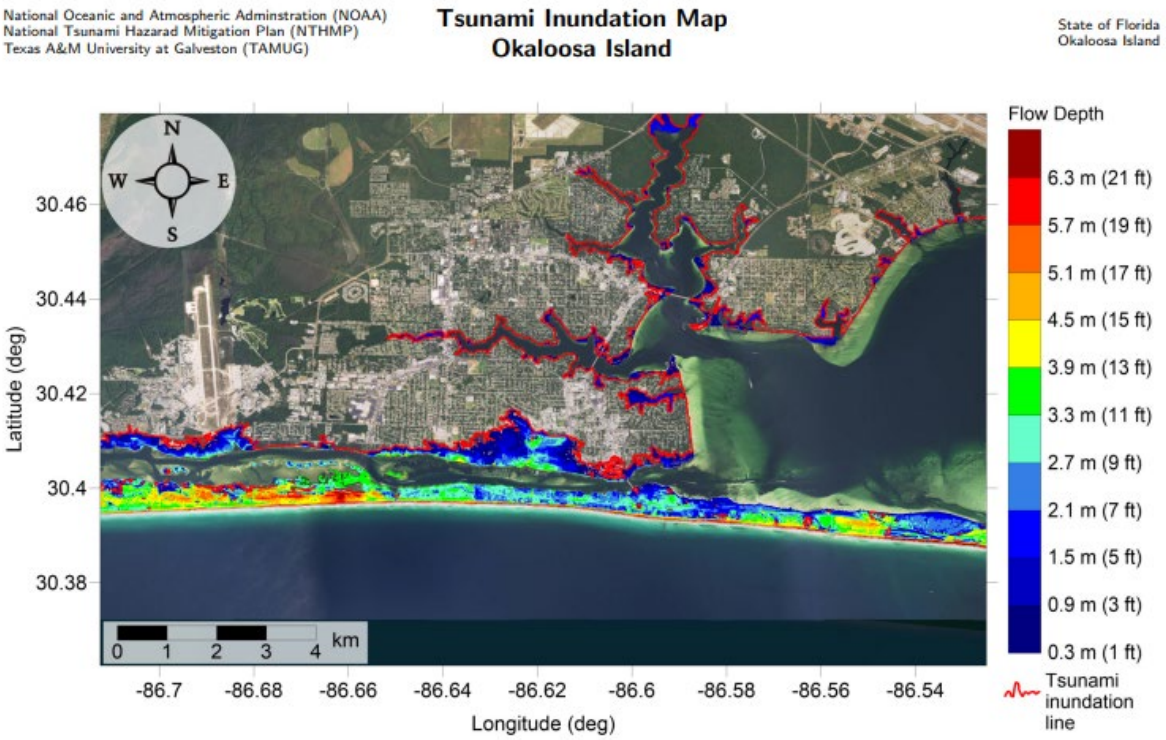
4.01.11.07 Volcano

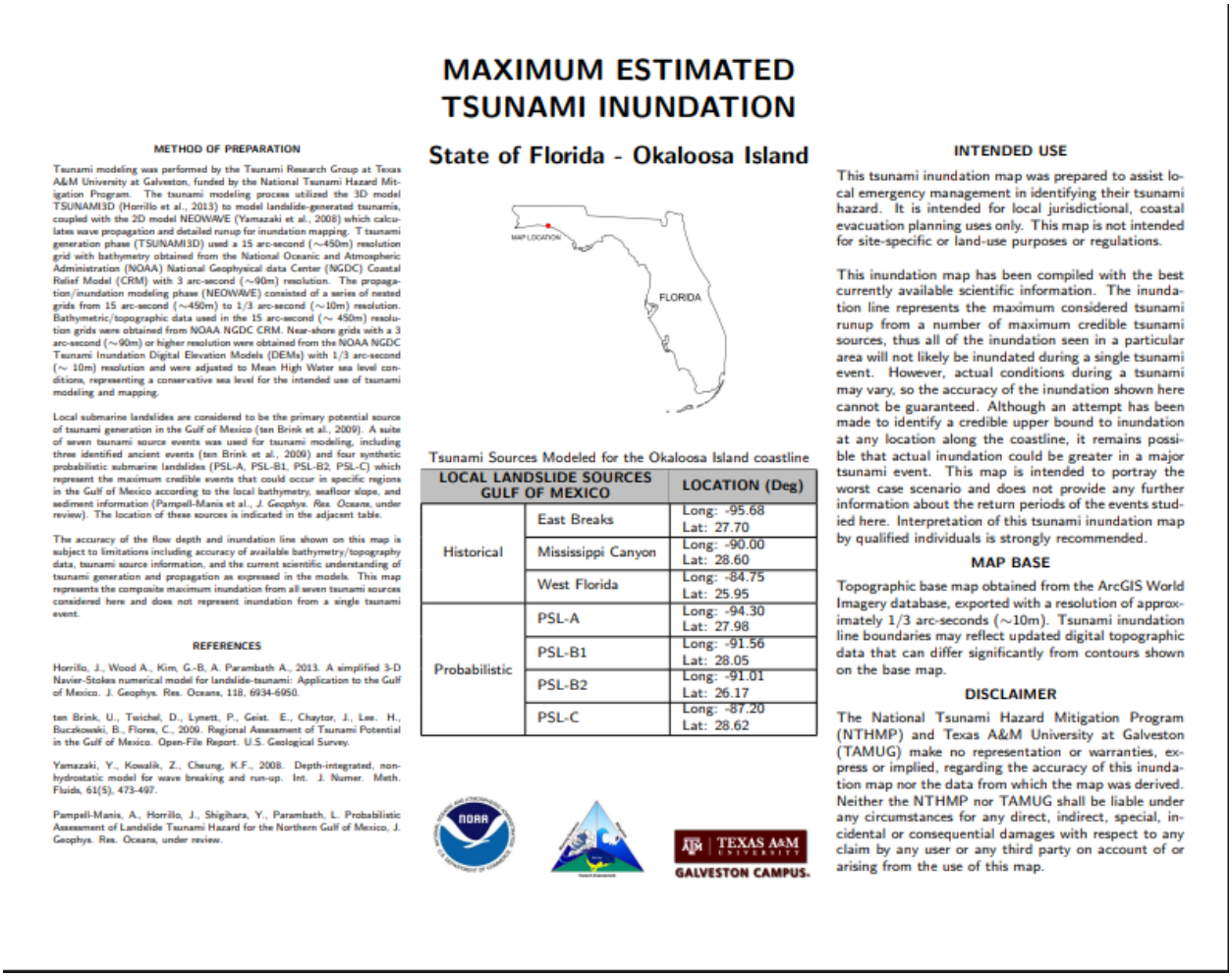
There are no known geological features in or near Okaloosa County or the Southeast related to volcanism. Since there is no history of this hazard in the county, no further analysis or risk assessment will be conducted for this plan. The future probability of a volcanic eruption occurring in Okaloosa County has been determined to be less than 1 in 100 years.

4.01.11.08 Tsunami

According to the U.S. Geological Survey, Okaloosa County is not located in an area that has historically been subjected to tsunamis, even though it is a coastal county. Since there is no history of this hazard in the county, minimum analysis and risk assessment will be conducted for this plan. The Local Mitigation Strategy Committee will monitor any developments in the ability to predict, monitor and issue warnings. There is no record of a tsunami occurring in Okaloosa County; therefore, the future probability has been determined to be less than 1 in 100 years.

Figure 4.01.11.08 Tsunami Inundation Map Okaloosa Island





MAXIMUM ESTIMATED TSUNAMI INUNDATION

State of Florida - Okaloosa Island

METHOD OF PREPARATION

Tsunami modeling was performed by the Tsunami Research Group at Texas A&M University at Galveston, funded by the National Tsunami Hazard Mitigation Program. The tsunami modeling process utilized the 3D model TSUNAMI3D (Horrillo et al., 2013) to model landslide-generated tsunamis, coupled with the 2D model NEOWAVE (Yamazaki et al., 2008) which calculates wave propagation and detailed runup for inundation mapping. T tsunami generation phase (TSUNAMI3D) used a 15 arc-second (~450m) resolution grid with bathymetry obtained from the National Oceanic and Atmospheric Administration (NOAA) National Geophysical data Center (NGDC) Coastal Relief Model (CRM) with 3 arc-second (~90m) resolution. The propagation/inundation modeling phase (NEOWAVE) consisted of a series of nested grids from 15 arc-second (~450m) to 1/3 arc-second (~10m) resolution. Bathymetric/topographic data used in the 15 arc-second (~ 450m) resolution grids were obtained from NOAA NGDC CRM. Near-shore grids with a 3 arc-second (~90m) or higher resolution were obtained from the NOAA NGDC Tsunami Inundation Digital Elevation Models (DEMs) with 1/3 arc-second (~ 10m) resolution and were adjusted to Mean High Water sea level conditions, representing a conservative sea level for the intended use of tsunami modeling and mapping.

Local submarine landslides are considered to be the primary potential source of tsunami generation in the Gulf of Mexico (ten Brink et al., 2009). A suite of seven tsunami source events was used for tsunami modeling, including three identified ancient events (ten Brink et al., 2009) and four synthetic probabilistic submarine landslides (PSL-A, PSL-B1, PSL-B2, PSL-C) which represent the maximum credible events that could occur in specific regions in the Gulf of Mexico according to the local bathymetry, seafloor slope, and sediment information (Pampell-Manis et al., *J. Geophys. Res. Oceans*, under review). The location of these sources is indicated in the adjacent table.

The accuracy of the flow depth and inundation line shown on this map is subject to limitations including accuracy of available bathymetry/topography data, tsunami source information, and the current scientific understanding of tsunami generation and propagation as expressed in the models. This map represents the composite maximum inundation from all seven tsunami sources considered here and does not represent inundation from a single tsunami event.

REFERENCES

Horrillo, J., Wood A., Kim, G.-B, A. Parambath A., 2013. A simplified 3-D Navier-Stokes numerical model for landslide-tsunami: Application to the Gulf of Mexico. J. Geophys. Res. Oceans, 118, 6934-6950.

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Yamazaki, Y., Kowalik, Z., Cheung, K.F., 2008. Depth-integrated, non-hydrostatic model for wave breaking and run-up. Int. J. Numer. Meth. Fluids, 61(5), 473-497.

Pampell-Manis, A., Horrillo, J., Shigihara, Y., Parambath, L. Probabilistic Assessment of Landslide Tsunami Hazard for the Northern Gulf of Mexico, J. Geophys. Res. Oceans, under review.

Tsunami Sources Modeled for the Okaloosa Island coastline

LOCAL LANDSLIDE SOURCES GULF OF MEXICO		LOCATION (Deg)
Historical	East Breaks	Long: -95.68 Lat: 27.70
	Mississippi Canyon	Long: -90.00 Lat: 28.60
	West Florida	Long: -84.75 Lat: 25.95
Probabilistic	PSL-A	Long: -94.30 Lat: 27.98
	PSL-B1	Long: -91.56 Lat: 28.05
	PSL-B2	Long: -91.01 Lat: 26.17
	PSL-C	Long: -87.20 Lat: 28.62

TEXAS A&M UNIVERSITY
GALVESTON CAMPUS.

INTENDED USE

This tsunami inundation map was prepared to assist local emergency management in identifying their tsunami hazard. It is intended for local jurisdictional, coastal evacuation planning uses only. This map is not intended for site-specific or land-use purposes or regulations.

This inundation map has been compiled with the best currently available scientific information. The inundation line represents the maximum considered tsunami runup from a number of maximum credible tsunami sources, thus all of the inundation seen in a particular area will not likely be inundated during a single tsunami event. However, actual conditions during a tsunami may vary, so the accuracy of the inundation shown here cannot be guaranteed. Although an attempt has been made to identify a credible upper bound to inundation at any location along the coastline, it remains possible that actual inundation could be greater in a major tsunami event. This map is intended to portray the worst case scenario and does not provide any further information about the return periods of the events studied here. Interpretation of this tsunami inundation map by qualified individuals is strongly recommended.

MAP BASE

Topographic base map obtained from the ArcGIS World Imagery database, exported with a resolution of approximately 1/3 arc-seconds (~10m). Tsunami inundation line boundaries may reflect updated digital topographic data that can differ significantly from contours shown on the base map.

DISCLAIMER

The National Tsunami Hazard Mitigation Program (NTHMP) and Texas A&M University at Galveston (TAMUG) make no representation or warranties, express or implied, regarding the accuracy of this inundation map nor the data from which the map was derived. Neither the NTHMP nor TAMUG shall be liable under any circumstances for any direct, indirect, special, incidental or consequential damages with respect to any claim by any user or any third party on account of or arising from the use of this map.

(National Oceanic and Atmospheric Administration (NOAA) National Tsunami Hazard Mitigation Plan (NTHMP) Texas A&M University at Galveston (TAMUG), 2017)

4.01.11.09 Sea Level Rise

As defined by multiple agencies, the term “sea level rise” refers to an increase in the ocean’s surface height relative to the land in a particular location. Thermal expansion of the Earth’s oceans and melting polar ice are commonly identified as the two primary causes of sea level rise, though land subsidence is also cited as a factor While sea level rise most directly impacts coastal regions, its impacts may be felt far beyond the shoreline as impacted areas react to changing conditions and must expand substantial amounts of funds in mitigation activities that may include construction of water control structures, relocating or re-routing roads and other infrastructure, and relocation of impacted populations.

Florida is a coastal state and, as identified in numerous studies, is vulnerable to sea level rise. In recognition of this, on May 12, 2021, Governor Ron DeSantis signed Senate Bill 1954 into law, establishing the Resilient Florida Program within the Florida Department of Environmental

Protection (FDEP). The Resilient Florida Program consists of a variety of grant funding opportunities that can be used by communities to analyze and plan for vulnerabilities, as well as implementation of projects for adaptation and mitigation. In 2023, Okaloosa County applied for and received a grant through the Resilient Florida Program to develop a Vulnerability Assessment and implementing Adaptation Plan and, pursuant to and in compliance with section 380.093, Florida Statutes, awarded a contract to Jacobs Engineering Group to develop said Vulnerability Assessment (VA) and implementing Adaptation Plan (AP). The VA and implementing AP developed by Jacobs Engineering Group is incorporated herein by reference (see Appendix E) for purposes of establishing vulnerability to sea level rise and various flooding scenarios for the entirety of Okaloosa County and all municipalities except for the city of Destin which has developed its own Vulnerability Assessment and Adaptation plan (see Appendix F) which it will incorporate into its portion of this LMS as appropriate.

Completed in August 2025, the Okaloosa County VA utilizes the sea level rise scenarios presented in NOAA/NOS' Center of Operational Oceanographic Products and Services report "Global and Regional Sea Level Rise Scenarios for the United States", NOAA Technical Report NOS CO-OPS 083 (Sweet, W.V., R.E. Kopp, C.P. Weaver, J. Obeysekera, R.M Horton, E.R. Thieler, and C. Zervas. 2017) to determine the vulnerability of different types of assets to several different sea level rise and sea level rise enhanced flood event scenarios. The analysis identifies four classes of assets:

- Critical Community and Emergency Facilities. This category includes community facilities, such as community centers and government buildings, public safety facilities, such as law enforcement and fire departments, and medical facilities, such as hospitals and other healthcare centers and facilities.
- Critical Infrastructure. Composed of the systems that support everyday living, this category consists of communications facilities (post offices and cell towers), electric utility infrastructure, water utility assets, wastewater utility assets, stormwater utility assets, and solid and hazardous waste facilities.
- Transportation and Evacuation Routes. This asset class includes transportation infrastructure facilities, such as airports and marinas, and roads, bridges and railroads.
- Natural, Cultural, and Historical Resources. Natural systems and lands, including conservation lands and wetlands, shorelines, and parks.

The VA reviews primarily two types of flood hazards: tidal flooding and the 1% annual chance flood event (commonly known as the 100-year flood), for present-day and future flood scenarios including sea level rise (SLR). Specifically, Jacobs analyzed the following flood hazard scenarios:

Scenario 1: Current Tidal Flooding (mean higher high water + 2 feet)
Scenario 2: Future Tidal Flooding Under Intermediate-Low SLR in 2040
Scenario 3: Future Tidal Flooding Under Intermediate-High SLR in 2040
Scenario 4: Future Tidal Flooding Under Intermediate-Low SLR in 2070
Scenario 5: Future Tidal Flooding Under Intermediate-High SLR in 2070
Scenario 6: Current 100-Year Flood (Federal Emergency Management Agency effective date 2021)
Scenario 7: Future 100-Year Flood Under Intermediate-Low SLR in 2040
Scenario 8: Future 100-Year Flood Under Intermediate-High SLR in 2040

Scenario 9: Future 100-Year Flood Under Intermediate-Low SLR in 2070
Scenario 10: Future 100-Year Flood Under Intermediate-High SLR in 2070

Based on the results of the VA (which finds that the "vast majority of assets in the County (89.2%) have no flood risk" under any of the scenarios), the AP provides a list of strategies to help the County and municipalities increase the resiliency of those assets identified as having some level of vulnerability. In line with these strategies, the Adaptation Plan also presents lists of projects specific to each municipality as well as the County of based on the Vulnerability Analysis. Table ES-1 of the Adaptation Plan lists the following overall priority projects across all jurisdictions except the City of Destin:

Table ES-1. Prioritized Adaptation Projects

Priority	Vulnerable Asset/Area	Project	Project Owner	Cost
Critical Community and Emergency Facilities				
1	Okaloosa Fire Station #4	Okaloosa Fire Station #4 Hardening	Okaloosa County	Variable
2	Elliott Point Elementary	Harden Elliott Point Elementary School for flooding	Okaloosa County School Board	Variable
Transportation and Evacuation Routes				
1	US-98	US-98 Living Shoreline	Okaloosa County	$750,000 (design)
2	US-98	Vulnerability Assessment	FDOT	$150,000
3	SR-85	Elevate Shoal River Bridge and Approaches	FDOT	TBD
4	CR-393	Elevate Bridge at Shoal River and Pond Creek	Okaloosa County	TBD
5	Miracle Strip Parkway (US-98)	Miracle Strip Parkway Road Elevation and Drainage Improvements	FDOT	TBD
Critical Infrastructure				
1	Gap Creek	Sanitary Lift Station Hardening	Okaloosa County	$400,000
2	Wynne Haven, Parrish Point	Community Resilience Vision Plan	Okaloosa County	TBD
3	Bluewater Bay	Community Resilience Vision Plan	Okaloosa County	TBD
4	Gap Creek	Gap Creek H&H Study	Okaloosa County	$250,000
5	Mary Esther	Regional Coastal Resilience Plan	Okaloosa County	TBD
Natural, Cultural, and Historical Resources				
1	Lions Park/Niceville	Lions Park Expansion and Hicks Basin Conservation Area	Niceville	TBD
2	Various Parks/Valparaiso	Valparaiso Resilient Parks	Valparaiso	$50,000 per park

Finally, immediately following Table ES-1, the AP states that:

> "the elevation of the Shoal River Bridge at SR-85 and its approaches is the greatest priority for implementation for the community – it was discussed in multiple meetings with both community members and County staff. The bridge is one of the single-most critical assets in the County; it is the primary connection between north and south County and is crucial for daily activities and commutes as well as evacuations during emergencies. ***Jacobs recommends that FDOT and the County prioritize the elevation of the Shoal River Bridge first to support operations and public safety.***"

To ensure coordinated implementation of the Adaptation Plan with the activities of this LMS, Chapter 3 of this LMS has been amended to include reference to the VA and AP in the LMS project ranking criteria,

4.01.12 Summary

The risk assessment section of this LMS document, as well as the specific analyses provided in the 2025 Okaloosa County Vulnerability Analysis (Jacobs, 2025), provide an overview of the hazards to which all of Okaloosa County is exposed. This provides the foundation for the subsequent section covering how vulnerable the County is to these identified hazards. Numerous facilities, infrastructure, and neighborhoods in Okaloosa County need to be assessed for their vulnerability to disasters.

Section 4.02 Overall Vulnerabilities

4.02.01 Introduction

The intent of this section is to provide a vulnerability assessment for the potential damage and economic loss to buildings and structures in Okaloosa County. This includes the unincorporated areas as well as each jurisdiction.

This section includes a brief summary description of the unincorporated areas, as well as each jurisdiction's vulnerability to the identified hazards and the impact of each hazard. It also describes the vulnerability in terms of the types and numbers of repetitive loss properties in the identified hazard areas. Additionally, the section describes vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard area.

The main intent of this section is to provide an estimate of potential dollar losses to vulnerable structures and a description of the methodology used to complete the estimate. Lastly, this section describes vulnerability in terms of providing a general description of land uses and development trends within the various jurisdictions so that mitigation options can be considered in future land use decisions.

4.02.02 Methodology

The LMS Committee used various methods to quantify the estimated dollar losses to the vulnerable structures potentially impacted by each hazard. For hazards to which the entire County

is equally susceptible, tornadoes, thunderstorms and lightning, property appraisal and Geographic Information Systems (GIS) data were used. Since all structures are vulnerable to these hazards, the Okaloosa County Staff tabulated all the structures by type and their 'just values' per jurisdiction to generate overall totals. The Mapping for Emergency Management, Parallel Hazard Information System (MEMPHIS) study of Okaloosa County in 2005 provided the probabilities of tornado, thunderstorm, or lightning events occurring annually. The County was determined to have a medium risk, 1 in 250 per year, of a tornado event occurring, and the threat of thunderstorm or lightning event occurring, in terms of causing economic damage or loss of over $50, of 1 in 50 per year.

For other hazards, like hurricanes and tropical storms, storm surge, flooding, waterspout, wildfire, and beach erosion, property appraisal data and GIS data were used in conjunction with hazard-specific exposure data from the West Florida Regional Planning Council, Okaloosa County Department of Growth Management, and Florida Department of Forestry. To determine the vulnerable structures, the LMS Committee overlaid the hazard-specific exposure data with the property appraisal and GIS data. Then, the LMS Committee tabulated all the vulnerable structures and their 'just values' per jurisdiction to generate an overall total for each hazard. Specific to the hazards of waterspout and beach erosion, only the structures located along the coastal and bay areas were determined to be vulnerable in this assessment.

The LMS Committee is unable to provide dollar loss estimates for all of the identified hazards that Okaloosa County is susceptible to because the necessary data to complete this assessment is unavailable. In particular, there have not been any relevant studies on the hazards of land erosion, winter storms, heatwave, and drought; therefore, it is difficult to determine what structures are vulnerable and the extent of those impacts on the County. All of Okaloosa County is vulnerable to land erosion, winter storms, heat wave, and drought; however, the specific impacts of those hazards are unavailable at this time. The LMS Committee will update this section as data becomes available.

For the purpose of this study "just values" were acquired from the Okaloosa County Property Appraisers Office. Just Values are the values established by the Property Appraiser for ad valorem purposes and include both the structural and land value. Under Florida Law, Just Value has been the term coined for representing Fair Market Value.

4.02.03 Summary Description of Okaloosa County

Okaloosa County is split into three geographic tiers; South County, Eglin Air Force Base and Hurlburt Field, and North County. The unincorporated areas of the south county are located directly on the Gulf, Choctawhatchee Bay, and Santa Rosa Sound. Due to the presence of Eglin Air Force Base, most of the population is geographically constricted to living on pockets of non-federal lands that are located mostly as enclaves between the municipalities and Eglin Air Force Base. Within Okaloosa County's jurisdiction has the following amount of coastline: 57.73 miles in the Choctawhatchee Bay, 10.63 in the Gulf, and 10.04 miles in the Santa Rosa Sound.

The municipalities located in the southern part of the County are the City of Destin, City of Fort Walton Beach, City of Mary Esther, City of Valparaiso, City of Niceville, Town of Cinco Bayou, and Town of Shalimar. The City of Destin and an area of unincorporated Okaloosa County are located directly on the Gulf , while the City of Mary Esther, City of Fort Walton Beach, City of

Valparaiso, City of Niceville, Town of Cinco Bayou, and Town of Shalimar are located on the Choctawhatchee Bay and associated bayous, inlets, and sounds.,

The incorporated cities located in the northern portion of the county are the City of Crestview and City of Laurel Hill. The City of Crestview is the largest jurisdiction in Okaloosa County and has been one of the fastest growing cities in the County for the past few years. It is expected to continue to grow at a fast pace.

According to the University of Florida's Shimberg Center for Housing Studies (which uses data from UF's Bureau of Economic and Business Research), over the next 15 years Okaloosa County's population is expected to grow by approximately 13% from a 2014 estimate of 196,512 to a projected population of 225,467 by the year 2040. The Shimberg Center's data also indicates that population growth will not occur uniformly across the County, but that some areas will experience greater growth (both in numbers and percentage) than others, and that some areas will, if the projections are accurate, actually lose population as shown by Table 4.02.03.01, which follows, below.

Table 4.02.03.01 Population Growth by Community 2014 to 2040)

Jurisdiction	2014 Population Estimate	2035 Population Projection	2040 Population Projection
Cinco Bayou	414	423	427
Crestview	22,955	35,112	37,577
Destin	13,355	14,041	14,266
Fort Walton Beach	21,558	22,061	22,310
Laurel Hill	575	496	488
Mary Esther	4,180	3,554	3,485
Niceville	14,387	16,423	17,029
Shalimar	784	751	755
Valparaiso	5,188	4,154	3,981
Unincorporated Okaloosa County	113,116	122,489	125,149
Totals	196,512	219,504	225,467

Source: University of Florida Shimberg Center for Housing Research

Of the 28,955 people projected by the Shimberg Center to move to Okaloosa County and its municipalities by 2040, only 4,526 are anticipated to live in the cities exclusively south of Eglin Air Force Base and the Eglin Reservation which bisect the County. Unincorporated Okaloosa County accounts for the remaining 24,429 anticipated new residents. However, since there are unincorporated areas both north and south of the Base and Reservation, it is necessary to determine where the new population will reside. Fortunately, in 2009 the County completed a major planning study that centered on determining where population growth will occur in Okaloosa County due to a large influx of military personnel.

As part of the 2005 Federal Base Realignment and Closure (BRAC) legislation, Congress directed that the U.S. Army's 7th Special Forces Group relocate from its long-time home in Ft Bragg, North Carolina to the Eglin Reservation in Okaloosa County. The 2005 BRAC legislation also designated Eglin Air Force Base as the site for the stand up of the new F-35 Joint Strike Fighter training program. In order to adequately plan for this growth, Okaloosa, Santa Rosa, and Walton counties, as well as their municipalities, developed a comprehensive Tri-County Eglin Growth Management Plan. One of the most important features of the Tri-County Growth Plan is its growth suitability analysis which identifies the specific communities within the Tri-County area where growth is likely to occur. To do this, the suitability analysis considers the nine (9) factors, below, to determine where incoming personnel are likely to locate:

1. **Transportation** summarizes existing average daily traffic, lanes, level of service, deficiencies, concurrency, and future level of service.
2. **Housing** summarizes tenure of residential structures, location of residential structures, homestead exemption locations, median value of single-family residential, real estate transactions, and the location of underutilized acreage.
3. **Public Utilities** summarizes the water supply and resource areas administered by the Northwest Florida Water Management District (NWFWMD), waste utility franchise areas, water supply service and franchise areas, natural gas service areas, and Okaloosa Gas District service area.
4. **Land Use** summarizes existing land use, future land use, vacant land, large land ownership, approved residential developments, and existing plans.
5. **Economic and Jobs** summarizes forecasts of population growth, employment growth (by sector) impact on county revenue and expenditures, and BRAC impact annual wage rates.
6. **Public Safety and Emergency** summarizes the existing conditions and level of service for law enforcement, fire protection, and medical services. The emergency management component identifies the areas potentially subject to damage from natural hazards (i.e., storm surge and excessive wind velocity).
7. **Health and Social Services** summarizes the facilities and location of the health care, family services, childcare and veterans facilities.
8. **Education** summarizes the elementary, junior high, and high school location and capacities of existing facilities as well as the locations and programs offered at post-secondary institutions.
9. **Quality of Life** summarizes the location and level of service for existing libraries, listings of historic places, and park, recreational and cultural facilities.

The paragraph, below, excerpted from the Tri-County Growth Management Plan, summarizes the BRAC-related growth for Okaloosa County based on its analysis of the 9 factors listed above:

> A total of three growth areas (Crestview, Fort Walton Beach and Niceville / Valparaiso) were identified within Okaloosa County. The Crestview Growth Area, with an estimated increase of 2,941 new households, is expected to experience the largest growth in population and number of households in the Tri-County Study Area as a result of the BRAC realignment. The Fort Walton Beach Growth Area is estimated to increase by 553 households, while the Niceville / Valparaiso Growth Area will need to accommodate 273 new households. In total, Okaloosa County is anticipated to receive

up to 90 percent of the households attributable to the BRAC realignment by 2015. This is due in large part to the proximity of these areas to Eglin AFB's Main Gate and the 7th Special Forces Group(A) [7 SFG(A)] cantonment area.

In short, the City of Crestview and the surrounding unincorporated area will absorb approximately 80% of the BRAC-related growth. While the Tri-County Growth Management Plan is specific to the growth resulting from the 2005 BRAC legislation, the factors considered in the suitability analysis are applicable to the needs of civilians, as well. It is not unreasonable, therefore, based on the analysis contained in the Tri-County Growth Management Plan, to conclude that the majority of the 24,429 new residents expected to live in Okaloosa County by 2040 will also choose to live north of the Eglin Reservation. In addition to the conclusions of the suitability analysis, the municipalities and unincorporated areas south of Eglin Air Force Base and the Eglin Reservation are substantially built out, and most growth in these areas will be primarily re-development and infill. This is an important consideration in emergency planning, since the areas north of Eglin are not subject to storm surge, and there are no hurricane evacuation zones.

Employment

As shown by Table 4.02.03.02, below, a wide variety of trades, industries, and occupations provide employment in Okaloosa County. Table 4.02.03.03 presents a graphic representation of the "size" of each economic activity relative to the others.

The military accounts for roughly 16,000 jobs directly and is also responsible for the lion's share of federal civilian employment in the county as well. A study conducted by the Haas Center utilizing 2007 data indicated that the military accounted for roughly $4.5 billion of Okaloosa County's total economic output – nearly 48% of the total county economy at the time the study was conducted. The military therefore accounts for an overwhelmingly high percentage of the county's economic activity and is *the* key driver of Okaloosa's high-wage, high-tech economy. The presence of the military, as studies have demonstrated, also has a sizable impact on the health of all of Okaloosa's key economic sectors.

While the military is identified as a discreet activity in Table 4.02.03.02, below, "tourism" is not; its effects are indicated by assessing those activities that depend wholly or in part on tourism as their drivers. Early studies conducted by the Haas Center for Business Research indicate that tourism accounts for roughly 10% of the total economic activity in Okaloosa County. The US Bureau of Economic analysis indicates that total gross domestic product for the County was approximately $9.5 billion in 2008. If this previous remains valid, tourism presently accounts for roughly $950 million the county's gross domestic product – a sizable share. As stated previously, the tourism industry affects many of the jobs identified in Table 4.02.03.02. For example, the construction industry depends on tourism dollars to drive economic growth and development in that sector. The retail trade and accommodation and food services sectors are also dependent on tourism for their health. Together these three sectors alone account for roughly 33,000 of Okaloosa's 127,000 jobs.

Table 4.02.03.02 Employment in Okaloosa County (Updated 2024 Estimates)

TYPE	Employment
Farm employment	420
Forestry, fishing, hunting & related	600
Mining	—
Utilities	430
Construction	10,900
Manufacturing	2,800
Wholesale trade	1,200
Retail trade	10,800
Transportation & Warehousing	1,500
Information	650
Finance & Insurance	1,400
Real Estate & Rental & Leasing	2,600
Professional, Scientific & Technical Services	6,200
Management of Companies	80
Administrative & Waste Services	2,850
Educational Services	2,500
Health Care & Social Assistance	10,800
Arts, Entertainment & Recreation	1,770
Accommodation & Food Services	6,900
Other Services (except Public Administration)	2,200
Federal Civilian	8,000
Military*	16,000
State & Local Government	7,000

Total Employment	**~95,000**

*Military employment reflects major installations including Eglin Air Force Base and Hurlburt Field.

Source: U.S. Census Bureau – American Community Survey; Bureau of Labor Statistics regional employment estimates.

Table 4.02.03.03: Employment, Growth Patterns and Earnings for Okaloosa County Industry Super Clusters - The figure uses U.S. Bureau of Labor Statistics and American Community Survey data to reflect total employment in each sector, earnings, and five-year growth percentage.

Table 4.02.03.03 Employment, Growth Patterns and Earnings for Okaloosa County Industry Super Clusters

Employment / Industry Sector	Salary Range	5-Year Growth Percentage
Agriculture, Natural Resources & Mining	$25,000 – $40,000	2 – 4%
Construction	$45,000 – $70,000	6 – 9%
Education & Health Services	$45,000 – $75,000	10 – 14%
Financial Activities	$55,000 – $85,000	6 – 10%
Government	$60,000 – $95,000	2 – 4%
Information	$65,000 – $95,000	7 – 11%
Leisure & Hospitality	$25,000 – $45,000	8 – 12%
Manufacturing	$55,000 – $80,000	4 – 8%
Other Services	$30,000 – $50,000	6 – 9%

Professional & Business Services	$60,000 – $95,000	10 – 15%
Trade, Transportation & Utilities	$40,000 – $70,000	5 – 8%

Source: U.S. Bureau of Labor Statistics; American Community Survey.

4.02.04 Vulnerable Populations

Hazards do not affect the entire population equally. Therefore, special attention needs to be given to the more vulnerable populations. In general, the selected populations are more vulnerable to some of the hazards due to their limited mobility and resources to prepare before and respond after a hazard event. In particular, populations that are language isolated may not be able to understand the important hazard information being communicated to them. Special mitigation efforts targeted at these populations may be necessary. The following categories listed below have been determined to be the vulnerable populations in this analysis.

Table 4.02.04.1: Vulnerable Population Categories Defined

Category	Description
Minority:	Non-white population (*Note* this is a racial category and does not include ethnic minorities)
Elderly:	Population aged over 65 years old
Disabled:	Population includes sensory, physical, mental, self-care, employment, and go-outside-home disabilities (*Note* this category includes all ages)
Poverty:	Population with incomes below poverty level (*Note* this category only includes individuals)
Language Isolation:	Population living in a language isolated household (*Note* to qualify for this category the household may not have a member 14 years old or over that 1) speaks English or 2) speaks a non-English language and speaks English very well)
Single Parent:	Persons living in a single parent household (*Note* with children under the age of 18)

It is important to note that these categories are not exclusive. Individuals can be counted in several categories. This data was obtained from the U.S. Census Bureau, 2020 Decennial Census and American Community Survey (ACS) 2019–2023 5-Year Estimates.

Table 4.02.04.02: Estimated Minority Population in Okaloosa County

ACS Estimate: **27.9%**

Jurisdiction	2020 Population	Percent of County Population	ACS Percentage	Estimated Population
Okaloosa County	211,668	100%	27.9%	59,061
Town of Cinco Bayou	457	0.22%	27.9%	128
City of Crestview	27,134	12.81%	27.9%	7,570
City of Destin	13,931	6.58%	27.9%	3,886
City of Fort Walton Beach	20,922	9.88%	27.9%	5,837
City of Laurel Hill	584	0.28%	27.9%	163
City of Mary Esther	3,982	1.88%	27.9%	1,111
City of Niceville	15,772	7.45%	27.9%	4,400
Town of Shalimar	737	0.35%	27.9%	206
City of Valparaiso	4,752	2.24%	27.9%	1,326
Unincorporated Okaloosa County	123,397	58.30%	27.9%	34,434

Source:
U.S. Census Bureau, *2020 Decennial Census* and *American Community Survey (ACS) 2019–2023 5-Year Estimates.*
Percentages were derived from the American Community Survey (2019–2023) 5-Year Estimates and applied to 2020 Census population totals for Okaloosa County and its municipalities to estimate vulnerable population totals.

Table 4.02.04.03 Estimated Elderly Population (Age 65+) in Okaloosa County

ACS Estimate: **17.3%**

Jurisdiction	2020 Population	Percent of County Population	ACS Percentage	Estimated Population
Okaloosa County	211,668	100%	17.3%	36,611
Town of Cinco Bayou	457	0.22%	17.3%	79
City of Crestview	27,134	12.81%	17.3%	4,694
City of Destin	13,931	6.58%	17.3%	2,409
City of Fort Walton Beach	20,922	9.88%	17.3%	3,620

City of Laurel Hill	584	0.28%	17.3%	101
City of Mary Esther	3,982	1.88%	17.3%	689
City of Niceville	15,772	7.45%	17.3%	2,728
Town of Shalimar	737	0.35%	17.3%	128
City of Valparaiso	4,752	2.24%	17.3%	821
Unincorporated Okaloosa County	123,397	58.30%	17.3%	21,338

Source:
U.S. Census Bureau, *2020 Decennial Census* and *American Community Survey (ACS) 2019–2023 5-Year Estimates.*
Percentages were derived from the American Community Survey (2019–2023) 5-Year Estimates and applied to 2020 Census population totals for Okaloosa County and its municipalities to estimate vulnerable population totals.

Table 4.02.04.04 Estimated Population with Disability in Okaloosa County

ACS Estimate: **16.2%**

Jurisdiction	2020 Population	Percent of County Population	ACS Percentage	Estimated Population
Okaloosa County	211,668	100%	16.2%	34,290
Town of Cinco Bayou	457	0.22%	16.2%	74
City of Crestview	27,134	12.81%	16.2%	4,396
City of Destin	13,931	6.58%	16.2%	2,257
City of Fort Walton Beach	20,922	9.88%	16.2%	3,389
City of Laurel Hill	584	0.28%	16.2%	95
City of Mary Esther	3,982	1.88%	16.2%	645
City of Niceville	15,772	7.45%	16.2%	2,555
Town of Shalimar	737	0.35%	16.2%	119
City of Valparaiso	4,752	2.24%	16.2%	770
Unincorporated Okaloosa County	123,397	58.30%	16.2%	19,990

Source:
U.S. Census Bureau, *2020 Decennial Census* and *American Community Survey (ACS) 2019–2023 5-Year Estimates.*

Percentages were derived from the American Community Survey (2019–2023) 5-Year Estimates and applied to 2020 Census population totals for Okaloosa County and its municipalities to estimate vulnerable population totals.

Table 4.02.04.05 Population Living Below the Poverty Level in Okaloosa County

ACS Estimate: 11.6%

Jurisdiction	2020 Population	Percent of County Population	ACS Percentage	Estimated Population
Okaloosa County	211,668	100%	11.6%	24,553
Town of Cinco Bayou	457	0.22%	11.6%	53
City of Crestview	27,134	12.81%	11.6%	3,147
City of Destin	13,931	6.58%	11.6%	1,616
City of Fort Walton Beach	20,922	9.88%	11.6%	2,427
City of Laurel Hill	584	0.28%	11.6%	68
City of Mary Esther	3,982	1.88%	11.6%	462
City of Niceville	15,772	7.45%	11.6%	1,830
Town of Shalimar	737	0.35%	11.6%	85
City of Valparaiso	4,752	2.24%	11.6%	551
Unincorporated Okaloosa County	123,397	58.30%	11.6%	14,314

Source:
U.S. Census Bureau, *2020 Decennial Census* and *American Community Survey (ACS) 2019–2023 5-Year Estimates.*
Percentages were derived from the American Community Survey (2019–2023) 5-Year Estimates and applied to 2020 Census population totals for Okaloosa County and its municipalities to estimate vulnerable population totals.

Table 4.02.04.06 Estimated Population Living in Language Isolation in Okaloosa County

ACS Estimate: **1.5%**

Jurisdiction	2020 Population	Percent of County Population	ACS Percentage	Estimated Population
Okaloosa County	211,668	100%	1.5%	3,175
Town of Cinco Bayou	457	0.22%	1.5%	7

City of Crestview	27,134	12.81%	1.5%	407
City of Destin	13,931	6.58%	1.5%	209
City of Fort Walton Beach	20,922	9.88%	1.5%	314
City of Laurel Hill	584	0.28%	1.5%	9
City of Mary Esther	3,982	1.88%	1.5%	60
City of Niceville	15,772	7.45%	1.5%	237
Town of Shalimar	737	0.35%	1.5%	11
City of Valparaiso	4,752	2.24%	1.5%	71
Unincorporated Okaloosa County	123,397	58.30%	1.5%	1,851

Source:
U.S. Census Bureau, *2020 Decennial Census* and *American Community Survey (ACS) 2019–2023 5-Year Estimates.*
Percentages were derived from the American Community Survey (2019–2023) 5-Year Estimates and applied to 2020 Census population totals for Okaloosa County and its municipalities to estimate vulnerable population totals.

Table 4.02.04.07 Estimated Single-Parent Population in Okaloosa County

ACS Estimate: **13.9%**

Jurisdiction	2020 Population	Percent of County Population	ACS Percentage	Estimated Population
Okaloosa County	211,668	100%	13.9%	29,422
Town of Cinco Bayou	457	0.22%	13.9%	64
City of Crestview	27,134	12.81%	13.9%	3,772
City of Destin	13,931	6.58%	13.9%	1,936
City of Fort Walton Beach	20,922	9.88%	13.9%	2,908
City of Laurel Hill	584	0.28%	13.9%	81
City of Mary Esther	3,982	1.88%	13.9%	554
City of Niceville	15,772	7.45%	13.9%	2,192
Town of Shalimar	737	0.35%	13.9%	102
City of Valparaiso	4,752	2.24%	13.9%	661
Unincorporated Okaloosa County	123,397	58.30%	13.9%	17,152

Source:
U.S. Census Bureau, *2020 Decennial Census* and *American Community Survey (ACS) 2019–2023 5-Year Estimates.*

Percentages were derived from the American Community Survey (2019–2023) 5-Year Estimates and applied to 2020 Census population totals for Okaloosa County and its municipalities to estimate vulnerable population totals.

4.02.05 Repetitive Loss and Severe Repetitive Loss Structures

According to FEMA, a *repetitive loss structure* is "an NFIP-insured structure that has had at least two paid flood losses of more than $1,000 each in any 10-year period since 1978", while a *severe repetitive loss structure* is one that has met at least one of the following paid flood loss criteria since 1978, regardless of ownership: 1) 4 or more separate claim payments of more than $5,000 each (including building and contents payments); or 2) 2 or more separate claim payments (building payments only) where the total of the payments exceeds the current value of the property (FEMA 2020).

As identified in this LMS, the hazards of hurricanes, tropical storms, storm surge, flooding, and thunderstorms are responsible for repetitive loss properties. Historically, these properties are more vulnerable to certain hazards than other structures in the County because they have already experienced significant flood damage. These properties are located in all the different flood zones and include both residential and non-residential uses. The following table depicts the cumulative repetitive and severe repetitive loss structures within the jurisdiction of Okaloosa County.

Table 4.02.05.1: Repetitive and Severe Repetitive Loss Structures in Okaloosa County

	Total Building Payment	Total Contents Payment	Total Losses Claimed	Total Paid	Residential Structures	Non-Residential Structures
Unincorporated County						
Repetitive Loss	$87,534,666	$14,191,181	29	$101,725,844	514	15
Severe Repetitive Loss	$24,850,637	$3,612,858	61	$28,463,499	61	0
Town of Cinco Bayou						
Repetitive Loss	$22,145	$50,000	1	$72,145	1	0
Severe Repetitive Loss	$0.00	$0.00	0	$0.00	0	0
City of Destin						
Repetitive Loss	$61,544,639	$4,072,750	229	$65,617,382	227	2
Severe Repetitive Loss	$23,864,163	$1,521,384	26	$25,385,545	26	0
City of Ft Walton Beach						

Repetitive Loss	$7,399,852	$1,557,992	85	$8,957,843	83	2
Severe Repetitive Loss	$2,193,062	$297,365	6	$2,490,426	6	0
City of Mary Esther						
Repetitive Loss	$1,859,585	$656,125	14	$2,515,710	14	0
Severe Repetitive Loss	$297,409	$87,688	2	$385,097	2	0
City of Niceville						
Repetitive Loss	$1,183,392	$204,834	16	$1,388,225	15	1
Severe Repetitive Loss	$313,500	$43,267	1	$356,766	0	1
Town of Shalimar						
Repetitive Loss	$1,742,104	$601,725	42	$2,343,827	42	0
Severe Repetitive Loss	$0.00	$0.00	0	$0.00	0	0
City of Valparaiso						
Repetitive Loss	$573,664	$103,740	13	$677,404	13	0
Severe Repetitive Loss	$248,570	$35,030	1	$283,599	1	0
County-wide totals						
Repetitive Loss	$161,860,047	$21,438,347	929	$183,298,380	909	20
Severe Repetitive Loss	$51,767,341	$5,597,592	97	$57,364,932	96	1
Note: The City of Crestview and the City of Laurel Hill have no repetitive loss or severe repetitive loss structures.						
Source: Federal Emergency Management Agency 2026						

4.02.06 Hurricane and Tropical Storm

All of Okaloosa County and its jurisdictions are vulnerable to hurricanes and tropical storms. The City of Destin and an area of unincorporated Okaloosa County are the most vulnerable to the damaging effects of tropical storms and hurricanes, as they are the only areas in the county located directly on the Gulf. The City of Destin and this area would suffer the most destruction in

terms of wind damage and storm surge. The City of Niceville, City of Valparaiso, City of Fort Walton Beach, City of Mary Esther, Town of Shalimar, and Town of Cinco Bayou are vulnerable to the effects of storm surge, heavy rains, and high winds during tropical storms and hurricanes even though they are located on the bay. The City of Crestview and City of Laurel Hill are also vulnerable to tropical storms and hurricanes even though they are located in the northern portion of the county and far from coastal waters. The City of Crestview and City of Laurel Hill are vulnerable to hurricane damage in the form of wind damage and heavy rain. High winds can damage structures by removing roofs, siding, and creating flying debris out of sources which are not anchored, while heavy rains can lead to flooding. The following tables depict the hurricane evacuation zones and the vulnerable structures located within each zone for the entire County.

Table 4.02.06.1: Evacuation Zones and the Vulnerable Residential Structures within Okaloosa County

Total:	Condominium	SFR-Townhouse	Single-Family	Mobile Home	Multi-Family
Zone A	362	102	167	0	1
Just Value	$112,667,600	$19,162,390	$191,606,488	$0	$428,135
Zone B	20,320	2088	1604	342	102
Just Value	$5,110,051,579	$448,583,121	$760,162,003	$24,308,296	$122,378,342
Zone C	1436	732	7756	20	84
Just Value	$542,895,229	$107,273,256	$2,294,880,318	$2,956,242	$48,424,288
Zone D	340	1597	12318	290	230
Just Value	$90,669,178	$295,375,166	$3,562,340,958	$22,654,959	$114,088,035
Zone E	602	432	7587	90	57
Just Value	$54,248,633	$39,207,378	$1,211,050,406	$9,908,158	$38,074,090

Note Evacuation Zones correspond with Hurricane Categories (Ex. Evacuation Zone 1 = Category 1 Hurricane)
Source: West Florida Regional Planning Council & Okaloosa County Property Appraiser, 2026 (Okaloosa County Staff generated table from overlaying the evacuation zones and property appraiser data)

Table 4.02.06.2: Evacuation Zones and the Vulnerable Structures within Okaloosa County

Total:	Commercial	Government/ Institutional	Trailer Park	RV Park
Zone A	37	13	0	0
Just Value	$739,765,298	$31,741,760	$0	$0
Zone B	584	116	0	5
Just Value	$72,170,918	$86,544,417	$0	$748,137
Zone C	156	76	3	0
Just Value	$62,759,774	$13,477,509	$469,293	$0
Zone D	1652	60	12	0

Just Value	$769,895,222	$195,753,372	$4,102,350	$0
Zone E	159	33	8	0
Just Value	$102,650,489	$12,687,308	$1,879,716	$0

Note Evacuation Zones correspond with Hurricane Categories (Ex. Evacuation Zone 1 = Category 1 Hurricane)
Source: West Florida Regional Planning Council & Okaloosa County Property Appraiser, 2026 (Okaloosa County Staff generated table from overlaying the evacuation zones and property appraiser data)

4.02.07 Storm Surge

All of the coastal areas of Okaloosa County are vulnerable to storm surge. The jurisdictions that are vulnerable to storm surge and susceptible to damage from this hazard are the City of Destin, City of Fort Walton Beach, City of Mary Esther, Town of Shalimar, City of Valparaiso, City of Niceville, unincorporated Okaloosa County and the Town of Cinco Bayou. The City of Destin and an area of unincorporated Okaloosa County are located on the Gulf and are vulnerable to storm surge levels of up to 21 feet above the mean high water line. The City of Niceville, City of Valparaiso, City of Mary Esther, Town of Shalimar, and Town of Cinco Bayou are vulnerable to storm surge from the Choctawhatchee Bay and associated bayous, inlets and sounds, and may reach levels of up to 17.4 feet in some areas. The City of Crestview, the City of Laurel Hill, and the unincorporated areas of north Okaloosa County are not vulnerable to storm surge.

Depending on the severity of the storm, surge levels can vary from a normal high tide, which would only affect low lying sparsely populated areas, to the complete overflow of Okaloosa Island. This could push water and storm debris into Choctawhatchee Bay and onto the northern shore of the bay and local bayous reaching an elevation of 21 feet above mean high water line. Storm surge levels this high would destroy numerous homes, infrastructure, and critical facilities in the City of Destin, City of Fort Walton Beach, City of Mary Esther, City of Niceville, City of Valparaiso, areas of unincorporated Okaloosa County, Town of Shalimar and Town of Cinco Bayou.

The following tables depict all of Okaloosa County's vulnerable structures to storm surge levels, which correspond with the category of hurricane.

Table 4.02.07.1: Okaloosa County's Vulnerable Residential Structures to Storm Surge

Total:	Condominium	SFR-Townhouse	Single-Family	Mobile Home	Multi-Family
Surge Level 1	1047	507	4019	7	39
Just Value	$729,881,538	$229,681,459	$4,413,513,709	$2,116,450	$66,757,007
Surge Level 2	2992	648	11,108	26	71
Just Value	$1,022,089,903	$298,675,972	$5,229,646,262	$5,295,023	$96,347,462
Surge Level 3	1463	655	7666	58	102
Just Value	$1,005,985,978	$249,492,120	$5,950,239,506	$9,849,784	$218,371,427
Surge Level 4	1375	1261	13,645	140	243
Just Value	$1,074,746,923	$344,671,505	$7,539,310,219	$17,476,471	$508,716,280
Surge Level 5	673	845	10,310	145	153

Just Value	$785,777,968	$259,831,505	$5,162,196,967	$17,486,298	$441,435,377

Source: Emeral Coast Regional Council and Okaloosa County Property Appraiser, 2025 (Okaloosa County Staff generated table from overlaying the surge levels and property appraiser data)

Table 4.02.07.2: Okaloosa County's Other Vulnerable Structures to Storm Surge

Total:	Commercial	Government/ Institutional	Trailer Park	RV Park
Surge Level 1	168	80	1	0
Just Value	$209,199,071	$7,356,2947	$1,591,685	$0
Surge Level 2	291	186	1	1
Just Value	$269,395,580	$85,755,131	$1,591,685	$345,288
Surge Level 3	242	204	4	0
Just Value	$649,222,512	$87,389,153	$2,060,978	$0
Surge Level 4	615	147	12	0
Just Value	$1,154,183,824	$121,284,761	$5,355,664	$0
Surge Level 5	785	116	17	1
Just Value	$908,491,860	$105,979,472	$6,018,694	$65,4381

Source: Emerald Coast Regional Council and Okaloosa County Property Appraiser, 2025 (Okaloosa County Staff generated table from overlaying the surge levels and property appraiser data)

4.02.08 Flooding

This portion of the LMS addresses flooding which is the result of rainfall, including rain that occurs during a hurricane or other tropical event. It does not, however, include flooding combined with storm surge as this is addressed in the VA and AP as previously discussed

All of Okaloosa County and its jurisdictions are vulnerable to flooding and susceptible to damage from this hazard. Localized roadway flooding from heavy rains can occur in any jurisdiction of the county. The most severe flooding in the county has historically occurred in the areas around Crestview and along the Shoal River, Yellow River and Black Water River in the north end of the county. In Okaloosa County, there are 1523 structures in the AE flood zone, 189 structures in the VE flood zone, and 125 structures in the A flood zone. The cumulative 'just value' of those structures in the flood zones is $1,101,220,570. The following table depicts the vulnerable structures located in the flood zones in Okaloosa County.

Table 4.02.08.1: Residential Structures Located in Flood Zones in Okaloosa County

Total:	Condominium	SFR-Townhouse	Single-Family	Mobile Home	Multi-Family
AE Flood Zone	1020	275	1478	20	63
Just Value	$898,258,652	$748,566,236	$1,687,253,123	$4,258,122	$98,125,678
VE Flood Zone	22	65	62	0	10
Just Value	$15,234,127	$35,741,159	$98,588,247	$0	$59,252,124
A Flood Zone	0	17	124	0	0
Just Value	$0	$1,889,212	$21,589,247	$0	$0

Source: Okaloosa County Department of Growth Management, 2025

Table 4.02.08.1: Other Structures Located in Flood Zones in Okaloosa County

Total:	Commercial	Government/ Institutional	Critical Facility
AE Flood Zone	170	29	5
Just Value	$286,558,010	$352,008,036	$14,011,322
VE Flood Zone	29	7	0
Just Value	$88,138,133	$82,104,123	$0
A Flood Zone	19	10	2
Just Value	$17,097,272	$71,502,372	$2,426,117

Source: Okaloosa County Department of Growth Management, 2025

4.02.09 Dam Safety

Most of the dams located in the county are found in the unincorporated area of north Okaloosa County. The only jurisdictions vulnerable to flooding as a result of dam failure are the City of Crestview and the City of Laurel Hill because these are the only jurisdictions in the county that have dams located within their jurisdictional boundaries. It is to be noted that other jurisdictions have dams which do not require permitting by the Northwest Florida Water Management District. Therefore, the dams considered in this 2026 LMS are only those regulated by the Northwest Florida Water Management District. Examples of unregulated dams would be an agricultural enclosure for watering livestock or farming of aquatic species. Failure of these types of dams would cause minimal impacts to structures due to their location in the sparsely populated agricultural areas of the county.

The types of dams found in Okaloosa County are manmade earthen-works usually on manmade lakes and ponds. The dams range in height from 3 feet to a maximum of 27 feet. In general, dams over 10 feet in height are regulated by the Northwest Florida Water Management District. The

largest dam in Okaloosa County is 27 feet high and located in the Blackwater Forest on Hurricane Lake. If this dam were to fail, the flooding damage would only affect the forested areas, which are undeveloped and scarcely inhabited.

The specific impacts of permitted dam failure in Okaloosa County are unavailable because there have been no studies conducted on the impact that dam failure would have on the potentially affected areas. Only broad general impacts can be given, which provide an indication of what impacts are expected with permitted dam failure. Homes and roadways in the unincorporated areas of north Okaloosa County, as well as in the City of Crestview and City of Niceville, are vulnerable to flooding as a result of a permitted dam failure although the probability of a failure occurring is very low. There are two small dams in unincorporated south Okaloosa County and some homes and roadways in the surrounding area are vulnerable to flooding from dam failure. Non-permitted dams are numerous throughout the county and dam failure is rare.

4.02.10 Land Erosion

Most of Okaloosa County and its jurisdictions are vulnerable to land erosion in localized areas and susceptible to damage from this hazard. The soil types and topography that lead to land erosion can be found in various parts of Okaloosa County. The two jurisdictions that are not vulnerable to land erosion are the City of Mary Esther and the Town of Shalimar because they do not have the topography or soil types that lead to land erosion.

Land erosion is generally caused by disturbed soils from construction and agricultural activities and usually isolated to an area less than 1 acre in size. Erodible soils account for 34.7% or 208,961 acres of Okaloosa County's total land area. Some river front homes in the County are vulnerable to erosion but would only affect about 20 homes.

4.02.11 Severe Storms

In the tables below, the estimated cost of damage to residential and non-residential structures in the event of a severe storm is provided. The numbers and estimated value represent the total number of structures in Okaloosa County. Although it is highly unlikely that all structures will be impacted during a singular severe storm event, all structures are equally vulnerable to severe storms and so it was deemed appropriate to list all structures in the county.

Table 4.02.11.1: Residential Structures Vulnerable to Severe Storms in Okaloosa County

Total:	Condominium	SFR-Townhouse	Single-Family	Multi-Family
	1098	2877	45896	1478
Just Value	$2,899,587	$1,588,268	$10,698,452,255	$1,256,896,541

Source: Okaloosa County Department of Growth Management, 2025

Table 4.02.11.2: Other Structures Vulnerable to Severe Storms in Okaloosa County

Total:	Commercial	Government/ Institutional	Critical Facilities
	45715	854	7
Just Value	$989,875,568,	$3,288,477,8993	$1,258,789

Source: Okaloosa County Department of Growth Management, 2025

Since the Severe Storms hazard includes tornado and waterspout, thunderstorms and lightning, and winter storms, the values listed in the tables above apply to all of those hazard types.

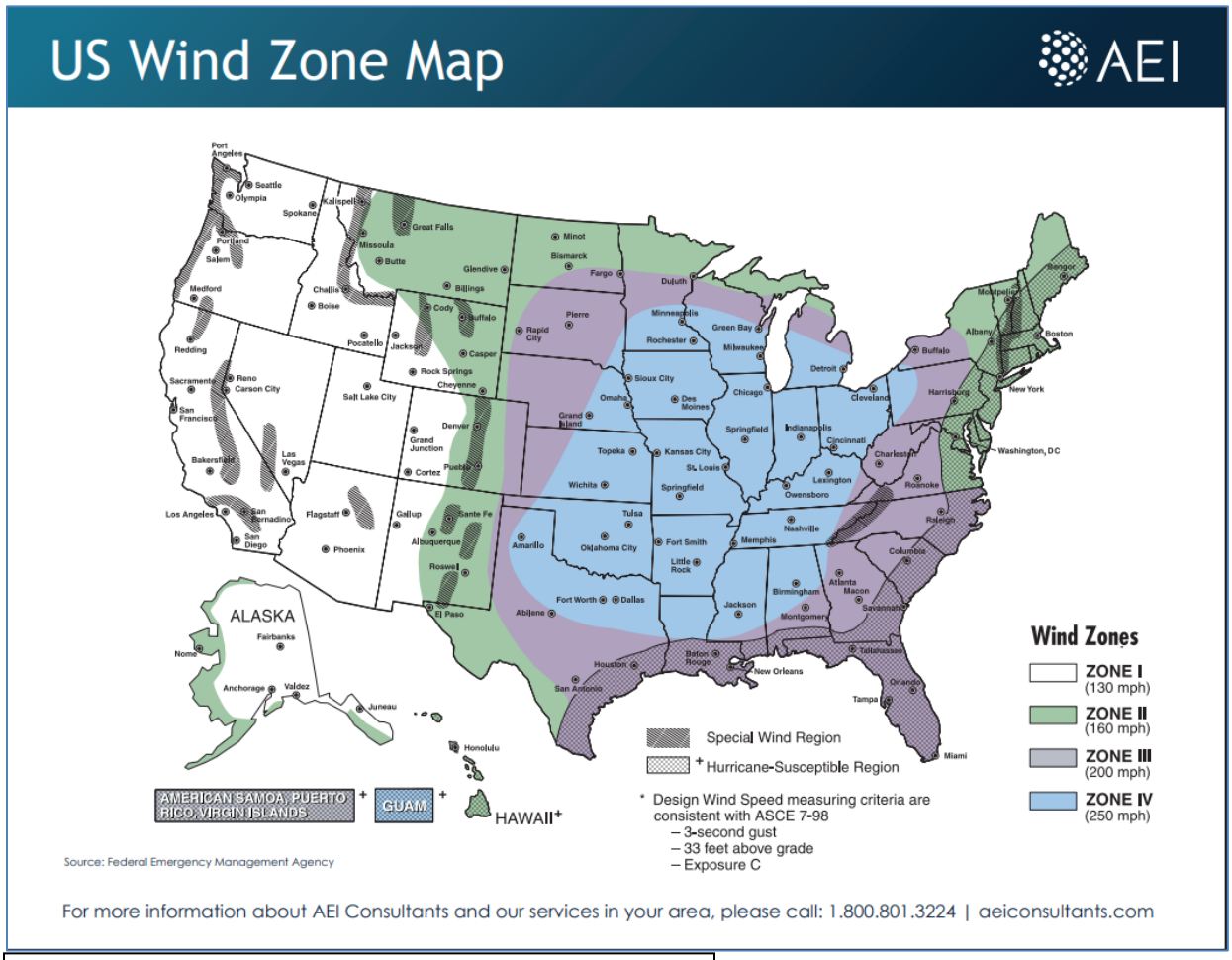
4.02.11.01 Tornado and Waterspout

According to FEMA's *Winds in the U.S.* map, all of Okaloosa County is located in Zone III, which means the entire county is susceptible to winds up to 200 mph (see figure below). All of Okaloosa County and its jurisdictions are vulnerable to tornadoes, and all structures within the county are susceptible to the impacts of this hazard due to their unpredictable nature. According to the Mapping for Emergency Management, Parallel Hazard Information System (MEMPHIS) study in 2005, nearly all of Okaloosa County has a medium risk, 1 in 250 per year, of a tornado event occurring. The unincorporated area in the northeastern portion of Blackwater Forest has a high risk, 1 in 100 per year, of a tornado event occurring.

The area's most vulnerable to tornado damage are those with a high density or large population, such as Okaloosa Island, because the damage rate increases as a function of population density. The types of structures most vulnerable to tornado damage are mobile homes, manufactured housing, poorly constructed or substandard housing and apartment complexes. Manufactured housing and substandard housing are particularly susceptible because of their lack of resistance to high winds, and apartment complexes because of their size and densities.

Figure 4.02.11.01.1: Wind Zones in the U.S.

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Source: AEI Consulting and FEMA, 2024

Because waterspouts occur over water, only the unincorporated coastal areas and City of Destin, City of Fort Walton Beach, City of Mary Esther, Town of Shalimar, Town of Cinco Bayou, City of Niceville, and City of Valparaiso are vulnerable to waterspouts because of their location on the Gulf of Mexico or Choctawhatchee Bay. In general, waterspouts tend to be weaker and smaller than tornadoes. The properties bordered by the water bodies are the most vulnerable to the destructive damage from flying debris. However, the specific impacts on those areas are unavailable due to the lack of relevant studies conducted regarding this hazard.

4.02.11.02 Thunderstorms and Lightning

All of Okaloosa County and its jurisdictions are vulnerable to thunderstorms and lightning, and all structures are susceptible to the damaging effects of wind, hail, and lightning associated with severe thunderstorms. According to the Florida Division of Emergency Management's Severe Thunderstorm Hazard Profile, 2023, all of Okaloosa County has the threat of a thunderstorm or lightning event occurring, in terms of causing economic damage or loss of over $50, of 1 in 50 per year.

4.02.11.03 Winter Storms

All of Okaloosa County and its jurisdictions are vulnerable to winter storms, and all structures are susceptible to the effects of freezing temperatures. All of the jurisdictions are minimally vulnerable to snow, freezing rain, icing and glazing events because they are so rare.

The specific impacts of winter storms in Okaloosa County are unavailable because there have been no studies conducted regarding these hazards' impacts in the County. Only broad general impacts of this hazard can be given, which provide an indication of what impacts are expected with winter storms. The homes in Okaloosa County that are most vulnerable to winter storms are those with unprotected or under-protected water pipes and homes in which plumbing, roofing, and insulation is inadequate. Unmitigated older structures and manufactured housing are also very vulnerable. Roadways and bridges are vulnerable to ice and sleet buildup.

4.02.12 Heat Wave and Drought

All of Okaloosa County and its jurisdictions are vulnerable to heat waves and drought. The specific impacts of heat waves and drought in Okaloosa County are unavailable because there have been no studies conducted regarding these hazards' impacts in the County. In addition, the nature of these hazards tends to only affect the populations without adequate cooling systems in their homes, low income, elderly, children, and outside workers. Only broad general impacts of these hazards can be given, which provide an indication of what impacts are expected with heat wave and drought. Everyone living within the county is susceptible to heat exhaustion. All households are susceptible to power outages due to increased electricity demand during periods of extreme heat. Electrical system failures due to demand would only enhance problems for the entire population, especially for the vulnerable populations. All water bodies and municipal water supplies are susceptible to declining water levels and water shortages due to drought.

4.02.13 Wildfire

Most of Okaloosa County and its jurisdictions are vulnerable to wildfire due to the proximity of houses and businesses within the wildland/urban interface. The only jurisdictions very minimally vulnerable to wildfire are the Town of Cinco Bayou and the Town of Shalimar because they are completely surrounded by other municipalities.

The homes located on the southern and northern perimeter of Eglin Air Force Base and in the northern unincorporated areas of the county are the most vulnerable because these areas have large acres of open forest land that are historically related to the Long Leaf Pine ecosystem and are naturally dependent on wildfire. Homes located near the wildland/urban interface are most vulnerable to damage from wildfires. Table 4.02.13.1 depicts the structures with 'medium (levels 4-6)' to 'high (levels 7-9)' wildfire level of concern. Levels 0-3 were determined to be of such minimal to low vulnerability to wildfire they were not included in this assessment. There are 6,854 structures in the 'medium' level of concern, with a cumulative 'just value' of $3,434,512,142. There are 4,754 structures in the 'high' level of concern, with a cumulative 'just value' of $1,716,560,191.

Table 4.02.13.1: Medium to High Wildfire Level of Concern for Residential Structures

Total:	Condominium	SFR/Gov TH Lease	SFR-Townhouse	Single-Family	Mobile Home	Multi-Family
Level 4	4	6	35	1896	258	34
Just Value	$894,258	$25,557,869	$41,568,257	$369,558,247	$18,962,524	$28,54,725
Level 5	3	2	34	1988	258	40
Just Value	$789,245	$15,523,899	$8,457,855	$789,452,632	$36,258,288	$98,528,741
Level 6	5	3	2	748	288	4
Just Value	$898,252	$25,869,551	$454,744	$457,122,588	$25,455,744	$35,478,259
Level 7	2	4	2	3012	452	36
Just Value	$489,256	$25,455,748	$691,258	$1,258,477,156	$52,276,598	$32,852,788
Level 8	2	1	0	898	158	20
Just Value	$452,252	$987,236	$0	$458,252,147	$8,258,369	$10,589,458
Level 9	0	1	0	58	14	1
Just Value	$0	$10,587,455	$0	$45,252,147	$789,159	$1,587,899

Source: Florida Forest Service and Okaloosa County Property Appraiser, 2025 (Okaloosa County Staff generated table from overlaying the wildfire level of concern and property appraiser data)

Table 4.02.13.2: Medium to High Wildfire Level of Concern for Other Structures

Total:	Commercial	Government/ Institutional	Trailer Park	RV Park
Level 4	98	69	8	1
Just Value	$452,257,422	$722,566,844	$5,258,477	$254,123
Level 5	177	52	8	1
Just Value	$522,489,589	$899,253,125	$2,744,855	$258,111
Level 6	58	22	1	0
Just Value	$758,225,568	$875,255,366	$452,255	$0
Level 7	111	22	4	0
Just Value	$415,222,366	$252,247,899	$1,258,995	$0
Level 8	56	35	2	0
Just Value	$255,247,588	$478,589,558	$987,258	$0
Level 9	8	4	0	0
Just Value	$255,255,144	$25,257,411	$0	$0

Source: Florida Forest Service and Okaloosa County Property Appraiser, 2025 (Okaloosa County Staff generated table from overlaying the wildfire level of concern and property appraiser data)

4.02.14 Beach Erosion

The coastal areas of Okaloosa County and the coastal jurisdictions of the City of Destin, City of Fort Walton Beach, City of Valparaiso, City of Niceville, City of Mary Esther, Town of Shalimar and Town of Cinco Bayou are vulnerable to beach erosion and susceptible to the damaging effects of this hazard. Homes located on beach-front or bay-front property are the most vulnerable to beach erosion. Intensive wind and wave action, usually during tropical storms and hurricanes, can accelerate the natural rate of beach erosion.

As previously mentioned, within Okaloosa County's jurisdiction there are 57.73 miles along the shoreline of Choctawhatchee Bay, 10.63 along the shore of the Gulf, and 10.04 miles along Santa Rosa Sound that borders the coast. There are 1.057 structures with a cumulative just value of $949,487,854 (see Table 4.02.14.1, below) along this cumulative 78.4 miles of shoreline. Residents living in the unincorporated coastal areas and those living in the coastal jurisdictions may witness beach erosion impacting s infrastructure, critical facilities, residences, and commercial buildings.

Table 4.02.14.1: Total Structures Susceptible to Beach Erosion

	Condominium	SFR-Townhouse	Single-Family	Multi-Family	Commercial	Government/Institutional
Total	72	185	988	19	32	18
Just Value	$88,258,741	$78,258,258	$987,257,456	$35,258,741	$458,456,852	$102,577,259

Source: Okaloosa County Department of Growth Management and Okaloosa County Property Appraiser 2025
Note: Table was generated from Property Appraiser data based on the structures that were determined to be located along the coastal areas in Okaloosa County.

4.02.15 Sea Level rise

See section 4.01.11.09.

4.02.16 Other Hazards

As previously stated in the Overall Risk Assessment, sinkholes, expansive soils, earthquake, avalanche, land subsidence, volcano, and tsunamis have been determined to be a minimal risk to Okaloosa County. Therefore, the LMS Committee has not assessed its vulnerability to these hazards. If any of the hazards become a greater risk in Okaloosa County, then the LMS Committee will update this section to reflect those changes.

4.02.17 Summary

The vulnerability assessment section of this LMS document highlighted how vulnerable the County is to the identified hazards from the Overall Risk Assessment. It discussed the vulnerable

populations, repetitive loss properties, and structure and infrastructure damages associated with these hazards. In Chapter 5, the jurisdictions within the County are assessed for both their exposure and vulnerability to specific hazards.

Section 5.01

City of Crestview

Section 5.01.01 Risk Assessments

Section 5.01.01.01 Introduction

The intent of this section is to provide information regarding the hazards threatening the City of Crestview. It is an incorporated city located in north Okaloosa County and is home to about 31,702 people according a 2025 estimate by the Bureau of Economic and Business Research at the University of Florida. It is the largest city in Okaloosa County and has been one of the fastest growing cities in the county for the past several years. In this section, hazard information relevant to the City of Crestview is compiled and an overview of the analyses is provided.

The City of Crestview was incorporated in 1916 in the northern part of Okaloosa County. As an incorporated city, Crestview has all the powers and authority granted to municipal governments found in Chapter 166 of the Florida Statutes as well as Article VIII of Section 2 of the Florida Costitution to exercise any governmental, corporate, or proprietary power for municipal purposes, provided they are not expressly prohibited by law. These powers allow Crestview to govern itself, deliver services, enact and enforce ordinances, and set policy.

The City of Crestview enforces the Florida Building Code as required by Chapter 553 of the Florida Statutes and participates in the National Flood Insurance Program pursuant to the National Flood Insurance Act of 1968 (42 U.S.C. §§4001 et seq.). The City of Crestview has adopted a comprehensive plan as provided in Chapter 163, Florida Statutes, and has adopted by ordinance implementing land development regulations including provisions for zoning and floodplain management. The City has all the financial resources granted by the Florida Constitution and Florida Statutes which are available to support the mitigation strategies discussed in this section.

The hazards that will be analyzed in this section are natural events and the analysis concentrates on the anthropogenic affects on those events as well as the effects of those events on mankind. However, this analysis is not an assessment of technological and/or societal hazards and, therefore, these types of events are not covered under this plan or in the analysis provided in this section.

Primary attention is given to hazards considered reasonably possible to occur in the City of Crestview. These hazards include:

- Hurricane and Tropical Storm
- Flooding
- Dam Safety
- Land Erosion
- Severe Storms
    - Tornado
    - Thunderstorms and Lightning
    - Winter Storms
- Heat Wave and Drought
    - Heat Wave

- Drought
- Wildfire

The following hazards are considered minimal or no risk to the City of Crestview: sinkholes, expansive soils, earthquakes, avalanches, land subsidence, landslides, volcanoes, sea level rise, and tsunamis. Therefore, these hazards are not analyzed in any depth in the hazard analysis. Further explanation is provided in the "Other Hazards" section. Also, because of the City of Crestview's topographic location and not being a coastal or bay community, it is not susceptible to storm surge, beach erosion, and waterspouts.

Hazard Identification

The technical planning process begins with hazard identification. In this process, the City of Crestview Staff, along with the staff from the Okaloosa County Growth Management Department, has identified all of the natural hazards that threaten the City of Crestview.

Section 5.01.01.02 Hurricane and Tropical Storm

DEFINITIONS:
Please refer back to the Risk Assessment of the overall County for the definitions of this hazard.

HISTORICAL OCCURRENCE:
Although the City of Crestview is located in the northern portion of the county and about 35 miles away from the coast, it is susceptible to the effects of hurricane and tropical storm activity. Its primary concerns attributed to hurricanes are pockets of flooding due to heavy rain, and wind damage.

The City of Crestview and Okaloosa County are equally susceptible to hurricanes and tropical storms, as a typical storm is 300 miles wide and outer rain bands can span from 50 miles to 300 miles. Hurricane-force winds can extend outwards about 150 miles in a large hurricane, while tropical-storm force winds can stretch out as far as 300 miles from the center of a large hurricane (NOAA, 1999). The degree of damage would certainly be less in the City of Crestview than a coastal or bay community in the county, but it is susceptible to damage from these storms. Therefore, the historic hurricane record of Okaloosa County is relevant to the City of Crestview.

Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard because all of the jurisdictions in Okaloosa County are equally susceptible to hurricanes and tropical storms.

EXTENT:
High winds from hurricanes are a substantial threat to homes, especially manufactured housing. Traditional stud and brick veneer or siding homes and businesses are vulnerable, as well, especially when hurricane shutters are not used. Relatively few businesses and homes have hurricane shutters in the City of Crestview, although shelters and some critical facilities are shuttered.

In the worst-case scenario, if a Category 5 hurricane directly hit Okaloosa County, hurricane force winds would be felt in the City of Crestview. These powerful winds would likely result in damage to homes and buildings, trees, power poles, and signage. In particular to power pole damage, there would be extensive widespread system destruction anticipated, which can include transmission/substation damage. Some mobile homes and frame homes would have visible damage. Windows may be broken and trees and power poles down (NOAA, 2010). Flooding may be particularly heavy on roadways.

PROBABILITY:
According to Colorado State University's United States Landfalling Hurricane Probability Project, Okaloosa County, and thus the City of Crestview, has the following future probabilities:

Table 5.01.01.02.1: 50-Year Probabilities of Named Storm, Tropical Storm, and Hurricane Making Landfall in Okaloosa County

1 or More Named Storms Making Landfall	1 or More Hurricanes Making Landfall	1 or More Intense Hurricanes Making Landfall	Tropical Storm-Force (≥ 40 mph) Wind Gusts	Hurricane-Force (≥ 75 mph) Wind Gusts	Intense Hurricane-Force (≥115 mph) Wind Gusts
90.90%	68.60%	40.50%	>99.9%	99.60%	82.30%

Source: The United States Land falling Hurricane Web Project, 2010

Section 5.01.01.03 Flooding

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
The City of Crestview is susceptible to localized flooding, particularly on roadways. On May 9, 1995, 15 roads north of I-10 in the City of Crestview were closed for several hours due to a foot of water over the road. On October 24, 1997 heavy rains caused flooding along Old Antioch Road in the City of Crestview and a bridge across the road had to be closed for almost an hour due to high water. On July 29, 1998 heavy rains caused flooding on several secondary roads in the city. The roads were closed for about an hour and rainfall amounts were estimated between 4-5 inches. On May 7, 1999 heavy rain from slow moving thunderstorms caused water to cover many roads in the north part of the county and around the City of Crestview. Rainfall amounts were recorded at 8-10 inches. On December 2, 2009 heavy rains from thunderstorms flooded several roads around the city. On January 21, 2010 there was extensive roadway flooding in the City of Crestview, and one home had significant flood damage. On February 05, 2010 heavy rains flooded numerous roadways around the city. (NCDC, 2010). One major flood was recorded in the City of Crestview and it was a result of Hurricane Georges in 1998. Interstate 10 was closed both east and west of the City of Crestview for several hours and schools were closed for several days because secondary roads were washed-out. Record river flooding was documented, as the Shoal River crested at 21.4 feet on September 30, 1998 (NCDC, 2010). Numerous homes built above the 100-year base flood were damaged. The Okaloosa County Emergency Management

Department considers the flooding associated with Hurricane Georges to be some of the most severe flooding ever recorded in Okaloosa County.

EXTENT:
The City of Crestview is susceptible to localized flooding in the areas surrounding the small streams, lakes, and rivers found within the municipality, and would likely be attributed to heavy rains associated with a hurricane, tropical storm, or severe storm. Due to the City of Crestview's location between the Yellow River to the west and the Shoal River to the east, it is vulnerable to severe flooding.

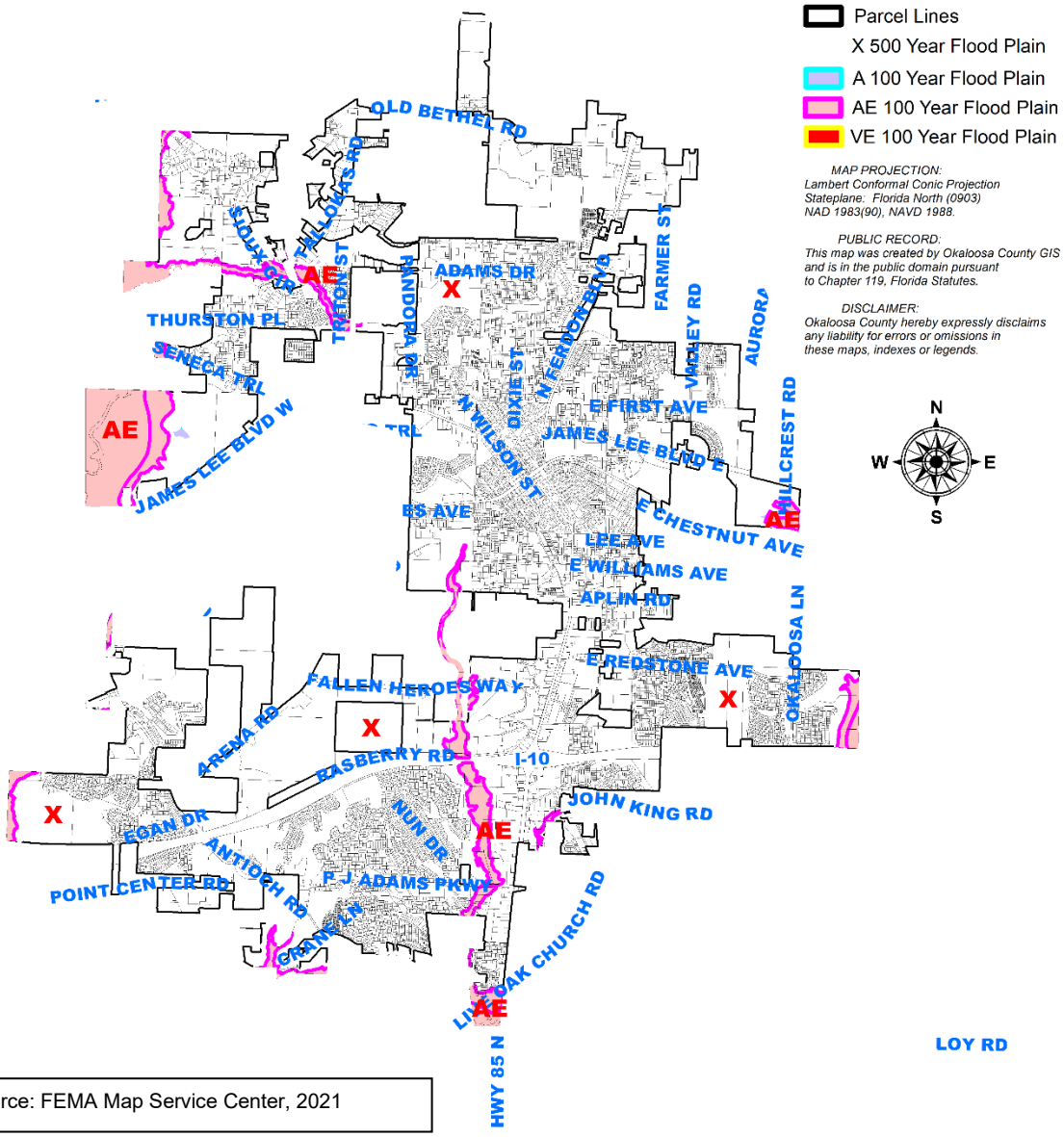
In the worst case scenario of flooding in the City of Crestview, roadways would have several inches of water over them, road-closures would impede travel and shipments through the area, and many homes, particularly along the Shoal River, would have significant flood damage.

As evident in the flood map below, the majority of the city is located in flood zone X (500 year flood plain). There are parcels in the southern part of the city that are located in the in unnumbered A and AE flood zones, and are more prone to flooding than other areas (See Figure 5.01.01.03.1, below).

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City of Crestview

Figure 5.01.01.03.1: The City of Crestview's Flood Zones



Source: FEMA Map Service Center, 2021

There are approximately 20.66 miles of arterial and collector roads in the City of Crestview. Out of this total, 20.36 miles of these roads are located in the NFIP X Zone (500 Year Flood Zone) and .30 miles located in the NFIP Special Flood Hazard Zone.

PROBABILITY:
The entire County, which includes the City of Crestview, has a future probability of a flash-flood or flood occurring annually and can be expected to occur frequently. However, due to the localized

nature of flash-flooding and flooding, a more exact probability will not be provided. The City of Crestview can expect to have less than 1 major flood per year.

Section 5.01.01.04 Dam Safety

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURENCES:
Since 2001, there have been 2 out of 178 active permitted dams to fail in Okaloosa County (NWFWMD, 2010). None of these failures occurred in Crestview, although one of the failures occurred just outside of the City of Crestview on Old Bethel Road. No homes were affected or significant loss reported.

EXTENT:
The City of Crestview has 28 active permitted dams within its jurisdiction. There are other dams located just outside the City's jurisdictional boundary, and may cause flooding within or spill over into the city, even though the dam is outside of the city limits. Most of these are small agricultural dams or retention ponds. In the worst case scenario, if one of these dams failed, the area surrounding the dam could experience flooding and agricultural losses, and may cause residential flooding or highway flooding.

.
PROBABILITY:
Due to the rarity of dam failure in Okaloosa County, and no record of occurrence in the City of Crestview, the future probability of dam failure resulting in flooding is less than 1 per year.

Section 5.01.01.05 Land Erosion

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
All of Okaloosa County is equally susceptible to land erosion in some localized areas; this includes the City of Crestview. Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard.

EXTENT:
Sheet erosion, if left unchecked, can damage drainage ditches, fill storm water retention ponds with sediment, and cause erosion into property, including structures. Most erosion of this nature occurs along unpaved roadways in hilly areas. In this instance, the result is the deposition and buildup of soils/sands on the roadways and in the drainage systems.

In the worst case scenario, soil erosion will cause land to be unusable for other purposes because of the degraded soil quality, structure, stability and texture. Erosion along stream and ditch banks will cause loss property, undermining of structures (bridges, etc), and washing out of lanes, roads, and fence rows.

PROBABILITY:
Based on the existence of potentially highly erodible soils and erodible soils there is a possibility of land erosion in Crestview. The future probability of soil erosion cannot be given because no occurrence of land erosion has been documented in the City of Crestview.

Section 5.01.01.06 Severe Storms

The Severe Storms segment of the LMS Hazards Assessment includes tornado, thunderstorms and lightning, winter storms, and heat waves and drought (hurricanes are excluded from this section because they are covered in another section of this chapter).

Section 5.01.01.06.01 Tornado

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRRENCE:
On October 4, 1995 an F2 tornado touched down near Interstate 10 east of the City of Crestview. The tornado destroyed two homes and a church and severely damaged the late Bob Sikes Homestead and the Crestview High School's gymnasium. One home was completely destroyed, killing an elderly female who was living there. The other home had the roof taken off and most of the insides of the home were destroyed. Three people were injured in the home. The tornado was on the ground for almost two miles.

On October 27, 1995 an F0 tornado briefly touched down near Duke Field which is on Highway 85 between the City of Crestview and the City of Niceville but resulted in no damage. On December 2, 2009 a tornado developed 3 miles southeast of the City of Crestview and developed during a line of thunderstorms that were passing though (NCDC, 2010). The total damage as a result of all these tornadoes was $300,000. Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard.

EXTENT:
The damage potential for a tornado increases as a function of population density. As the number of structures and people increase, the potential damage/injury rate increases. Manufactured housing, poorly constructed or substandard housing and apartment complexes are especially susceptible to damage from a tornado. The worst possible scenario in terms of tornado damage would be if an F-5 tornado hit the City of Crestview. It is very unlikely that an F-5 tornado would strike either Okaloosa County or the City of Crestview, but if one did there would be complete destruction of homes and businesses that were in the tornado's path. Trees and power lines would be snapped, building debris scattered about, and severe structural damage would be evident on any building left standing. The most common and active weather threat in Okaloosa County for the formation of tornadoes is severe thunderstorms associated with frontal boundaries. Frontal boundaries and summertime afternoon air mass thunderstorms can reach severe limits because of atmospheric uplift. High winds relating to gust fronts and "microbursts" can create high wind speeds up to 100 MPH.

PROBABILITY:
As stated previously, the tornado history of Okaloosa County is equally relevant to the City of Crestview. Therefore, the future tornado probability of Okaloosa County is the same for the City of Crestview. From 1958-2009 there have been a total of 94 reported tornadoes in Okaloosa County. Based on this data the probability of a future tornado occurrence in the City of Crestview is less than 2 tornadoes per year.

Section 5.01.01.06.02 Thunderstorms and Lightning

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
Between 1995 and 2009, there have been 16 different hail events in the City of Crestview. The total damage associated with these events was $13,000. Between 1995 and 2009 there have been 14 accounts of damaging thunderstorm winds. These winds have mostly resulted in damage in the form of downed trees and power lines. There was one account recorded during January of 1999 in which a house sustained roof damage due to high winds. The total cumulative damage from all of these events was $101,500. Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

On September 4, 1996 a workshop in the City of Crestview was struck by lightning and the building was totally destroyed by fire. On June 20, 1997 two houses were struck by lightning and both of them caught on fire, but were put out with minimal damage to the homes. On July 1998, lightning struck a water tower and blew a hole in it. Lightning also hit a home in the same area and started a fire but it was quickly put out. On January 2, 1999 lightning struck the communications system for Okaloosa County in the City of Crestview and knocked the 911 system off the air for several hours. On June 15, 2000 lightning hit a tree outside of a house. The strike ran along the trees root system into a house, knocked two brick walls down, shattered a glass patio door, and knocked cabinets off a kitchen wall. It also started a small fire that was quickly extinguished. On August 18, 2001 lightning hit a tree near a house. The lightning ran through the branches of the tree and started a fire in the roof and attic of the house. The home suffered major damage before the fire could be put out. On June 5, 2003 lightning struck a home near the City of Crestview. The fire was quickly extinguished after the fire department arrived. On July 15, 2004 lightning struck a garage in the City of Crestview which started a fire in the garage and the two vehicles parked in it were destroyed. On April 1, 2005 lightning struck a home in the City of Crestview area. The strike started a fire and severely damaged the home, but no one was home at the time of the strike. On August 4, 2006 lightning struck several houses around the City of Crestview. No major damage was reported and no one was injured. The total damage as a result of all of these lightning events was $244,000. Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
Thunderstorm damage can include traffic accidents on wet roads, flash-flooding, lightning damage to electronics and structures, lightning strikes on people, and wind and hail damage.

Aside from being able to produce tornadoes, thunderstorms can produce damaging high winds. Cold upper level air descending from the top of a thunderstorm to the ground usually causes these winds. In a worst case scenario, if the upper level air speed of descent is rapid, these cold "microbursts" can fan out as they come in contact with the ground at a high rate of speed. This is sometimes referred to as "straight line winds." These winds can cause significant property damage, injuries, and deaths similar to a F0 to F2 tornado or Category 1 or 2 hurricanes.

PROBABILITY:
Based on historical data (See Risk Assessment of overall County of this hazard's historical occurrences), the City of Crestview has a future probability of experiencing less than 5 severe thunderstorms per year. Also based on historical data (See Risk Assessment of overall County for this hazard's historical occurrences), the City of Crestview is likely to experience 4 to 16 flashes of lightning per square kilometer per year.

Section 5.01.01.06.03 Winter Storms

DEFINITION:
Please refer Chapter 4 which provides the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
From 2005-2009 the City of Crestview had a total of 160 days where the temperature was below freezing (Weather Underground, Inc., 2010). The City of Crestview's larger amount of freezing days may be attributed to its elevated location, which creates a greater exposure to the cold. Table 5.01.06.03.1, below, depicts the historical winter minimum average temperatures for the City of Crestview.

Table 5.01.01.06.03.1: Monthly Mean Temperature Minimums in degrees Fahrenheit, 1971-2009

	Nov	Dec	Jan	Feb	Mar
Crestview FAA Airport, FL	38.3°	33.9°	29.6°	33.8°	40.2°

Source: Southeast Regional Climate Center, 2025

Snow is considered a very rare event and generally melts off quickly. However, as discussed in greater detail in Chapter 4, Winter Storm Enzo brought approximately 8 inches of snow in the Crestview area, which remained for several days and dissipated within one week.

EXTENT:

The worst case scenario in terms of winter storms in the City of Crestview would be if freezing or below freezing temperatures and snow lasted for a week or more, and if the storm responsible for such freezing temperatures knocked down power lines resulting in power loss, and the inability of residents to heat their homes. A freeze's greatest risk is generally unprotected or under-protected water pipes in homes, businesses and infrastructure. Outdoor irrigation systems and plumbing in homes where insulation is inadequate in walls or in off-grade homes where plumbing is exposed are most vulnerable. Unmitigated older structures and manufactured housing are probably the most vulnerable structures. An icing, glaze, sleet or snow incident in the City of Crestview and the surrounding area would likely result in severe traffic problems and safety concerns throughout the community and its roadways, including Highway 85 and I-10. With limited means of salting roadways or removing ice, emergency response would be severely slowed in affected areas. Electrical service would likely be interrupted or totally absent in many areas due to power line glazing and tree branches falling. Mitigation efforts would more likely focus on sheltering, the ability salt roadways, and the ability to receive outside mutual aid assistance.

PROBABILITY:
Based on the best available data of total below freezing days, the future probability of freezing temperature days in the City of Crestview is estimated to be 100 days over a 5-year time period. Annually, the City of Crestview can expect to have 8 days of freezing temperatures (NCDC). Because a snow event in the City of Crestview is so rare, a single snow "event" over five or ten years is probably the average.

Section 5.01.01.07 Heat Wave and Drought

Heat Wave

DEFINITION:
Please refer to the Risk Assessment of the overall County (Chapter 4) for the definition of heat wave.

HISTORICAL OCCURRENCE:

The City of Crestview experienced three heat waves from 2005-2009 with high temperatures ranging from 91°F-102°F and average humidity ranging from 58-84 (Weather Underground, Inc., 2010).

Table 5.01.01.06.03.1: Monthly Mean Temperature Minimums in degrees Fahrenheit, 1971-2025

	May	Jun	Jul	Aug
Crestview FAA Airport, FL	89.8°	95.6°	97°	96.9°

Source: Southeast Regional Climate Center, 2025

EXTENT:

The worst case scenario in terms of a heat wave would be if excessive heat and humidity lasted for a week or more. Dangerous conditions are present when both heat and high humidity combine to make outside temperatures feel in the 103-124° F range. External danger warnings are issued when high temperatures and humidity combine to make outside temperatures feel in the 126-137° F range. Heat disorders may develop in people who work outside for long periods of time, such as construction workers.

To combat the dangerous effects of excessive heat residents should dress appropriately, stay indoors, refrain from strenuous work during the hottest part of the day, and stay hydrated. Electrical system failures due to demand is a true possibility during excessive heat conditions. Individuals without adequate cooling systems in their homes, with emphasis on low income and the elderly, are especially at risk of developing heat disorders. Electrical system failures due to demand would only enhance problems for all of these industries and populations (NOAA Watch: Heat Wave).

PROBABILITY:
Based on the data above, it is predicted that the future probability of a heat wave occurring in the City of Crestview is on average three times during a 5-year period.

Drought

DEFINITION:
Please refer to the Risk Assessment of the overall County for the definition of drought and the categories of drought according the U.S. Drought Monitor.

HISTORICAL OCCURRENCE:
Okaloosa County and Crestview are equally susceptible to droughts as they tend to affect a large geographic area. Therefore, the drought record of Okaloosa County is relevant to the City of Crestview. Please refer back to the Risk Assessment of the overall county for the historical occurrences of drought because Crestview is equally susceptible to this hazard.

EXTENT:
The worst case scenario in terms of drought would be if an exceptional drought (D4) lasted for months or years in Okaloosa County and the City of Crestview (See the Risk Assessment of the overall County for drought category descriptions). An exceptional drought would cause shortages of water in reservoirs, streams, and wells. Bay swamps and bodies of water would see a drastic decline in natural water levels and water shortages in reservoirs and wells would create water emergencies. Precipitation levels would be -2.0 inches or less. Also, the risk of wildfire increases as drought deepens (U.S. Drought Monitor, 2010).

PROBABILITY:
The abnormally dry drought intensity is the condition of dryness before and after a period of actual drought. From 2000-2009, there were a total of 49 out of 120 months where Okaloosa County was abnormally dry. Based on this data, the City of Crestview has a future probability of experiencing less than 5 abnormally dry months every year. Also, from 2000-2009, there were a total of 51 out of 120 months where moderate, severe, extreme, or exceptional drought occurred in Okaloosa County. These drought intensities are the varying severity of actual droughts. The

future probability of a moderate to severe drought occurring in the City of Crestview is on average 5 months per year.

Section 5.01.01.08 Wildfire

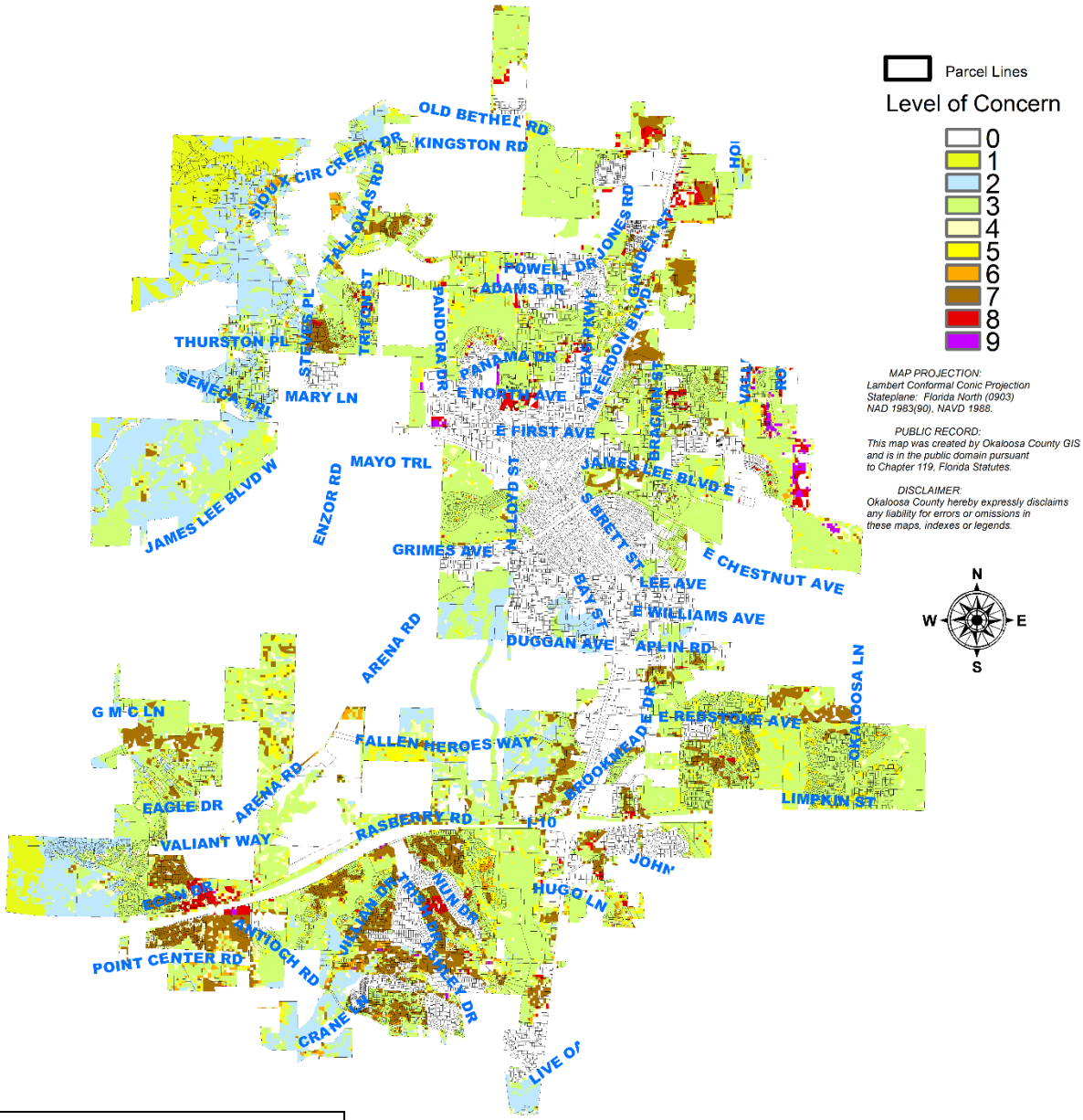
DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
The City of Crestview is vulnerable to wildfire. The majority of the acreage located within the municipality is urban or residential, but vast acres of open forest lands surround the City of Crestview, and these lands consists of natural vegetation historically related to the Longleaf Pine or upland Southeastern forests. The wildfire record of Okaloosa County is relevant to the City of Crestview. Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard.

EXTENT:
Based on the Wildland Fire Risk Assessment of Okaloosa County, the worst case scenario would be if the areas with the greatest Level of Concern (LOC) experienced a massive wildfire. These areas have a greater likelihood of danger and destruction due to their inadequate infrastructure, inaccessibility to critical facilities or firefighting resource locations, and connection to the wildland-urban interface. *Note* According to the Florida Department of Forestry, wildland urban interface is defined as “the zone where structures and other human development intermingles with undeveloped wildland fuels and other natural features.” Fires could come into subdivisions and neighborhoods in urban and suburban areas, which could be a potentially catastrophic situation. Smoke and ash from dangerous wildfires could decrease visibility on highways and local roads.

PROBABILITY:
The Wildland Fire Risk Assessment System map from the Florida Division of Forestry displays the wildfire levels of concern for the City of Crestview. According to the map, most of the incorporated City is classified with “lower” levels of concern (2010). However, there are small parcels that have a high level of concern, as indicated in red. The figure below displays the levels of wildfire concern for the entire City of Crestview. It appears that the City of Crestview’s future probability of wildfire occurrence is low, although there are certain areas to be more concerned about. See Figure 5.01.01.08.1, below.

Figure 5.01.01.08.1: Wildfire Levels of Concern for the City of Crestview



Source: Florida Division of Forestry, 2025

Section 5.01.01.09 Other Hazards

The hazards listed below have been analyzed and determined that the impact would be minimal or non-existent in the City of Crestview.

Section 5.01.01.09.01 Sinkholes

The map and description prepared by the United States Geologic Survey (USGS) in its "Sinkhole, Type, Development and Distribution in Florida" (1985) indicates that Okaloosa County in its entirety is located in an area where sinkholes seldom, if ever, occur. The Florida Geologic Survey's statewide sinkhole database indicates no sinkholes in the County. Since there is no history of this hazard in the County, no further analysis or risk assessment will be conducted for this plan. However, should conditions change and geological features be changed, any new occurrence information in ongoing updates.

The future probability of a sinkhole occurring in the City of Crestview is less than 1% based upon no documented sinkholes in the county and the soil strata is non-conducive to the formation of sinkholes.

Section 5.01.01.09.02 Expansive Soils

According to the *Soil Survey of Okaloosa County Florida* (USDA, June 1995), two types of soils are considered vulnerable to expansion. These are known as shrinking and swelling or "expansive soils." Another way of describing expansive soils is the change of volume of a soil with a change of moisture content. All of the soils listed in the expansive class are also considered erodible soils. Okaloosa County may be susceptible to expansive soils in some localized areas. There have been no previous occurrences recorded of expansive soils in the County. The following table lists soils having moderate to high shrink swell potential in Okaloosa County. Only those soils with an associated risk of "High" are listed:

Table 5.01.01.09.02.1: Shrink/ swell potential of soils in Okaloosa County.

Soil Type	ME Soils*	HE Soils**	Total Acreage	% Total Land Area
#35-Angie (2 to 5 percent slopes)		X	1,073.26	.16
#49-Angie (5 to 12 percent slopes)		X	10,280.79	1.61
#20-Udorthents (nearly level)	X		655.31	.11
Total	**.11**	**1.77**	**12,009.36**	**1.88**

* Moderate Erodible Soils **Highly Erodible Soils

Note: Expansive soils and erodible soils are classified as the same. Source: Soil Survey of Okaloosa County, Florida; June 1995.

Expansive soils can lessen the strength of building foundations, which could result in structural collapse or instability. In addition, these soils have limitations for use as local roads and streets because of lack of strength to support roadways and traffic. There is a possibility of shrink/swell potential or soil expansion based on the existence of moderately erodible soils and highly erodible soils in Okaloosa County. Although the specific amount of these soils in the county is known, the future probability of this occurring in the City of Crestview is minimal because this issue is addressed during the time of construction and there are no previous records of occurrence.

Section 5.01.01.09.03 Earthquake

According to the U.S. Geological Survey Earthquake Probability maps, the City of Crestview has between a 0.005 and 0.010% chance of experiencing a 5.0 magnitude earthquake within 100 years. This is considered a very minimal risk. Also, since there is no history of earthquakes in Okaloosa County, no further analysis or risk assessment will be conducted for this plan. The future probability of an earthquake occurring in the City of Crestview is less than 1 in 100 years.

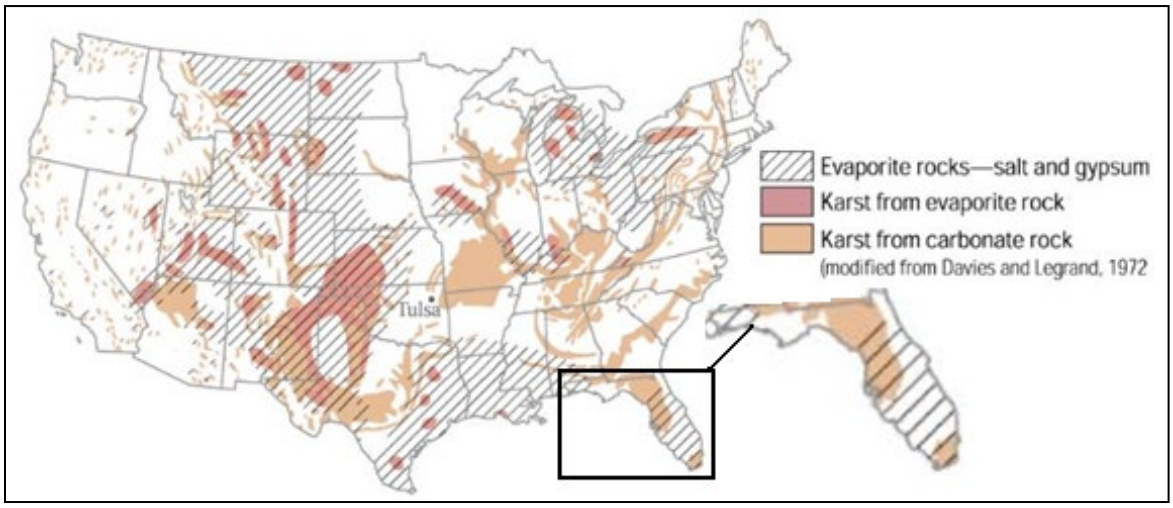
Section 5.01.01.09.04 Avalanche

The City of Crestview does not have topography nor snowfall amounts that would create conditions for an avalanche. Since there is no history of this hazard in the county, no further analysis or risk assessment will be conducted for this plan. The future probability of an avalanche occurring in the City of Crestview is less than 1 in 100 years.

Section 5.01.01.09.05 Land Subsidence

According to the U.S. Geological Survey, “land subsidence occurs when large amounts of ground water have been withdrawn from certain types of rocks, such as fine-grained sediments. The rock compacts because the water is partly responsible for holding the ground up. When the water is withdrawn, the rock falls in on itself. Land subsidence is most often caused by human activities, mainly from the removal of subsurface water” (U.S. Geological Survey). The City of Crestview has a minimal amount of the most common rock types that are connected to land subsidence (Figure 5.01.01.09.05.1). Since there is no history of this hazard in Okaloosa County, no further analysis or risk assessment will be conducted for this plan. The future probability of land subsidence occurring in the City of Crestview is less than 1 in 100 years.

Figure 5.01.01.09.05.1: Rock types connected to collapse (subsurface cavities/sinkholes) in the U.S.



Source: U.S. Geological Survey

Section 5.01.01.09.06 Landslide

According to U.S. Geological Survey Map of Relative Incidence and Susceptibility Map, Crestview has a very low landslide incidence with less than 1.5% area susceptible to a landslide (USGS). Landslides are therefore considered to be a minimal risk, and no further analysis or risk assessment will be conducted for this plan. The future probability of a landslide occurring in the City of Crestview is less than 1 in 100 years.

Section 5.01.01.09.07 Volcano

There are no geological features in or near Okaloosa County, the City of Crestview, or the Southeast related to volcanism. Since there is no history of this hazard in Crestview, no further analysis or risk assessment will be conducted for this plan. The future probability of a volcanic eruption occurring in the City of Crestview is less than 1 in 100 years.

Section 5.01.01.09.08 Tsunami

According to the U.S. Geological Survey, the City of Crestview is not located in an area that has historically been subjected to tsunamis. Since there is no history of this hazard in the City of Crestview, minimum analysis and risk assessment will be conducted. There is no record of a tsunami occurring in the City of Crestview, as it is not a coastal county. Therefore the future probability has been determined to be less than 1 in 100 years.

Section 5.01.01.09.09 Sea Level Rise

Located well inland and north of the Eglin Reservation, the City of Crestview is not directly threatened by rising coastal waters. However, the 2025 Okaloosa County Vulnerability Assessment (Jacobs Engineering 2025) incorporated into this LMS and attached as Appendix E discusses the potential threat posed by changing rainfall and streamflow characteristics to City-owned infrastructure (primarily parks and sanitary sewer lift stations) that can occur along or in relative proximity to creeks and rivers. In addition, the Vulnerability Assessment (VA) notes that the flooding of State Road 85 (SR 85 is controlled by the Florida Department of Transportation) where it crosses the Shoal River is a concern as SR 85 is the only road connection wholly within the County between the County's northern and southern population centers and the river crossing constitutes a traffic choke point. The elevation of the SR 85 bridge and approaches over the Shoal River is included on Table ES-1, Prioritized Adaptation Projects, of the 2025 VA's companion Adaptation Plan (also developed by Jacobs Engineering) that is also included as part of Appendix E.

Section 5.01.01.10 Summary

The risk assessment section of this LMS document highlighted the hazards that the City of Crestview is exposed to. This provides the foundation for the subsequent section covering how vulnerable the City of Crestview is to these identified hazards. The facilities, infrastructure, and neighborhoods in the City of Crestview need to be assessed for their vulnerability to disasters.

Section 5.01.02 Vulnerabilities

Section 5.01.02.01 Introduction

The intent of this section is to provide a vulnerability assessment for the potential damage and estimated loss to building structures in the City of Crestview.

This section includes a brief summary description of the City of Crestview, as well as its vulnerability to the identified hazards and the impact of each hazard. It also describes the vulnerability in terms of the types and numbers of repetitive loss properties within the City of Crestview. Additionally, the section describes vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the City of Crestview.

The main intent of this section is to provide an estimate of potential dollar losses to vulnerable structures and a description of the methodology used to complete the estimate. Lastly, this section describes vulnerability in terms of providing a general description of land uses and development trends within the City of Crestview so that mitigation options can be considered in future land use decisions.

Section 5.01.02.02 Methodology

The Okaloosa County Staff used the same methods of quantifying the estimated dollar losses to the vulnerable structures potentially impacted by each hazard for the City of Crestview as the overall County. Therefore, please refer to Okaloosa County's Overall Vulnerabilities, Section 4.02.02, for more information.

Section 5.01.02.03 Summary Description of the City of Crestview

The City of Crestview is an incorporated city located in the northern portion of Okaloosa County. As of a 2025 estimate by the Bureau of Economic and Business Research at the University of Florida, it was home to 31,702 residents, which makes it the largest municipality in Okaloosa County by population. The City of Crestview is the most rapidly growing city in Okaloosa County and has been for several years. Most of the existing commercial development is located north of I-10 and concentrated along the corridor of U.S. Highway 85. The majority of the residential subdivisions are located both northeast and northwest of I-10 and U.S. Highway 85. Local development data indicates that it is reasonable to expect that the City of Crestview and the surrounding area will continue to grow north of I-10, with an increase in growth north of Highway 90.

The City enforces the Florida Building Code as required by Chapter 553 of the Florida Statutes. This is accomplished through the Inspections Division of the City's Community Development Services Department which employs a full-time Certified Building Official (CBO) as well as multiple inspectors and plans examiners all of whom are licensed pursuant to Chapter 468, Florida Statutes. For determining whether an addition or redevelopment of a structure constitutes a substantial improvement pursuant to the NFIP, these staff members coordinate with the Floodplain Manager within the same department (see below) who oversees the day-to-day

implementation of the program. The CBO has the authority to request certified appraisals when considering whether a proposed activity constitutes a substantial improvement. The CBO, plans examiners, and inspectors conduct substantial damage assessments at need and are joined by the City's certified Code Enforcement Officers for damage assessment following a major storm event. The damage assessments are carried out in accordance with FEMA standards.

In addition to a licensed building official and inspectors, the City also employs within the Community Development Services (CDS) Department the CDS Director, who is a Certified Floodplain Manager who oversees the day-to-day implementation of the City's program. The Floodplain Manager coordinates technical aspects of the program together with a Florida-licensed Professional Engineer, housed within the Public Works Department. Being in separate departments and separate chains-of-command allow these positions to serve as a check and balance in interpretation and enforcement of the program.

Emergency management activities are coordinated through the City of Crestview Fire Department under the Fire chief and Emergency Management Chief. Activities are further coordinated with Okaloosa County's Department of Emergency Management as necessary.

The City of Crestview currently participates in the National Flood Insurance Program (42 U.S.C. §§4001 et seq.). The City has regularly updated its floodplain regulations to remain consistent with the program requirements. The most recent update is the adoption of City Ordinance 1789 which amended the majority of the Land Development Code (LDC), including updates to the City's floodplain management regulations. This ordinance specifically adopted Section 5.05.02 of the LDC which includes the following language:

> 5.05.02.C. Basis for establishing/food hazard areas. The Flood Insurance Study for Okaloosa County, Florida and Incorporated Areas dated December 6, 2002, and all subsequent amendments and revisions, and the accompanying Flood Insurance Rate Maps (FIRM), and all subsequent amendments and revisions to such maps, are adopted by reference as a part of this article and shall serve as the minimum basis for establishing flood hazard areas. Studies and maps that establish flood hazard areas are on file in the Community Development Services at City Hall, 198 Wilson Street North, Crestview, FL 32536.

The City will incorporate the findings and recommendations of the LMS into our respective planning mechanisms through integration with comprehensive plans, capital improvement programs, land development regulations, and emergency management plans. LMS-identified hazards, vulnerabilities, and mitigation actions are considered during project prioritization, budgeting, and policy development to ensure consistency with long-term resilience objectives. Additionally, the city will utilize the LMS to support grant applications, inform development review processes, and guide post-disaster recovery and redevelopment decisions. This coordinated approach ensures that hazard mitigation principles are systematically embedded into local planning and decision-making processes.

Section 5.01.02.04 Vulnerable Populations

Hazards do not affect the entire population the same. Therefore, special attention needs to be given to the more vulnerable populations. Please refer back to the overall County's Vulnerability for further explanation on these vulnerable populations. The table below displays the City of Crestview's vulnerable populations.

Table 5.01.02.04.1: Estimated Vulnerable Populations in the City of Crestview, (ACS 5-Year Estimates)

Population	Percent Population
Elderly	10.1%
Language Isolation	8.2%
Disabled	12.4%
Single Parent	12%
Poverty	1.2%
Minority	37%

Source: American Community Survey 5-Year Estimates (2019-2024)

Section 5.01.02.05 Repetitive Loss and Severe Repetitive Loss Properties

The Federal emergency Management Agency defines repetitive loss and severe repetitive loss properties as follows (44 CFR Part 77 § 77.2):

> ***Repetitive loss structure*** means a structure covered under an NFIP flood insurance policy that:
>
> (1) Has incurred flood-related damage on 2 occasions, in which the cost of repair, on average, equaled or exceeded 25% of the value of the structure at the time of each such flood event; and
>
> (2) At the time of the second incidence of flood related damage, the contract for flood insurance contains increased cost of compliance coverage.
>
> ***Severe repetitive loss structure*** means a structure that is covered under an NFIP flood insurance policy and has incurred flood-related damage:
>
> (1) For which 4 or more separate claims payments have been made under flood insurance coverage under subchapter B of this chapter, with the amount of each claim (including

building and contents payments) exceeding $5,000, and with the cumulative amount of such claims payments exceeding $20,000; or

(2) For which at least 2 separate flood insurance claims payments (building payments only) have been made, with cumulative amount of such claims exceeding the value of the insured structure.

The hazards of hurricanes, tropical storms, storm surge, flooding, and thunderstorms are responsible for repetitive/severe repetitive loss properties. Historically, these properties are more vulnerable to certain hazards than other structures in the County because they have already experienced significant flood damage. As of 2026 the City of Crestview does not have any repetitive loss properties; however, the LMS Committee will update this if this changes in the future.

Section 5.01.02.06 Hurricane and Tropical Storm

The City of Crestview is vulnerable to the damaging effects of tropical storms and hurricanes, even though it is located in the northern portion of the county and about 35 miles away from the coast. The City of Crestview would experience destruction in terms of wind damage and pockets of flooding due to the heavy rains. All structures within the City of Crestview's jurisdiction are susceptible to damage in the form of flooding due to heavy rains and strong storm surge. High winds can damage structures by removing roofs and siding, and create flying debris out of sources which are not anchored. The City of Crestview does not have designated evacuation zones for the different categories of hurricanes. This is due to their more northerly location away from the coastal areas by the Gulf of Mexico, which is where the storms typically make landfall. Historically, storms generate their power over bodies of water and lose their strength as they make landfall. Therefore, as the storm travels further north in the County, the communities are not impacted as severely as the coastal areas. The specific impacts of hurricanes and tropical storms on the City of Crestview are unable to be provided due to a lack of conducted studies.

Section 5.01.02.07 Flooding

This section of the LMS considers flooding that is a result of rainfall, which includes rain that occurs during a tropical storm or hurricane. The City of Crestview is vulnerable to flooding and susceptible to damage from this hazard. Localized roadway flooding from heavy rains is the most commonly observed type of flooding in the City of Crestview. During a hurricane, tropical storm or severe storm heavy rains might cause some homes to flood particularly in low lying areas or those with poor drainage systems. In the City of Crestview, there are 5 structures located in the AE flood zone and 0 structures in the A flood zone. The cumulative 'just value' of the structures in the AE and A flood zones is $1,468,436. The following table depicts the amount of structures located in flood zones.

Table 5.01.02.07.1: Structures Located in Flood Zones in the City of Crestview

	AE Flood Zone	Just Value	A Flood Zone	Just Value
Single Family	5	$1,468,436	0	N/A

Source: Okaloosa County Department of Growth Management, 2025; FEMA, 2021

Section 5.01.02.08 Dam Safety

The City of Crestview has 28 active permitted dams within its jurisdiction. There are other dams located just outside the City's jurisdictional boundary, and may cause flooding within or spill-over into the city, even though the dam is outside of the city limits. Most of these are small agricultural dams or retention ponds. The specific impacts of dam failure in Okaloosa County is unavailable because there have been no studies conducted on the impact that dam failure would have on the potentially affected areas. Only broad general impacts can be given, which provide an indication of what impacts are expected with dam failure. If one of these dams failed, the area surrounding the dam has to potential to experience flooding and agricultural losses, and may cause residential or highway flooding.

Section 5.01.02.09 Land Erosion

The City of Crestview in vulnerable to land erosion in some localized areas, and some structures are susceptible to damage from this hazard. The soil types and topography that leads to land erosion can be found in various parts of the City of Crestview. The areas that are most susceptible to land erosion are those with steep slopes and which have highly erodible soil types. Land erosion in the City of is generally caused by disturbed soils from construction activities and usually isolated to an area less than 1 acre in size.

Section 5.01.02.10 Severe Storms

In the tables below, the estimated cost of damage to residential and non-residential structures in the event of a severe storm is provided. The numbers and estimated value represents the total number of structures in the City of Crestview. Although it is highly unlikely that all structures will be impacted during a singular severe storm event, all structures are equally vulnerable to severe storms and so it was deemed appropriate to list all structures in the City of Crestview.

Table 5.01.02.10.1: Residential Structures Vulnerable to Severe Storms in the City of Crestview

Total:	SFR-Townhouse	Single-Family	Multi-Family
	818	8,641	206

Just Value	$138,996,951	$1,917,471,390	$236,873,655

Source: Okaloosa County Department of Growth Management, 2025

Table 5.01.02.10.2: Other Structures Vulnerable to Severe Storms in the City of Crestview

Total:	**Commercial**	**Government/ Institutional**
	589	103
Just Value	$406,789,157	$105,310,143

Source: Okaloosa County Department of Growth Management, 2025

Since severe storms includes tornadoes, thunderstorms and lightning, and winter storms, the values listed in the tables above apply to all those special hazards.

Section 5.01.02.10.01 Tornado

The City of Crestview is vulnerable to tornadoes, and all structures within its jurisdiction are susceptible to the impacts of this hazard due to their unpredictable nature.

The areas within the City of Crestview that are most vulnerable to tornado damage are those with a high density or large population because the damage rate increases as a function of population density. The types of structures most vulnerable to tornado damage within the City of Crestview are poorly constructed housing, apartment complexes, and condominiums because of their size and densities. According to the Mapping for Emergency Management, Parallel Hazard Information System (MEMPHIS) study in 2005, nearly all of Okaloosa County, including the City of Crestview, has a medium risk, 1 in 250 per year, of a tornado event occurring.

Section 5.01.02.10.02 Thunderstorms and Lightning

The City of Crestview is vulnerable to thunderstorms and lightning, and all structures within its jurisdictions are susceptible to the damaging effects of wind, hail, and lightning associated with severe thunderstorms. Thunderstorm damage can include traffic accidents on wet roads, flash-flooding, lightning damage to electronics and structures, lightning strikes on people, and wind and hail damage to structures. According to the Mapping for Emergency Management, Parallel Hazard Information System (MEMPHIS) study in 2005, all of Okaloosa County, including the City of Crestview, has the threat of a thunderstorm or lightning event occurring, in terms of causing economic damage or loss of over $50, of 1 in 50 per year.

Section 5.01.02.10.03 Winter Storms

The City of Crestview is vulnerable to winter storms, and all structures within its jurisdiction are susceptible to the effects of freezing temperatures. The City of Crestview is vulnerable to snow,

freezing rain, icing and glazing events but because these events are so rare, the City of Crestview is unlikely to suffer serious damage from this hazard. The specific impacts of winter storms in the City of Crestview are unavailable because there have been no studies conducted regarding these hazards' impacts in the County. Only broad general impacts of this hazard can be given, which provide an indication of what impacts are expected with winter storms. The homes in the City of Crestview that are most vulnerable to winter storms are those with unprotected or under-protected water pipes and homes in which plumbing and insulation is inadequate. Unmitigated older structures and manufactured housing are also very vulnerable.

Section 5.01.02.11 Heat Wave and Drought

The City of Crestview is vulnerable to heat waves and drought. The specific impacts of heat waves and drought in the City of Crestview are unavailable because there have been no studies conducted regarding these hazards' impacts in the County. In addition, the nature of these hazards tends to only affect the populations without adequate cooling systems in their homes, low income, elderly, children, and outside workers. Only broad general impacts of these hazards can be given, which provide an indication of what impacts are expected with heat wave and drought. Everyone living within the City of Crestview is susceptible to heat exhaustion. All households are susceptible to power outages due to increased electricity demand during periods of extreme heat. Electrical system failures due to demand would only enhance problems for the entire population, especially for the vulnerable populations. All water bodies and municipal water supplies are susceptible to declining water levels and water shortages due to drought.

Section 5.01.02.12 Wildfire

The City of Crestview is vulnerable to wildfire. The majority of the acreage located within the municipality is urban or residential, but vast acres of open forest lands surround the City of Crestview, and these lands consists of natural vegetation historically related to the Longleaf Pine or upland Southeastern forests. Although the City of Crestview is susceptible to wildfire, as previously mentioned in the City's Hazard Assessment, it appears that the future risk of wildfire is low. The areas and populations that are most vulnerable to the danger and destruction of wildfire are the ones with inadequate infrastructure, inaccessibility to critical facilities or firefighting resource locations, and located in the wildland-urban interface. The following tables depict the structures with 'medium (levels 4-6)' to 'high (levels 7-9)' wildfire level of concern. Levels 0-3 were determined to be of such minimal to low vulnerability to wildfire they were not included in this assessment.

Table 5.01.02.12.1: Medium to High Wildfire Level of Concern for Residential Structures

Total:	SFR-Townhouse	Single-Family	Mobile Home	Multi-Family
Level 4	21	300	1	11
Just Value	$3,713,725	$72,371,987	$171,144	$18,514,959
Level 5	158	365	0	10
Just Value	$25,804,872	$91,483,959	$209,916	$15,655,813

Level 6	5	77	2	1
Just Value	$849,720	$19,579,737	$328,659	$1,790,445
Level 7	29	991	0	23
Just Value	$5,461,519	$223,861,430	$0	$24,637,852
Level 8	2	172	0	15
Just Value	$380,282	$39,846,451	$0	$15,501,409
Level 9	4	21	0	1
Just Value	$756,537	$4,382,488	$0	$1,359,609

Source: Florida Division of Forestry and Okaloosa County Property Appraiser, 2025 (City of Crestview Staff generated table from overlaying the wildfire level of concern and property appraiser data)

Table 5.01.02.12.2: Medium to High Wildfire Level of Concern for Other Structures

Total:	Commercial	Government/ Institutional
Level 4	7	11
Just Value	$6,220,707	$36,372,509
Level 5	3	8
Just Value	$25,929,495	$25,499,075
Level 6	3	4
Just Value	$1,050,869	$14,299,991
Level 7	35	15
Just Value	$50,095,553	$44,025,850
Level 8	5	6
Just Value	$5,914,049	$17,721,541
Level 9	1	0
Just Value	$195,170	$0

Source: Florida Division of Forestry and Okaloosa County Property Appraiser, 2025 (Okaloosa County Staff generated table from overlaying the wildfire level of concern and property appraiser data)

Section 5.01.02.13 Other Hazards

As previously stated in the Risk Assessment, the following hazards, sinkholes, expansive soils, earthquake, avalanche, land subsidence, volcano, sea level rise, and tsunami have been determined to be a minimal risk to the City of Crestview. Therefore, the City's vulnerability to these

hazards has not been assessed. If any of the hazards become a greater risk in the City of Crestview, then the LMS Committee will update this section to reflect those changes.

Section 5.01.02.14 Summary

The vulnerability assessment section of this LMS document highlighted how vulnerable the City of Crestview is to the identified hazards from the Risk Assessment. It discussed the vulnerable populations, repetitive loss properties, and structure and infrastructure damages associated with these hazards.

Section 5.01.03 Critical Facilities

The following is a list of all critical facilities found inside the City of Crestview' city limits. It is to be noted that some critical facilities belong to and are maintained by other jurisdictions.

Section 5.01.03.01 Fire Stations

Site Name	Address	X-COORD	Y-COORD
CRESTVIEW STATION 1	203 W WOODRUFF AVE CRESTVIEW FL 32536	1317938.4	645060.2
CRESTVIEW STATION 2	2106 P J ADAMS PKWY CRESTVIEW FL 32536	1313718.375	628287.254
CRESTVIEW STATION 3	2106 P J ADAMS PKWY CRESTVIEW FL 32536	1321413.158	636301.522

Section 5.01.03.02 Law Enforcement

Site Name	Address	X-COORD	Y-COORD
CRESTVIEW PD	203 W WOODRUFF AVE CRESTVIEW FL 32536	1317828.966	644975.637
OKALOOSA CO CORRECTIONS	1200 JAMES LEE BLVD E CRESTVIEW FL 32539	1321957.199	646851.4
OKALOOSA CO SHERIFF NORTH	296 BRACKIN ST CRESTVIEW FL 32539	1321912.742	647795.831
OKALOOSA COUNTY 911	2110 P J ADAMS PKWY CRESTVIEW FL 32536	1313786.565	628264.013

Section 5.01.03.03 Government Centers

Site Name	Address	X-COORD	Y-COORD
COUNTY COURTHOUSE	101 JAMES LEE BLVD E CRESTVIEW FL 32536	1317600.83	646431.499
CRESTVIEW CITY HALL	198 N WILSON ST CRESTVIEW FL 32536	1318002.984	645118.845
HEALTH DEPARTMENT	810 JAMES LEE BLVD E CRESTVIEW FL 32539	1320987.67	647049.33

Section 5.01.03.04 Hospitals

Site Name	Address	X-COORD	Y-COORD
NORTH OKALOOSA MEDICAL CENTER	151 E REDSTONE AVE CRESTVIEW FL 32539	1320593	637168.25

Section 5.01.03.05 Adult Congregate Living Facilities

Site Name	Address	X-COORD	Y-COORD
SHOAL CREEK REHAB CENTER	500 HOSPITAL DR CRESTVIEW FL 32539	1321083.377	636256.705
CRESTVIEW MANOR	603 N PEARL ST CRESTVIEW FL 32536	1317985.4	646987.213
PARTHENON OF CRESTVIEW	1849 E FIRST AVE CRESTVIEW FL 32539	1323750.25	647646.249
SILVERCREST MANOR NURSING HOME	910 BROOKMEADE DR CRESTVIEW FL 32539	1319671.75	635144.499
EDEN AT CRESTVIEW	575 W REDSTONE AVE CRESTVIEW FL 32536	1318166.63	637000.307

Section 5.01.03.06 Public Works Facilities

Site Name	Address	X-COORD	Y-COORD
CRESTVIEW PUBLIC WORKS YARD	715 FERDON BLVD N CRESTVIEW FL 32539	1319632.6	649504.399
CRESTVIEW WWTP	5101 ARENA RD CRESTVIEW FL 32536	1310317.2	637722.799
OKALOOSA CO PUBLIC WORKS AND FLEET OPERATIONS	2798 GOODWIN AVE CRESTVIEW FL 32539	1320922	638754.6

Section 5.01.03.07 Hurricane Shelters (See Note)

Site Name	Address	X-COORD	Y-COORD
ANTIOCH ELEM SCHOOL	4700 WHITEHURST LN CRESTVIEW FL 32536	1305431.608	629444.843
DAVIDSON MIDDLE SCHOOL	6261 OLD BETHEL RD CRESTVIEW FL 32536	1320741.773	658408.71
RIVERSIDE ELEMENTARY SCHOOL	3400 E REDSTONE AVE CRESTVIEW FL 32539	1328524.999	637580.024
SHOAL RIVER MIDDLE SCHOOL	3200 E REDSTONE AVE CRESTVIEW FL 32539	1326955.018	637700.527

NOTE: It is not the intention of this plan that all shelters be opened in any given event. Opening of particular shelters will depend on the anticipated demand. Generally, only 5-7% of the evacuating public seeks refuge in a public shelter. This number could rise substantially in a short-notice event. The term "shelter" does not imply a guarantee of any level of safety. No such guarantees can be made in any hurricane. These shelters are intended as a place for the public to take refuge as they escape areas that are expected to suffer from dangerous storm surge. We do not automatically open all emergency shelters during an evacuation. Several factors determine which shelters will be open. Listen to local radio stations for updates.

Section 5.02.03.08 Temporary Housing Sites for Disaster Victims (See Note)

Site Name	Address	X-COORD	Y-COORD
SPANISH TRAIL PARK	201 STILLWELL BLVD CRESTVIEW FL 32539	1320851.6	650915.6

NOTE: Some of the sites listed above may be dual-use. It is not the intention of this plan that all the listed facilities would be opened as temporary shelters in any given event. Temporary living shelters would be opened as needed in geographic regions of the county. If additional sites are needed due to damage of those above or a heavy demand, any surviving school may be pressed into service under the provisions of Chapter 252, F.S.S.

Section 5.01.03.09 Mobile Home Parks and RV Campgrounds

Site Name	Address	X-COORD	Y-COORD
BROOKMEADE MOBILE HOME	429 BROOKMEADE DR CRESTVIEW FL 32539	1321523.25	637931.5
CRESTVIEW MOBILE PARK	864 E CHESTNUT AVE CRESTVIEW FL 32539	1321360.2	644934.2
CRESTVIEW RV PARK	4050 FERDON BLVD S CRESTVIEW FL 32536	1317270	631316.999
LONG DRIVE MOBILE HOME PARK	537 LONG DR LOT 1 CRESTVIEW FL 32539	1320721.2	649442.399

(All such sites are considered to be in a hurricane evacuation area due to their poor wind resistance. Damage Assessment Teams should attempt to visit these areas since damage is likely to be high in a major hurricane)

Section 5.01.04 Mitigation Actions

The following are a list of mitigation actions performed by the City of Crestview through its Comprehensive Plan, Land Development Regulations, and other relative codes and policies to mitigate against each specific hazard. Also listed are the status of each action and which department is responsible for implementing the action.

Section 5.01.04.01 Hurricane and Tropical Storm

1. Support efforts to shutter critical facilities. (Responsible party: Maintenance) *Status: Up To Date*
2. Ensure the public is informed of pending conditions. (Responsible party: Police and Fire) *Status: As Needed*
3. Enforce Florida Building Codes for new structures. (Florida Building Codes) *Status: Ongoing*
4. Ensure adequate equipment exists to remove debris, clear roads, perform search and rescue functions, and otherwise respond and recover from hurricane impacts. (Responsible party: Public Services) *Status: Up to Date*
5. Ensure communications are wind and electrical-failure resistant to allow for 24/7 communications during the first 72 hours flowing a disaster. (Responsible party: Okaloosa County Public Safety, Police and Fire) *Status: Up to Date*
6. Ensure adequate and safe public risk shelters are available in all location in the County to prevent homelessness, including adequate dining facilities and to maintain sanitary conditions. (Responsible party: Okaloosa County Public Safety, private businesses)
7. Promote and support funding that allows for buildings to remain functional before, during and after a hurricane or tropical storm event in order to support the function of Okaloosa County Emergency Management's mandates. *Status: Ongoing*
8. Promote public awareness of hurricane and tropical storm hazards. (Responsible party: Okaloosa County Public Safety, Police and Fire) *Status: Ongoing*
9. Promote ways that private structure owners and landowners can mitigate using governmental or private sector investment. (Responsible party: Growth Management) *Status: Ongoing*
10. Ensure communications systems are capable to communicate during and following hurricanes/tropical storms. Also to include the ability to erect temporary repeaters to restore communications. (Responsible party: Okaloosa County Public Safety) *Status: Up to Date*
11. Ensure internet systems are redundant to ensure continued availability of disaster management software throughout the county. (Responsible party: Okaloosa County Public Safety; private businesses) *Status: Up to Date*
12. Support activities that educate the public about the dangers of hurricanes/tropical storms. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office. (Responsible party: Okaloosa County Public Safety, Police, Fire, and Planning and Zoning) *Status: Ongoing*

13. Ensure roads are designed and engineered for the amount of wind, flooding and debris that can be expected from a hurricane or tropical storm event. (Responsible party: Public Services) *Status: Ongoing*

Section 5.01.04.02 Flooding

1. Ensure all future buildings are constructed to the Florida Building Code. (Land Development Code) *Status: Ongoing; for NFIP Compliance*
2. Ensure all future buildings are built with a minimum finished floor height of 1' above the established Base Flood Elevation on the Flood Insurance Rate Maps for those buildings located within the AE Flood Zones. (Land Development Code) *Status: Ongoing; for NFIP Compliance*
3. Ensure road are built and engineered for the amount of flooding that can be expected. (Land Development Code) *Status: Ongoing; for NFIP Compliance*
4. Promote the continued purchase of lands that are at high risk of flooding, with proper considerations of private property rights and constitutional requirements for just compensation, as appropriate. (FEMA) *Status: As Needed; for NFIP Compliance*
5. Provide opportunities for property owners to elevate existing structures, move them to higher ground, or to have properties purchased by local governments in order to reduce overall community vulnerability to flooding. (Land Development Code, FEMA) *Status: As Needed; for NFIP Compliance*
6. Ensure that all public buildings that serve first response and critical emergency/public needs, including recording/data collection and communication centers/infrastructure, are located outside of flood zones or flood prone areas. (FEMA) Status: Up to Date*; for NFIP Compliance*
7. Ensure communications systems are capable to communicate during and following flood events. (Responsible party: Police and Fire) *Status: Up to Date; for NFIP Compliance*
8. Maintain status as a NFIP community by enforcing both the NFIP requirements and additional criteria that exceeds the NFIP. (Land Development Code, FEMA) *Status: Ongoing*
9. Support activities that educate the public about the dangers of flooding. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office. (Responsible party: Police and Fire) *Status: Ongoing; for NFIP Compliance*
10. Ensure the public is informed of pending conditions. (Responsible party: Public Safety) *Status: As Needed; for NFIP Compliance*

Section 5.01.04.03 Dam Safety

1. Support efforts that document hazards and risks associated with structural and earthen dams and upkeep. (Responsible party: NWFLWMD) *Status: Ongoing*
2. Support efforts that create partnerships with property owners that promote the overall goal of communitywide and stream valley safety. (Responsible party: NWFLWMD) *Status: Ongoing*
3. Support efforts to produce hazard zone maps that depict flooding that could result from dam failure. (GIS) *Status: Ongoing*

Section 5.01.04.04 Land Erosion

1. Implement the erosion control and stormwater management provisions of the City Code (Responsible party: Crestview Community Development Services Department)
2. Maintain City properties, rights-of-way, drainage systems, and other infrastructure in a manner that reduces susceptibility to erosion and unmanaged runoff (Responsible parties: Crestview Public Services and Community Recreation & Enrichment Services departments)

Section 5.01.04.05 Severe Storms

1. Ensure the public is informed of pending conditions. (Responsible party: Okaloosa County Public Safety, Police and Fire) *Status: As Needed*
2. Ensure communications systems are capable to communicate during and following severe storms. (Responsible party: Okaloosa County Public Safety, Police and Fire) *Status: Up to Date*
3. Support activities that educate the public about the dangers of severe storms. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office. (Responsible party: Okaloosa County Public Safety, Police and Fire) *Status: Ongoing*

Section 5.01.04.05.01 Tornado

1. Ensure communications systems are capable to communicate during and following tornados. (Responsible party: Okaloosa County Public Safety, Police and Fire) *Status: Up to Date*
2. Support activities that educate the public about the dangers of tornados and waterspouts. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office. (Responsible party: Okaloosa County Public Safety, Police and Fire) *Status: Ongoing*
3. Ensure the public is informed of pending conditions. (Responsible party: Okaloosa County Public Safety, Police and Fire) *Status: As Needed*

Section 5.01.04.05.02 Thunderstorms and Lightning

1. Ensure communications systems are capable to communicate during and following thunderstorms and lightning. (Responsible party: Okaloosa County Public Safety, Police and Fire) *Status: Up to Date*
2. Support activities that educate the public about the dangers of thunderstorms and lightning. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office. (Responsible party: Okaloosa County Public Safety, Police and Fire) *Status: Ongoing*

3. Support activities to reduce the risk of loss of electronic equipment and structures due to lightning strike and electrical surge. (All City Departments in City of Crestview) *Status: Ongoing*
4. Ensure the public is informed of pending conditions. (Responsible party: Okaloosa County Public Safety) *Status: As Needed*

Section 5.01.04.05.03 Winter Storms

1. Ensure communications systems are capable to communicate during and following winter storms. (Responsible party: Police and Fire) *Status: Up to Date*
2. Support activities that educate the public about the dangers of winter storms. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office. (Responsible party: Police and Fire) *Status: Ongoing*
3. Ensure winter storm shelters are capable of providing heating systems. (Responsible party: Private resources, Churches) *Status: Not Applicable*
4. Reduce or eliminate the vulnerability to freezing or provide secondary heating or electrical systems for public facilities. (Responsible party: Public Services) *Status: Up to Date*
5. Ensure the public is informed of pending conditions. (Responsible party: Police and Fire) *Status: As Needed*

Section 5.01.04.06 Heat Wave and Drought

1. Ensure communications systems are capable to communicate during and following heat waves and droughts. (Responsible party: Police and Fire) *Status: Up to Date*
2. Support activities that educate the public about the dangers of heat waves and droughts. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office. (Responsible party: Police and Fire) *Status: Ongoing*
3. Ensure host shelters are capable of providing cooling systems. (Responsible party: Private resources, Churches) *Status: Not Applicable*
4. Ensure the public is informed of pending conditions. (Responsible party: Police and Fire) *Status: As Needed*

Section 5.01.04.07 Wildfire

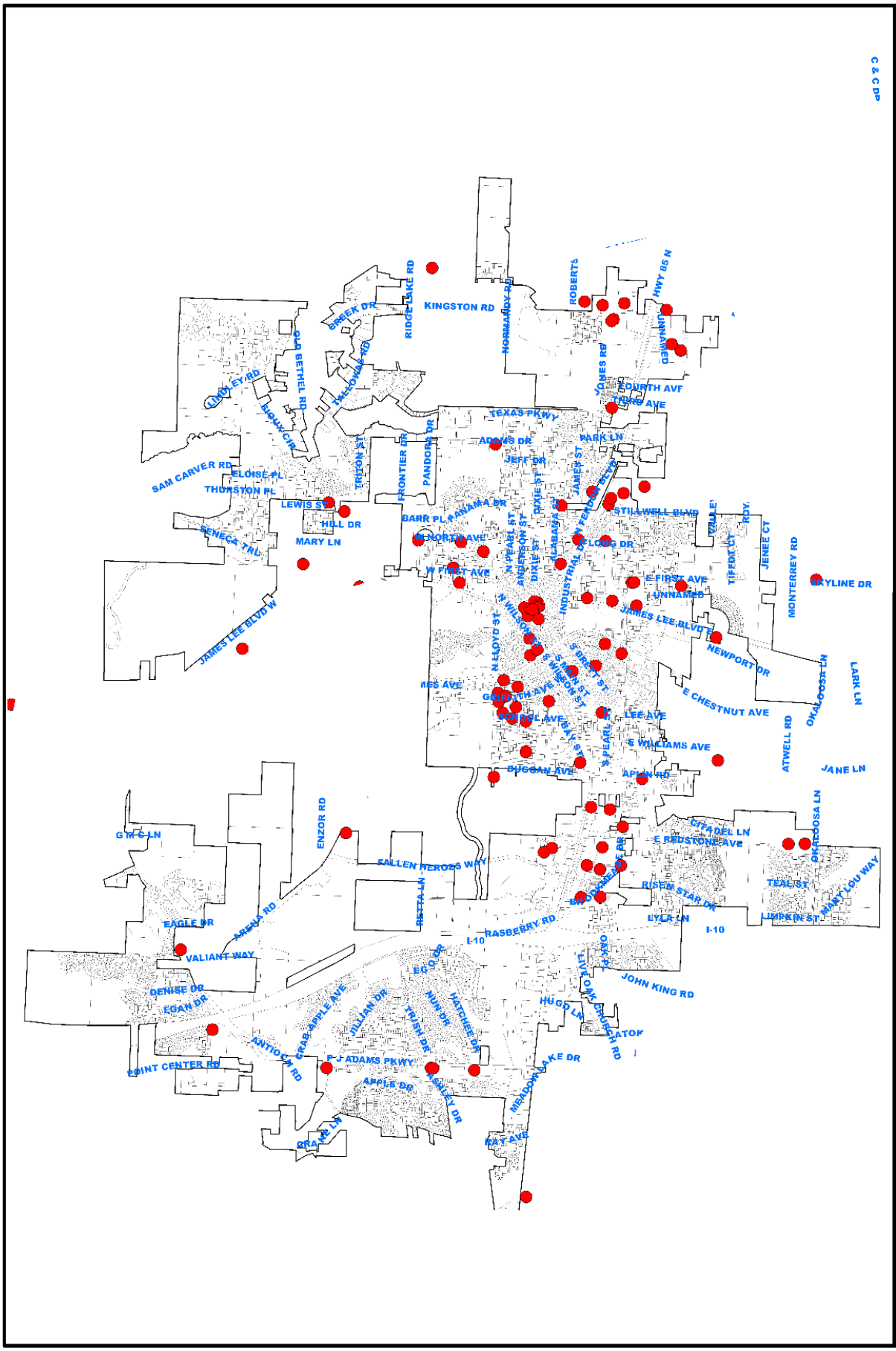
1. Ensure communications systems are capable to communicate during and following wildfire events. (Responsible party: Police and Fire) *Status: Up to Date*
2. Ensure the public is informed of pending conditions. (Responsible party: Police, Fire, Florida Division of Forestry) *Status: As Needed*
3. Support activities that educate the public about the dangers of wildfire. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office or the local fire department or the Florida Division of Forestry. (Responsible party: Police and Fire) *Status: Ongoing*

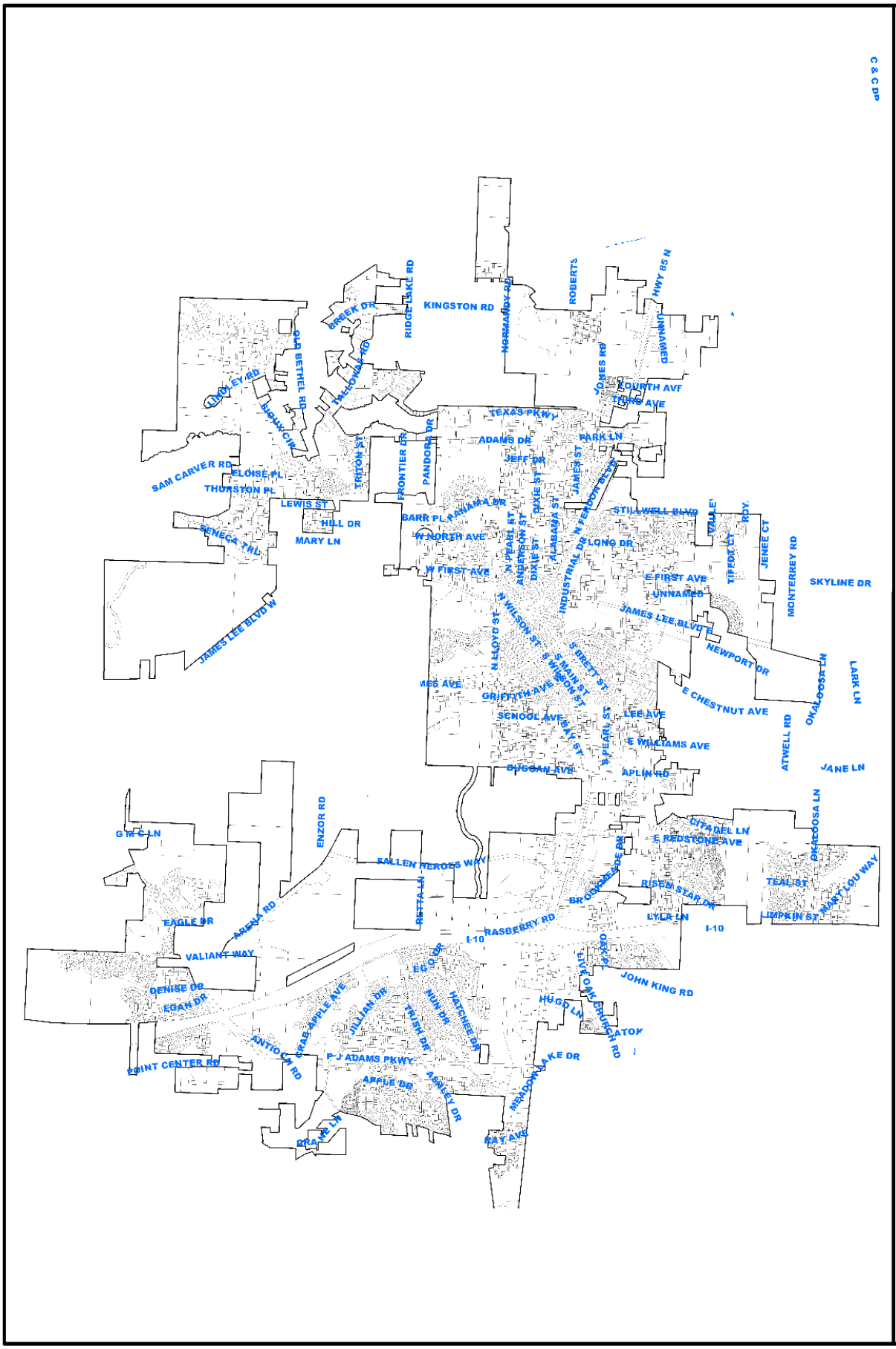
4. Require new subdivisions plats and new commercial structures to designed and built to National Fire Codes. (Florida Building Codes) *Status: Ongoing*
5. Support activities that newly document or update maps, aerial photography, or other remote sensing imagery that shows degrees of risk for wildfire and utilize such data to focus mitigation activities against wildfire. (Responsible party: Florida Division of Forestry) *Status: Ongoing*
6. Support efforts that fire stations and their supporting equipment and personnel are adequate in terms of size, modernization, communications, in order to respond to situations by mitigating situations that are below acceptable standards to fight wildfires throughout the City and to provide mutual aid support in neighboring jurisdictions or counties. (Responsible party: Fire Department) *Status: Ongoing*
7. Support public and private mitigation efforts to provide fire hydrants to locations at risk along the urban/rural interface where water systems exist to provide such services. (Responsible party: Public Services and Fire Department) Status: Ongoing
8. Support mitigation efforts that would identify public measures that would help agricultural, forestry and silvicultural prevent or lessen the risk of wildfires. (Responsible party: Public Services and Fire Department) *Status: Ongoing*

Section 5.01.05 Maps

Included in this section are maps of the City of Crestview. They include:

1. Critical Facilities..... 5.01-33
2. Evacuation Zones..... 5.01-34
3. Flood Zones..... 5.01-35
4. Repetitive Loss Properties..... 5.01-36
5. Surge Zones..... 5.01-37
6. Wildfire Level of Concern..... 5.01-38


City of Crestview Critical Facilities
Parcel Lines
Critical Facilities
Source: Okaloosa County Public Safety, 2025
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (2903)
NAD 1983(90); NAVD 1988.
PUBLIC RECORD:
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N
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Department of Growth Management
3/18/2026
KINGSTON RD
JAMES LEE BLVD W
JAMES LEE BLVD E
E CHESTNUT AVE
E WILLIAMS AVE
E FIRST AVE
E REDSTONE AVE
STILLWELL BLVD
JOHN KING RD
RASBERRY RD
I-10
FALLEN HEROES WAY
ENZOR RD
ATWELL RD
NEWPORT DR
MONTERREY RD
SKYLINE DR
JANE LN
LARK LN
OKALOOSA LN
CITADEL LN
TEAL ST
LIMPKIN ST
LYLE LN
RISEN STAR DR
EAGLE DR
VALIANT WAY
DENISE DR
EGAN DR
POINT CENTER RD
ANTIOCH RD
CRAB APPLE AVE
F J ADAMS PKWY
APPLE DR
VALLEY DR
MEADOW LAKE DR
HUDD LN
OAK CHURCH RD
ALLIGATOR
LEE AVE
BUGGAN AVE
APLIN RD
GRIFFITH AVE
MARY LOU WAY
GMC LN
RETTA LN
JILLIAN DR
TWIN DR
HATCHEE DR
EGO DR
PRAIRIE LN
RAY AVE
SAM CARVER RD
ELOISE PL
THURSTON PL
SENECA TRL
MARY LN
HILL DR
LEWIS ST
BARR PL
PANAMA DR
NORTH AVE
FOURTH AVE
THIRD AVE
TEXAS PKWY
ADAMS DR
JEFF DR
PARK LN
LINDLEY RD
OLD BETHEL RD
TRITON ST
FRONTIER DR
PANDORA DR
DIXIE ST
ALABAMA ST
JAMES ST
INDUSTRIAL DR
PEARL ST
ANDERSON ST
WILSON ST
LLOYD ST
GARDEN ST
BRACE ST
JONES RD
ROBERTS
N 85 HWY
UNNAMED
RIDGE LAKE RD
CREEK DR
NORMANDY RD
YELLOW HAW RD
TYLER CT
JENEE CT
TIFFANY CT
BLVD
C & D P



City of Crestview Evacuation Zones

- Parcel Lines
- Evac Zone A
- Evac Zone B
- Evac Zone C
- Evac Zone D
- Evac Zone E

ZONE A = HURRICANE CAT 1

ZONE B = HURRICANE CAT 2

ZONE C = HURRICANE CAT 3

ZONE D = HURRICANE CAT 4

ZONE E = HURRICANE CAT 5

Note: There are no Evacuation Zones in the City Of Crestview

Source: Okaloosa County Public Safety, 2025

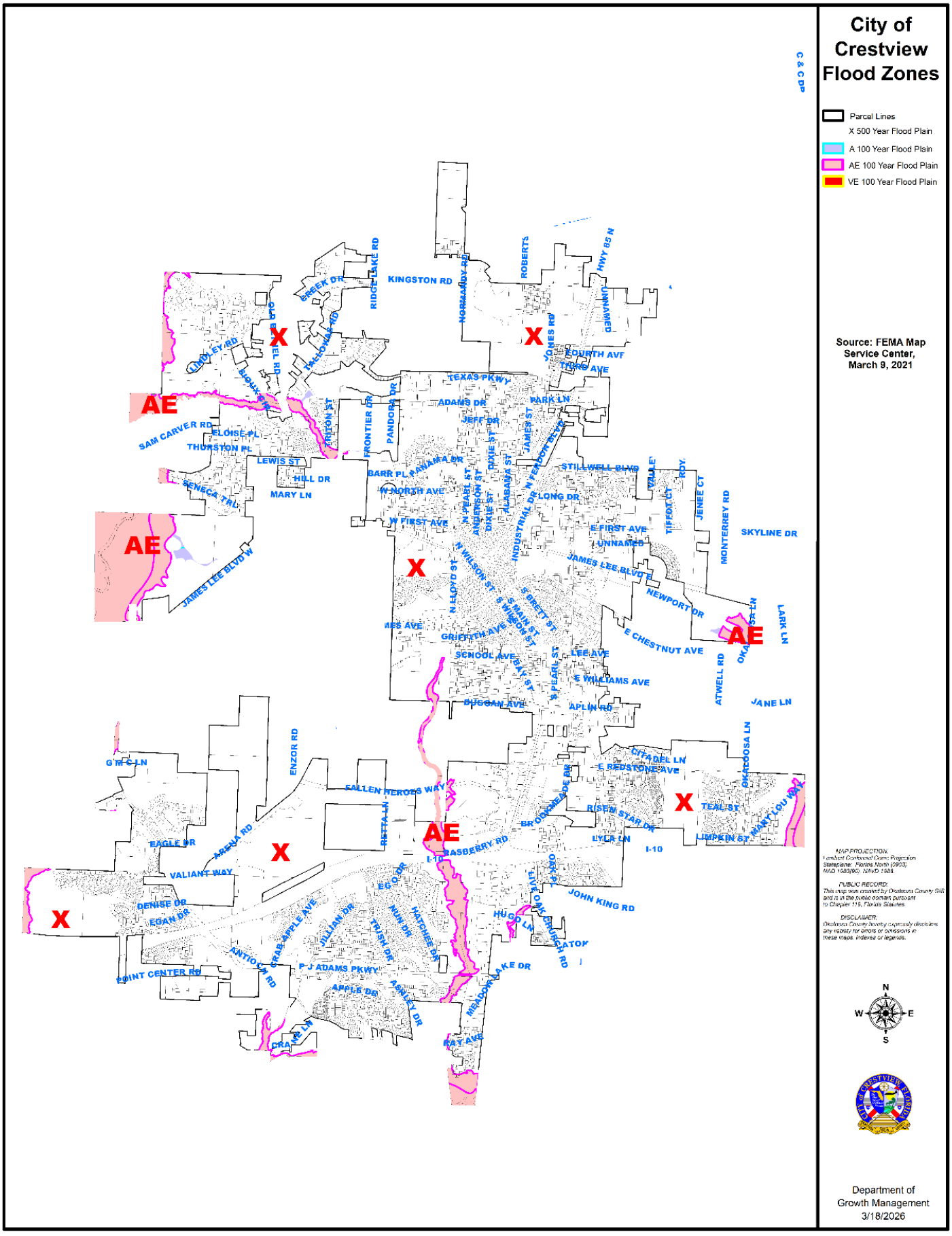
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Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
NAD 1983(96); NAVD 1988.

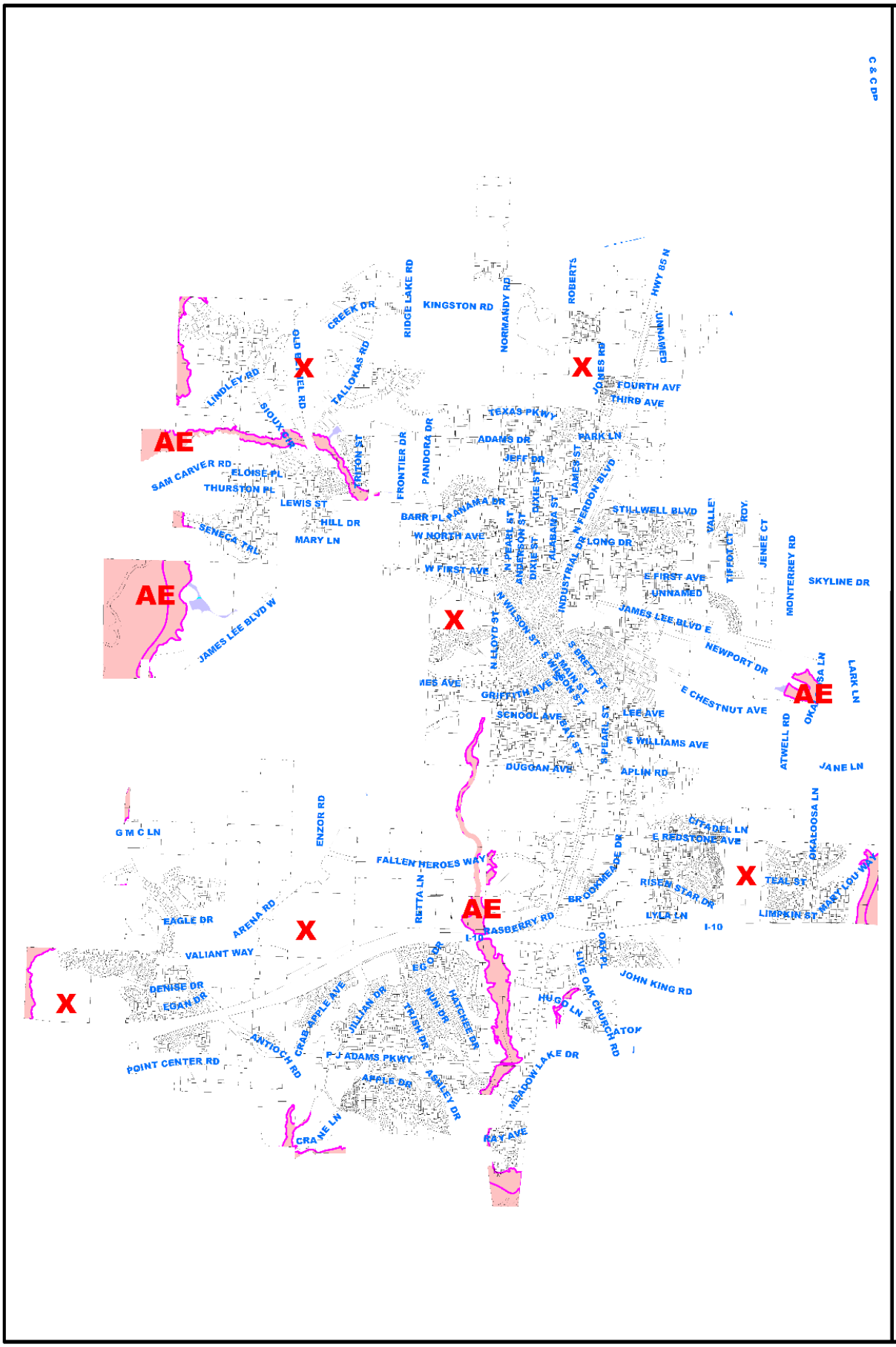
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Department of Growth Management
3/18/2026


City of Crestview Flood Zones
Parcel Lines
X 500 Year Flood Plain
A 100 Year Flood Plain
AE 100 Year Flood Plain
VE 100 Year Flood Plain
Source: FEMA Map Service Center, March 9, 2021
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
NAD 1983(90): NAD 1986.
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N
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Department of Growth Management
3/18/2026
AE
X
KINGSTON RD
RIDGE LAKE RD
CREEK DR
OLD BETHEL RD
LINDLEY RD
BETHEL RD
HILLCREST RD
NORMANDY RD
ROBERTS
HWY 85 N
CHERRY
JONES RD
FOURTH AVE
THIRD AVE
TEXAS PKWY
ADAMS DR
PARK LN
JEFF DR
JAMES ST
FRONTIER DR
PANDORA DR
ARLTON ST
SAM CARVER RD
ELOISE PL
THURSTON PL
LEWIS ST
HILL DR
MARY LN
SENECA TRL
BARR PL
ALABAMA DR
N PEARL ST
ANDERSON ST
DIXIE ST
ALABAMA ST
N FERDON BLVD
STILLWELL BLVD
VALLEY RDY
TIFFOX CT
JENEE CT
MONTERREY RD
SKYLINE DR
W NORTH AVE
W FIRST AVE
LONG DR
INDUSTRIAL DR
E FIRST AVE
UNNAMED
JAMES LEE BLVD W
JAMES LEE BLVD E
N WILSON ST
N LLOYD ST
S WILSON ST
S MAIN ST
S ORIENT ST
NEWPORT DR
E CHESTNUT AVE
NT ST
LARK LN
MEE AVE
GRIFFITH AVE
SCHOOL AVE
LEE AVE
S PEARL ST
E WILLIAMS AVE
BUGGAN AVE
APLIN RD
ATWELL RD
OKA
JANE LN
OKALOOSA LN
CITADEL LN
E REDSTONE AVE
BROOKSIDE DR
RISEN STAR DR
LYLA LN
TEAL ST
LUPKIN ST
MARY LOU AVE
I-10
RASBERRY RD
ENZOR RD
G M C LN
FALLEN HEROES WAY
RETTA LN
ARENA RD
EAGLE DR
VALIANT WAY
DENISE DR
EGAN DR
EGO DR
JILLIAN DR
TRISH DR
NUN DR
HATCHEE DR
CRABAPPLE AVE
ANTIOCH RD
POINT CENTER RD
P J ADAMS PKWY
APPLE DR
ARNEY DR
CRAIG LN
MEADOWLAKE DR
HUGO LN
OLIVE OAK CHURCH RD
JOHN KING RD
ALLIGATOR
RAT AVE



City of Crestview Repetitive Loss Properties

Parcel Lines
X 500 Year Flood Plain
A 100 Year Flood Plain
AE 100 Year Flood Plain
VE 100 Year Flood Plain
Base Flood Elevation in a Floodway
Repetitive Loss Properties

The City of Crestview does not have any Repetitive Loss Properties in its jurisdiction

Source: FEMA Map Service Center, March 9, 2021

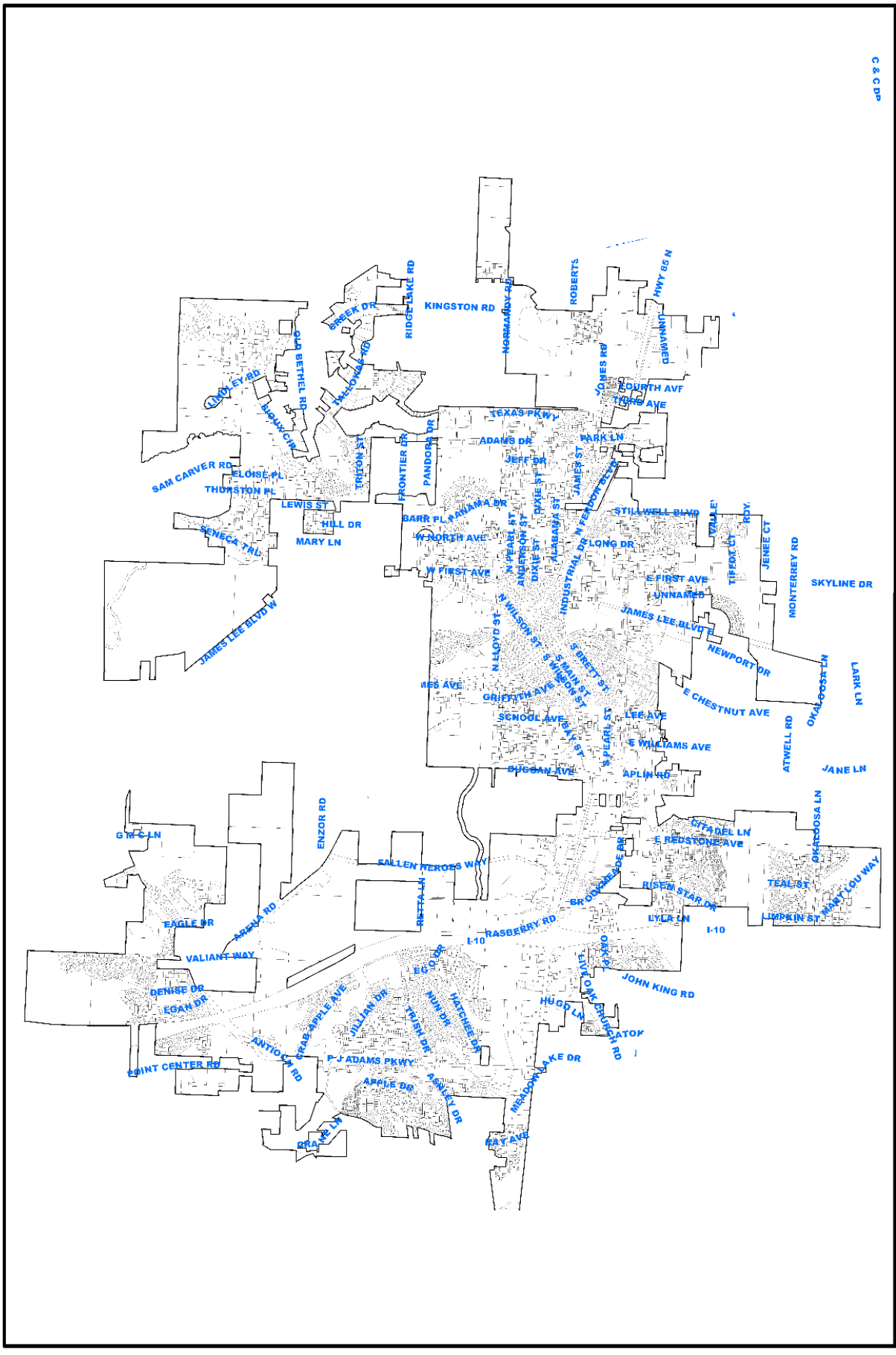
MAP PROJECTION:
Lambert Conformal Conic Projection
Statewide: Florida North (0903)
NAD 1983(90), NAVD 1988.

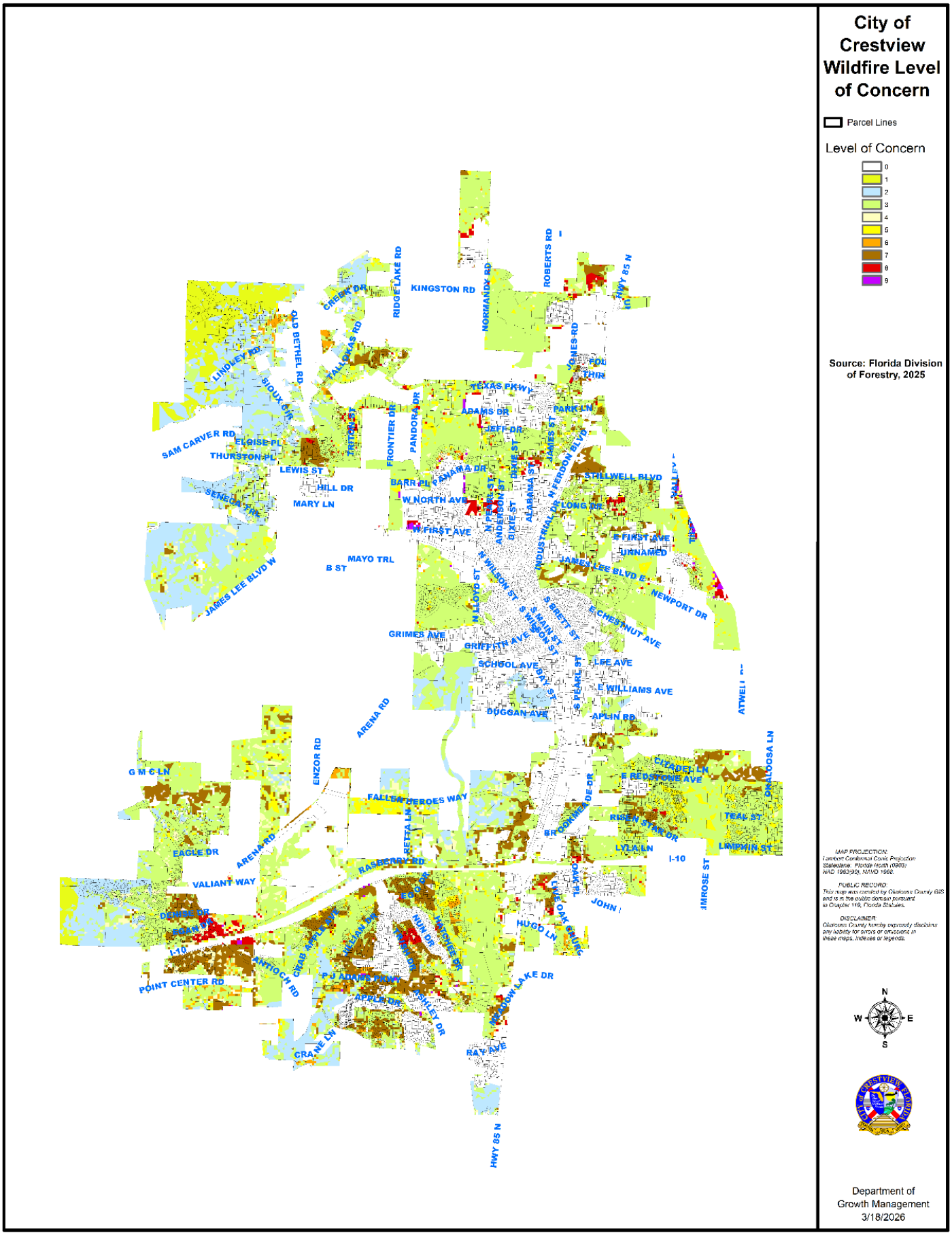
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Department of Growth Management
3/18/2026


City of Crestview Surge Zones
Parcel Lines
Category 1
Category 2
Category 3
Category 4
Category 5
Note: There are no Surge Zones in the City Of Crestview
Source: West Florida Regional Planning Council, 2025
KINGSTON RD
RIDGE LAKE RD
CREEK DR
HELLOMAE RD
BIG SHOE RD
LINDLEY RD
SAM CARVER RD
ELOISE PL
THURSTON PL
LEWIS ST
TRITON ST
FRONTIER DR
PANDORA DR
HILL DR
MARY LN
SENECA TRL
JAMES LEE BLVD W
TEXAS PKWY
ADAMS DR
JEFF DR
PARK LN
BARR PL
PANAMA DR
W NORTH AVE
W FIRST AVE
N PEARL ST
ANDERSON ST
DIXIE ST
ALABAMA ST
JAMES ST
INDUSTRIAL DR
N FERDON BLVD
STILLWELL BLVD
LONG DR
E FIRST AVE
UNNAMED
JAMES LEE BLVD E
NEWPORT DR
E CHESTNUT AVE
N WILSON ST
N LLOYD ST
S MAIN ST
S BRENT ST
S WILSON ST
GRIFFITH AVE
SCHOOL AVE
LEE AVE
E WILLIAMS AVE
S PEARL ST
DUGGAN AVE
APLIN RD
ATWELL RD
OKALOOSA LN
LARK LN
JANE LN
MONTEREY RD
SKYLINE DR
JENEE CT
TIFFOT CT
ROY
ROBERTS
NORMANDY RD
JONES RD
UNNAMED
HWY 85 N
FOURTH AVE
THIRD AVE
ENZOR RD
GWEN LN
FALLEN HEROES WAY
RETTA LN
EAGLE DR
ARENA RD
VALIANT WAY
DENISE DR
EGAN DR
POINT CENTER RD
I-10
RASBERRY RD
EGO DR
JULIAN DR
TRUSH DR
NUN DR
HATCHEE DR
ANTIOCH RD
GEAR APPLE AVE
P J ADAMS PKWY
APPLE DR
ASHLEY DR
CRANE LN
EAT AVE
MEADOW LAKE DR
HUGO LN
OLIVE CHURCH RD
JOHN KING RD
LYLA LN
BROOKREE DR
RISEM STAR DR
E REDSTONE AVE
CITADEL LN
TEAL ST
LIMPKIN ST
MARY LOU WAY
PIEDMONT LN
MAP PROJECTION:
Lambert Conformal Conic Projection
StatePlane: Florida North (0903)
NAD 1983(86) NAVD 1988
PUBLIC RECORD:
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Department of Growth Management
3/18/2026


City of Crestview Wildfire Level of Concern
Parcel Lines
Level of Concern
0
1
2
3
4
5
6
7
8
9
Source: Florida Division of Forestry, 2025
KINGSTON RD
NORMANDY RD
ROBERTS RD
HWY 85 N
RIDGE LAKE RD
CREEK DR
OLD BETHEL RD
TALLADEGA RD
LINDLEY RD
SIOUX DR
SAM CARVER RD
ELOISE PL
THURSTON PL
LEWIS ST
HILL DR
MARY LN
SENECA TRL
TRITICE ST
FRONTIER DR
PANDORA DR
TEXAS PKWY
ADAMS DR
JEFF DR
PARK LN
JAMES ST
N FERDON BLVD
STILLWELL BLVD
BARR PL
PANAMA DR
W NORTH AVE
W FIRST AVE
N PEARL ST
ANDERSON ST
DIXIE ST
ALABAMA ST
INDUSTRIAL DR
LONG RD
E FIRST AVE
UNNAMED
MAYO TRL
B ST
JAMES LEE BLVD W
JAMES LEE BLVD E
NEWPORT DR
N LLOYD ST
N WILSON ST
S WILSON ST
S MAIN ST
S BRETT ST
E CHESTNUT AVE
GRIMES AVE
GRIFFITH AVE
SCHOOL AVE
S PEARL ST
LEE AVE
E WILLIAMS AVE
DOGGAN AVE
APLIN RD
ATWELL DR
ARENA RD
ENZOR RD
G M C LN
FALLEN HEROES WAY
CITADEL LN
E REDSTONE AVE
DIAMONDOSA LN
TEAL ST
RIVER STONE DR
LYLA LN
LAMPKIN ST
I-10
IMROSE ST
BROOKWOOD DR
EAGLE DR
ARENA RD
RASBERRY RD
RETTA LN
VALIANT WAY
DENVER DR
BOAR WAY
I-10
ANTIOCH RD
CRAB APPLE LN
PJ ADAMS PKWY
APPLE DR
POINT CENTER RD
NINI DR
HUGO LN
LIVE OAK DRIVE
JOHN L
YELLOW LAKE DR
CRANE LN
RAY AVE
HWY 85 N
IMAP PROJECTION:
Lambert Conformal Conic Projection
Statewide, Florida North (0903)
NAD 1983(90), NAVD 1988.
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Department of Growth Management
3/18/2026

Section 5.01.06 Post Disaster Redevelopment Plan

The City of Crestview does not currently have a Post Disaster Redevelopment Plan therefore, the city will abide by the Okaloosa County Post Disaster Redevelopment Plan (PDRP) and submit the required data per the PDRP requirements.

Section 5.02

City of Destin

Section 5.02.01 Risk Assessments

Section 5.02.01.01 Introduction

The intent of this section is to provide information regarding the hazards threatening the City of Destin. Destin is an incorporated city located in the southern portion of Okaloosa County. The 2024 U.S. Census Bureau estimate states it was home to 13,991 residents (www.census.gov). In this section, information relevant to Destin is compiled and an overview of the analyses is provided.

The City of Destin was incorporated in 1984 in the southeastern portion of Okaloosa County. As an incorporated city, Destin has all the powers and authority granted to municipal governments found in Chapter 166 of the Florida Statutes as well as Article VIII of Section 2 of the Florida Constitution to exercise any governmental, corporate, or proprietary power for municipal purposes, provided they are not expressly prohibited by law. These powers allow Destin to govern itself, deliver services, enact and enforce ordinances, and set policy.

The City of Destin enforces the Florida Building Code as required by Chapter 553 of the Florida Statutes and participates in the National Flood Insurance Program pursuant to the National Flood Insurance Act of 1968 (42 U.S.C. §§4001 et seq.). Destin has adopted a comprehensive plan as provided in Chapter 163, Florida Statutes, and has adopted by ordinance implementing land development regulations including provisions for zoning and floodplain management. The City has all the financial resources granted by the Florida Constitution and Florida Statutes which are available to support the mitigation strategies discussed in this section.

The City will incorporate the findings and recommendations of the LMS into its planning mechanisms through integration with comprehensive plans, capital improvement programs, land development regulations, and emergency management plans. LMS-identified hazards, vulnerabilities, and mitigation actions are considered during project prioritization, budgeting, and policy development to ensure consistency with long-term resilience objectives. Additionally, the city will utilize the LMS to support grant applications, inform development review processes, and guide post-disaster recovery and redevelopment decisions. This coordinated approach ensures that hazard mitigation principles are systematically embedded into local planning and decision-making processes.

The hazards that will be analyzed in this section are natural events and the analyses concentrate on the anthropogenic effects on those events as well as the effects of those events on mankind. However, this analysis is not an assessment of technological and/or societal hazards and, therefore, these types of events are not covered under this plan or in the analysis provided in this section.

Primary attention is given to hazards considered reasonably possible to occur in the City of Destin. These hazards include:

- Hurricanes and Tropical Storms
- Storm Surge

- Flooding
- Dam Safety
- Land Erosion
- Severe Storms
    - Tornadoes and Waterspouts
    - Thunderstorms and Lightning
    - Winter Storms
- Heat Wave and Drought
    - Heat Wave
    - Drought
    -
- Wildfires
- Beach Erosion
- Sea Level Rise

The following hazards have minimal or no risk to the City of Destin: sinkholes, expansive soils, earthquakes, avalanches, land subsidence, landslides, volcanoes, and tsunamis. Therefore, these hazards are not analyzed in any depth in the hazard analysis. Further explanation is provided in the "Other Hazards" section.

Hazard Identification

The technical planning process begins with hazard identification. In this process, the City of Destin Staff, along with the staff from the Okaloosa County Growth Management Department, has identified all the natural hazards that threaten the community.

Section 5.02.01.02 Hurricane and Tropical Storm

DEFINITIONS:
Please refer to the Risk Assessment of the overall County for the definitions of this hazard.

HISTORICAL OCCURRENCE:
The City of Destin and Okaloosa County are equally susceptible to hurricanes and tropical storms, as the City is located on the coast. Due to the large area that hurricanes and tropical storms impact, it is assumed that the City of Destin and the overall County experienced the same storms. Therefore, the historic hurricane record of Okaloosa County is applicable to the City of Destin. Please refer to the Risk Assessment of the overall County for the historical occurrences of this hazard.

NOTE: the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
High winds from hurricanes are a substantial threat to all homes, especially manufactured housing. Category 3 or higher force winds would likely cause substantial damage throughout the City of Destin. Winds of more than 157 mph could be experienced in a major Category 5 hurricane in some locations. Traditional stud and brick veneer or siding homes and businesses are

vulnerable, especially when hurricane shutters are not used. Relatively few businesses and homes have hurricane shutters, although shelters and some critical facilities are shuttered.

In the worst-case scenario of a Category 5 hurricane, there will be catastrophic damage to homes and buildings, trees, power poles, and signage. Due to power pole damage, extensive and widespread system destruction would be anticipated, including transmission/substation damage. All mobile homes and most frame homes will be destroyed due to wind causing structural collapse. The Category 5 winds of more than 157 mph will cause significant damage to all buildings, with loss of roof sheathing, broken windows, and in some cases wall failure resulting in a structural collapse. Many trees will be snapped and power poles downed. In some cases, this will result in

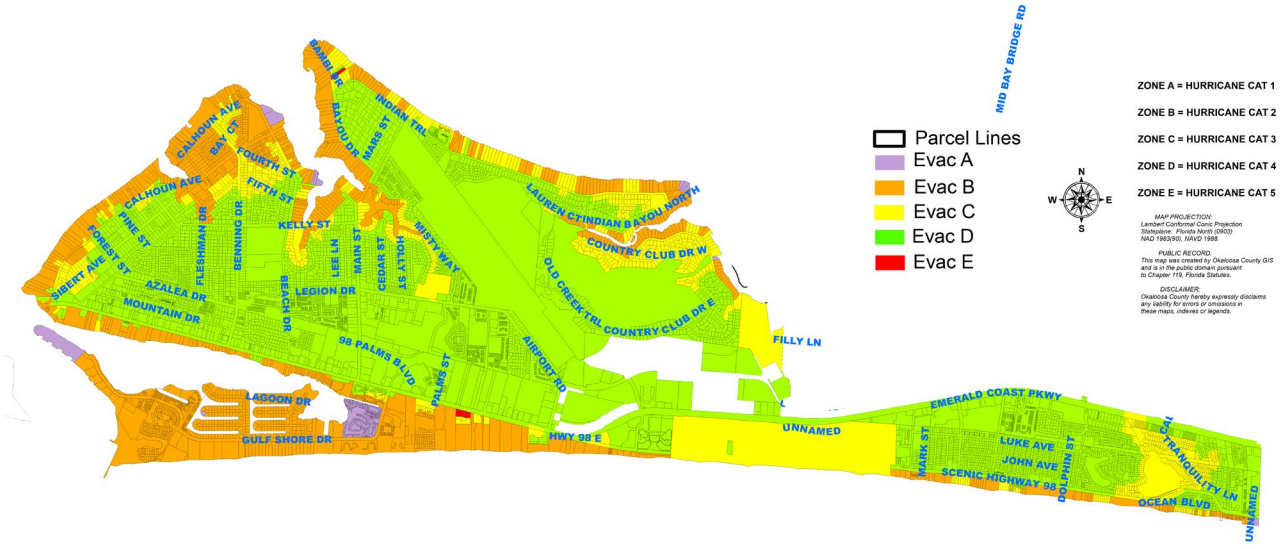
power outages that could last for weeks or months. People and animals would be at an extremely high risk of injury or death because of the strong, forceful winds causing flying or falling debris.

From the figure below, it is evident that the entire City of Destin will need to evacuate prior to a Category 5 hurricane making landfall (See Figure 5.02.01.02.1, below, for evacuation zones). The expected storm surge level of up to 15.8 feet associated with a Category 5 hurricane will substantially impact the City of Destin. Also, severe flooding will occur and likely cause polluted water, storm sewer overflow, and damage to roadways. Storm surge will be examined in greater depth in the following section. (NOAA, 2010).

Saffir-Simpson Hurricane Wind Scale (1-minute average at 10m height):

- Tropical Storm: 39-73 mph
- Category 1: 74-95 mph
- Category 2: 96-110 mph
- Category 3 (Major): 111-129 mph
- Category 4 (Major): 130-156 mph
- Category 5 (Major): 157 mph or higher

Figure 5.02.01.02.1: Evacuation Zones for the City of Destin



Source: Okaloosa County Public Safety / Okaloosa County GIS, 2022

PROBABILITY:
According to Colorado State University's United States Landfalling Hurricane Probability Project, Okaloosa County, and thus the City of Destin, have the following future probabilities over a 50-year period:

Table 5.02.01.02.1: 50-Year Probabilities of Named Storm and Hurricanes Making Landfall within 50 miles of Okaloosa County

1 or More Named Storms Making Landfall	1 or More Hurricanes Making Landfall	1 or More Major Hurricanes Making Landfall
~100%	99.8%	95.5%

Source: Colorado State University TC-RAMS Data, derived for 50-year probabilities, Poisson Model

Section 5.02.01.03 Storm Surge

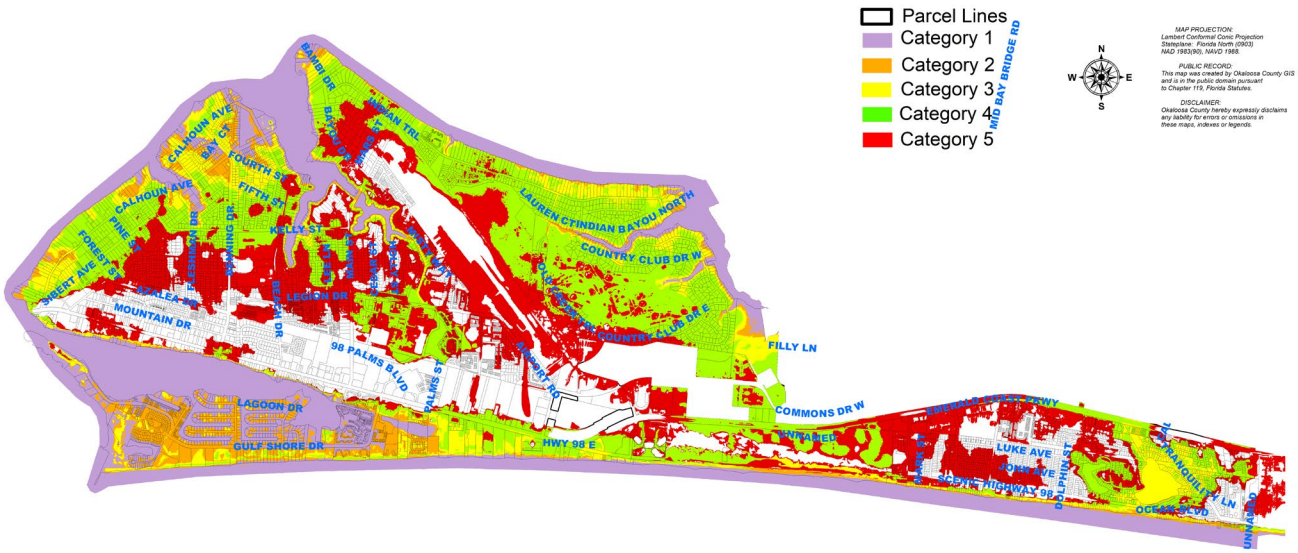
DEFINITION:
Please refer to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
Since Okaloosa County's bay and coastal areas are equally susceptible to storm surge, and because the City of Destin is located on the coast, the County's historic storm surge data is relevant to the City of Destin. Please refer to the Risk Assessment of the overall County for the historical occurrences of this hazard.

NOTE: the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
In the worst-case scenario, some of these areas of the City of Destin will experience storm surge levels up to 15-20 feet above mean sea level during a Category 5 hurricane (SLOSH modeling). It is evident from the figure below that most of the areas near bodies of water will be affected by the resulting flooding from the storm surge. The high storm surge levels will cause significant flooding of residential and commercial structures, power outages, and storm sewer overflow. The figure below shows the possible storm surge levels with each hurricane category in the City of Destin.

Figure 5.02.01.03.1: The City of Destin's Exposure to Storm Surge



Source: West Florida Regional Planning Council, 2023

PROBABILITY:
Regardless of the storms' level of intensity, the storm surges associated with each storm greatly vary. This fact is recognized in the updated Saffir-Simpson Hurricane Wind Scale where storm

surge has been removed due to the difficulties in its prediction. Therefore, a probability of future storm surge occurrence shares the same probability of hurricanes and tropical storms. The potential storm surge levels have been determined from several historic points around the City of Destin (See Table 5.02.01.03.1, below).

Table 5.02.01.03.1: Potential Storm Surge Level for Hurricane Categories

HISTORY POINT (Description)	HURRICANE SURGE ELEVATION (in feet)				
	CAT 1	CAT 2	CAT 3	CAT 4	CAT 5
Joe's Bayou (Destin)	3.3	5.2	6.7	12.9	15.8
Indian Bayou (Destin)	3.1	4.7	6.2	12.2	15
Piney Point (Destin)	3.2	4.8	6.2	12	14.8

Note: Storm surge levels reflect 2023 hurricane scale update.
Source: West Florida Regional Planning Council, 2023

Section 5.02.01.04 Flooding

DEFINITION:
Please refer to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
Given the minimal amount of data available at the municipal level regarding the historical occurrences of severe floods or flash floods, overall County data of this hazard will be used.

Please refer to the Risk Assessment of the overall County for the historical occurrences of this hazard because all of Okaloosa County is equally susceptible to this hazard.

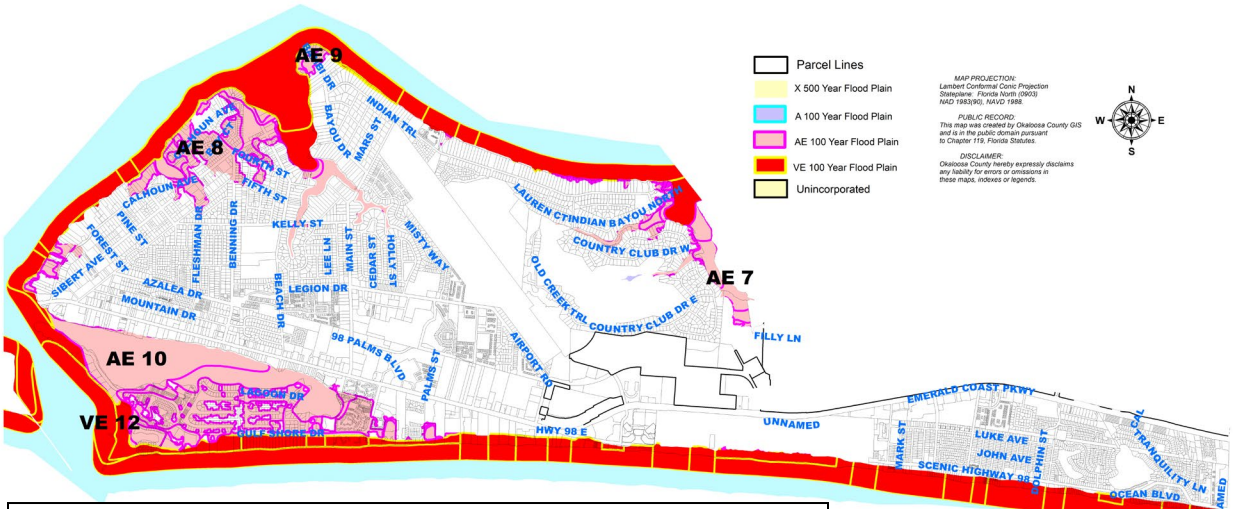
NOTE: the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
The worst-case scenario in terms of flooding in the City of Destin would be if widespread flooding resulted in property damage and losses, power outages, storm sewer overflow, and road closures. Properties located in the AE8, AE11, AE12, VE13, and A flood zones will be impacted more severely than the rest of the city, which is in flood zone X or 0.2%-chance (X).

NOTE: AE8, AE11, AE12, and VE13 flood zone means that the area is susceptible to flooding at 8, 11, 12, and 13 feet above sea level, respectively. (See Figure 5.02.01.04.1).

Flooding can severely impact the road network in the City of Destin. There are approximately 32.6 miles of collector roads in the City of Destin (does not include US98 which is approximately 7 additional miles). Out of this total, 3.5 miles of these roads are in the NFIP X Zone (0.2% chance), and 7.6 miles located in the NFIP Special Flood Hazard Zone (1% chance). These roads can be susceptible to flooding during moderate to heavy rain events.

Figure 5.02.01.04.1: The City of Destin's Flood Zones



Source: FEMA Map Service Center, March 9, 2021

Temporary localized flooding can also severely impact roadways during moderate to heavy rain events, which could result in road closures. It is particularly difficult to prepare transportation systems for "trailing" storm systems that tend to saturate land as well as overload drainage and retention systems. Arterial roads and roads constructed prior to uniform standards and regulations are some of the roadways typically impacted by isolated heavy rain events. Culverts and small bridges can sometimes be undermined, causing people to be stranded and isolated until the repairs can be made. Some major roadways used for evacuation are subject to flooding.

PROBABILITY:
The entire County, as well as the City of Destin, has a future probability of a flashflood or flood occurring annually. However, due to the localized nature of flash-flooding and flooding, a more exact probability will not be provided.

Section 5.02.01.05 Dam Safety

DEFINITION:
Please refer to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
The City of Destin has 2 unpermitted dams within its jurisdiction. These dams support small holding ponds or small lakes. The dam of Coleman Lake into the east branch of Joe's Bayou is comprised of a concrete spillway and has three 24" cross drains. Kelly Street sits on another earthen dam at the outfall of Spring Lake into the southern branch of Joe's Bayou. The Kelly Street spillway is comprised of 36x36 pool elevation control structure.

EXTENT:
The worst-case scenario of dam failure in the City of Destin would be if the Coleman Lake dam failed. In this scenario, Main Street would be closed for the duration until the appropriate repairs were complete. Residents of Main Street north of the dam would be required to take the alternate route of Misty Way/N Lakeside Dr that connects Main Street to Airport Road.

PROBABILITY:
Due to the rarity of dam failure in Okaloosa County, and no record of occurrence in the City of Destin, the future probability of dam failure resulting in flooding is less than 1 per year.

Section 5.02.01.06 Land Erosion

DEFINITION:
Please refer to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
All of Okaloosa County is equally susceptible to land erosion in some localized areas. Therefore, some localized portions of the City of Destin may be susceptible to land erosion. Please refer to the Risk Assessment of the overall County for the historical occurrences of this hazard.

NOTE: the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
Sheet erosion, if left unchecked, can damage drainage ditches, fill stormwater retention ponds with sediment, and cause erosion into property, including structures. In this instance, the result is the deposition and buildup of sand on the roadways and within the drainage systems. In the worst-case scenario, soil erosion will cause land to be unusable because of the degraded soil quality, structure, stability and texture. Erosion along stream and ditch banks will cause undermining of structures (bridges, etc.) and washing out of lanes, roads, and fence rows.

PROBABILITY:
Based on the existence of potentially highly erodible soils and erodible soils there is a possibility of land erosion in the City of Destin. The future probability of soil erosion cannot be given because no previous occurrences have been reported.

Section 5.02.01.07 Severe Storms

The Severe Storms segment of the LMS Hazards Assessment includes tornadoes and waterspouts, thunderstorms and lightning, winter storms, and heat waves and drought (hurricanes are excluded from this section because they are covered in another section of this chapter).

Section 5.02.01.07.01 Tornado and Waterspout

DEFINITION:
Please refer to the Risk Assessment of the overall County for the definitions of these hazards.

HISTORICAL OCCURRENCE:
In 2025, the National Weather Service confirmed an EF1 (Enhanced Fujita Scale) tornado that affected portions of Destin on May 10th. The tornado touched down at 9:05 a.m., beginning as a waterspout that moved onshore at Henderson Beach State Park. It traveled northward across Emerald Coast Parkway during its five-minute path, covering 1.86 miles with a maximum width of 120 yards.

The historic tornado record of Okaloosa County is relevant to the City of Destin because of the unpredictable pattern of tornadoes. The entire County, including the City of Destin, is vulnerable to tornado damage. Also, the County's waterspout historical record is applicable to the City of Destin because it is located on the coast, making it susceptible to waterspouts. Please refer to the Risk Assessment of the overall County for the historical occurrences of these hazards.

NOTE: the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
Because of the unpredictable patterns of tornadoes, and because Okaloosa County has a relatively high frequency of occurrence, the entire County, including the City of Destin, is vulnerable to tornado damage. The damage potential for a tornado increases as a function of population density. As the number of structures and people increases, the potential damage/injury rate increases. Manufactured housing, poorly constructed or substandard housing and apartment complexes are especially susceptible to damage from a tornado. Manufactured housing and substandard housing are exceptionally susceptible because of their lack of resistance to high winds, and apartment complexes because of their size and densities.

The worst possible scenario in terms of tornado damage would be if an EF-5 tornado hit the City of Destin. It is very unlikely that an EF-5 tornado would strike Okaloosa County or the City of Destin, but if one did there would be complete destruction of homes and businesses that were in the tornado's path. Trees and power lines would be snapped, building debris scattered about, and severe structural damage would be evident on any building left standing.

The most common and active weather threat in the City of Destin for the formation of tornadoes is severe thunderstorms associated with frontal boundaries. Frontal boundaries and summertime afternoon air mass thunderstorms can reach severe limits because of atmospheric uplift. High

winds relating to gust fronts and microbursts can create high wind speeds up to 100 mph. Buildings and highway traffic are vulnerable to these storms.

PROBABILITY:
From 1975 to 2025, there were 10 tornadoes within a 10-mile radius of Destin.

Older versions of the Okaloosa County Local Mitigation Strategy refer to F-scale tornadoes. A comparison of F-scale wind speeds versus the Enhanced Fujita scale is provided.

Fujita Scale, wind speeds in mph		Enhanced Fujita Scale, winds speed in mph	
F-0	40-72	EF-0	65-85
F-1	73-112	EF-1	86-110
F-2	113-157	EF-2	111-135
F-3	158-206	EF-3	136-165
F-4	207-260	EF-4	166-200
F-5	261-318	EF-5	>200

Section 5.02.01.07.02 Thunderstorms and Lightning

DEFINITION:
Please refer to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
In 1995, 1999, and 2009 there were strong thunderstorm winds that resulted in some of the following damage: trees blown over, small boats overturned and destroyed or damaged aircraft. The most significant incident occurred in 2009, when there were 2 general aviation aircraft destroyed and 10 other aircraft damaged at the Destin Airport. There was $1,000,000 in property damage reported. There were no known injuries or fatalities in any of these occurrences. (NCDC, 2010).

On two different occasions in 1997, there were two homes in the City of Destin struck by lightning, which caused a fire to the affected properties. The cumulative reported property damage from those occurrences was $25,000. In 1995, a developing thunderstorm in the City of Destin area resulted in a 14-year-old female getting struck by lightning, while 6 others received shock from the strike. There were 7 injuries and no fatalities or property damage reported. In 2003, a man in a personal watercraft was struck by lightning as he was heading to shore away from the approaching thunderstorms. There was 1 injury and no fatalities or property damage reported. Also in 2003, after most of the thunderstorms had moved out of the City of Destin area, a man was struck by lightning while he was surfing. The man was the only fatality with no other injuries or property damages reported. In 2009, a lifeguard was struck by lightning in his tower, which resulted in his jacket being burnt and the tower on fire. He was the only injury with no other injuries, fatalities, or property damage reported. (NCDC, 2010). The City of Destin equally susceptible to thunderstorms and lightning as Okaloosa County.

Therefore, the historic record of thunderstorms and lightning in Okaloosa County will be applicable to the City of Destin. Please refer to the Risk Assessment of the overall County for the historical occurrences of this hazard.

NOTE: the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
Thunderstorm damage can include traffic accidents on wet roads, flash-flooding, lightning damage to electronics and structures, lightning strikes on people, and wind and hail damage.

Aside from being able to produce tornadoes, thunderstorms can produce damaging high winds. Cold upper-level air descending from the top of a thunderstorm to the ground usually causes these winds. In a worst-case scenario, if the upper-level air speed of descent is rapid, these cold microbursts can fan out as they meet the ground at a high rate of speed. This is sometimes referred to as straight line winds. These winds can cause significant property damage, injuries, and deaths similar to an EF0 to EF2 tornado or Category 1 or 2 hurricanes.

PROBABILITY:
Based on historical data (See Risk Assessment of overall County of this hazard's historical occurrences), the City of Destin has a future probability of experiencing less than 5 severe thunderstorms per year. Also based on historical data (See Risk Assessment of overall County for this hazard's historical occurrences), the City of Destin is likely to experience 4 to 16 flashes of lightning per square kilometer per year.

Section 5.02.01.07.03 Winter Storms

DEFINITION:
Please refer to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
The record low temperature in the City of Destin is 6.3°F (Farmer's Almanac, 2010). That low temperature is a rare case and is not considered the 'norm' for the City of Destin during the winter season. The City of Destin's monthly mean temperature minimums from 2000-2025 are displayed below.

The City, along with Okaloosa County experienced an icing event, with snow, in January 2025. Schools and businesses were closed for 2 to 3 days.

Table 5.02.01.07.03.1: Average Temperature Minimums in degrees Fahrenheit, 2000-2025

	Nov	Dec	Jan	Feb	Mar
Destin, FL	57°	49°	47°	48°	56°

Table 5.02.01.07.03.2: Monthly Record Low Temperature in degrees Fahrenheit

	Nov	Dec	Jan	Feb	Mar
Destin, FL	17°	9°	6°	12°	19°

On average, the City of Destin experiences 17 days per year where the low temperatures are below 32°F. Please refer to the Risk Assessment of the overall County for the historical occurrences of winter weather because all of Okaloosa County is equally susceptible to this hazard.

NOTE: the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
The worst-case scenario in terms of winter storms in the city would be if freezing or below freezing temperatures lasted for a week or more, and if the storm responsible for such freezing temperatures knocked down power lines resulting in power loss, and the inability of residents to heat their homes. A freeze's greatest risk is generally unprotected or under-protected water pipes in homes, businesses and infrastructure. Outdoor irrigation systems and plumbing in homes where insulation is inadequate in walls or in off-grade homes where plumbing is exposed are most vulnerable. Unmitigated older structures and manufactured housing are probably the most vulnerable structures.

An icing, glaze, or sleet incident in Okaloosa County would likely result in severe traffic problems and safety concerns throughout the community and its roadways. With no means of salting roadways or removing ice, emergency response would be severely slowed in iced areas. Electrical service would likely be interrupted or totally absent in many areas due to power lines glazing and tree branch falls. Mitigation efforts would more likely focus on sheltering and ability to receive outside mutual-aid assistance, rather than on equipment and ice buildup prevention due to the infrequency and inconsistency of such events.

PROBABILITY:
Based on the data of total below freezing days, the future probability of freezing temperature days in the City of Destin is estimated to be 30 days in a 5-year time frame. Because a snow event in the City Destin is so rare, a single snow "event" over five or ten years might be a reasonable average.

Section 5.02.01.08 Heat Wave and Drought

Heat Wave

DEFINITION:
Please refer to the Risk Assessment of the overall County for the definition of heat waves.

HISTORICAL OCCURRENCE:
Every jurisdiction in Okaloosa County is equally susceptible to heat waves as they tend to impact a relatively large geographic area. A heat wave can generally be considered a period of abnormally hot weather lasting at least 2 consecutive days, where temperatures are significantly above the normal range for a specific location, often combined with high humidity.

Table 5.02.01.08.1: Monthly Mean Temperature Maximums in degrees Fahrenheit

	May	Jun	Jul	Aug
Destin, FL	83°	88°	89°	89°

Table 5.02.01.08.02: Monthly Record High Temperatures in degrees Fahrenheit

	May	Jun	Jul	Aug
Destin, FL	102°	103°	106°	104°

EXTENT:
The worst-case scenario in terms of a heat wave would be if excessive heat and humidity lasted for a week or more. Dangerous conditions are present when both heat and high humidity combine to make outside temperatures feel in the 103-124° F range. External danger warnings are issued when high temperatures and humidity combine to make outside temperatures feel in the 126-137° F range. Heat disorders may develop in people who work outside for long periods of time, such as construction workers or agricultural workers. To combat the dangerous effects of excessive heat residents should dress appropriately, stay indoors, refrain from strenuous work during the hottest part of the day and stay hydrated.

Electrical system failures due to demand are a true possibility during excessive heat conditions. The general threat to the City of Destin is to individuals without adequate cooling systems in their homes, with emphasis on low income and the elderly. Electrical system failures due to demand would only enhance problems for these populations. (NOAA Watch: Heat Wave).

PROBABILITY:
Based on the City of Destin heat wave data, it is predicted that the future probability of a heat wave occurring in the City of Destin is on average three times during a 5-year period.

Drought

DEFINITION:
Please refer to the Risk Assessment of the overall County for the definition of drought and the categories of drought according to the U.S. Drought Monitor.

HISTORICAL OCCURRENCE:
Droughts occur at a regular frequency and are cyclical in Okaloosa County. Due to the large area that droughts impact, it is assumed that the City of Destin had a similar number of drought occurrences. Please refer to the Risk Assessment of the overall County for the historical occurrences of drought because all of Okaloosa County is equally susceptible to this hazard.

EXTENT:
The worst-case scenario in terms of drought would be if an exceptional drought (D4) lasted for months or years (See the Risk Assessment of the overall County for drought category descriptions). An exceptional drought would cause shortages of water in reservoirs, streams, and wells. Bay swamps and bodies of water would see a drastic decline in natural water levels and water shortages in reservoirs and wells would create water emergencies. Precipitation levels would be -2.0 inches or less. Also, the risk of wildfire increases as drought deepens. (U.S. Drought Monitor, 2010).

Droughts impact the City of Destin in several ways. For example, declining water levels and altered hydroperiods in bay swamps can disrupt breeding cycles of fish and amphibians which can affect other species which prey on, or which are preyed upon, such fish and amphibians.

Increased demand created by drought conditions on public and private water supply systems that serve the public has caused some generators and pumps to fail at critical moments, creating low or no pressure for critical facilities such as fire hydrants and medical centers.

PROBABILITY:
The abnormally dry drought intensity is the condition of dryness before and after a period of actual drought. From 2000-2009, a total of 49 out of 120 months were abnormally dry. Based on this data, the City of Destin has a future probability of experiencing less than 5 abnormally dry months every year. Also, from 2000-2009, there were a total of 51 out of 120 months where moderate, severe, extreme, or exceptional drought occurred in Okaloosa County. These drought intensities are the varying severity of actual droughts. The future probability of a moderate to severe drought occurring in the City of Destin is on average 5 months per year.

Section 5.02.01.09 Wildfire

DEFINITION:
Please refer to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
The City of Destin is susceptible to wildfire. Most of the incorporated areas are urban or residential. The wildfire record of Okaloosa County is relevant to the City of Destin. Please refer to the Risk Assessment of the overall County for the historical occurrences of this hazard.

NOTE: the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into specific areas of the county.

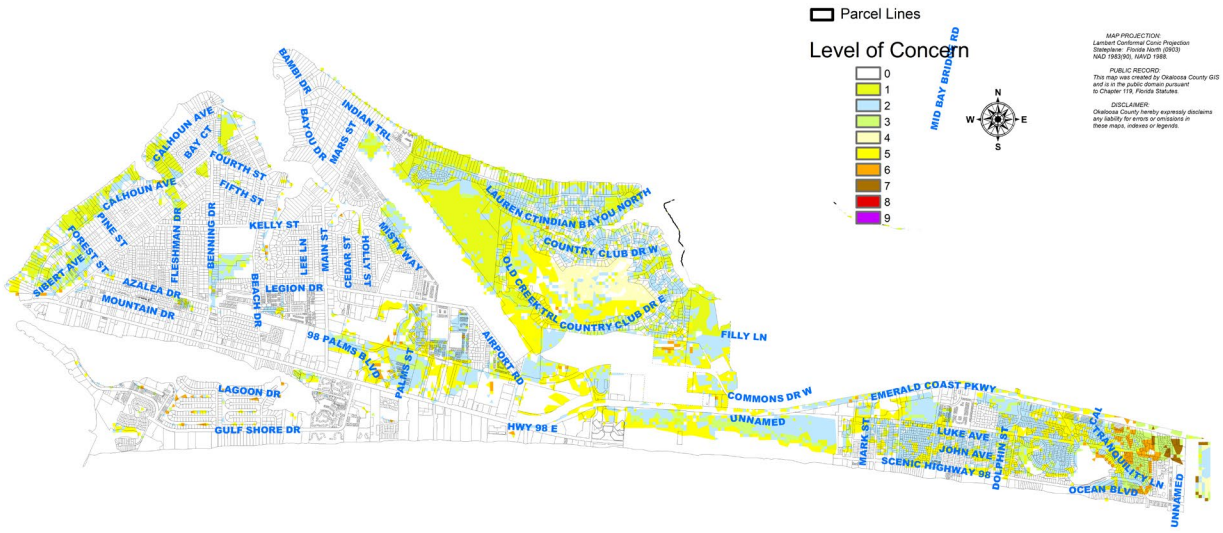
EXTENT:
Based on the Wildland Fire Risk Assessment of Okaloosa County, the worst-case scenario would be if the areas with the greatest Level of Concern (LOC) experienced massive wildfire.

These areas have a greater likelihood of danger and destruction due to their inadequate infrastructure, inaccessibility to critical facilities or firefighting resource locations, and location in the wildland-urban interface.

NOTE: According to the Florida Department of Forestry, wildland urban interface is defined as "the zone where structures and other human development meets/intermingles with undeveloped wildland fuels and other natural features." Fires could come into subdivisions and neighborhoods in urban and suburban areas, which could be a potentially catastrophic situation. Smoke and ash from dangerous wildfires could decrease visibility on highways and local roads.

PROBABILITY:
The Wildland Fire Risk Assessment System of the Florida Division of Forestry displays the wildfire levels of concern for the City of Destin. According to the map, most of the incorporated City is classified as non- or minimally-burnable (2020). The figure below displays the relatively low levels of concern that wildfire has for the city. Although the City of Destin is susceptible to wildfire, it appears that the future probability of occurrence is relatively low.

City of Destin



Source: Florida Forest Service, 2025

Section 5.02.01.10 Beach Erosion

DEFINITION:

Please refer to the Risk Assessment of the overall County for the definition of this hazard.

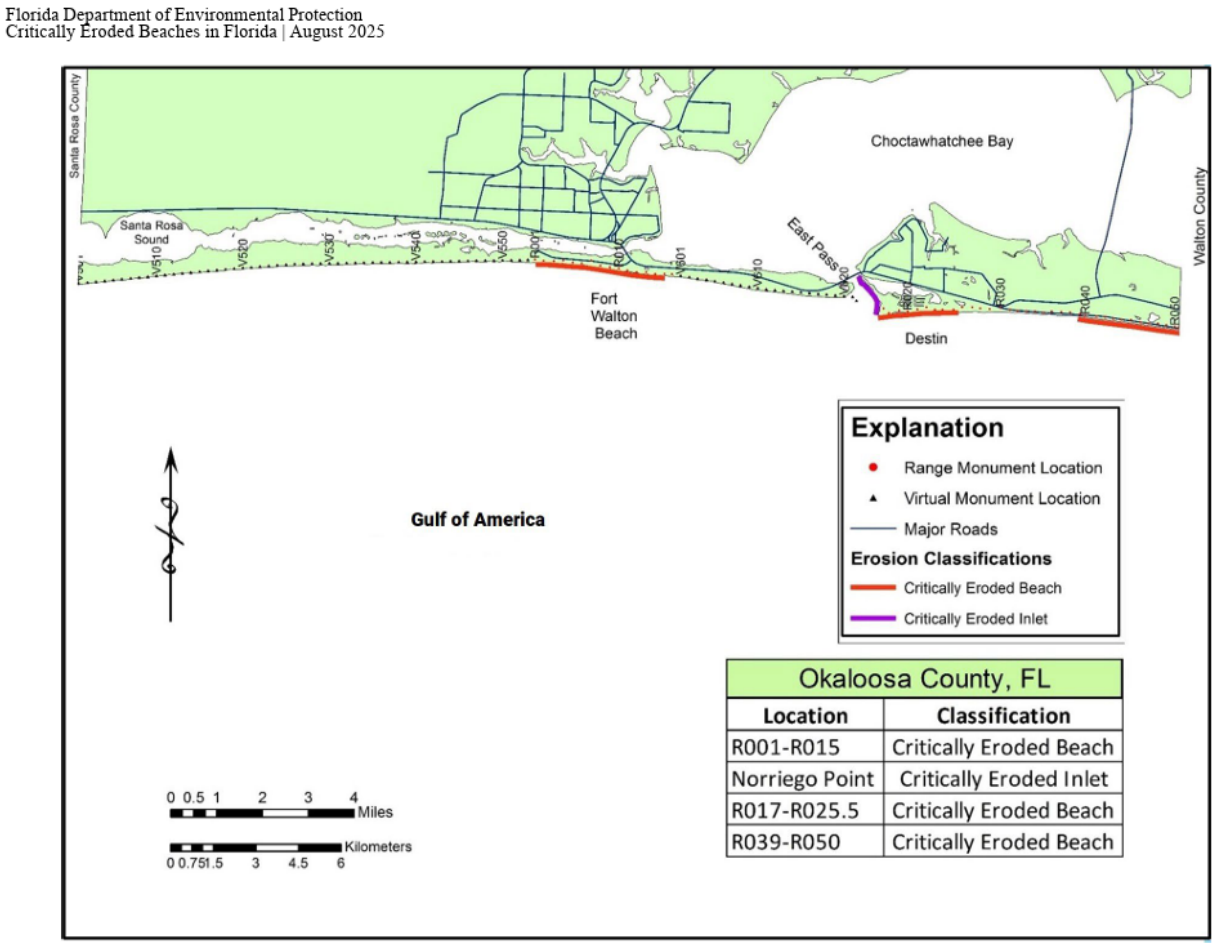
HISTORICAL OCCURRENCE:

The coastal areas of Okaloosa County, including the City of Destin, are equally susceptible to beach erosion. Because hurricanes and other weather events, which accelerate the effects of beach erosion, tend to affect Okaloosa County's entire coastal areas, the historical occurrences of the County are applicable to the City of Destin. Please refer to the Risk Assessment of the overall County for the historical occurrences of this hazard.

NOTE: the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into specific areas of the county.

According to the Florida Department of Environmental Protection, Bureau of Beaches and Coastal Systems, there are 7.3 miles of critically eroded beaches in Okaloosa County. The location of these critically eroded areas includes 0.55 miles in the City of Destin on the west side and 0.67 miles in the City of Destin on the east side (geodata.dep.state.fl.us/datasets) represented in the figure below.

Figure 5.02.01.10.1: Beach Erosion Classification in Okaloosa County, 2025



Okaloosa County, FL	
Location	**Classification**
R001-R015	Critically Eroded Beach
Norriego Point	Critically Eroded Inlet
R017-R025.5	Critically Eroded Beach
R039-R050	Critically Eroded Beach

Source: FDEP Bureau of Beaches and Coastal Systems 2025

EXTENT:
The worst-case scenario of a beach erosion occurrence is if a major storm with significantly strong winds and storm surge washed out the coastal areas. The damage will be much worse

for portions of the coastline already declared as critically eroded (See Figure 5.02.01.09.1). Beach erosion will undermine the integrity of infrastructure, beachfront homes and businesses, and other structures by washing away the sediments that support the structural foundation, sometimes resulting in complete destruction.

PROBABILITY:
Based on recent historical data, it appears that beach erosion will most certainly occur in the future. The frequency and extent of erosion are highly dependent on the frequency and intensity

of tropical storms and hurricanes. Therefore, a numerical value will not be given for the estimated future amount of beach erosion. It must also be noted that beach erosion is a natural part of a coastal system and can be expected to occur at various locations and at different rates over time.

Section 5.02.02.11 Sea Level Rise

The City of Destin completed a combined Comprehensive Vulnerability Assessment and Adaptation Plan (VAAP) in May 2025 in compliance with Section 380.093, Florida Statutes, through funding provided by the Florida Department of Environmental Protection's Resilient Florida Program. The Destin VAAP evaluates the exposure and vulnerability of critical community assets to present-day and future flooding conditions associated with Sea Level Rise (SLR) and extreme weather events. The results of this assessment are incorporated herein by reference for purposes of evaluating sea level rise vulnerability specific to the City of Destin . The VAAP is also attached as Appendix F.

As discussed in greater detail in Section 5.02.02, SLR poses a significant and increasing hazard to the City of Destin due to the City's low-lying coastal geography, extensive shoreline along the Gulf of America and Choctawhatchee Bay, and reliance on coastal infrastructure and tourism-based development. Sea level rise is driven primarily by the thermal expansion of ocean waters and the melting of land-based ice, with local impacts influenced by tidal conditions, storm surge, and topography.

Section 5.02.01.12 Other Hazards

The hazards listed below have been analyzed and determined that the impact would be minimal or non-existent in the City of Destin.

Section 5.02.01.12.01 Sinkholes

The map and description prepared by the United States Geologic Survey (USGS) in its "Sinkhole, Type, Development and Distribution in Florida" (1985) indicates that Okaloosa County in its entirety is in an area where sinkholes seldom, if ever, occur. The Florida Geologic Survey's statewide sinkhole database indicates no sinkholes in the County. Since there is no history of this hazard in the County, including the City of Destin, no further analysis or risk assessment will be conducted for this plan. However, should conditions change and geological features be discovered which contribute to the development of sinkholes, the LMS committee will include any new occurrence information in ongoing updates.

The future probability of a sinkhole occurring in the City of Destin is less than 1% based upon no documented sinkholes in the county and the soil strata is non-conducive to the formation of sinkholes.

Section 5.02.01.12.02 Expansive Soils

According to the *Soil Survey of Okaloosa County Florida* (USDA, June 1995), two types of soil are considered vulnerable to expansion. These are known as shrinking and swelling or "expansive soils." Another way of describing expansive soils is the change of volume of soil with

a change of moisture content. Soils listed in the expansive class are also considered erodible soils. Okaloosa County may be susceptible to expansive soils in some localized areas. There have been no previous occurrences recorded of expansive soil in the County. The following table lists soils having moderate to high shrink swell potential in Okaloosa County. Only those soils with an associated risk of "High" are listed:

Table 5.02.01.12.02.1: Shrink/ swell potential of soils in Okaloosa County.

Soil Type	ME Soils*	HE Soils**	Total Acreage	% Total Land Area
#35-Angie (2 to 5 percent slopes)		X	1,073.26	.16
#49-Angie (5 to 12 percent slopes)		X	10,280.79	1.61
#20-Udorthents (nearly level)	X		655.31	.11
Total	**.11**	**1.77**	**12,009.36**	**1.88**

* Moderate Erodible Soils **Highly Erodible Soils

Note: Expansive soils and erodible soils are classified as the same.
Source: Soil Survey of Okaloosa County, Florida; June 1995.

Expansive soils can lessen the strength of building foundations, which could result in structural collapse or instability. In addition, these soils have limitations for use as local roads and streets because of lack of strength to support roadways and traffic. There is a possibility of shrink/swell potential or soil expansion based on the existence of moderately erodible soils and highly erodible soils in Okaloosa County. Although the specific amount of these soils in the county is known, the future probability of this occurring in the City of Destin is minimal because this issue is addressed during the time of construction and there are no previous records of occurrence.

Section 5.02.01.12.03 Earthquake

According to the U.S. Geological Survey Earthquake Probability maps, the City of Destin has between a 0.005 and 0.010% chance of experiencing a 5.0 magnitude earthquake within 100 years. This is considered a very minimal risk. Also, since there is no history of earthquakes in Okaloosa County or the City of Destin, no further analysis or risk assessment will be conducted for this plan. The future probability of an earthquake occurring in the City of Destin is less than 1 percent.

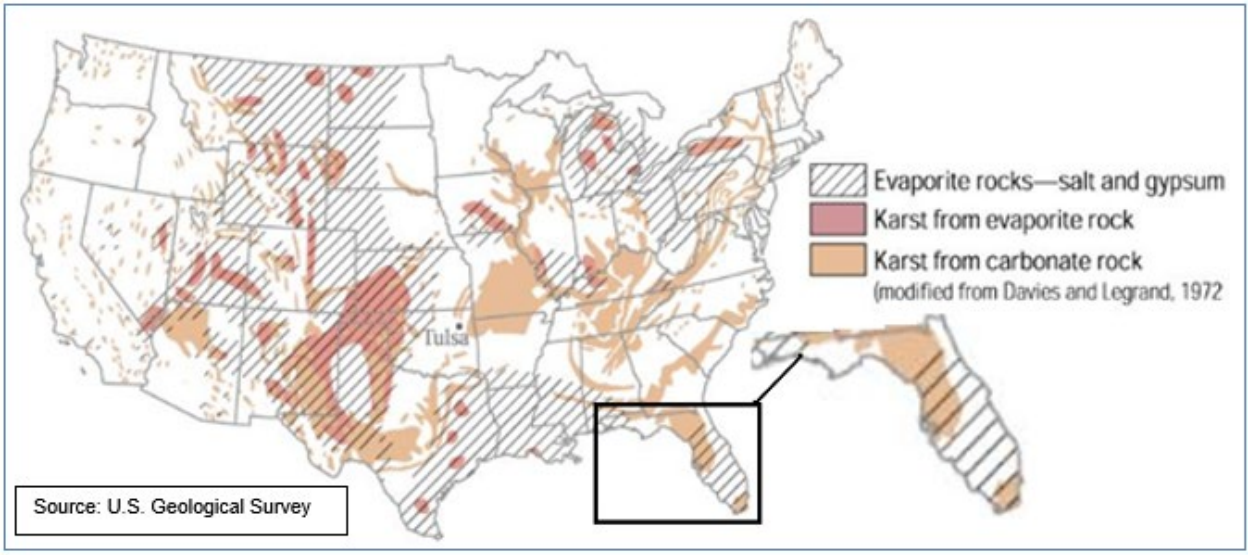
Section 5.02.01.12.04 Avalanche

The City of Destin does not have topography or snowfall amounts that would create conditions for an avalanche. Since there is no history of this hazard in the county, no further analysis or risk assessment will be conducted for this plan. The future probability of an avalanche occurring in the City of Destin is less than 1 percent.

Section 5.02.01.12.05 Land Subsidence

According to the U.S. Geological Survey, "land subsidence occurs when large amounts of ground water have been withdrawn from certain types of rocks, such as fine-grained sediments. The rock compacts because the water is partly responsible for holding the ground up. When the water is withdrawn, the rocks fall in on themselves. Land subsidence is most often caused by human activities, mainly from the removal of subsurface water" (U.S. Geological Survey, 2010). The City of Destin has a minimal amount of the most common rock types that are connected to land subsidence (See Figure 5.02.01.10.06.1). Since there is no history of this hazard in the City of Destin, no further analysis or risk assessment will be conducted for this plan. The future probability of land subsidence occurring in the City of Destin is less than 1 percent years.

Figure 5.02.01.10.06.1: Rock types connected to collapse (subsurface cavities/sinkholes) in the U.S.



Section 5.02.01.12.06 Landslide

According to U.S. Geological Survey Map of Relative Incidence and Susceptibility Map, the City of Destin has a very low landslide incidence with less than 1.5% area susceptible to a landslide (USGS, 2010). Landslides are therefore considered to be a minimal risk, and no further analysis or risk assessment will be conducted for this plan. The future probability of a landslide occurring in the City of Destin is less than 1 percent.

Section 5.02.01.12.07 Volcano

There are no geological features in or near Okaloosa County, the City of Destin, or the Southeast related to volcanism. Since there is no history of this hazard in the City of Destin, no further

analysis or risk assessment will be conducted for this plan. The future probability of a volcanic eruption occurring in the City of Destin is less than 1 percent.

Section 5.02.01.12.08 Tsunami

According to the U.S. Geological Survey, Okaloosa County is not located in an area that has historically been subjected to tsunamis, even though it is a coastal county. Since there is no history of this hazard in the county, including the City of Destin, no further analysis and risk assessment will be conducted for this plan. The Local Mitigation Strategy Committee will monitor any developments in the ability to predict, monitor and issue warnings. There is no record of a tsunami occurring in Okaloosa County; therefore, the future probability has been determined to be less than 1 percent.

Section 5.02.01.13 Summary

The risk assessment section of this LMS document highlighted the hazards that the City of Destin is exposed to. This provides the foundation for the subsequent section covering how vulnerable the city is to these identified hazards. Numerous facilities, infrastructure, and neighborhoods in the City of Destin need to be assessed for their vulnerability to disasters.

Section 5.02.02 Vulnerabilities

Section 5.02.02.01 Introduction

The intent of this section is to provide a vulnerability assessment for the potential damage and estimated loss to building structures in the City of Destin.

This section includes a brief summary description of the City of Destin, as well as its vulnerability to the identified hazards and the impact of each hazard. It also describes the vulnerability in terms of the types and numbers of repetitive loss properties within the City of Destin. Additionally, the section describes vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the City of Destin.

The main intent of this section is to provide an estimate of potential dollar losses to vulnerable structures and a description of the methodology used to complete the estimate. Lastly, this section describes vulnerability in terms of providing a general description of land uses and development trends within the City of Destin so that mitigation options can be considered in future land use decisions.

Section 5.02.02.02 Methodology

The Okaloosa County Staff used the same methods of quantifying the estimated dollar losses to the vulnerable structures potentially impacted by each hazard, for the City of Destin as the overall County. Please refer to Okaloosa County's Overall Vulnerabilities, Section 4.02.02, for more information.

NOTE: Previously, land values were also included in the dollar losses. For the 2026 LMS, only building values as determined by the Okaloosa County Property Appraiser were tabulated.

Section 5.02.02.03 Summary Description of the City of Destin

The City of Destin is an incorporated city located in the southern portion of Okaloosa County. As of a 2024 Census estimate, it was home to 13,991 residents. The City of Destin is best known for its beautiful beaches and the thriving tourism industry. Within its jurisdiction, there are 6.71 miles of coastline along the Gulf of America, 8.72 miles of shoreline along Old Pass Lagoon, 1.58 miles along the East Pass, as well as 10.55 miles that border Choctawhatchee Bay on the northern portion of the city. Most of the development in the City of Destin is concentrated adjacent to the Gulf of America and along both sides of U.S. Highway 98. Much of the development within the City of Destin serves a seasonal tourist population, so hotels, condominiums, and vacation rentals define much of the development within the city.

The City of Destin participates in the National Flood Insurance Program (NFIP) and enforces floodplain management regulations through the City of Destin Land Development Code and applicable ordinances. The City has adopted flood damage prevention regulations that meet the requirements of the NFIP and applicable State of Florida regulations.

City of Destin

The City has formally adopted the current Flood Insurance Rate Maps (FIRMs), Flood Insurance Study (FIS), and all subsequent amendments and revisions issued by the Federal Emergency Management Agency (FEMA). These maps and studies serve as the basis for identifying Special Flood Hazard Areas (SFHAs) and regulating development within flood-prone areas.

The City's Floodplain Management Regulations are found in the Land Development Code in Article 11 (Coastal Management and Conservation, 11.04.00 to be specific, adopted via Ordinance 18-05-LC on March 19, 2018 and updated via Ordinance 24-12-LC on November 11, 2024) as well as in a section of the Code of Ordinances (Chapter 6 Section 117, adopted and amended by the aforementioned Ordinances) that governs the variance process.

Administration and enforcement of floodplain management regulations, including development within Special Flood Hazard Areas (SFHAs), are conducted through the Community Development Department's Building Division. Floodplain development permits, building permits, site plans, construction plans, and elevation documentation are reviewed to ensure compliance with federal, state, and local floodplain management requirements.

The City utilizes a coordinated review process involving the Floodplain Administrator, Planning Division, and Building Division. This process provides a system of checks and balances whereby floodplain compliance is reviewed during project planning, permitting, construction, and final inspection stages to ensure consistent enforcement of SFHA requirements.

Responsibility for maintaining compliance with NFIP requirements rests with the City's Floodplain Administrator, with support from Community Development Department staff, Building Division personnel, and other departments as necessary. The Floodplain Administrator is responsible for implementing and enforcing floodplain management regulations, maintaining required records, coordinating with FEMA and the Florida Division of Emergency Management, and ensuring compliance with all applicable NFIP standards.

The City administers Substantial Damage (SD) and Substantial Improvement (SI) requirements through a coordinated review process involving the Floodplain Administrator and Building Division staff. For proposed improvements, applicants are required to provide project valuations, contractor estimates, and other supporting documentation during permitting. These values are evaluated in accordance with NFIP requirements to determine whether the cumulative cost of improvements equals or exceeds fifty percent (50%) of the market value of the structure. When necessary, certified appraisals or additional documentation may be required to establish market value. Building permits and land improvements are managed utilizing MGO (MyGovernmentOnline) software.

Following significant storm events or other disasters, substantial damage assessments are conducted using FEMA guidance and methodologies. City staff coordinate inspections, damage assessments, and documentation reviews to determine whether structures have sustained damage equal to or exceeding fifty percent (50%) of their pre-damage market value.

NOTE: the City of Destin currently does not enforce substantial improvement requirements per SB 180 (2025) but continues to track permits for the purposes of establishing substantial improvements once SB180 times out on October 1, 2027.

The City of Destin participates in the Community Rating System (CRS) and is committed to implementing floodplain management practices that exceed minimum NFIP standards.

The City maintains records of publicly owned open space, conservation areas, stormwater facilities, and other properties that contribute to floodplain protection and flood risk reduction.

Section 5.02.02.04 Vulnerable Populations

Hazards do not affect the entire population equally. Therefore, special attention needs to be given to the more vulnerable populations. Please refer back to the overall County's Vulnerability for further explanation on these vulnerable populations. The table below displays the City of Destin's vulnerable populations based on the July 1, 2024, estimate of 13,991.

Table 5.02.02.04.1: Estimated Vulnerable Populations in the City of Destin, 2024

Population	2024 Census Percent Population	2024 Estimate
Elderly	18.0%	2518
Language Isolation Households	17.8%	2490
Disabled under 65	5.9%	825
Single Parent	estimated 8.7%	1217
Poverty	7.6%	1063
Minority	18.7%	2336

Source: Census QuickFacts, https://www.census.gov/quickfacts/fact/table/destincityflorida/PST045224

Section 5.02.02.05 Repetitive Loss and Severe Repetitive Loss Properties

The Federal emergency Management Agency defines repetitive loss and severe repetitive loss properties as follows (44 CFR Part 77 § 77.2):

> Repetitive loss structure means a structure covered under an NFIP flood insurance policy that:
>
> (1) Has incurred flood-related damage on 2 occasions, in which the cost of repair, on average, equaled or exceeded 25% of the value of the structure at the time of each such flood event; and
>
> (2) At the time of the second incidence of flood related damage, the contract for flood insurance contains increased cost of compliance coverage.

Severe repetitive loss structure means a structure that is covered under an NFIP flood insurance policy and has incurred flood-related damage:

> (1) For which 4 or more separate claims payments have been made under flood insurance coverage under subchapter B of this chapter, with the amount of each claim (including building and contents payments) exceeding $5,000, and with the cumulative amount of such claims payments exceeding $20,000; or
>
> (2) For which at least 2 separate flood insurance claims payments (building payments only) have been made, with cumulative amount of such claims exceeding the value of the insured structure.

In Destin, hurricanes, tropical storms, storm surge, flooding, and thunderstorms are responsible for repetitive loss properties. These properties are more vulnerable to certain hazards than other structures in the City because they have already experienced significant flood damage. Please see Section 4.02.05 and Table 4.02.05.1 for this LMS' discussion of Repetitive Loss and Severe Repetitive Loss properties throughout the County, including within the City of Destin.

Section 5.02.02.06 Hurricane and Tropical Storm

The City of Destin is vulnerable to the damaging effects of tropical storms and hurricanes as it is the only incorporated city in Okaloosa County located directly on the Gulf of America. The City of Destin would experience destruction in terms of wind damage, heavy rains, and storm surge during a tropical storm or hurricane. All structures within the City of Destin's jurisdiction are susceptible to damage in the form of flooding due to heavy rains and strong storm surge. High winds can damage structures by removing roofs and siding creating flying debris. The most vulnerable homes are those located on beachfront and bayfront lots. The following tables depict the hurricane evacuation zones and the vulnerable structures located within each zone.

Table 5.02.02.06.1: Evacuation Zones and the Vulnerable Residential Structures within

	Condominium	SFR-Townhouse	Single-Family	Mobile Home	Multi-Family
Zone A	381	0	6	0	0
Bldg Value	$13,837,000	$0	$12,430,274	$0	$0
Zone B	4319	244	922	0	9
Bldg Value	$2,767,788,834	$74,312,227	$745,687,909	$0	$5,008,134
Zone C	292	52	284	8	5
Bldg Value	$177,570,570	$8,903,718	$435,301,474	$293,583	$16,054,753
Zone D	2323	1269	101	7	26
Bldg Value	$1,285,083,099	$275,753,617	$1,363,689,631	$267,126	$229,788,489
Zone E	0	0	2	0	0

Bldg Value	$0	$0	$1,697,456	$0	$0

Staff generated table from overlaying the evacuation zones and property appraiser data

Table 5.02.02.06.2: Evacuation Zones and the Vulnerable Structures within

	Commercial	Government/ Institutional	Trailer Park	RV Park
Zone A	2	3	0	0
Bldg Value	$1,137,107	$0	$0	$0
Zone B	41	22	0	1
Bldg Value	$28,313,363	$945,921	$0	$19,269
Zone C	16	11	0	0
Bldg Value	$30,959,653	$877,777	$0	$0
Zone D	418	11	1	0
Bldg Value	$280,137,580	$47,910,220	$349,026	$0
Zone E	2	0	0	0
Bldg Value	$904,303	$0	$0	$0

Staff generated table from overlaying the evacuation zones and property appraiser data

Section 5.02.02.07 Storm Surge

The City of Destin is vulnerable to storm surge and the structures along the Gulf of America and Choctawhatchee Bay are the most susceptible to damage from this hazard. The strongest storm surge level during a Category 5 hurricane would be 16.1 feet above the mean high water line along some areas boarding Choctawhatchee Bay. This would severely flood numerous homes, infrastructure, and commercial structures in this area. The following tables depict the vulnerable structures to storm surge levels, which correspond with the category of hurricane.

Table 5.02.02.07.1: Vulnerable Residential Structures to Storm Surge

	Condominium	SFR-Townhouse	Single-Family	Mobile Home	Multi-Family
Surge Level 1	52	0	1	0	0
Bldg Value	$17,501,600	$0	$2,437,361	$0	$0
Surge Level 2	812	168	219	0	1
Bldg Value	$414,079,220	$39,835,780	$172,961,416	$0	$1,012,435
Surge Level 3	1335	40	375	8	4
Bldg Value	$918,293,077	$10,216,014	$233,047,785	$160,440	$1,870,780
Surge Level 4	387	20	378	4	4

Bldg Value	$217,761,355	$3,174,084	$319,169,031	$165,110	$1,736,715
Surge Level 5	1160	87	928	6	8
Bldg Value	$652,691,451	$23,843,494	$455,832,416	$226,559	$153,042,132

Staff generated table from overlaying the surge levels and property appraiser data

Table 5.02.02.07.2: Other Vulnerable Structures to Storm Surge

	Commercial	Government/ Institutional	RV Park	Trailer Park
Surge Level 1	0	1	0	0
Bldg Value	$0	$0	$0	$0
Surge Level 2	4	4	0	0
Bldg Value	$1,071,048	$233,035	$0	$0
Surge Level 3	4	9	1	0
Bldg Value	$908,479	$63,862	$19,269	$0
Surge Level 4	5	4	0	0
Bldg Value	$877,773	$565,069	$0	$0
Surge Level 5	28	13	0	1
Bldg Value	$24,353,769	$1,214,178	$0	$349,026

Staff generated table from overlaying the surge levels and property appraiser data

Section 5.02.02.08 Flooding

Our definition of flooding only considers flooding that is a result of rainfall, which includes tropical rains during a hurricane. The City of Destin is vulnerable to flooding and susceptible to damage from this hazard. Localized roadway flooding from heavy rains is the most commonly observed type of flooding in the City of Destin. During a hurricane, tropical storm or severe storm heavy rains might cause some homes to flood particularly in low-lying areas or those with poor drainage systems. In the City of Destin, there are 1,604 structures located in the AE flood zone and 4,696 structures in the VE flood zone. The cumulative building value of all the structures located in the AE and VE flood zones is $7,499,989,268. The following table depicts the vulnerable structures located in the AE and VE flood zones in the City of Destin.

Table 5.02.02.08.1: Structures Located in Flood Zones in the City of Destin

	AE Flood Zone	Bldg Value	VE Flood Zone	Bldg Value
Condominium	954	$490,388,842	4233	$2,943,441,723
SFR-Townhouse	101	$23,930,958	178	$57,208,746

Single-Family	526	$3,677,028,857	214	$271,046,185
Mobile Home	6	$113,929	0	$0
Multi-Family	2	$1,131,444	3	$2,714,635
Commercial	6	$2,055,325	50	$29,003,689
Government/Institutional	9	$257,702	18	$667,233

Staff generated table from overlaying the surge levels and property appraiser data

Section 5.02.02.09 Dam Safety

The City of Destin has 2 active unpermitted dams within its jurisdiction. A portion of Main Street crossing the outfall of Coleman Lake into the east branch of Joe's Bayou sits on an unpermitted earthen dam which lacks a clay core and shows signs of deterioration. Kelly Street sits on another earthen dam at the outfall of Spring Lake into the southern branch of Joe's Bayou.

The specific impact of dam failure in the City of Destin is unavailable at this time because there have been no studies conducted on the impact that dam failure would have on the respective areas surrounding the dams. Only general impacts can be given, which provide an indication as to what impacts are expected with dam failure.

If one of these small dams in the City of Destin failed, the area surrounding the dam would likely experience flooding of property and roadways, and may result in road closures and in extreme cases, damage to homes.

Section 5.02.02.10 Land Erosion

The City of Destin is vulnerable to erosion in some localized areas, and some structures are susceptible to damage from this hazard. The soil types and topography that leads to land erosion can be found in various parts of the City of Destin. The areas that are most susceptible to land erosion are those with steep slopes and which have highly erodible soil types. Land erosion in the City of Destin is generally caused by disturbed soils from construction activities and usually isolated to an area less than 1 acre in size.

Section 5.02.02.11 Severe Storms

In the tables below, the estimated cost of damage to residential and non-residential structures in the event of a severe storm is provided. The numbers and estimated value represent the total number of structures in the City of Destin. Although it is highly unlikely that all structures will be impacted during a singular severe storm event, all structures are equally vulnerable to severe storms and so it was deemed appropriate to list all structures in the City of Destin.

Table 5.02.02.09.1: Vulnerable Residential Structures to Severe Storms

	Condominium	SFR-Townhouse	Single-Family	Multi-Family
# of Buildings	7316	1543	5210	41
Bldg Value	$4,354,950,143	$358,969,562	$2,551,042,288	$250,851,376

Staff generated table from appraiser's data for all properties.

Table 5.02.02.09.2: Other Vulnerable Structures to Severe Storms

	Commercial	Government/ Institutional	Critical Facilities
# of Buildings	759	130	5
Bldg Value	$363,848,886	$40,606,229	$5,537,868

Staff generated table from appraiser's data for all properties.

Since severe storms includes tornadoes and water spouts, thunderstorms and lightning, and winter storms, the values listed in the tables above apply to all those hazards.

Section 5.02.02.11.01 Tornado and Waterspout

The City of Destin is vulnerable to tornadoes and waterspouts, and all structures within its jurisdiction are susceptible to the impacts of this hazard due to their unpredictable nature.

The areas within the City of Destin that are most vulnerable to tornado damage are those with a high density or large population (such as along the Gulf of America) because the damage rate increases as a function of population density. The types of structures most vulnerable to tornado damage within the City of Destin are poorly constructed housing, apartment complexes, and condominiums because of their size and densities. According to the Mapping for Emergency Management, Parallel Hazard Information System (MEMPHIS) study in 2005, nearly all of Okaloosa County, including the City of Destin, has a medium risk, 1 in 250 per year, of a tornado event occurring. Because waterspouts occur over water, the areas in the City of Destin most susceptible to damage from waterspouts are those located on the Gulf of America and Choctawhatchee Bay.

Waterspouts tend to not last very long, but their high winds can result in damage from flying debris. There are 382 structures along the City of Destin's coastline. The cumulative 'building value' of those structures is $407,000,370. The surrounding areas to the coastline are susceptible to damage from flying debris as well, but the specific impacts on those areas are unavailable due to the unavailability of relevant studies.

Section 5.02.02.11.02 Thunderstorms and Lightning

The City of Destin is vulnerable to thunderstorms and lightning, and all structures within its jurisdiction are susceptible to the damaging effects of wind, hail, and lightning associated with

severe thunderstorms. Thunderstorm damage can include traffic accidents on wet roads, flash-flooding, lightning damage to electronics and structures, lightning strikes on people, and wind and hail damage to structures. According to the Mapping for Emergency Management, Parallel Hazard Information System (MEMPHIS) study in 2005, all of Okaloosa County, including the City of Destin, has the threat of a thunderstorm or lightning event occurring, in terms of causing economic damage or loss of over $50 per year.

Section 5.02.02.11.03 Winter Storms

The City of Destin is vulnerable to winter storms, and all structures within its jurisdiction are susceptible to the effects of freezing temperatures. The City of Destin is vulnerable to snow, freezing rain, icing and glazing events but because these events are so rare, the City of Destin is unlikely to suffer serious damage from this hazard. The specific impacts of winter storms in the City of Destin are unavailable because there have been no studies conducted regarding these hazards' impacts in the County. Only general impacts of this hazard can be given, which provide an indication of what impacts are expected with winter storms. The homes in the City of Destin that are most vulnerable to winter storms are those with unprotected or under-protected water pipes and homes in which plumbing and insulation is inadequate. Unmitigated older structures and manufactured housing are also very vulnerable.

Section 5.02.02.12 Heat Wave and Drought

The City of Destin is vulnerable to heat waves and drought, and everyone living within the jurisdiction is susceptible to heat exhaustion. The specific impacts of heat waves and drought in the City of Destin are unavailable because there have been no studies conducted regarding these hazards' impacts in the County. In addition, the nature of these hazards tends to only affect the populations without adequate cooling systems in their homes, low income, elderly, children, and outside workers. Only general impacts of these hazards can be given, which provide an indication of what impacts are expected with heat waves and drought. Everyone living within the county is susceptible to heat exhaustion. All households are susceptible to power outages due to increased electricity demand during periods of extreme heat. Electrical system failures due to demand would only enhance problems for the entire population, especially for the vulnerable populations. All water bodies and municipal water supplies are susceptible to declining water levels and water shortages due to drought.

Section 5.02.02.13 Wildfire

Although the City of Destin is susceptible to wildfire, as previously mentioned in the City's Hazard Assessment, it appears that the future risk of wildfire is minimal. The areas and populations that are most vulnerable to the danger and destruction of wildfire are the ones with inadequate infrastructure, inaccessibility to critical facilities or firefighting resource locations, and located in the wildland-urban interface. The following tables depict the structures with 'medium (levels 4-6)' to 'high (levels 7-9)' wildfire level of concern. Levels 0-3 were determined to be of such minimal to low vulnerability to wildfire they were not included in this assessment.

Table 5.01.02.13.1: Medium to High Wildfire Level of Concern for Residential Structures

	Condominium	SFR-Townhouse	Single-Family	Multi-Family
Level 4	0	0	33	0
Bldg Value	$0	$0	$18,201,961	$0
Level 5	0	3	137	3
Bldg Value	$0	$566,376	$64,434,878	$2,720,970
Level 6	3	0	20	0
Bldg Value	$707,000	$0	$9,320,033	$0
Level 7	0	0	0	0
Bldg Value	$0	$0	$0	$0

Source: Staff generated table from overlaying the wildfire level of concern and property appraiser data

Table 5.02.02.13.2: Medium to High Wildfire Level of Concern for Other Structures

	Commercial	Government/ Institutional
Level 4	1	2
Bldg Value	$3,103,570	$22,836,441
Level 5	37	8
Bldg Value	$94,446,478	$72,880,325
Level 6	10	2
Bldg Value	$19,436,403	$3,754,884
Level 7	2	0
Bldg Value	$1,410,994	$0

Source: Staff generated table from overlaying the wildfire level of concern and property appraiser data

Section 5.02.02.14 Beach Erosion

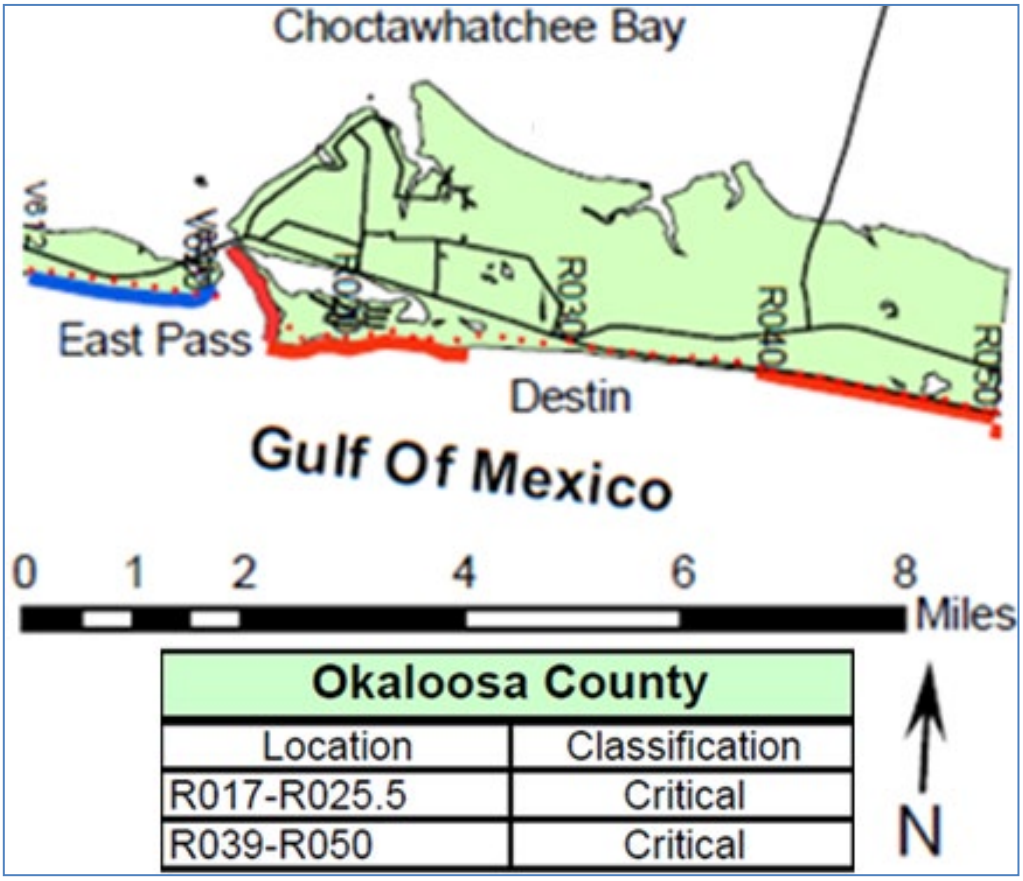
The areas of the City of Destin that are vulnerable to the effects of beach erosion are the properties that border the Choctawhatchee Bay and Gulf of America. As previously mentioned, within its jurisdiction, there are 6.7 miles of coastline along the Gulf of America as well as 10.6 miles of coastline that border Choctawhatchee Bay. The populations that reside, work, run businesses, or own property in these parcels are the most affected by beach erosion. Beach erosion undermines the integrity of infrastructure, beachfront homes and businesses, and other structures by washing away the sediments that support the structural foundation sometimes resulting in complete destruction. There are 382 structures along the City of Destin's coastline. The cumulative 'building value' of those structures is $407,000,370 (See Table 5.02.02.13.1, below). The areas where the beaches are already classified as "critically eroded" are more vulnerable and impacted more severely by beach erosion (See Figure 5.02.02.13.1, below).

Table 5.02.02.13.1: Total Structures Susceptible to Beach Erosion

	Condominium	SFR-Townhouse	Single-Family	Multi-Family	Commercial	Government/ Institutional
Total	56	106	200	7	10	3
Bldg Value	$25,052,988	$20,793,402	$272,517,829	$10,066,436	$40,344,164	$38,225,551

Source: Table was generated from Property Appraiser data based on the structures that were determined to be located along the coastal areas in Okaloosa County.

Figure 5.02.02.13.1: Critically Eroded Beaches in the City of Destin, 2020



Source: FDEP Bureau of Beaches and Coastal Systems

Section 5.02.02.15 Sea Level Rise

City of Destin

Sea level rise (SLR) poses a significant and increasing hazard to the City of Destin due to its low-lying coastal geography, extensive shoreline along the Gulf of America and Choctawhatchee Bay, and reliance on coastal infrastructure and tourism-based development. Sea level rise is driven primarily by the thermal expansion of ocean waters and the melting of land-based ice, with local impacts influenced by tidal conditions, storm surge, and topography.

As sea levels rise, the City faces increased risk from tidal flooding, storm surge flooding, and compound flooding events, as well as long-term impacts to infrastructure, transportation networks, natural systems, and developed properties .

The City of Destin completed a Comprehensive Vulnerability Assessment (VA) in March 2025 in compliance with Section 380.093, Florida Statutes, through funding provided by the Florida Department of Environmental Protection's Resilient Florida Program. The Destin VA evaluates the exposure and vulnerability of critical community assets to present-day and future flooding conditions associated with sea level rise and extreme weather events. The results of this assessment are incorporated herein by reference for purposes of evaluating sea level rise vulnerability specific to the City of Destin .

The Destin VA assessed sea level rise using projections from the NOAA 2017 Global and Regional Sea Level Rise Scenarios, with data derived from the Pensacola tide gauge, which provides a long-term regional record applicable to Destin. Both intermediate-low and intermediate-high scenarios were evaluated for the 2040 and 2070 planning horizons. Under these scenarios, projected sea level rise ranges from approximately 0.8 to 1.4 feet by 2040 and 1.3 to 3.2 feet by 2070, with recent observed trends suggesting conditions closer to the intermediate-high scenario over time .

To evaluate tidal flooding, the VA analyzed areas subject to Mean Higher High Water (MHHW) plus two feet, consistent with FDEP guidance. Results indicate that tidal flooding, while currently limited in duration, is projected to increase substantially in both frequency and extent. Under the 2070 intermediate-high sea level rise scenario, approximately 18 percent of the City's land area could be subject to regular tidal inundation, with some locations experiencing tidal flooding for a majority of the year. Areas surrounding Destin Harbor and Joe's Bayou are particularly vulnerable to increasing tidal flood exposure .

Sea level rise also amplifies storm surge and compound flooding risks. The VA evaluated the 1-percent annual chance flood event (100-year flood) under existing and future sea level rise conditions. Results show that between 27 percent and 37 percent of the City could be inundated during a coastal storm surge event, with the highest exposure occurring under the 2070 intermediate-high scenario. When storm surge coincides with extreme rainfall (compound flooding), up to 51 percent of the City's land area may be inundated, significantly increasing impacts to roadways, utilities, emergency facilities, and other critical assets .

Critical infrastructure assets identified as highly vulnerable to sea level rise and associated flooding include stormwater treatment facilities and pump stations, communications facilities, major roadways, and transportation corridors that serve evacuation and emergency response functions. Natural systems such as dunes, wetlands, and parks also experience increased exposure; while these features can provide beneficial flood storage and attenuation, continued

sea level rise may exceed their natural adaptive capacity without active management and restoration .

The findings of the Destin VA demonstrate that sea level rise is a long-term, escalating hazard that will increase both the frequency and severity of flooding impacts within the City. These results support the prioritization of adaptation and mitigation strategies that address tidal flooding, storm surge, and compound flooding, and they inform future land use decisions, infrastructure investments, and capital improvement planning to reduce vulnerability and enhance resilience over time.

Section 5.02.02.16 Other Hazards

As previously stated in the Risk Assessment, the following hazards, sinkholes, expansive soils, dam safety, earthquake, avalanche, land subsidence, volcano, and tsunami have been determined to be a minimal risk to the City of Destin. Therefore, the City's vulnerability to these hazards has not been assessed. If any of the hazards become a greater risk in the City of Destin, then the LMS Committee will update this section to reflect those changes.

Section 5.02.02.17 Summary

The vulnerability assessment section of this LMS document highlighted how vulnerable the City of Destin is to the identified hazards from the Risk Assessment. It discussed the vulnerable populations, repetitive loss properties, and structure and infrastructure damages associated with these hazards.

Section 5.02.03 Critical Facilities

The following is a list of all critical facilities found inside the City of Destin's city limits. It is to be noted that some critical facilities belong to and are maintained by other jurisdictions.

The Bay View Campground, listed below, is within the 1% chance Floodplain (Zone AE). The Bay View Campground is an existing legal non-conforming use located within the Low Density Residential-Village (LDR-V) zoning district. At the time Okaloosa County Emergency Management issues evacuation notices for Destin, the Bay View Campground must be completely evacuated though it is not located in the Coastal High Hazard Area.

Policies for the redevelopment, construction and reconstruction of such facilities are provided under the Post Disaster Redevelopment Plan, which is included as Section 5.02.06 of this LMS. Also, as this use is legal non-conforming any redevelopment of the property shall comply with all applicable goals, policies, and objectives of the City's Comprehensive Plan and land development regulations in place at that time.

Section 5.02.03.01 Fire Stations

Site Name	Address	X-COORD	Y-COORD
DESTIN FD #10 (CRYSTAL BEACH	1001 AIRPORT RD DESTIN FL 32541	1347251.96	513211.47
DESTIN FD #9 (MAIN)	848 AIRPORT RD DESTIN FL 32541	1344030.49	513269.62
DESTIN FD #19 (BAY)	127 CALHOUN AVE DESTIN FL 32541	1334307.72	514621.27

Section 5.02.03.02 Government Centers

Site Name	Address	X-COORD	Y-COORD
DESTIN CITY HALL	4200 INDIAN BAYOU TRAIL DESTIN FL 32541	1351098.91	510433.24
DESTIN CITY ANNEX	4100 INDIAN BAYOU TRAIL DESTIN FL 32541	1350729.68	510934.02

Section 5.01.03.03 Hospitals & Urgent Cares

Site Name	Address	X-COORD	Y-COORD
ASCENSION SACRED HEART OF DESTIN	36500 EMERALD COAST PKWY DESTIN FL 32541	1370091.69	508264.27
WHITE-WILSON MEDICAL CENTERWALK-IN	990 AIRPORT RD DESTIN FL 32541	1346384.71	512866.45

Section 5.02.03.04 Adult Congregate Living Facilities

Site Name	Address	X-COORD	Y-COORD
DESTINATION HEALTHCARE AND REHAB CENTER	195 MATTIE M KELLY BLVD DESTIN FL 32541	1347288.93	511773.60

Section 5.02.03.05 Public Works Facilities

Site Name	Address	X-COORD	Y-COORD
DESTIN WWTP	18 INDUSTRIAL PARK LN DESTIN FL 32541	1344458.26	512361.11
CITY OF DESTIN PUBLIC WORKS	3949 COMMONS DR DESTIN FL 32541	1350082.83	510865.01

Section 5.02.03.06 Rapid Impact Assessment Team Reference Points

Site Name	Address	X-COORD	Y-COORD
CRYSTAL BEACH (JAMES LEE PARK)	3310 SCENIC HWY 98 DESTIN FL 32541	1366519.77	507185.50
DESTIN AIRPORT	1001 AIRPORT RD DESTIN FL 32541	1347557.51	513580.32
DESTIN ELEM SCHOOL	630 KELLY ST DESTIN FL 32541	1340781.28	515335.47

Section 5.02.03.07 Helicopter Landing Zones and Possible Staging Areas

Site Name	Address	X-COORD	Y-COORD
CRYSTAL BEACH MEDICAL PLAZA	36500 EMERALD COAST PKWY DESTIN FL 32541	1370002.53	508393.95
HENDERSON BEACH STATE RECREATION	17000 EMERALD COAST PKWY DESTIN FL 32541	1354682.14	509413.16
DESTINATION HEALTHCARE AND REHAB CENTER (HELIPAD ONLY)	195 MATTIE M KELLY BLVD DESTIN FL 32541	1347288.92	511773.59
TIMBERVIEW DESTIN HELICOPTERS (HELIPAD ONLY), not within City limits	34859 EMERALD COAST PKWY DESTIN FL 32541	1358954.10	510027.88

Section 5.02.03.08 Disaster Recovery Centers/Comfort Stations/Field Clinics

Site Name	Address	X-COORD	Y-COORD
DESTIN COMMUNITY CENTER	101 STAHLMAN AVE DESTIN FL 32541	1334877.09	513442.11
DESTIN PUBLIC LIBRARY	150 SIBERT AVE DESTIN FL 32541	1335507.12	514289.74

Section 5.02.03.09 Mobile Home Parks and RV Campgrounds

Site Name	Address	X-COORD	Y-COORD
BAY VIEW CAMPING	749 BEACH DR LOT 12 DESTIN FL 32541	1340565.75	518068.63
CEDAR CREST MOBILE HOME PARK	230 SIBERT AVE DESTIN FL 32541	1336375.16	515099.24
DUTYS TRAILER PARK	315 SIBERT AVE LOT 9 DESTIN FL 32541	1336529.50	515798.42

(All such sites are considered to be in a hurricane evacuation area due to their poor wind resistance. Damage Assessment Teams should attempt to visit these areas since damage is likely to be high in a major hurricane)

Section 5.02.04 Mitigation Actions

The following are a list of mitigation actions performed by the City of Destin through its Comprehensive Plan, Land Development Regulations, and other relevant codes and policies to mitigate each specific hazard. Also listed are the status of each action and which department is responsible for implementing the action.

Section 5.02.04.01 Hurricanes and Tropical Storms

1. Support efforts to shutter critical facilities. (Responsible Party: Public Works)
2. Ensure the public is informed of pending conditions. (Responsible party: Public Works and Public Information Officer)
3. Enforce Florida Building Codes for new structures. (Responsible Party: Community Development)
4. Ensure communications are wind and electrical failure resistant to allow for 24/7 communications during the first 72 hours following a disaster. (Responsible party: Public Works)
5. Ensure adequate and safe public risk shelters are available in all locations in Okaloosa County to prevent homelessness, including adequate dining facilities and to maintain sanitary conditions. (Responsible party: Okaloosa County Public Safety, non-profits)
6. Promote and support funding that allows for buildings to remain functional before, during and after a hurricane or tropical storm event in order to support the function of Okaloosa County Emergency Management's mandates. (Responsible Party: Public Works)
7. Promote public awareness of hurricane and tropical storm hazards. (Responsible party: Public Works and Public Information Officer)
8. Promote ways that private structure owners and landowners can mitigate using governmental or private sector investment. (Responsible party: Public Works)
9. Ensure communications systems are functional during and following hurricanes/tropical storms. Also, to include the ability to erect temporary repeaters to restore communications. (Responsible party: Public Works)
10. Ensure internet systems are redundant to ensure continued availability of disaster management software throughout the county. (Responsible party: Public Works and Information Technology)
11. Support activities that educate the public about the dangers of hurricanes/tropical storms. Such activities should be coordinated with the Okaloosa County Public Safety Department, Emergency Management Office. (Responsible party: Public Works and Public Information Officer)
12. City of Destin Comprehensive Plan: Policy 5-1.4.12: Development in Beach/Dune Area. Notwithstanding the land use categories and Policies of the Plan, no development or development activity of any kind, except for dune walkovers, shall be allowed within any area 50 feet landward from the mean high-water line along the Gulf of America. Density

may be transferred from this 50-foot protection area, as well as from other natural resources areas (dunes and wetlands) on a one-to-one basis to the buildable portion of the site. (Responsible party: Community Development)

13. City of Destin Comprehensive Plan: Policy 6-1.6.3: Implementing General Hazard Mitigation. The LDC shall restrict the density/intensity of development within the high hazard area as denoted on the Future Land Use Map Series. Furthermore, the state and local coastal construction control lines shall be enforced. Performance criteria shall stipulate the need to reduce exposure of human life and property to natural hazards. (Responsible party: Community Development)
14. City of Destin Comprehensive Plan: Policy 6-1.6.4: Hazard Mitigation and Redevelopment. In the event that Destin faces a major disaster or is included in a Presidential Disaster Declaration, the City shall implement the adopted Post Disaster Redevelopment Plan and the interagency hazard mitigation report when adopting a redevelopment plan for the affected areas. Interagency hazard mitigation report shall mean the recommendations of a team of federal, state, regional, or local officials addressing measures that reduce the potential for future flood losses and which is prepared in response to a major disaster or a Presidential Disaster Declaration. The City will amend its local mitigation plan or implement a new program in order to reduce risks of natural disaster and ensure compliance with Federal, State, or regional regulations, imposed on the receipt of Federal monies under the Robert T. Stafford Disaster Assistance and Relief Act, Public Law 93-388. (Responsible party: Community Development)
15. City of Destin Comprehensive Plan: Policy 6-1.6.5: Coastal Population Densities and Hurricane Evacuation. The City of Destin shall amend the LDC to include administrative procedures ensuring that any development order approved by the City complies with the Okaloosa County Hurricane Evacuation Plan and applicable regional or state hurricane evacuation plans. (Responsible party: Community Development)
16. City of Destin Comprehensive Plan: Policy 6-1.6.6: Hurricane Evacuation and Roadway Improvements. The City shall promote, to the extent possible, improvements to the critical roadway segments identified in the Statewide Regional Evacuation Study for northwest Florida. Promotion of roadway improvements shall be accomplished through the City's participation with the Okaloosa-Walton Transportation Planning Organization (OWTPO) and the Florida Department of Transportation (FDOT). (Responsible party: Public Works, Community Development)
17. City of Destin Comprehensive Plan: Policy 6-1.7.1: Existing Infrastructure in the Coastal High Hazard Area (CHHA). The City maintains a list of critical facilities under its NIFP and Community Rating System (CRS) programs. Infrastructure is defined as roads, bridges, sanitary sewer facilities, and potable water facilities. The list of critical facilities includes schools, public safety buildings, municipal buildings, and healthcare facilities. The City shall give priority for relocating, mitigating, or replacing infrastructure facilities to the facilities located in the high velocity storm surge areas. (Responsible party: Public Works, Destin Water Users, Okaloosa Gas)

18. City of Destin Comprehensive Plan: Policy 6-1.7.2: Future Infrastructure in the CHHA. The City shall continue to allow infrastructure facilities to be constructed within the CHHA provided that the facilities are necessary to serve the existing and future population and are constructed in a manner that minimizes the impacts from storm events. (Responsible party: Public Works, Community Development)
19. City of Destin Comprehensive Plan: Policy 6-1.8.1: Restrict Development in CHHA. The City shall continue to allow development within the CHHA; however, the City shall direct population concentrations, including non-residential development, away from these areas. Residential development and redevelopment in the CHHA shall not exceed the residential densities shown on the Future Land Use Map (FLUM) for that property. (Responsible party: Community Development)
20. City of Destin Comprehensive Plan: Policy 6-1.8.2: Residential Structures within the CHHA. Within the CHHA, the City shall allow no new permanent residential structures, which do not meet the construction standards required by the FDEP if the construction is seaward of the CCCL or by the FEMA construction standards if located within applicable flood zones. (Responsible party: Community Development)
21. City of Destin Comprehensive Plan: Policy 6-1.9.1: Emergency Management. The Division of Emergency Management will be responsible for preparing regional hurricane evacuation plans. In the event of a natural disaster, the City shall respond to the instruction and guidance of the Okaloosa County Emergency Management office. The City shall also periodically review the hurricane evacuation plan and will update and revise such plans based upon data from the Statewide Regional Evacuation Study for Northwest Florida. (Responsible party: Public Works)
22. City of Destin Comprehensive Plan: Policy 6-1.9.2: Hurricane Evacuation Logistical Support. To prevent congestion on roads and overcrowding at evacuation centers, the City shall coordinate with Okaloosa County in disseminating information concerning the need for residents to evacuate at various hurricane threat levels. (Responsible party: Okaloosa County, Public Works, City Public Information Officer)
23. City of Destin Comprehensive Plan: Policy 6-1.9.3: Future Coordination with Okaloosa County in Emergency Preparedness. The City shall coordinate with Okaloosa County by annually updating the County's Comprehensive Emergency Management Plan. The City shall coordinate with the Okaloosa County in updating hurricane evacuation center assignments as well as other policy formulation surrounding land use and emergency preparedness. (Responsible party: Public Works)
24. City of Destin Comprehensive Plan: Policy 6-1.9.4: Designated Hurricane Evacuation Routes. The City designates Harbor Boulevard/Emerald Coast Parkway and Mid-Bay Bridge as the primary evacuation routes out of Destin as part of its Hurricane Evacuation Plan. (Responsible party: Public Works)
25. City of Destin Comprehensive Plan: Policy 6-1.9.5: Re-Entry Following a Hurricane Evacuation. The City shall coordinate with Walton County and Okaloosa County Emergency Management Services to coordinate efficient and safe re-entry into the City

following a mandatory evacuation. (Responsible party: Walton and Okaloosa Sheriff's Dept., Public Works, Community Development)

26. City of Destin Comprehensive Plan: Policy 6-1.9.6: Improve Hurricane Evacuation Time. The City shall continue to support programs that reduce evacuation time through improved warning and evacuation notification systems. To improve hurricane evacuation time, the City has almost completed the construction of an alternative east/west roadway parallel to and north of Harbor Boulevard/Emerald Coast Parkway. The City shall incorporate this new roadway into its hurricane evacuation plans as an alternative route to Harbor Boulevard/Emerald Coast Parkway in the event an accident, traffic congestion, or flooding limits or prevents use of the highway along any portion from Danny Wuerffel Way to Calhoun Avenue. The City shall also coordinate with FDOT regarding available funding to support construction of an alternative east-west evacuation route for Harbor Boulevard/Emerald Coast Parkway. (Responsible party: Public Works, Okaloosa-Walton Transportation Planning Organization (TPO))
27. City of Destin Comprehensive Plan: Policy 6-1.9.7: Improve Hurricane Evacuation Clearance Times. The City shall perform a hurricane clearance time analysis as part of the City's transportation concurrency review using pre-impact and best practices outlined in the National Hurricane Program. (Responsible party: Public Works, TPO)
28. City of Destin Comprehensive Plan: Policy 6-1-9.8: Hurricane Evacuation Carrying Capacity Study. Continue to monitor and evaluate the carrying capacity of all evacuation routes within the City. Based on the findings of the carrying capacity study, the City shall identify transportation improvement needs, hurricane preparedness actions, or land use controls to assure timely evacuation of the entire City prior to hurricane landfall. (Responsible party: Community Development)
29. City of Destin Comprehensive Plan: Policy 6-1.6.1: CHHA Defined. As defined in § 163.3178(2)(h) FS Coastal Management, the Coastal High-Hazard Area (CHHA) is the area below the elevation of the Category 1 storm surge line as established by a Sea, Lake, and Overland Surges from Hurricanes (SLOSH) computerized storm surge model. (Responsible party: Public Works, Community Development)
30. City of Destin Comprehensive Plan: Policy 6-1.6.2: Hazard Mitigation Management**.** The City shall continue to participate in Okaloosa County's technical coordinating committee in preparing the hazard mitigation component of the Comprehensive Emergency Management Plan. Updates of the Plan shall identify specific actions that may be implemented to reduce exposure to natural hazards. In addition, the City shall enforce more restrictive land use controls within the CHHA than in areas outside of the CHHA, including but not limited to:
    A. Not allowing increases in maximum density as identified in the Future Land Use Map.
    B. Performance criteria within the LDC shall mandate that all development and redevelopment within the CHHA comply with the following regulatory techniques for hazard mitigation:

1. State and local regulations establish CCCL, as well as applicable state and local construction codes regulating construction activity in coastal areas.
2. Surface water management improvements that mitigate against loss of flood plain and comply with adopted surface water management level of service standards for drainage cited in the Public Facilities Element.
3. Publicly funded infrastructure shall not be built within the CHHA unless the facility is for the protection of public health and safety, creation of open space, implementation of beach restoration or shoreline erosion protection programs.
4. Land use controls ensure that wetlands are preserved and protected from the adverse impacts of development.
5. Dune and beach system restoration including ongoing maintenance of coastal vegetation.

(Responsible Party: Public Works and Community Development)

C. A multi-agency site plan review process shall be initiated to ensure that all proposed development or redevelopment having adverse impacts on water quality, wetlands, shoreline stabilization, natural habitats, fish or wildlife, hurricane evacuation, or other coastal resources, shall be coordinated with county, state, federal, or regional agencies having jurisdiction. A primary function of this review process shall be to effectively reconcile hazard mitigation issues prior to issuance of any development orders. (Responsible party: Community Development)

Section 5.02.04.02 Storm Surge

1. Promote public awareness of storm surge. (Responsible Party: Public Works and Public Information Officer)
2. Ensure the public is informed of pending conditions. (Responsible Party: Public Works and Public Information Officer)
3. Ensure that maps accurately reflect the amount of storm surge, wave and flood action that can occur during hurricanes and tropical storms. (Responsible Party: Public Works, City Community Development)
4. Provide opportunities for property owners to elevate existing structures, move them to higher ground, or to have properties purchased by local governments in order to reduce overall community vulnerability to storm surge. (Responsible Party: Public Works)
5. Promote the continued purchase of lands that are at high risk of storm surge, with proper considerations of private property rights and constitutional requirements for just compensation, as appropriate. (Responsible Party: Public Works)
6. Ensure roads are designed and engineered for storm surge that can be expected. (Responsible Party: Community Development and Engineering Departments)

7. Support activities that educate the public about the dangers of storm surge. Such activities should be coordinated with the Okaloosa County Public Safety Department, Emergency Management Office. (Responsible Party: Public Works and Public Information Officer)
8. City of Destin Comprehensive Plan: Policy 6-1.1.10: Protection of Norriego Point. The City shall continue its efforts to preserve and protect Norriego Point, a peninsula separating Destin Harbor from East Pass. All or appropriate portions of Norriego Point under public ownership shall be preserved as a bird rookery. Efforts will include cooperation by the City with the FDEP and U.S. Army Corps of Engineers. The City will continue to monitor the condition of the point and notify both agencies whenever erosion or other activities threaten the Point. The City shall continue to request that spoils materials from dredging East Pass be used to renourish and replenish Norriego Point. (Responsible party: Community Development, Public Works, FDEP)
9. City of Destin Comprehensive Plan: Policy 3-1.3.7: Provide Appropriate Locations for Manufactured Housing. Mobile homes shall be prohibited within storm-surge areas of the City and within FEMA 1%-chance flood areas. Manufactured housing, which does not meet the Federal Highway Administration (FHWA) definition of mobile home, shall be constructed consistently with the Florida Building Code, and where applicable within the City, FEMA construction standards. (Responsible party: Community Development)
    a. From Destin Comprehensive Plan - Manufactured Housing: A factory-built, single-family structure, which is manufactured or constructed under authority of 42 U.S.C. Sec. 5403, Federal Manufactured Home Construction and Safety Standards, and is to be used as a place for human habitation, but which is not constructed with a permanent hitch or other device allowing it to be moved other than for the purpose of moving to a permanent site and which does not have permanently attached to its body or frame any wheels or axles. A mobile home is not a manufactured home unless it has been converted to real property and is taxed as a site-built dwelling. For the purpose of this title, a manufactured home shall be considered the same as any site-built, single-family detached dwelling.
    b. From Destin Comprehensive Plan - Mobile Home: A structure meeting the definition in § 320.01, FS. The entire home is manufactured off-site, has its own flooring system, and is installed on-site without a separate slab. It is licensed and inspected by the Department of Transportation.

Section 5.02.04.03 Flooding

1. Ensure all future buildings are constructed to the Florida Building Code. For NFIP Compliance. (Responsible Party: Community Development)
2. Ensure all future buildings are built with a minimum finished floor height of 1’ or 2’ above (zoning dependent) the established Base Flood Elevation on the Flood Insurance Rate Maps for those buildings located within the AE Flood Zones. For NFIP Compliance (Responsible Party: Community Development)

3. Ensure all future buildings built within the V Flood Zones meet the minimum 2' freeboard requirement. For NFIP Compliance (Responsible Party: Community Development)
4. Ensure all future buildings are built with a minimum finished floor height of 5' above the highest adjacent grade for those buildings located within approximate A Flood Zones. **NOTE:** the City of Destin has only four areas identified as Approximate A zones, none of which are buildable. For NFIP Compliance City Department of Community Development)
5. Ensure all future buildings are built with a minimum finished floor height of 1' above the crown of the road, except where topography will provide adequate drainage as certified by a professional engineer registered in the State of Florida (LDC 10.03.02.A.5). For NFIP Compliance (Responsible Party: Community Development)
6. Ensure roads are designed and engineered for the amount of flooding that can be expected. For NFIP Compliance (Responsible Party: Community Development and Engineering)
7. Ensure that all flooding sources are documented and that the public are aware of the existence of such mapping services and products for planning purposes. For NFIP Compliance (Responsible Party: Public Works and Public Information Officer)
8. Promote the continued purchase of lands that are at high risk of flooding, with proper considerations of private property rights and constitutional requirements for just compensation, as appropriate. For NFIP Compliance (Responsible Party: Public Works)
9. Provide opportunities for property owners to elevate existing structures, move them to higher ground, or to have properties purchased by local governments in order to reduce overall community vulnerability to flooding. For NFIP Compliance (Responsible Party: Public Works)
10. Ensure that all public buildings that serve first response and critical emergency/public needs, including recording/data collection and communication centers/infrastructure, are located outside of flood zones or flood prone areas. For NFIP Compliance (Responsible Party: Community Development)
11. Ensure communications systems are functional during and following flood events. For NFIP Compliance (Responsible Party: Public Works)
12. Maintain status as a NFIP and CRS community by enforcing both the NFIP requirements and additional criteria that exceeds the NFIP for CRS compliance as a class 6 community.
13. Support efforts of the Institute of Food and Agricultural Services (IFAS/County Cooperative Extension Service) and the Natural Resources Conservation Services (NRCS) as it relates to reduction and mitigation of flood hazards to crops and silvicultural operations. (Responsible Party: Public Works and Community Development)
14. Support activities that educate the public about the dangers of flooding. Such activities should be coordinated with the Okaloosa County Public Safety Department, Emergency Management Office. For NFIP Compliance (Responsible Party: Public Works and Public Information Officer)
15. Ensure the public is informed of pending conditions. For NFIP Compliance (Responsible Party: Public Works and Public Information Officer)

16. City of Destin Comprehensive Plan: Policy 9-1.5.3: Resolving Concurrency Issues. In order to implement Objective 9-1.5, the City shall require that all developers obtaining a development order, building permit, zoning permit, subdivision approval, rezoning, special use permit, variance, site plan approval, or any other official City action having the effect of permitting a development of land shall, at the time the subject application is filed, submit narrative and graphic information which demonstrates that all services needed by the proposed development as listed in Policy 9-1.3.5 will be provided concurrent with the new development. (Responsible party: Community Development)
17. City of Destin Comprehensive Plan: Policy 9-1.5.4: Establish an Orderly Review Process: To establish an orderly review process, the City shall include in the adopted LDC specific narrative and/or graphic data and information required at the time an application for comprehensive plan amendment or LDC amendment, subdivision or replat, site plan, or building permit is filed with the City. As a minimum, the information shall include, but may not be limited to, the following: Conceptual plan for accommodating stormwater runoff and demonstrated evidence that the proposed drainage improvements shall accommodate stormwater runoff without adversely impacting natural systems or the City's adopted level of service for storm drainage. (Responsible party: Community Development) For NFIP Compliance
18. City of Destin Comprehensive Plan: Policy 3-1.3.7: Provide Appropriate Locations for Manufactured Housing. Mobile homes shall be prohibited within storm-surge areas of the City and within FEMA 1%-chance flood areas. Manufactured housing, which does not meet the Federal Highway Administration (FHWA) definition of mobile home, shall be constructed consistent with the Florida Building Code, and where applicable within the City, FEMA construction standards. (Responsible party: Community Development)
    a. From Destin Comprehensive Plan - Manufactured Housing: A factory-built, single-family structure, which is manufactured or constructed under authority of 42 U.S.C. Sec. 5403, Federal Manufactured Home Construction and Safety Standards, and is to be used as a place for human habitation, but which is not constructed with a permanent hitch or other device allowing it to be moved other than for the purpose of moving to a permanent site and which does not have permanently attached to its body or frame any wheels or axles. A mobile home is not a manufactured home unless it has been converted to real property and is taxed as a site-built dwelling. For the purpose of this title, a manufactured home shall be considered the same as any site-built, single-family detached dwelling.
    b. From Destin Comprehensive Plan - Mobile Home: A structure meeting the definition in § 320.01, FS. The entire home is manufactured off-site, has its own flooring system, and is installed on-site without a separate slab. It is licensed and inspected by the Department of Transportation.

Section 5.04.04.04 Dam Safety

1. Support efforts that document hazards and risks associated with structural and earthen dams and upkeep. (Responsible party: NWFLWMD)
2. Support efforts that create partnerships with property owners that promote the overall goal of communitywide and stream valley safety. (Responsible party: NWFLWMD)
3. City of Destin Comprehensive Plan: Policy 4-4.2.2: Inspect Facilities. The City shall continue its periodic inspection program of stormwater control and treatment structures to ensure proper functioning and continue to enforce the maintenance and operation of such structures previously permitted by the City. (Responsible party: Public Works)
4. City of Destin Comprehensive Plan**:** Policy 4-4.2.3: Maintain Facilities Per LOS Standards. The City shall continue its practice of correcting localized drainage problems so that LOS standards are maintained including street sweeping as appropriate. (Responsible party: Public Works)
5. City of Destin Comprehensive Plan: Policy 4-5.1. 4: Roadway Drainage Facilities. The City shall require the use of swale drainage on roadways (existing or new) to the maximum extent possible. Perforated pipe shall be used in situations where piping is necessary. The swales shall be designed to be dry within 72 hours following a 25-year/24-hour storm event and shall provide retention of the first inch of runoff and comply with Ch. 62-330 F.A.C. (Responsible party: Public Works)

Section 5.02.04.05 Land Erosion

1. Support efforts that allow public and private sector entities to gain control of problem erosion locations, gullies and rills that reduce unnatural sedimentation accumulation and cutting into natural hillsides and land, and to control coastal erosion where seawalls are necessary. (Responsible Party: Community Development)
2. Support efforts that help to eliminate or reduce coastal erosion due to boat/ship wake issues, while weighing the interests of the boating public. (Responsible party: Coast Guard)
3. City of Destin Comprehensive Plan: Policy 5-1.10.3: Construction Activities Consistent with Soil Types: Land uses and construction techniques shall be compatible with soil conditions specific to the site. Boring and soils test shall be conducted to demonstrate that suspect soils are suitable to accommodate proposed land uses and construction. Any modification to soils must comply with the City's White Sand Protection policies and ordinances. (Responsible party: Community Development, FDEP)

Section 5.02.04.06 Severe Storms

1. Ensure the public is informed of pending conditions. (Responsible party: Public Works and Public Information Officer)

2. Ensure communications systems are functional during and following severe storms. (Responsible party: Public Works)
3. Ensure internet systems are redundant to ensure continued availability of disaster management software throughout the county. (Responsible party: Public Works and Information Technology)
4. Support activities that educate the public about the dangers of severe storms. Such activities should be coordinated with the Okaloosa County Public Safety Department, Emergency Management Office. (Responsible party: Public Works and Public Information Officer)

Section 5.02.04.06.01 Tornado and Waterspout

1. Ensure communications systems are functional during and following tornadoes and waterspouts. (Responsible party: Public Works)
2. Support activities that educate the public about the dangers of tornadoes and waterspouts. Such activities should be coordinated with the Okaloosa County Public Safety Department, Emergency Management Office. (Responsible party: Public Works and Public Information Officer)
3. Ensure the public is informed of pending conditions. (Responsible party: Public Works and Public Information Officer)
4. Ensure internet systems are redundant to ensure continued availability of disaster management software throughout the county. (Responsible party: Public Works and Information Technology)

Section 5.02.04.06.02 Thunderstorms and Lightning

1. Ensure communications systems are functional during and following thunderstorms and lightning. (Responsible party: Public Works)
2. Support activities that educate the public about the dangers of thunderstorms and lightning. Such activities should be coordinated with the Okaloosa County Public Safety Department, Emergency Management Office. (Responsible party: Public Works and Public Information Officer)
3. Ensure the public is informed of pending conditions. (Responsible party: Public Works and Public Information Officer)
4. Ensure internet systems are redundant to ensure continued availability of disaster management software throughout the county. (Responsible party: Public Works and Information Technology)

Section 5.02.04.06.03 Winter Storms

1. Ensure communications systems are functional during and following winter storms. (Responsible Party: Public Works)
2. Support activities that educate the public about the dangers of winter storms. Such activities should be coordinated with the Okaloosa County Public Safety Department, Emergency Management Office. (Responsible Party: Public Works and Public Information Officer)
3. Reduce or eliminate the vulnerability to freezing or provide secondary heating or electrical systems for public facilities. (Responsible Party: Public Works)
4. Ensure the public is informed of pending conditions. (Responsible Party: Public Works)

Section 5.02.04.07 Heat Wave and Drought

1. Ensure communications systems are functional during and following heat waves and droughts. (Responsible Party: Public Works)
2. Support activities that educate the public about the dangers of heat waves and droughts. Such activities should be coordinated with the Okaloosa County Public Safety Department, Emergency Management Office. (Responsible Party: Public Works and Public Information Officer)
3. Ensure the public is informed of pending conditions. (Responsible Party: Public Works and Public Information Officer)
4. City of Destin Comprehensive Plan: Policy 5-1.2.1: Monitor Potable Water Supply: The City shall maintain on-going communication with Destin Water Users (DWU) and South Walton Utilities (SWU) regarding the availability of water capacity and water quality within the DWU and SWU systems to serve existing development and future connections within the City. (Responsible party: Community Development)
5. City of Destin Comprehensive Plan: Policy 5-1.2.2: Protect Wellfield Areas: The City shall ensure the protection of potable water supply wells near DWU well fields by restricting uses within a 300-foot radius surrounding each well field to those that do not handle hazardous materials of any type or have the potential to harm the water supply in accordance with Chapters 62-521 and 62-555, F.A.C. The area enclosed within a 300-foot foot distance surrounding each DWU well is designated as a well field protection area. (Responsible party: Community Development)
6. City of Destin Comprehensive Plan: Policy 5-1.2.3: Water Resource Caution Area and Water Conservation: Destin is located within a designated Water Resource Caution Area. The City shall support efforts by the NWFWMD, DWU, and SWU to identify alternative drinking water sources other than the Floridian Aquifer. The City shall also extend cooperation with the water utility companies regarding extension of water transmission mains to inland wellfields. (Responsible party: Destin Water Users)

7. City of Destin Comprehensive Plan: Policy 5-1.2.4: Intergovernmental Coordination for Water Conservation: The City shall cooperate with local, regional, state and federal agencies for the management of freshwater resources to maintain adequate fresh water supplies during dry periods and to conserve water where practicable. (Responsible party: Community Development, Destin Water Users)
8. City of Destin Comprehensive Plan: Policy 5-1.2.5: Emergency Water Conservation. The City shall cooperate with DWU and Northwest Florida Water Management District to conserve water resources. (Responsible party: Community Development)
9. City of Destin Comprehensive Plan: Policy 5-1.2.6: Low-Water Tolerant Landscaping. The Land Development Code (LDC) will continue to contain standards to require new development and redevelopment to use low-water tolerant plant and tree species to fulfill a minimum portion of required landscaping materials to promote regional goals to conserve groundwater. (See also Policy 3-1.13.7, Xeriscaping in new private development.) (Responsible party: Community Development)
10. City of Destin Comprehensive Plan: Policy 5-1.2.7: Extension of Gray Water/Re-Use Lines. Within two years of Plan adoption, the City shall coordinate with DWU to encourage the extension of gray water systems and re-use lines to those developed areas of Destin currently not served by such system. If such coordination efforts reveal that extension of reuse lines is not financially feasible for DWU, the City shall investigate potential grant funds administered by state or federal agencies that may be available to assist with the extension of such systems. (Responsible party: Community Development, Destin Water Users)

Section 5.02.04.08 Wildfire

1. Ensure communications systems are functional during and following wildfire events. (Responsible Party: Public Works)
2. Ensure the public is informed of pending conditions. (Responsible Party: Public Works and Public Information Officer)
3. Support activities that educate the public about the dangers of wildfire. Such activities should be coordinated with the Okaloosa County Public Safety Department, Emergency Management Office or the local fire department or the Florida Forest Service. (Responsible Party: Public Works and Public Information Officer)
4. Require new subdivisions plats and new commercial structures to be designed and built to National Fire Codes. (Responsible Party: Community Development)
5. Support public and private mitigation efforts to provide fire hydrants to locations at risk along the urban/rural interface where water systems exist to provide such services. (Responsible Party: Destin Water Users and Destin Fire Control District)
6. City of Destin Comprehensive Plan: Policy 3-1.5.3: Maintain Active Code Enforcement. The City shall maintain an active code enforcement program to identify housing accommodations and non-residential structures that fail to comply with the minimum

specification governing building construction, electrical facilities, water and wastewater systems, construction, fire protection, flood prevention, and housing. Where structures fail to meet minimum standard specifications, the City shall duly notice the violation and stipulate conditions for bringing the structure into compliance. (Responsible Party: Community Development)

Section 5.02.04.09 Beach Erosion

1. Ensure compliance with the Florida Department of Environmental Protection (FDEP) Coastal Construction Control Line (CCCL) regulations that require location of construction a sufficient distance landward of the beach to permit natural shoreline fluctuations and to preserve dune stability. Construction may occur to the extent that the natural storm buffering and protection capability of the dunes is not diminished. (Responsible Party: Community Development)
2. The City of Destin will encourage activities that protect and rebuild coastal dunes. This will be accomplished by continuing, or supporting the continuation of, activities by private and public agencies for dune restoration purposes, installation of sand fences on public and private properties, and enforcing restrictions regarding the destruction of sea oats and requiring the planting of sea oats by new development in coastal areas. All activities will be coordinated with the Guiding Principles of the Local Mitigation Strategy. (Responsible Party: Public Works)
3. Cooperate with the U.S. Army Corps of Engineers and the Florida Department of Environmental Protection to re-nourish public beaches using white sand made available by maintenance dredging of Choctawhatchee Bay, Santa Rosa Sound, or other water bodies within or near Destin. (Responsible Party: Public Works)
4. With respect to acquisition, the City of Destin, where feasible, shall protect environmentally sensitive coastal areas unduly threatened by development, through acquisition, establishment of public or private conservation easements, purchase of development rights, or through other available means as deemed appropriate. (Responsible Party: Public Works and Community Development)
5. The City of Destin will encourage existing development and require new development to plant or replant native vegetation where appropriate, including seagrass beds and other types of shoreline, aquatic and upland vegetation. (Responsible Party: Public Works and Community Development)
6. Coordinate with the following existing resource protection plans: Choctawhatchee River and Bay Surface Water Improvement and Management Plan (SWIM), Pensacola Bay SWIM Plan, FDEP Ecosystem Management Plan, West Florida Strategic Regional Policy Plan, Rocky Bayou Aquatic Preserve Management Plan, and the Northwest Florida Resource Management Plan, and the Local Mitigation Strategy. (Responsible Party: Public Works)

7. Shoreline armoring should be discouraged in favor of alternative methods of enhancing shoreline stability that minimize erosion and allow for the growth of emergent shoreline grasses. (Responsible Party: Community Development and Engineering)
8. New structures, other than dune walkovers, and structures needed to accommodate conservation and passive recreation uses, are prohibited within the portion of the Coastal High Hazard Area lying within the FEMA V Zone, unless all Department of Environmental Protection Coastal Construction Control Standards and FEMA Special Hazard Area Minimum Construction Requirements are met. (Responsible Party: Community Development)
9. Enforce rigorous development standards consistent with the City's NFIP and the CRS program for flood hazard reduction including: location of buildings landward of the reach of the mean high tide; requirement to elevate structures one (1) foot above base flood elevation as specified on FEMA maps; anchoring standards to resist flotation, collapse, and lateral movement; prohibiting fill used as structural support in V zones, and; prohibiting alteration of sand dunes which would increase potential flood damage. (Responsible Party: Community Development)
10. Public funds shall be expended in the coastal high hazard area only for development that: complies with land use densities/intensities adopted in the comprehensive plan; produces no adverse effects to the surrounding land uses or the environment without approved mitigation plans, and/or; furthers opening up the waterfront to public access. (Responsible Party: Community Development)
11. Shoreline development must comply with performance standards that address lot coverage, vegetated buffers, stormwater management, and erosion and sedimentation controls. (Responsible Party: Community Development)
12. City of Destin Comprehensive Plan: Policy 5-1.10.1: White Sand Protection Zone. White sand is a designated natural resource within the City that shall be protected for the purpose of preserving the unique and aesthetic environmental attributes it contributes to the Emerald Coast's renowned coastal beauty, and for its economic attributes to the local tourism economy. Where indigenous white sand is the predominant surface soil, construction activities and fill material used for new development or redevelopment shall not cause or have the potential to cause, through wind and water transport, any alteration to surface soil characteristics resulting from incompatible fill material or landscaping. Map 5-1 identifies the boundaries where White Sand shall be protected from potential adverse impacts generated by site development. (Responsible party: Community Development)
13. City of Destin Comprehensive Plan: Policy 5-1.10.2: Enforce White Sand Ordinance. The City shall continue to enforce its White Sand Ordinance that regulates the removal of white sand as well as the use and type of fill material applied to new development sites. The White Sand Ordinance shall be incorporated into the articles of the LDC. Within one year from the effective date of the Comprehensive Plan, LDC shall be amended to include penalties, fines, and restoration plans for unauthorized impacts to White Sand. (Responsible Party: Community Development)

14. City of Destin Comprehensive Plan: Policy 5-1.10.3: Construction Activities Consistent with Soil Types Land uses and construction techniques shall be compatible with soil conditions specific to the site. Boring and soils test shall be conducted to demonstrate that suspect soils are suitable to accommodate proposed land uses and construction. Any modification to soils must comply with the City's White Sand Protection policies and ordinances. (Responsible party: Community Development)
15. City of Destin Comprehensive Plan: Policy 6-1.1.9: Support the Artificial Reef Program. The City shall continue to support artificial reef programs sponsored by the State and Okaloosa County that create habitat for aquatic species or protect Gulf beaches from soil erosion. The City shall continue to monitor the activities of Okaloosa County as the County coordinates with the USACE, the U.S. Fish and Wildlife Service (USFWS), and the FDEP to provide inspection services for artificial reef materials and ensure that such materials are suitable for use as artificial habitats in the Gulf and Bay. (Responsible party: Public Works)
16. City of Destin Land Development Code: Policy 6-1.3.1: Reduce Shoreline Erosion through the Land Development Code. The City shall continue to enforce its Shoreline Protection Ordinance. No native vegetation shall be removed from the coastal or wetland shoreline without a duly authorized permit from the city and state agencies, as applicable. Development along the shoreline shall revegetate, stabilize, and enhance damaged vegetative shorelines by planting native vegetation which:

    A. Contributes to fish and wildlife habitat, marine productivity and water quality.
    B. Offers protection from erosion and flooding.
    C. Contributes to the natural soil building process.
    (Responsible party: Community Development)

17. City of Destin Comprehensive Plan: Policy 6-1.3.3: Coastal Vegetation. No vegetation shall be removed unless the applicant agrees to a mitigation plan to ensure that revegetation occurs. Appropriate federal and/or state agencies having jurisdiction shall approve the mitigation plan and establish the appropriate revegetation ratio. Hardening of the shoreline with bulkheads or other similar devices shall not be allowed without proper permits. (Responsible party: Community Development)
18. City of Destin Comprehensive Plan: Policy 6-1.3.4: Coastal Revegetation Programs. The City shall continue to support programs administered by the FDEP, the University of Florida Institute of Food and Agricultural Science (IFAS), and the Choctawhatchee Basin Alliance (CBA) to plant coastal vegetation and sea oats along shoreline beaches. (Responsible Party: Community Development)
19. City of Destin Comprehensive Plan: Policy 6-1.3.5: Beach Renourishment Programs. The City shall continue to support the FDEP's Beach Erosion Control Plan. The City shall evaluate available grant funds administered by the FDEP for beach restoration and renourishment. (Responsible party: CM Office, Public Works)

20. City of Destin Comprehensive Plan: Policy 6-1.3.6: Support Artificial Reef Programs. The City will continue to support State programs to create near-shore artificial reefs that reduce shoreline erosion. (Responsible party: Public Works, CM Office)
21. City of Destin Comprehensive Plan: Policy 6-1.3.7: Manage Impact of Coastal Development on Tidal Patterns**.** No development shall produce changes in the tidal flushing and circulation patterns unless all agencies having jurisdiction grant clearance and the applicant has submitted hydrographic information sufficient to clearly demonstrate that no adverse environmental impacts shall be occasioned by the proposed changes in tidal flushing and circulation patterns. No alteration in tidal flow shall be permitted that causes stagnation or siltation. (Responsible Party: Community Development)
22. City of Destin Comprehensive Plan: Policy 6-1.3.8: Erosion Impacts Generated by Motorized Watercraft. Where the City experiences shoreline erosion from wave impacts generated by watercraft operating within near shore areas and within bayous, coordination will occur with the State Office of Waterway Management (SOWM) regarding establishment of no wake zones, watercraft speed limits, or boating restrictions within the affected shoreline areas. For areas where existing boating restrictions are posted, the City will coordinate with State Office of Waterway Management regarding increased enforcement activities. (Responsible party: Community Development)
23. City of Destin Comprehensive Plan: Policy 6-1.3.9: Coordinate Sand Deposits at Norriego Point. The City shall continue to coordinate with the U.S. Army Corps of Engineers regarding depositing sands dredged from East Pass onto Norriego Point. (Responsible party: Community Development, Public Works, CM Office)
24. City of Destin Comprehensive Plan: Policy 6-1.1.10: Protection of Norriego Point. The City shall continue its efforts to preserve and protect Norriego Point, a peninsula separating Destin Harbor from East Pass. Appropriate portions of Norriego Point under public ownership shall be preserved as a bird rookery. The City will take all necessary measures to preserve and restore Norriego Point as outlined in the most current management plans approved by the City Council. Efforts will include coordination with the FDEP and U.S. Army Corps of Engineers. The City will continue to monitor the condition of the point and notify both agencies whenever erosion or other activities threaten the Point. The City shall continue to request that spoil materials from dredging East Pass be used to renourish and replenish Norriego Point. (Responsible party: Community Development and Public Works)
25. City of Destin Comprehensive Plan: Policy 6-1.5.1: Enforce Development Restrictions Seaward of the Coastal Construction Control Line (CCCL). The City shall coordinate the development review process by forwarding all applications for construction seaward of the CCCL to FDEP for jurisdictional action. Following such action, any construction permitted by the State shall comply with best management principles and practices for respective activities and shall receive permits from all other public agencies having jurisdiction. (Responsible party: Community Development)
26. City of Destin Comprehensive Plan: Policy 6-1.5.2: Support Natural Shoreline and Beach/Dune Stabilization. Shoreline development and access shall continue to be

restricted in order to preserve the shoreline. Rigid shoreline protection structures are not permitted except for those structures approved by FDEP or the USACE. When beach renourishment projects are needed, the dune system should be restored, as necessary, using natural, indigenous vegetation. (Responsible party: Public Works)

27. Policy 6-1.13.2: Beach Renourishment Standards. Any future proposed beach renourishment project shall meet standards of best management practices and shall receive permits from all federal and state agencies having jurisdiction, including the FDEP. (Responsible party: Community Development)
28. City of Destin Comprehensive Plan: Policy 6-1.5.3: Restrictions on Operation of Vehicles on Beaches. The City shall continue to enforce restrictions that prohibit any motorized vehicle upon or over the City's incorporated portion of the beach adjacent to the Gulf of America, excepting mechanical beach cleaning equipment, public safety and emergency vehicles, and vehicles permitted by the FDEP. (Responsible party: Sheriff's Dept. and Code Compliance)
29. City of Destin Comprehensive Plan: Policy 6-1.5.4: Restore Beach and Dune Systems. The City shall continue to coordinate with the FDEP to require beach and dune system restoration where development is proposed on the adjacent upland to the primary dune system and where breaches are caused in any portion of a dune system. Furthermore, beach and dune system restoration shall be incorporated into the landscape plan required for new development. The property owner is required to maintain and restore beach and dune systems, including all coastal vegetation, occurring within the parcel or lot consistent with the landscape plan. The LDC shall require dune and beach restoration plans as part of the landscape standards. (Responsible party: Public Works and Community Development)
29. City of Destin Comprehensive Plan: Policy 5-1.5.7: The Gulf Shoreline Protection Zone commences at the mean high-water line and runs to, and includes the primary dune system, which is defined according to Section 62B-33.002(17), F.A.C. The following activities shall be prohibited within the Gulf shoreline protection zone:

    A. Construction of buildings and structures, except for permitted minor structures authorized by the FDEP; albeit the minimum setback for construction within properties fronting the Gulf of America shall not be less than 50 feet from the line of mean high water;
    B. Removal of existing vegetation, except as allowed pursuant to an approved FDEP permit;
    C. Planting of new vegetation except for native, salt-resistant species suitable for beach and dune stabilization;
    D. Installation of temporary or permanent coastal armoring, as such is defined in Rule 62B-33.002(5), Florida Administrative Code, unless a permit for such armoring has been issued by FDEP, and any other applicable Federal and local requirements have been satisfied, or unless such armoring is authorized by the City's adoption

of an emergency resolution pursuant to § 161.085(3), FS, and any other applicable Federal, State and local requirements have been satisfied.
(Responsible Party: Community Development and Public Works)

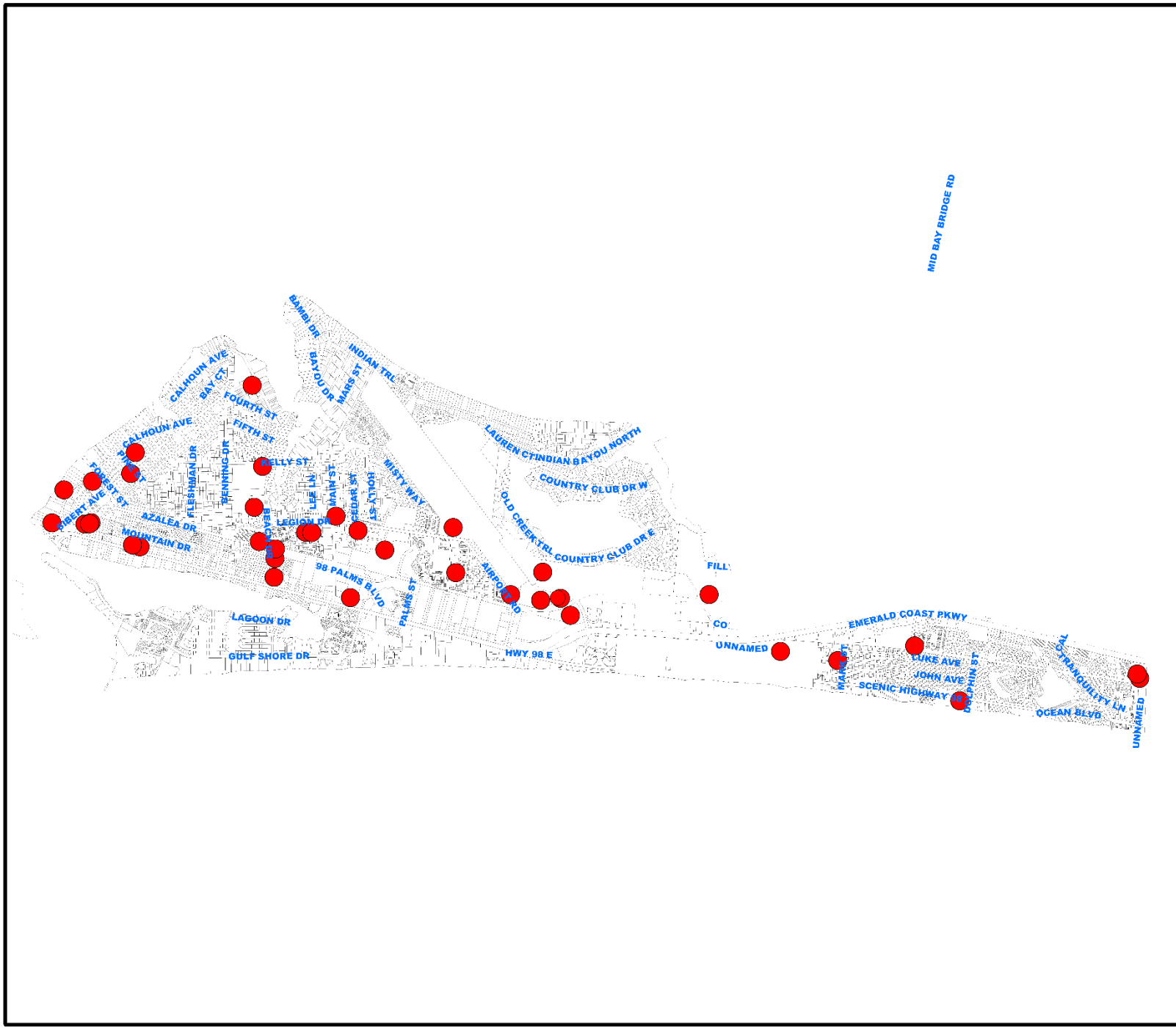
Section 5.02.04.10 Sea Level Rise

The mitigation actions contained in Section 5.02.04.03 Flooding will address the needs for mitigation actions for Sea Level Rise also.

Section 5.02.05 Maps

Attached to this page are maps of the City of Destin. They include:

1. Critical Facilities….....5.02-51
2. Evacuation Zones….....5.02-52
3. Flood Zones… 5.02-53
4. Repetitive Loss Properties….....5.02-54
5. Surge Zones….....5.02-55
6. Wildfire Level of Concern… 5.02-56



City of Destin Critical Facilities

Parcel Lines

Critical Facilities

Source: Okaloosa County Public Safety, 2025

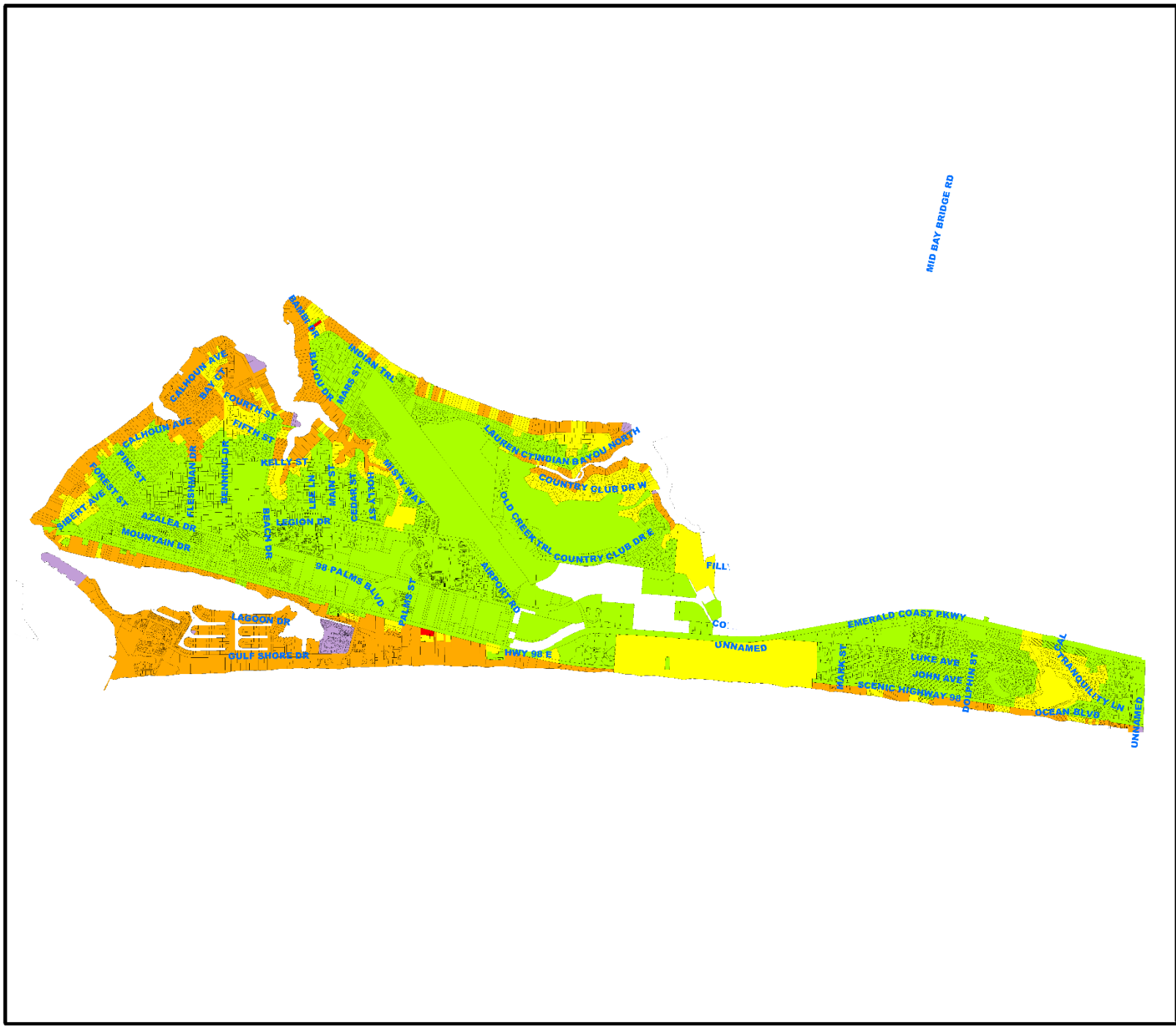
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Lambert Conformal Conic Projection
Stateplane : Florida North (0903)
NAD 1983(90), NAVD 1988.

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Department of
Growth Management
3/18/2026



City of Destin Evacuation Zones

- Parcel Lines
- Evac Zone A
- Evac Zone B
- Evac Zone C
- Evac Zone D
- Evac Zone E
- Unincorporated

ZONE A = HURRICANE CAT 1

ZONE B = HURRICANE CAT 2

ZONE C = HURRICANE CAT 3

ZONE D = HURRICANE CAT 4

ZONE E = HURRICANE CAT 5

Source: Okaloosa County Public Safety, 2025

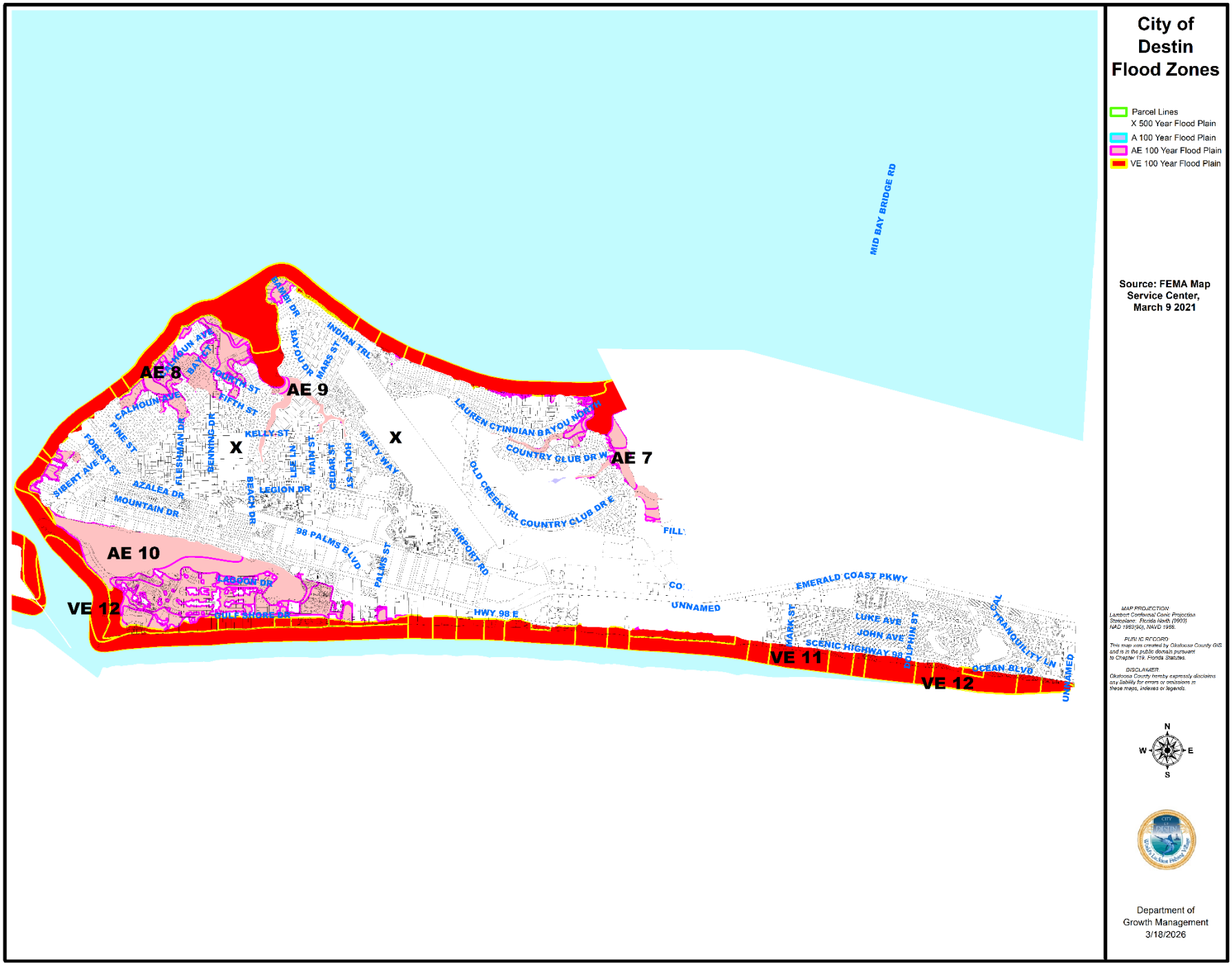
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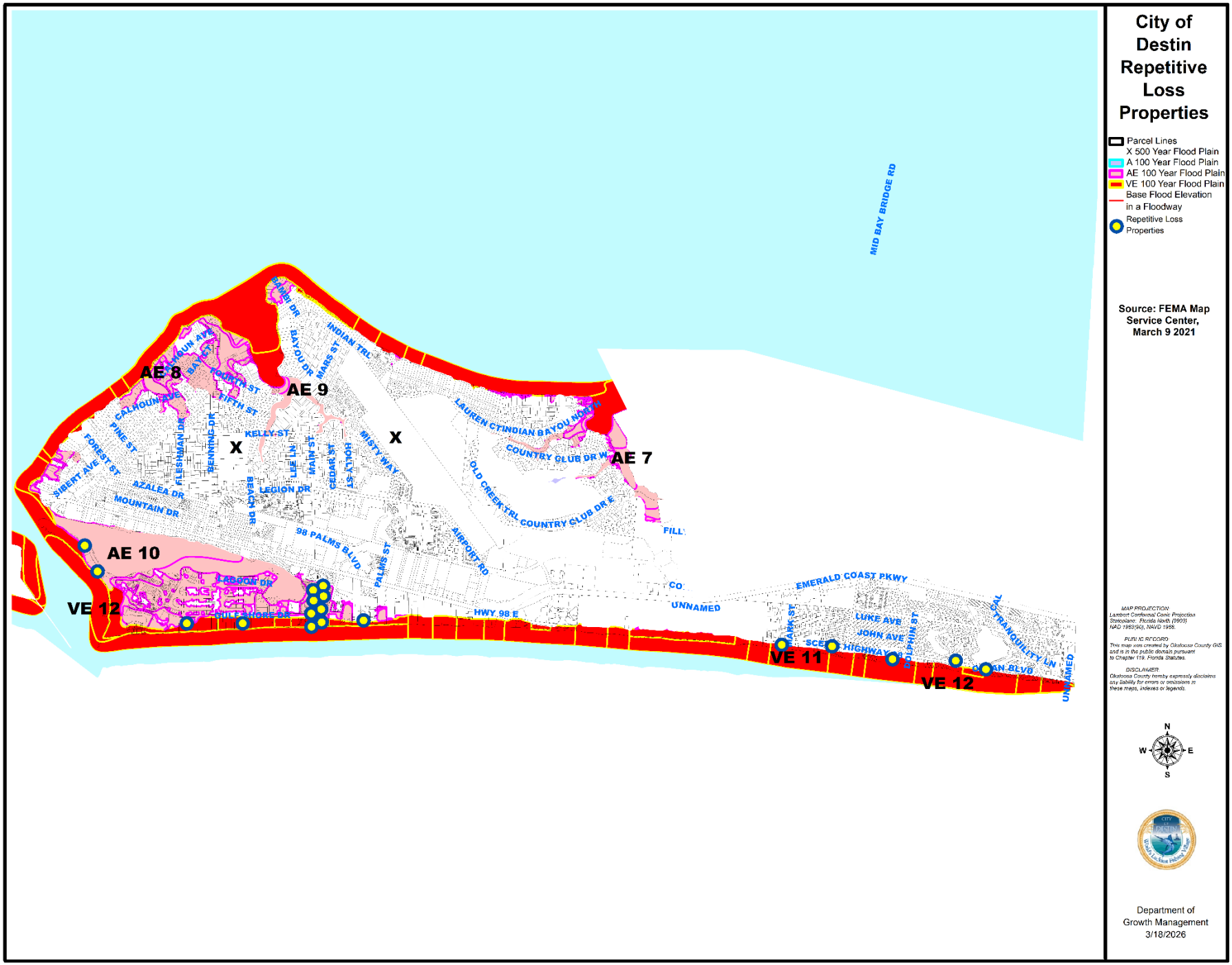
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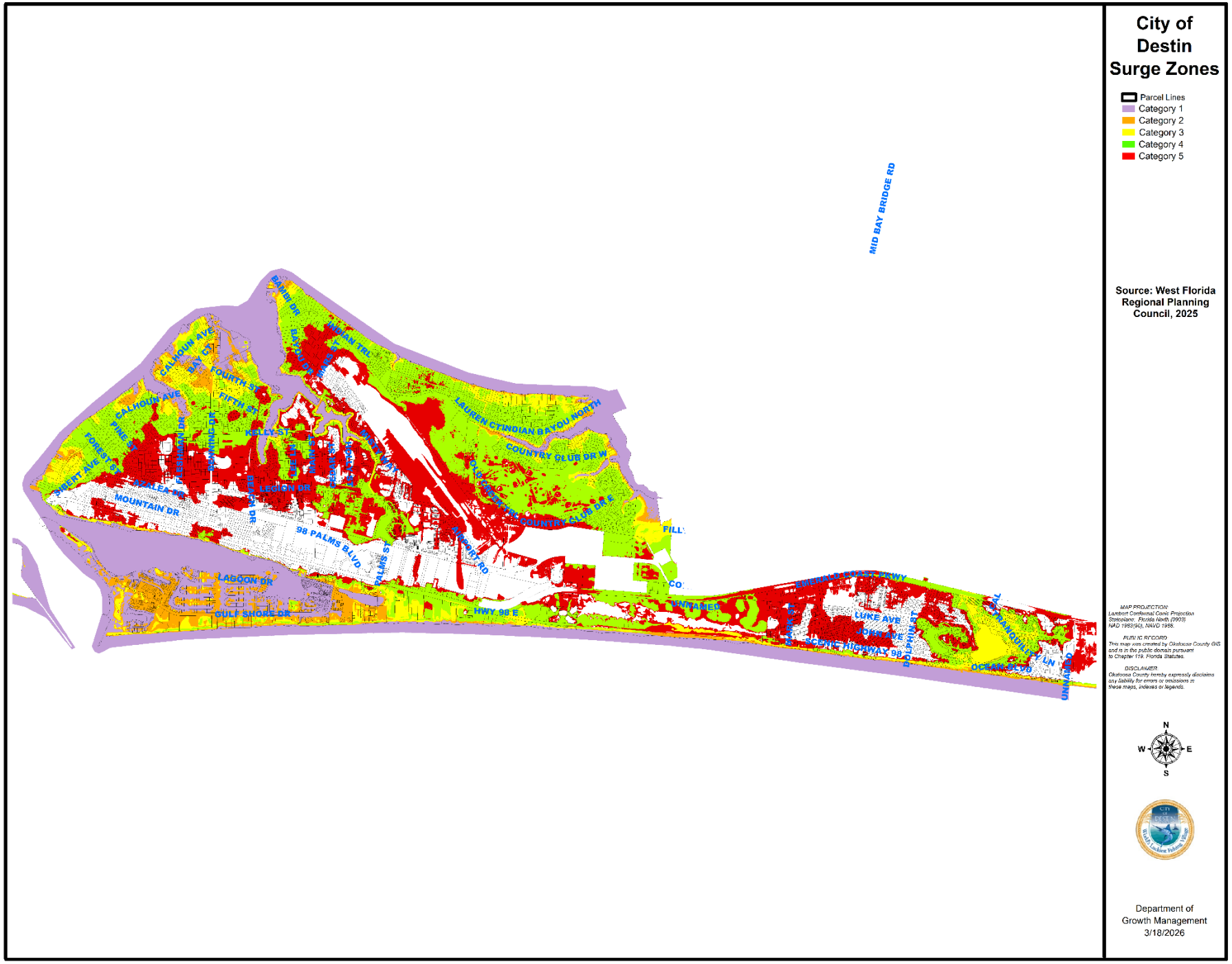
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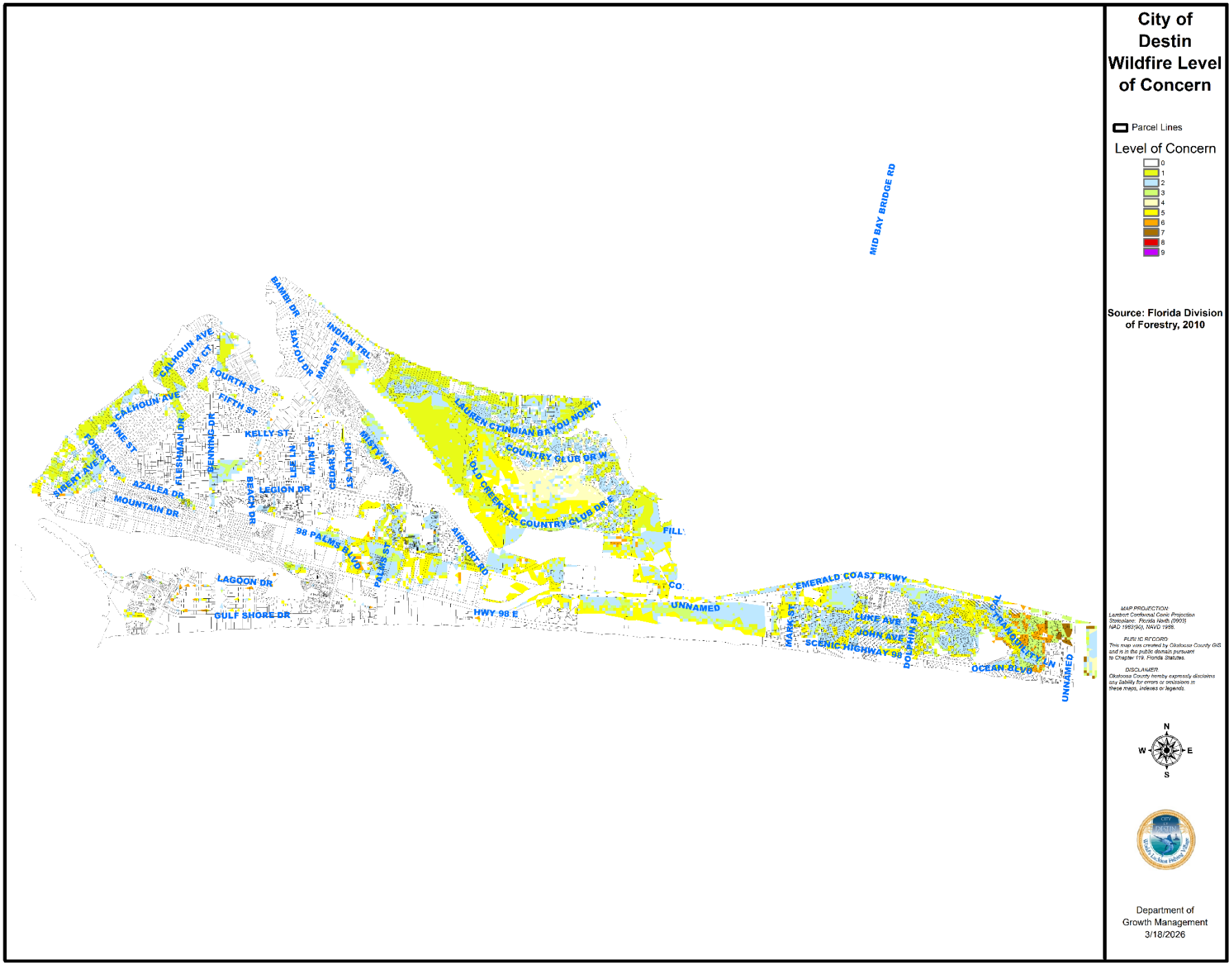
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Department of
Growth Management
3/18/2026


City of Destin Flood Zones
Parcel Lines
X 500 Year Flood Plain
A 100 Year Flood Plain
AE 100 Year Flood Plain
VE 100 Year Flood Plain
Source: FEMA Map Service Center, March 9 2021
MID BAY BRIDGE RD
AE 8
AE 9
AE 7
AE 10
VE 12
VE 11
VE 12
X
X
KELLY ST
MISTY WAY
LAUREN CT
INDIAN TRL
INDIAN BAYOU NORTH
COUNTRY CLUB DR W
OLD CREEK TRL
COUNTRY CLUB DR E
98 PALMS BLVD
AIRPORT RD
PALMS ST
LAGOON DR
GULF SHORE DR
HWY 98 E
EMERALD COAST PKWY
UNNAMED
MARK ST
LUKE AVE
JOHN AVE
SCENIC HIGHWAY 98
DOLPHIN ST
TRANQUILITY LN
OCEAN BLVD
UNNAMED
SIBERT AVE
PINE ST
FOREST ST
CALHOUN AVE
FLEMING DR
BENNING DR
AZALEA DR
MOUNTAIN DR
BEACH DR
LEGION DR
FOURTH ST
FIFTH ST
BAYOU DR
MARS ST
MAIN ST
CEDAR ST
HOLLY ST
LEE LN
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
NAD 1983(86), NAVD 1988.
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3/18/2026


City of Destin Repetitive Loss Properties
Parcel Lines
X 500 Year Flood Plain
A 100 Year Flood Plain
AE 100 Year Flood Plain
VE 100 Year Flood Plain
Base Flood Elevation in a Floodway
Repetitive Loss Properties
Source: FEMA Map Service Center, March 9 2021
MAP PROJECTION:
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UNNAMED
EMERALD COAST PKWY
LUKE AVE
JOHN AVE
HIGHWAY 98
DOLPHIN ST
PARK ST
TRANQUILITY LN
UNNAMED


City of Destin Surge Zones
Parcel Lines
Category 1
Category 2
Category 3
Category 4
Category 5
MID BAY BRIDGE RD
Source: West Florida Regional Planning Council, 2025
MAP PROJECTION:
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Stateplane : Florida North (0903)
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SCENIC HIGHWAY 98
LUKE AVE
JOHN AVE
OCEAN BLVD
HARBOR BLVD


City of Destin Wildfire Level of Concern
Parcel Lines
Level of Concern
0
1
2
3
4
5
6
7
8
9
Source: Florida Division of Forestry, 2010
MAP PROJECTION:
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LAUREN CT
INDIAN BAYOU NORTH
COUNTRY CLUB DR W
OLD CREEK TRL
COUNTRY CLUB DR E
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AZALEA DR
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98 PALMS BLVD
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AIRPORT RD
LAGOON DR
GULF SHORE DR
HWY 98 E
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EMERALD COAST PKWY
MARK ST
LUKE AVE
JOHN AVE
SCENIC HIGHWAY 98
DOLPHIN ST
OCEAN BLVD
UNNAMED

Section 5.02.06 Post Disaster Redevelopment Plan

Attached to this page is the post disaster redevelopment plan adopted by the City of Destin in November of 2004. This plan is still in effect.

City of Destin

ARTICLE ONE

FORWARD

In 1987, the United Nations General Assembly passed a resolution calling for a decade dedicated to reducing "loss of life, property damage, and social and economic disruptions caused by natural disasters." To assist in preparing for the International Decade for Natural Disaster Reduction, the Secretary-General appointed an international ad-hoc group of experts. In January, 1990, the group's 25 findings and recommendations for immediate and long-term emergency management priorities for the Decade were completed. The following illustrate the direction and intent of the recommendations for the Decade:

- Most of the world views natural disasters with fatalism. This attitude is wrong and must be changed. Societies, communities, and individuals, prepared through education, training, policy and legislation, and investment can be both disaster resistant and disaster resilient.

- Re-orient government thinking to integrate pre-disaster planning into the mainstream of the government policy and decision-making process, including medical preparedness for disasters, improved building codes, and land use planning.

From the United Nations General Assembly comes a mandate to conduct pre-disaster planning for the events during and following a natural disaster. Of all natural disasters, Destin is most vulnerable to hurricanes due to its coastline and its geographic location. The Florida State Land Development Plan (1989) has an objective that all coastal cities will have developed post-disaster redevelopment plans by 1993. Chapter 163, Part II, Florida Statutes; Rule 9J-5, Florida Administrative Code; and Objective 11.A.8 of Destin's Comprehensive Plan each require the City to prepare a Post-Disaster Redevelopment Plan by 1992. This Plan is a continuation of the City's comprehensive planning efforts and is designed to accommodate and complement the requirements of that Plan. The Post-Disaster Redevelopment Plan is not intended to require a revision of the work already documented by emergency management officials and their planning for the immediate recovery phase after a major disaster.

In the aftermath of a hurricane or other major disaster, the ability of local governments to take effective advantage of opportunities to guide redevelopment in a way that reduces exposure to the effects of future disasters will be strongly influenced by the regulatory environment established prior to the event. In the absence of regulations designed for redevelopment following a major disaster, or clear policies relating to reducing development in high hazard areas, the redevelopment patterns post-disaster will be consistent with those pre-disaster. Attempts to mitigate development in high hazard areas are often constrained by the possibility of litigation resulting from restrictions imposed on the development potential of individual properties.

City of Destin

A local government's pursuit of the general health, safety, and welfare constitutes a legitimate legal basis for measures designed to reduce the impact of hurricanes/disasters. The actual application of this principle, however, may still subject that government to legal challenges due to alleged interference with private property rights.

By the same token, the failure of a local government to take appropriate mitigative measures may expose it to judicial findings of negligence, subjecting it to substantial liability for damages actually sustained. This is an important reason for local governments to formulate pre-hazard mitigation strategies together with post-hazard redevelopment plans.

City of Destin

REDEVELOPMENT

ARTICLE TWO
INTRODUCTION AND PURPOSE

The City of Destin is periodically threatened by severe weather phenomena: tornadoes, hail storms, flooding, high winds, tropical storms, and hurricanes. A major highway running through the heart of the City and the proximity to major military installations and large bodies of water could cause it to be subject to the effects of man-made disasters (e.g., aircraft or vehicular accidents, radioactive fallout, oil/chemical spills, etc.). Other emergency situations, such as accidents involving hazardous/dangerous materials may also occur. The need for pre-disaster planning is quite clear.

During a major disaster event, many structures will be either damaged or destroyed. The residents of homes will need temporary housing as they pursue financial assistance for repairs or relocation. The City's building division will be besieged with building permit requests. At this point, many questions will arise. Without a process in place, inefficient and inconsistent decision-making may result in poor land use decisions in the turmoil of post-disaster efforts. Coordinated, centralized, informed decision-making, frequent and accurate media communiqués, accurate recordkeeping, and prioritization of recovery activities which are flexible, but never broken, are key points necessary to deal effectively with any catastrophic disaster.

It is recognized that a plan such as this cannot anticipate all of the redevelopment scenarios and problems the City will face. Nor can any local government be expected to anticipate all of the redevelopment scenarios it will face after a major disaster. Recognizing this, it is the goal of this Plan to establish the background of data, requirements, precedence, and sources of information necessary to support and adopt a Post-Disaster Redevelopment Plan and to suggest policies which will guide reconstruction and redevelopment. Thus, this Plan is designed to assist the City when considering alternate policies to guide redevelopment.

Further, it is designed to provide, in cooperation with Federal, State, and County governments, a plan for the purpose of minimizing exposure of human life and public and private property to any type of disaster, whether natural or man-made. Common measures taken to reduce destruction include increasing open space, reducing density and intensity, and limiting public infrastructure and facilities in high hazard areas. Special assessments levied in high hazard areas to cover recovery costs is another possible measure. Pre-and post-disaster planning allows a community to capitalize more fully on mitigation opportunities after a disaster, and when developed and adopted with public involvement prior to a disaster, identifies and alleviates controversial issues that often arise after disasters.

City of Destin

ARTICLE THREE

DEFINITIONS

3.1 Minor Damaged Structure. A structure that can be made habitable in a short period of time with minimal repairs. Damage may include doors, windows, floors, furnaces, water heaters, and other minor structural damages. The indicator for this category is whether the cost of repair is 25% or less of the replacement cost of the structure at the time of damage.

3.2 Major Damaged Structure. A structure that can be made habitable with extensive repairs. Damage may include foundation, roof structure, and major structural components. The indicator for this category is whether cost of repair is greater than 25% and less than 50% of the replacement cost of the structure at the time of damages.

3.3 Destroyed Structures. A structure that is a total loss or damaged to such an extent that repairs are not technically or economically feasible, i.e., 50% or more of the replacement cost of the structure at the time of damage or destruction.

Such a structure experiencing total destruction shall be visibly labeled 'condemned' by a local official. Generally, the Federal Emergency Management Agency (F.E.M.A) requires all private structure damaged greater than 50.5% of their pre-disaster replacement value to be rebuilt to existing codes and regulations, including the non-conforming provisions.

3.4 Damage Assessment Team. The following shall constitute the City's damage assessment team:

CORE GROUP:

a) Public Works Director /Public Works Department
- will oversee public damages assessment

b) Building Inspections Division
- will oversee private property damage assessment
- Natural Gas, Electric, Water/Sewer, Communications

c) Utility Companies Personnel

d) Local Officials
- Fire District officials/Okaloosa County Emergency Management personnel/Okaloosa County Sheriff's Dept.

A damage assessment team's function is to assess losses to property immediately after a disaster. These teams should be identified and trained in advance of a disaster so they will be ready when needed. The Building Official shall, within the limits of access, time, and staffing, visibly placard structures that are unsafe for occupancy or use. (See examples in Appendix D.)

FOR HURRICANE LEVELS 3 AND ABOVE, ADD:

a) Health officials
b) Red Cross officials
c) Okaloosa County property appraisers' office
d) Real estate appraisers
e) Insurance agency representatives

3.5 Post-Disaster Reconstruction Task Force. A committee composed of the following individuals or their respective designees, reflecting a broad-based representation of community interests:

a) Building Official
- Enlists representatives from Okaloosa County property and tax appraisers, insurance agents, utilities inspections

b) Public Works Director
- Enlists representatives from Gulf Power, Destin Water Users, Okaloosa Gas, communication and solid waste franchisees, and Department of Environmental Protection

c) City Manager
- Enlists representatives from City attorneys, City Council, and Chamber of Commerce

d) Community Development Director
- Enlists representatives from Okaloosa County Planning Dept., and Northwest Florida Regional Planning Council and enlists representatives as needed

e) Emergency Manager

- coordinates with Okaloosa County Emergency Management, Fire District, Sheriff's Department, Public Health Department, Department of Community Affairs, Federal Emergency Management Agency, and all other response agencies; enlists representatives as needed f) Finance Director

- coordinates with city manager, local banks and vendors, and department heads concerning emergency purchasing needs, requirements, and procedures. The Reconstruction Task Force shall be responsible for advising and making recommendations to the City Council on a wide range of post-storm redevelopment and reconstruction issues.

3.6 Coastal High Hazard Area. A coastal high hazard area (or zone) shall be defined, in accordance with Chapter 163 of the Florida Statutes and Rule 9.J-5.003 of the Florida Administrative Code, as "the evacuation zone for a category 1 hurricane as established in the regional hurricane evacuation study applicable to the local government."

3.7 Flood Inundation Areas. Areas designated by the regional hurricane evacuation plan as prone to temporary flooding due to storm surge, and requiring evacuation in the event of a 100-year storm or a Category 3 storm event. Rule 9J-5.003 (60) of the Florida Administrative Code.

3.8 Mitigation (Long-Term). Any activities which actually eliminate or reduce the probability of occurrence or the effects of a disaster. It also includes long-term activities which reduce the effects of unavoidable accidents. These activities can occur before, during, and after a disaster and overlap all phases of emergency management. In addition to reducing hazard impacts through mitigative actions and improving preparedness, response and recovery capabilities can also reduce loss of life and property.

ARTICLE FOUR

PLANNING PHASES

4.1 Comprehensive Planning: Since the Second World War, emergency management has focused primarily on preparedness. But being prepared is only one phase of comprehensive emergency management. The City has the opportunity to plan for emergencies before they strike and to be prepared to aid recovery after a disaster. As a result, the current philosophy in emergency management defines four phases of comprehensive emergency management. They are mitigation, preparedness, response, and recovery. Each phase results from the previous one and establishes the requirements of the next one. Preparedness moves swiftly into response when disaster strikes, and response yields to recovery. Similarly, recovery should trigger mitigation, motivating attempts to prevent or reduce the potential of a future disaster. Finally, the emergency management phases have no beginning or end. The recognition of a threat can motivate mitigation as well as an actual emergency can.

4.1.1 Existing Mitigative Building Construction Requirements: The City has adopted the following codes designed to ensure that construction will withstand high wind conditions, reduce risk of flooding, reduce exposure of infrastructure, and provide barrier protection from storm surges:

- Standard Building Codes;
- Coastal Code (Destin Ordinance 181) implements SSTD 10-93 (Deem to Comply Manual of the Southern Building Code Congress International), requiring structures City-wide to be built to withstand 110-mph winds;
- Flood Damage Prevention (Destin Ordinance 111) adopts FEMA standards; establishes minimum ground floor elevation enhanced standards for coastal construction;
- Destin Ordinance 152, Land Development Regulations, requires: a) underground utilities in new subdivisions b) 25' setback from water's edge on bays, bayous;
- Shoreline Protection Zone (Destin Ordinance 047) prohibits major structures forward of protection zone, prohibits destruction of primary dune, and requires restoration.
- Competency standards for contractors (Destin Ordinance 207) requires contractors to pass Okaloosa County BLOCK exam or be state certified (unless grandfathered).

4.1.2 Preparedness (To Respond): Preparedness activities are necessary to the extent that mitigation measures have not or cannot prevent disasters. Preparedness activities include the development of response procedures, design and installation of warning systems, exercising emergency operational procedures, and training of emergency personnel.

Training also includes education of public officials, including administrative officials, the Mayor and members of the City Council. In preparedness, governments, organizations, and individuals develop plans to save lives (includes evacuation and re-entry) and minimize disaster damage.

4.1.3 Response (To Emergency): Response activities follow an emergency or disaster. These include, rescue operations, emergency medical/care, shelter programming, and other emergency assistance for casualties. They also seek to reduce the probability of secondary damage and to speed recovery operations.

4.1.4 Recovery (Short and Long Term): Recovery activities begin after the disaster and continue until all systems return to a normal or improved level. These include repairs to roads, bridges, electrical power, water/sewer and other public facilities and activities that stabilize and restore normal service to a community. Short-term recovery may include necessary restrictions to heavily damaged areas in order to protect and safeguard public health *and* emergency response personnel while responders return vital life-support systems to minimum operating standards. Long-term may continue for a number of years and may include the complete redevelopment of damaged areas.

4.2 Redevelopment Planning Policies: Rule 9J-5 of the Florida Administrative Code requires the City to develop goals and policies and a concurrency management system that will ensure mitigation of impacts concurrent with development. It is likely that the City's Capital Improvements Element (CIE), and the level of service documented within, will be rendered ineffective immediately after a hurricane.

Rule 9J-11.006(1)(a)3.c of the Florida Administrative Code provides for emergency amendments to the local comprehensive plan outside of the twice a year amendment procedures. However, it is unlikely that a planning body will be able to assemble the necessary details to submit and adopt an amendment to the comprehensive plan immediately after a hurricane.

Therefore, a procedure which contemplates this must be considered. An emergency ordinance, an enforced re-entry procedure, or a short-term moratorium on building may be implemented. Incorporating the policies of the local government to be exercised in an emergency can legally reinforce planning activities in an emergency situation.

REDEVELOPMENT

ARTICLE FIVE POTENTIAL MITIGATION POLICIES

5.1 Mitigation Policies: This Article presents a list of potential policies for hazard mitigation. The City acknowledges that often the strongest of mitigative measures is to designate land for conservation, recreation, or open space; however, due to political, legal, and financial repercussions, this may not be feasible.

5.2 Future Development or Redevelopment: The following policies should be instituted for future development or redevelopment in the aftermath of a hurricane or any other type of disaster:

- Changes from residential to commercial uses in order to reduce evacuation needs;
- Reduction in residential density (i.e. from multi-family to single-family);
- Residential redevelopment densities not to exceed pre-disaster development without providing enhanced evacuation methods and routes in order to reduce evacuation times;
- Clustering of development away from the Coastal High Hazard Area (CHHA) to the most protected portions of the lots, including developing new street patterns in an attempt to remove structural and physical patterns which increase the susceptibility of development to the hazards of hurricanes, floods, or other natural disasters;
- Building and rebuilding strictly to current code (including flood insurance standards);
- Relocation of public infrastructure away from the hazard zones;
- Reduction of the pre-disaster density of residential development in the CHHA or flood inundation areas through relocation assistance, zoning incentives, or acquisition of open space as defined by the National Flood Insurance Program;
- Assessment of impact fees for public infrastructure and services in hazard zones;
- Transfer of development rights to reduce density; or

- Land use amendments reducing the densities in the high hazard areas.

5.2.1 Development Regulation: Several different regulations may be developed to assist local governments in the implementation of hazard mitigation policies and plans:

- If applicable, sand-fencing will be required at time of permitting;
- Waived or reduced permitting fees for structural upgrades that mitigate future hazards/damages.

5.2.1.1 Land Use: A pragmatic approach is one which seeks to reduce the overall quantity of development at risk (such as reducing development density through land-use amendments).

5.2.1.1.1 Conventional Zoning: Reduce the quantity of development exposed.

- Local zoning ordinances must be in accordance with the Comprehensive Plan.
- An increase in the minimum lot size or a reduction in the number of dwelling units permitted per acre would decrease the overall density of development.
- Certain high density uses in high hazard areas can be zoned out and declared non-conforming uses through changes in zoning districts, and, in time, a slow process of land use change might be expected. Land development code language should specify that non-conforming buildings may be rebuilt, but only to current standards.

5.2.1.1.2 Bonus or Incentive Zoning: Developers may be granted additional development density if projects incorporate hazard-reduction features. These features may include the purchasing and deeding of high hazard lands to the public, or the provision of design features which may increase the ability of structures to withstand hurricane forces. However, it may counteract other hazard mitigation strategies to encourage or permit additional densities in coastal hazard areas, even if public amenities and hazard-reduction features are provided as compensation.

5.2.1.1.3 Performance Zoning: This approach sets standards for each zone based on the permissible effects of a development rather than specifically enumerating the types of uses, dimensions, or densities permitted.

5.2.2. Land and Property Acquisition: Public acquisition of land can serve to influence the direction and timing of growth and development in a locality. Outright purchase of land in coastal areas experiencing moderate or high levels of market demand will tend to be prohibitively expensive for most local governments. The locality must be prepared, however, to take advantage of below-market sales after a hurricane when some property owners may wish to vacate the

hazard area due to the increase in cost of rebuilding.

5.2.3 Transfer of Development Rights (TDR): The basic concept underlying Transfer of Development Rights is that ownership of land includes the right to develop the land, a right which may be separated from other ownership rights and transferred to someone else. Under a mandatory program, a locality would simply zone the hurricane hazard area so that fewer units of development are allowed (or prohibit new development entirely), and the owner of the land within this zone would then be permitted to transfer all or some of this unused development density to parcels outside of the hazard-prone areas or to sell the TRDs on the open market to others who own land in areas designated for development. The local government would then permit increased levels of development in the non-hazard prone zone as a result of transferring extra development rights.

5.2.4 Taxation and Fiscal Incentives: In contrast to the public acquisition of hurricane-prone lands, a taxation policy might seek to reduce development by decreasing the holding costs of open space and vacant lands, in turn reducing the opportunity cost of not developing such lands for more intensive uses.

5.2.5 Special Assessments and Impact Fees: Since storm surge is the most destructive force of any hurricane and causes the most damage, Federal Emergency Management Agency statistics establish that people who build in and inhabit coastal hazard areas impose substantially more costs on the public than those who reside elsewhere. An impact fee could be designed to recoup and mitigate the overall impacts of a project or development on the community at large.

5.3 Capital Facilities and Public Infrastructure Policy: Coastal development-its type, location, density, and timing-is highly influenced by capital facilities, such as roads, sewer and water services, electricity. Such public investments have been aptly termed "growth shapers."

5.3.1 Policies to Prevent Location of Public Facilities in High Risk Areas: A locality can develop a specific set of capital facilities extension policies designed to avoid high hazard areas, thus reducing the amount of development and property which will be attracted to the area and reducing the potential threats to lives and property. This approach can only become an effective deterrent, however, if development in high hazard areas is dependent upon the existence of public facilities.

5.3.2. Relocation or Strengthening of Capital Investments After a Hurricane: It may be possible, if the facilities are sufficiently damaged, that roads and sewers can be rebuilt in areas which are less susceptible to damage from future hurricanes. Even if the facilities are not relocated, they may be repaired and reconstructed in ways that make them stronger or less susceptible to hazards from hurricanes or other disasters. Roads and sewers can be elevated, for instance, and sewer and water lines can be flood-proofed. Also, placing power and telephone lines underground after the hurricane may help ensure safer evacuation when the next hurricane

threatens.

5.4 <u>Information Dissemination</u>: More informed consumers make more rational and allocable efficient market decisions. This implies the need for an additional set of mitigation strategies which aims primarily at supplementing and enlightening individual market decisions regarding hurricane preparedness, recovery, and redevelopment. Attempts to educate the housing consumer about hurricanes might include brochures and other materials distributed to new and prospective residents of the community, informing them about what to look for in a new home or business (such as elevation and flood-proofing). The dissemination of information on the supply side might take the form of construction practice seminars for coastal builders and developers, introducing both conventional and innovative approaches to building and designing structures, and to siting and planning the orientation of buildings in vulnerable locations.

REDEVELOPMENT

ARTICLE SIX

DAMAGE ASSESSMENT PROCESS

(Cross-Reference: Destin Disaster Preparedness Plan)

6.1 Damage Assessment. One of the most important parts of Destin's response to an emergency or disaster situation is damage assessment. It is a key step in caring for the long-term needs of the people in the community. The process determines what has happened, what the effects are, which areas are hardest hit, what situations must be given priority, and what types of assistance are needed (e.g. local, state, or federal).

6.2 Damage Assessment Teams. Trained observers will be used to assess damage. This will be accomplished by the local Damage Assessment Team (DAT), reference Article 3, Section 3.4. To conduct an accurate damage survey, local governments must have capable DATs. These teams should be identified and trained in advance of the disaster. The composition will vary depending on the severity, type of damage, and the availability of personnel. Each team should have a team leader who makes sure the team has the proper forms, maps with identified areas marked, and transportation. During joint damage assessment activities involving the State/FEMA, the City should have a team member to match up with State and Federal DAT members at all times.

6.3 Sequence of Events Leading to a Presidential Declaration. Public Law 100-707, the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988, which is the authorization for Federal assistance to local or state governments through a Presidential Declaration of an emergency or major disaster, requires "as a condition of any disaster loan or grant made under the provisions of this Act, the state or local government shall agree that the natural hazards in the areas in which the proceeds of the grants and loans are to be used shall be evaluated and appropriate action shall be taken to mitigate such hazards, including safe land use and construction practices, in accordance with standards prescribed or approved by the President after adequate consultation with appropriate elected officials of general purpose local governments, and the state shall furnish such evidence of compliance with this section as may be required by regulation"(FEMA, 1989). The following sections explain how a Declaration is secured and how local governments get involved.

6.3.1 Local Declaration of Emergency. Local jurisdictions have the authority to declare a local "state of emergency" pursuant to Section 252.38(3)(a)5 of the Florida Statutes. A local state of emergency must be declared prior to requesting response or recovery assistance from the county/state. Doing so informs decision-makers that the emergency situation is beyond the response or recovery capabilities of the local jurisdiction. The State will not initiate the damage assessment process, nor seek a Presidential Declaration for a city that has not declared a local state of emergency.

The enactment of such a declaration would enable municipalities/counties to:

- Enforce re-entry procedures into heavily damaged areas and restrict habitation in those areas until the infrastructure necessary for public health and safety is restored;
- request State assistance, if needed;
- invoke emergency related mutual-aid assistance; and
- waive the procedures and formalities otherwise required of the political subdivision, by law, to respond to the emergency.

These measures pertain to:

- the performance of public works;
- entering into contracts;
- incurring obligations;
- hiring permanent/temporary workers;
- using volunteers;
- securing rental equipment;
- the acquisition and distribution of supplies; and
- the appropriation and expenditure of public funds.

6.3.2 Initial Damage Assessment. Immediately following a disaster, an initial damage assessment must be performed by the City to assess the impact of the disaster. The Public Works Director will be designated to conduct this generalized, preliminary post-disaster damage assessment and provide it to the City administration within 24 hours. (Appendix A, "Windshield Survey" Form.) This assessment should provide a rough estimate of the type and extent of the damage. Often this will require the coordination of the various municipal and county governments, who will also perform their own damage assessments. Once the information has been generated, it should be transmitted to the city administration by telephone or facsimile and followed up with a submittal of a State of Florida Situation Report Form (Appendix B). Often in the aftermath of a major disaster that has generated obvious, extensive damages, the State and FEMA, upon request, will join the local government in completing the initial damage assessment.

6.3.3 Preliminary State/Local Assessment. In situations where it is not an obvious conclusion that a disaster has had a major impact on the City, the State will initiate a local damage assessment. The action is taken to document the severity of the impact and justify the need to pursue a request for Presidential Declaration. When the damage is of such a magnitude that it would appear a Declaration is imminent, this assessment would be combined with FEMA, thereby eliminating this step and the assessment process. If this step is initiated, local jurisdictions can expedite the process by having the appropriate maps of the damaged areas, personnel, and transportation available to take State damage assessors to affected sites. The more expeditiously the data can be collected, the quicker a potential disaster Declaration can be obtained.

6.3.4 State of Emergency by the Governor. If the City determines the emergency or disaster is beyond its ability to effectively respond, a state of emergency can be declared by the Governor through an executive order or proclamation. The action of the governor will be in support of the local jurisdiction's expressed needs. The Declaration of a state of emergency does the following:

- activates the emergency response, recovery, mitigation phases of the State and local emergency management plans; and

- provides authority for mobilization and deployment of all resources to which the plans refer, pursuant to Section 252.31-60, Florida Statutes, or any other provisions of law relating to emergencies.

6.3.5 Preliminary Federal/State Damage Assessment. Prior to recommending a disaster declaration for the City, FEMA will perform a damage assessment to determine if there are sufficient damages to justify a request for a Presidential Declaration. If it is obvious that there is sufficient damage for such a request, FEMA will be asked to participate in a joint local/State preliminary damage assessment to further substantiate the request. This approach will eliminate the need to conduct separate local, State, and Federal assessments. The data collected during the preliminary damage assessment will be used by the State when preparing the formal request for Federal disaster aid.

6.3.6 Request for Presidential Disaster Declaration. When State and local resources are inadequate to effectively respond to an emergency or major disaster, Public Law 100-707 allows for Federal assistance through a Presidential Disaster Declaration. This assistance is requested through the Governor if the situation meets the criteria for a Declaration. The Governor submits a written request to the President through the Federal Emergency Management Agency, Region IV, in Atlanta, Georgia. If FEMA concurs with the request, it is sent to the President, who determines whether the request will be approved or rejected. The response is transmitted through FEMA, Region IV, back to the Governor.

6.4 Public and Private Damage Assessment. In the aftermath of a disaster, both public and private damage assessments must be performed because of the corresponding types of Federal/State assistance available. Each type of assessment is designed to quantify the eligible amount of damage a community incurred. Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, the Hazard Mitigation Grant Program, creates a new program to fund additional hazard mitigation measures "which substantially reduce the risk of future damage, hardship, loss, or suffering in any area affected by a major disaster." Specifically, this program can be used to relocate susceptible property that was not damaged by a hurricane and prevent it from future damage. Hence, this section provides an opportunity for the disaster area to fund large scale mitigation land use scenarios that previously were not funded by the Federal Emergency Management Agency (FEMA). Section 406 provides an assistance program for public relocation projects such as roadways. Section 406 authorizes "Large In-Lieu Contributions" for public and certain private nonprofit facilities. If the local government or landowner determines that the public welfare would not best be served by repairing, restoring, or replacing the damaged facility, it may elect to receive a contribution not to exceed 65% of the federal contribution of eligible work of repair.

6.4.1 Public Damages. With the expansion of FEMA regulations addressing hazard mitigation assistance for public facilities (Hazard Mitigation Grant Program, section 404), it is more important than ever for local governments to have identified mitigation measures prior to a declaration. This includes any damage incurred by a publicly owned structure or facility. This could include roads, bridges, buildings, utilities, etc. To be eligible, the damages must fall in one of the seven basic categories of eligibility. They include:

Category A Debris Clearance -This includes all storm-induced debris on public roads, including the rights of way; other public property; and private property when undertaken by local government forces. It can also cover the cost of public structure demolition when a structure was made unsafe by the disaster.

Category B Emergency Protective Measures -This addresses a need to provide emergency measures designed to protect life, safety, property, and health. For example, evacuation, traffic control, barricades, etc.

Category C Road Systems -This includes roads, streets, bridges, culverts, and traffic control devices. The categories of damage might range from some minor damage requiring repairs to complete wash-out or destruction.

Category D Water Control Facilities -This includes dikes, levees, dams, drainage channels, irrigation works, and harbor flushing device.

Category E Public Buildings and Equipment -This includes the damage or destruction to buildings, supplies and/or inventory, vehicles or equipment.

Category F Public Utility Systems -This includes the water system, sanitary sewers, storm drains, light, power, and other utilities.

Category G Other -This includes park and recreational facilities, public facilities under construction, and other public facility damages that do not reasonably fit in one of the six other categories.

6.4.1.1 Public Damage Assessment Reporting. Public damage assessment is performed in the field using Form A (Appendix C). It is used to report the damage done on each individual site. Three individual site entries can be made on each form. Once the public damage information has been collected on Form A, Form B is used to summarize, by category, information gathered at all sites that received damage to public property (Appendix C). Documentation of damages by photograph and video camera should also be compiled at this time.

6.4.2 Private or Business Categories. The purpose of individual damage assessment is to determine the extent to which individuals and private businesses have been impacted by the disaster. There are two basic categories of eligible damage that can be reported and assessed for damages. They include:

Damage to Private or Individual Dwelling-a person whose residence has been damaged by a disaster may qualify for various forms of disaster assistance. Water damage on the interior or wind damage to shingles, windows, or siding are examples. Mobile homes should be included in this category as a separate entry.

Damage to Businesses-privately owned businesses that were damaged or destroyed by the disaster can qualify for individual assistance programs. Businesses include buildings, inventory, and equipment.

6.4.2.1 Individual Assessment Forms. Performing damage assessments to quantify individual loss and suffering is much different from performing public damage assessments. By using the Habitability Assessment Form (Appendix D), the building official and his team are able to document the extent of individual damages to homes and businesses.

ARTICLE SEVEN

DISASTER RECONSTRUCTION AND REDEVELOPMENT

7.1 Intent: Following a disaster and enactment of a building moratorium, it is the intent of the City to allow rebuilding and redevelopment in an orderly manner. The City will control the issuance of building permits to manage the location, timing, and sequence of reconstruction and repair. It is further the intent of this Article that the City establish, prior to a disaster, a special Reconstruction Task Force as defined in Article 3, Section 3.5 of this Plan. The Task Force will oversee the recovery and reconstruction process and serve as an advisory body to the City Council on reconstruction/redevelopment issues. The main responsibility of this body will be to identify opportunities to mitigate future storm damage through the management of redevelopment standards. To further the intent of this Article, the City will identify and orchestrate various post-disaster reconstruction resources, while at the same time ensuring maximum local controls over the reconstruction and redevelopment process.

7.2 Disaster Reconstruction/Redevelopment: Reconstruction and redevelopment following a disaster address the removal, relocation, or structural modification of damaged structures for both short and long-term repair or replacement. As a condition of any Federal disaster loan or grant, the City shall agree that the natural hazards in the areas in which the proceeds of the grants and loans are to be used shall be evaluated, and appropriate action shall be taken, to mitigate such hazards, including responsible land use and construction practices; thus, indicating a long-term, comprehensive approach to mitigation.

7.2.1 Determination of Damage: A primary task of the local Damage Assessment Team is to identify structures which, as a result of the disaster event, have been damaged. The local Damage Assessment Team will recommend to the City administration those structures which have: 1) been destroyed; 2) received major damage; and 3) received minor damage. The Building Official will then place each structure in one of the above categories.

7.2.2 Declaration of a Building Moratorium: An initial post-storm reconstruction moratorium shall be declared in effect upon the occurrence of both of the following:

7.2.2.1 The City is declared a disaster area by either the Governor of the State of Florida or the President of the United States.

7.2.2.2 The Mayor declares a local "state of emergency" and begins the initial building moratorium when the City Council finds that a moratorium is necessary for the protection of lives, safety, and property; or due to the inability of the City to maintain acceptable levels of public order and service. The City Council, based upon the above finding, may extend the initial moratorium until such time as a state of emergency no longer exists.

7.2.3 Initial Building Moratorium: Upon the declaration of a building moratorium, the initial post-moratorium shall be in effect for a minimum period of 72 hours. No building permits shall be issued during this time period. After expiration of this initial moratorium, the following moratoria shall apply:

7.2.3.1 Destroyed Structure Moratorium: No building permit shall be issued within thirty (30) days following the expiration of the initial moratorium for the replacement of any structure which has been destroyed, as defined in Section 3.3 of this Plan. All the replacement buildings shall meet the requirements of the current land development codes, Comprehensive Plan, land use map, zoning maps, FEMA Flood Insurance Rate Maps, and all applicable sections of City Ordinances and applicable building codes prior to the issuance of a building permit. Non-conforming land uses destroyed shall be designed and constructed consistent with the current adopted Future Land Use Plan Map, Land Development Code, and building regulations.

7.2.3.2 Major Damaged Structures Moratorium: No building permit for repairs of a major damaged structure shall, as defined in Section 4.2 of this Plan, be issued for at least seven (7) days following the expiration of the initial moratorium. All repairs to a major damaged structure shall meet the requirements of the current land development codes, Comprehensive Plan, land use map, zoning maps, FEMA Flood Insurance Rate Maps, and all applicable sections of City Ordinances and applicable building codes prior to the issuance of a building permit; and will be inspected prior to issuance of Certificate of Occupancy.

7.2.3.3 Minor Damaged Structures Moratorium: Permits for the repair of minor damaged structures, as defined in Section 4.1 of this Plan, may be issued 48 hours following the expiration of the initial moratorium. All repairs to minor damaged structures shall meet the requirements of the current land development codes, Comprehensive Plan, land use map, zoning maps, FEMA Flood Insurance Rate Maps, and all applicable sections of City Ordinances and applicable building codes prior to the issuance of a building permit.

7.2.3.4 Outstanding Building Permits Moratorium: All inspections shall be suspended for a minimum period of thirty (30) days following the expiration of the initial moratorium, unless upon finding by the City Building Official, on a case-by-case basis, with sufficient inspection staff available to adequately inspect the structures, that construction may again resume. All permits issued prior to the disaster event must meet any additional requirements of the current land development codes, Comprehensive Plan, land use map, zoning maps, FEMA Flood Insurance Rate Maps, and all applicable sections of City Ordinances and applicable building codes before building can resume.

7.2.3.5 Site Plan Review: Site plans which have been submitted to the City prior to the disaster shall not be reviewed by the staff, Planning Commission, Technical Review Committee, or City Council for a period of thirty (30) days following the expiration of the initial moratorium. All submitted dates and review periods shall be adjusted accordingly to reflect a time period covered by this thirty (30) day moratorium.

7.2.3.6 Review Procedures Moratorium: No new site plans, zoning requests, or subdivision plats shall be accepted by the City for a period of thirty (30) days following the expiration of the initial moratorium. All submittal dates and review periods shall be adjusted accordingly to reflect the time period covered by this thirty (30) day moratorium.

7.2.3.7 Duration of Moratorium: All moratoria other than the initial moratorium as in Section 8.2.3 shall be in effect for the length of time described above and may be cancelled or extended by the City Council.

7.2.4 Emergency Repairs: While a moratorium is in effect, no construction or reconstruction activities may be undertaken, except in only minor interior repairs and emergency repairs necessary to prevent injury or loss of life or imminent collapse or other substantial additional damage to the structure. For illustrative purposes only, items that constitute minor repair may include temporary roof repairs to avoid further water damage, minor repairs to steps and a temporary shoring up of a structure to avoid imminent collapse.

7.3 Reconstruction Task Force: The Reconstruction Task Force, created as defined in Section 3.5 of the Plan, shall be activated and mobilized upon the declaration of the initial building moratorium. The Task Force shall advise and make recommendations to the City administration on a wide range of post-storm reconstruction issues; including evaluating the projected workload for managing the recovery and reconstruction process and recommending the hiring of temporary workers or contracting portions of the workload to specialists. The City Manager shall approve or disapprove such recommendations.

7.3.1 Responsibilities of the Reconstruction Task Force: The Reconstruction Task Force's primary function is to receive and review damage reports and other analyses of post-storm circumstances and to compare these circumstances with mitigation opportunities identified prior to the storm to discern appropriate areas for post-storm change and innovation. When needed, the Reconstruction Task Force can review in a more specific fashion alternative mechanisms for bringing these changes about and recommend the coordination of internal and external resources for achieving these ends. The Reconstruction Task Force will use Okaloosa County's adopted Local Mitigation Strategy (LMS) to guide its mitigation proposals. (The LMS is updated yearly by the City of Destin.)

7.3.2 Review and Mitigative Recommendations: In addition to the responsibilities above, the Reconstruction Task Force shall review the nature of damages, identify and evaluate alternative program approaches for repairs and reconstruction, and formulate recommendations for handling community recovery. The Task Force shall also have the following responsibilities:

- Recommend land use and rezoning changes in areas of damage;
- Recommend reduction in residential density (i.e. from multi-family to single family)
- Change from residential to commercial or mixed use in order to reduce evacuation needs;
- Set a calendar of milestones for reconstruction tasks in conjunction with the City administration;
- Ensure that building and rebuilding is strictly to current code;
- Maintain schedule for repairs to critical water, sewer, and other facilities;
- Recommend the expiration or extension of a moratorium for "major" and "minor" repairs;
- Recommend the expiration or extension of a moratorium for new development;
- Evaluate hazards and the effectiveness of mitigation policy and recommend the amendment of policies if necessary;
- Recommend clustering of development on the most protected portions of lots;
- Initiate recommendations for negotiations for relocation and acquisition of property;
- Recommend relocation of public infrastructure and services in hazard zones; and
- Participate in Federal hazard mitigation planning.

The Task Force shall recommend any changes in subdivision regulations and the land development code; i.e., setback, density, height, elevation requirements, building codes, or any other ordinances or land uses which it deems necessary or advisable to prevent a recurrence of a disaster of this nature. Within the coastal high hazard area, the City shall allow no new

permanent residential structures that do not meet the construction standards in the current Land Development and Building Codes.

7.3.3 Non-Mitigative Recommendations: The Reconstruction Task Force may also undertake a similar process for non-mitigative local objectives and opportunities. The Task Force may recommend the City Council's consideration for the following specific opportunities:

- enhancement of local recreational and open space opportunities;
- enhancement of public access to the shoreline;
- enhancement and restoration of local natural ecosystems;
- reduction of traffic congestion, noise, and other traffic-related problems;
- enhancement of the long-term economic vitality of the local commercial and industrial base; and
- other objectives which further the stated goals and policies of the City's Comprehensive Plan and Land Development Code.

7.4 Conditions for Issuance of Building Permits: Upon expiration or cancellation of an applicable building moratorium enacted in Section 7.2.2 of this Plan, the following additional requirements, in addition to all applicable land development codes, shall be met prior to issuance of a building permit. Permitting of new development and redevelopment in the coastal high hazard area shall also be in consideration of impacts on hurricane evacuation times.

7.4.1 Destroyed Structures: The following additional requirements must be met prior to the issuance of any building permit for construction of a replacement structure:

- Septic system capped/closed and sewer provided to street frontage of lot, if possible.
- A post-storm survey and site plan, as applicable, of the lot and proposed structure.
- Site plan approval as provided by current applicable Land Development Code, including the location of all property lines.

- On-site inspection of lot by City Building Official or his representative. *The Building Official shall, after consultation with the Community Development Director, City Engineer, and County Emergency Manager, identify land parcels or lots that are destroyed and replaced by tidal waters and determine if they meet minimum dimensional requirements.

- Water and sewer will be restorable at street frontage of lot.

- Direct, uninterrupted, approved vehicular access to lot.

- Electrical service restorable to building site.

- All debris removed from lot.

7.4.2 <u>Major Damaged Structures</u>: The following additional requirements must be met prior to issuance of a building permit for a major damaged structure:

- A post-storm survey and/or site plan, as applicable, of the lot and structure if there is a proposed increase of footprint of a structure over the pre-storm structure. In addition, the following information shall be provided on a survey/site plan:

    1. the location of all property boundary lines

    2. require the upgrading of non-conforming structures

    3. site plan approval

    4. on-site inspection of lot by City Building Official or his representative

    5. water and sewer will be restorable on street frontage of lot -direct, uninterrupted, approved vehicular access to lot -electrical service restorable to building site

    6. septic system capped/closed and sewer provided to frontage of lot, if possible

7.4.3 Minor Damaged Structures: The following additional requirements must be met prior to issuance of a building permit to repair a minor damaged structure:

- A post-storm survey and/or site plan, as applicable, of the lot and structure if there is a proposed increase in the footprint of the structure over the pre-storm structure. In addition, the following information shall be provided on the survey/site plan:

  1. the location of all property boundary lines
  2. site plan approval
  3. on-site inspection of lot by the City Building Official or his representative
  4. vehicular access to lot -all debris removed from lot
  5. septic system capped/closed and sewer provided to frontage of lot, if possible.

7.5 Policy on Reconstruction of Roads, Easements, and Infrastructure: Provide public roads, public facilities and services which guarantee to the greatest extent possible the health, safety, and welfare of the community and which do not require future expenditures for the public infrastructure in the Coastal High Hazard Area.

7.5.1 Public Facilities: Repair in place facilities which are essential to the immediate health, safety, or welfare of citizens, or work to provide the impaired service to residents through alternative means. The City shall coordinate the planning and provision of emergency water and sewer services with Destin Water Users and Okaloosa County. This shall include, but not be limited to, executing and entering into local agreements, locating and inventorying existing lines, installing meters, and conducting engineering studies to determine the amount of pressure/capability available as compared to required. In case of an emergency disaster affecting water and sewer facilities, contact the Okaloosa County Emergency Management Director. Also, for emergency water supply to critical areas, contact Destin Water Users and South Walton Utilities.

7.5.2 Public Roads and Easements: Prior to the consideration of an expenditure of public funds for the repair or construction of City roads which are destroyed or damaged by a disaster, the City shall conduct adequate studies and explore alternative solutions, including, but not limited to, abandonment procedures, special assessment, and condemnation.

7.5.3 Infrastructure: No public infrastructure shall be allowed in the coastal high hazard area except for that needed to provide public access to the shoreline, to serve public parks that have

been approved by the City, state and federal agencies, and to protect or enhance natural resources. Public expenditures in the CHHA shall be limited to maintaining the existing service capacity, except for recreation facilities. Provision of water and sewer service at private expense to existing lots of record will be permitted, as long as such provision does not result in conflict with policies for: criteria adopted for determining when structures can be rebuilt; the land development regulations; and the state policy to limit public expenditures that subsidize development permitted in coastal high hazard areas, except for enhancement of natural resources. New sanitary sewer facilities in the coastal high hazard area shall be flood-proofed.

7.1.1 Private Roads and Easements: It shall be the policy of the City not to expend public funds for the repair or reconstruction of any private road or vehicular easement where it is damaged or destroyed as a result of a disaster, except as emergency access for the public health and safety (an emergency protective measure).

Acquisition of Property: The aftermath of a disaster can present an opportunity to achieve substantial progress in hazard mitigation by the rapid acquisition of land. The City will take advantage of opportunities which may arise to acquire or purchase land following a disaster. To this extent, the City will identify priority areas and will develop decision-making and funding mechanisms to ensure their rapid acquisition. The selection of parcels to be purchased based on a criterion of hazard reduction per dollar spent could maximize the use of public money for such a program. The City shall identify acquisition areas which would satisfy multiple community objectives, including, but not limited to, beach access, open space, parks and recreation sites, historic or scenic areas, or areas for location of City facilities and any other use allowed by law.

City of Destin

ARTICLE EIGHT

FEDERAL ASSISTANCE PROGRAMS AND PROCESS

8.1 Federal and State Disaster Aid Programs. There are a large number of Federal and State programs available to aid in disaster relief and reconstruction. The programs can provide assistance or funds to local government units as well as provide information about assistance that is available to individuals, businesses, families, and non-profit associations. Some programs can only be implemented upon declaration of a major disaster by the President of the United States. Other programs can be made available independently of a Presidential Declaration or a major disaster or emergency.

8.2 Policy. It should be the policy of the City to appoint the Emergency Management/Grants Coordinator to be responsible for:

- determining the types of assistance available to the City and the type of assistance most needed
- assisting in the coordination of Federal disaster recovery efforts
- coordinating Federal and State programs of assistance
- informing the community of types of assistance programs available
- recommending to the Recovery Task Force and the City administration programs which are available to the City and then act as facilitator in securing these programs

8.3 Federal Assistance Process. When all of the eligible public and individual damages have been assessed, and the request for a Presidential Disaster Declaration has been prepared and approved by the President, a variety of Federal programs can be made available to public entities and individuals. These programs are designed to bring a community and its residents back to a pre-disaster condition. It is important to note that there are no longer separate public and individual disaster declarations. When a Presidential Disaster Declaration is approved, both individuals and public assistance are automatically offered. The following is a brief explanation of both types of assistance.

8.3.1 Public Assistance. Public assistance is that part of disaster relief through which the Federal government supplements the efforts of State and local governments to return the disaster area to pre-disaster conditions. These efforts primarily address the repair and restoration of public facilities, infrastructure, or services that have been damaged or destroyed. There are two types of public assistance authorized: "emergency" and "permanent" work. Emergency work includes efforts to save lives, protect property, and maintain operation of essential facilities on a short-term

basis until permanent restoration can be made. Permanent work involves action necessary to repair, restore, reconstruct, or replace public, and certain private non-profit, facilities damaged or destroyed.

Project application for public assistance may be approved to fund a variety of projects that fall within the eligibility categories identified in Section 7.4.1 of this Plan.

8.3.2 Flood Insurance Requirements. One very important element in receiving public assistance are the requirements concerning flood insurance. Public Law 100-707 makes it very clear that all applicants for public assistance must have flood insurance. If they do not have flood insurance at the time of the disaster, eligible cost will be reduced by the maximum amount of flood insurance proceeds that applicant could have received had the facility been fully covered by flood insurance. Also, applicants will be required to commit to maintaining insurance coverage for the total eligible amount of the damages as a condition to receive public assistance. No assistance for any facility will be available in future disasters unless the required insurance has been obtained and maintained.

8.4 Method of Funding. Recent changes have streamlined the funding methods for public assistance programs. Currently, there are two types of grants (funding methods) available that are based on the cost of the project, and two funding options available, either of which can be used under each of the grants. Each grant is explained below.

8.4.1 Large Project Grant. When the total cost to repair or replace eligible public damage is $48,000 (adjusted annually according to the Consumer Price Index) or more, a large public grant can be secured. Such grants are used to restore public or private non-profit facilities to their pre-disaster condition.

8.4.2 Small Project Grant. When the total cost to repair or replace eligible damage is less than $48,000, a small project grant can be secured. Once approved, these funds are made totally available at the beginning of the project. At its completion, the applicant certifies that the work is completed. The State will perform a final inspection.

8.5 Funding Options. The following funding options can be used by the applicant if they feel it will benefit their situation. They are designed to give the applicant a greater degree of flexibility. Both options can be used under large or small project grants, and are voluntary.

8.5.1 Alternate Projects. Often, when a community applies for a large or small grant, they will determine that the public welfare would not best be served by repairing, restoring, reconstructing, or replacing a damaged facility. Under the "alternate project" option, the community could receive 67.5% of the original damage estimate for use on: other public facilities, constructing new facilities, or funding hazard mitigation activities. Funds necessary for completing the alternate project would come from local sources.

8.5.2 Improved Projects. When the applicant decides to exceed the original design and value of a damaged facility instead of simply restoring it to its pre-disaster condition, the "improved project" option can be approved. The applicant could receive 87.5% (Federal/State contribution) of the original damage estimate and provide the remaining funds necessary to complete the project.

8.6 Public Assistance Process. The process for securing public assistance for a community site, once a Presidential Declaration has been declared, is described below. The process involves all levels of government at various stages.

8.6.1 Applicants' Briefing (Step 1). As soon as possible following the President's Declaration of an emergency of major disaster, the State Coordinating Officer and the State Public Assistance Officer will coordinate the applicants' briefing at the local level. This meeting acquaints the applicants with the public assistance process and project administration. Appropriate City personnel should attend the applicant's briefing (namely, the Finance Officer and the Emergency Management/Grants Manager), who will:

- know the general location of all disaster damages;
- have the authority to sign for Federal assistance for the City, including the "Notice of Interest" form (Appendix F); and
- be responsible for recording data and maintaining documentation of time, repairs, and costs.

8.6.2 Inspector's Briefing (Step 2). Once Notice of Interest (NOI) forms are collected, they are reviewed to determine the types of public damages applicants have identified. At this point, Damage Assessment Teams (DAT) are formed based on the need expressed in the NOI's. Each DAT should have Federal/State and local membership. These assessors are briefed on their appropriate procedures to do a site-by-site detail damage assessment, and how to prepare a damage survey report.

8.6.3 Damage Survey Report Preparation (Step 3). The DATs are then sent into the field. Each damage site is surveyed and a Project Worksheet is prepared. The FEMA DAT member will prepare the Project Worksheet. The State and local DAT members sign it upon completion, certifying that they concur or do not concur with the scope of work and the estimated repair costs.

8.6.4 FEMA and State Review (Step 4). As the Project Worksheets are prepared, they are reviewed by FEMA and the State Public Assistance Officer for completeness. Problems are discussed in an effort to resolve them prior to FEMA's formal review.

8.1.1 Application Preparation (Step 5). Once the State has approved the Project Worksheets, a State Project Application is prepared that includes all of these worksheets, and is submitted to the Disaster Recovery Manager (FEMA) for approval.

8.1.2 Advance Funds (Step 6). Once the Project Application has been approved, funds are advanced to the State through a letter of credit. For large project grants, the State then forwards the Federal share of the money (75%) to the approved applicants on a cost reimbursement basis. For small project grants, the entire amount of the proposed project (75% Federal share) is forwarded to the applicant.

8.1.3 Completion of Work (Step 7). When the "large project" is completed, the applicant will submit a Project Summary of Documentation Form to the Department of Emergency Management, along with a request for final inspection. Once the State has reviewed the Documentation Form, a final inspection will be scheduled. When a "small project" is completed, the applicant must submit to the DEM a certification that the work has been completed in accordance with the Project Application. If the total amount of the grant was not used, the applicant can use the remaining funds for other appropriate purposes, subject to State approval.

8.1.4 Final Inspection and Certification (Step 8). The State will perform the final inspection to ensure the project was completed per the scope of work, and certify that the work and cost are in compliance with the provisions of the FEMA/State Agreement.

8.1.5 Final Payment (Step 9). For large projects, once the final inspections are completed and any discrepancies are resolved, the applicant will submit a request for final payment.

8.1.6 Single Audit Act (Step 10). All recipients of public assistance will be audited per the requirements of the Single Audit Act of 1984, Circular OMB A-128.

8.1.7 State Approval of Audit (Step 11). Once the audits are performed, the State must approve the audit report. All audit exceptions and discrepancies will be resolved prior to closing out the project.

8.2 Individual Assistance. After the President signs the disaster Declaration, it is important to inform affected individuals of the programs available to them, and to assist them in obtaining any aid to which they may be entitled. To make it convenient for affected individuals to obtain information and assistance, disaster application centers may be established in each of the declared counties. Representatives of Federal, State, local, and volunteer organizations are then made available at these centers to assist disaster victims applying for assistance. There is a wide range of programs providing disaster assistance to individuals including the following:

8.2.1 Small Business Administration (SBA). Once implemented, the SBA Program can offer low interest loans to individuals, businesses, and farmers for refinancing, repair, rehabilitation or replacement of damaged property (real and personal). A SBA declaration can be independent or

in concert with a Presidential Declaration. There must be a minimum of 25 homes or businesses with 40% or more insured losses and/or 5 businesses with economic or physical losses.

8.2.2 Temporary Housing. In the event of a presidentially declared disaster, a Temporary Housing Program may be authorized in order to meet the housing needs of disaster victims. The program has several components, including:

8.2.2.1 Mortgage and Rental Assistance Program. Applicable for individuals or families who have received written notice of eviction or foreclosure due to financial hardship caused by a disaster.

8.2.2.2 Rental Assistance. Provided to homeowners or renters whose dwelling is determined uninhabitable as a direct result of the disaster.

8.2.2.3 Minimal Repairs Program. Provides money for owner-occupied, primary residences which have sustained minor damage, and are unlivable as a direct result of the disaster.

8.2.2.4 Mobile Homes or Other Readily Fabricated Dwellings. When all other avenues are exhausted, FEMA may initiate the mobile home program. Such homes are moved to, or near, the disaster site and set up. The State of Florida does not have a temporary housing program. Therefore, FEMA will manage the temporary housing program, should it be needed in Florida.

8.2.3 Individual and Family Grant Programs. The Individual and Family Grant Program provides grants up to $10,000 to help families meet serious needs and necessary expenses that are not covered by other governmental assistance programs, insurance, or other conventional forms of assistance. Financial aid can be provided under the following categories:

- medical expenses
- transportation costs
- home repair
- replacement of essential property
- protective measures
- funeral expenses

75% of the costs are funded by FEMA and 25% by the State and/or the local government. (In 1997, the state of Florida announced that it would match only 12.5% of the costs of a disaster, leaving the local entity to pay 12.5% of the costs in all future disasters.)

8.3 Disaster Unemployment Assistance. Individuals unemployed as a result of a major disaster and not covered by regular State or private unemployment insurance programs, will be eligible for unemployment benefits. The weekly compensation received will not exceed the maximum amount of payment under the Unemployment Compensation Program of Florida, and may be provided until an individual is re-employed, or up to 26 weeks after the major disaster is declared, whichever is the shortest period.

Other individual assistance programs that could be activated, if appropriate, are:

- food coupons (U.S. Department of Agriculture)
- food commodities
- legal services
- crisis counseling
- economic injury loans
- tax information
- emergency conservation measures program
- agriculture assistance
- Veterans assistance
- waiver of penalty for early withdrawal of funds or certain time deposits

8.4 Conclusion. This Section is designed to briefly describe the sequence of events necessary to secure assistance following an emergency or disaster. More detailed information is available by consulting the "Public Assistance" manual prepared by the Florida Department of Community Affairs, Division of Emergency Management, and the State of Florida Peace Time Emergency Plan.

8.5 Additional References. Other sources of reference for emergency management and post-disaster redevelopment include:

- Okaloosa County Comprehensive Emergency Plan
- City of Destin Disaster Preparedness Plan
- State of Florida Mutual Aid documents
- Okaloosa County Long-term Mitigation Strategy
- Code of Federal Regulations 44 (Emergency Management and Assistance)
- 1999 Tri-State Hurricane Evacuation Study

Section 5.03

City of Fort Walton Beach

City of Fort Walton Beach

Section 5.03.01 Risk Assessments

Section 5.03.01.01 Introduction

The intent of this section is to provide information regarding the hazards threatening the City of Fort Walton Beach as well as a summary of the resources the city has available to address the hazards and emergencies discussed herein.

Fort Walton Beach is a waterfront community bordered by Santa Rosa Sound to the south, Choctawhatchee Bay to the east, and bay tributaries to the north. To the west it is bordered by Hurlburt Field which is home to the Air Force Special Operations Command. The city has approximately 11 miles of estuarine shoreline vulnerable to coastal flooding and surge. The city's downtown and City Hall are located directly on the Santa Rosa Sound and are only a short distance (roughly one-half of a mile) from the Gulf of America. The city's Utilities and Public Works facilities are located within the Central Business District approximately one mile from the Gulf, as well. The City's population density is approximately 2,737.6 persons/square mile. As of the 2020 Census it was home to 20,922 residents. In this section, information relevant to City of Fort Walton Beach is compiled and an overview of the analyses is provided.

Originally incorporated in 1941 as the Town of Fort Walton, the city was reincorporated in 1953 as the City of Fort Walton Beach. As an incorporated city, Fort Walton Beach has all the powers and authority granted to municipal governments found in Chapter 166 of the Florida Statutes as well as Article VIII of Section 2 of the Florida Costitution to exercise any governmental, corporate, or proprietary power for municipal purposes, provided they are not expressly prohibited by law. These powers allow Fort Walton Beach to govern itself, deliver services, enact and enforce ordinances, and set policy.

The City of Fort Walton Beach enforces the Florida Building Code as required by Chapter 553 of the Florida Statutes. This is accomplished through the Building Department of the city's Growth Management Department, which employs a full-time Certified Building Official (CBO) as well as inspectors and plans examiners, some of whom are licensed pursuant to Chapter 468, Florida Statutes. For determining whether an addition or redevelopment of a structure constitutes a substantial improvement pursuant to the NFIP, these staff members coordinate with the Planning Supervisor within the same department who oversees the day-to-day implementation of the program. The CBO has the authority to request certified appraisals when considering whether a proposed activity constitutes a substantial improvement. The CBO, plans examiners, and inspectors conduct substantial damage assessments in need and are joined by the city's Code Enforcement Officers for damage assessment following a major storm event. The damage assessments are carried out in accordance with FEMA standards.

In addition to a licensed building official and inspectors, the city also employs within the Growth Management Department a Planning Supervisor and Floodplain Manager who are working towards their certification. The Director of Growth Management is a Certified Floodplain Manager and oversees the day-to-day implementation of the city's program. The technical aspects of the program are the responsibility of a Floodplain Administrator within the Growth Management Department and who cooperates with the Planning Supervisor on floodplain matters. Being in

separate division and separate chains-of-command allow these positions to serve as a check and balance in interpretation and enforcement of the program.

Emergency management activities are coordinated through the Division of Emergency Management within the County's Department of Public Safety under the Public Safety Director and Emergency Management Chief as well as the Fort Walton Beach Fire Chief. The Emergency Management Chief is a member of the County's LMS Committee and is in regular communication with the emergency managers within the municipalities as well as the State.

The city has regularly updated its floodplain regulations to remain consistent with the program requirements. The most recent update is the adoption of city Ordinance 2046 on January 26, 2021, which amended Chapter 3 of the Land Development Code (LDC) and other related sections of the Land Development Code pertaining to the County's floodplain management regulations. This ordinance specifically adopted Section 3.06 of the LDC which includes the following language:

> 3.06.02.C. Basis for establishing flood hazard areas. The Flood Insurance Study for Okaloosa County, Florida and Incorporated Areas dated March 9, 2021, and all subsequent amendments and revisions, and the accompanying Flood Insurance Rate Maps (FIRM), and all subsequent amendments and revisions to such maps, are adopted by reference as a part of this section and shall serve as the minimum basis for establishing flood hazard areas. Studies and maps that establish flood hazard areas are on file at the Growth Management Department.

The City of Fort Walton Beach participates in the National Flood Insurance Program (NFIP) Community Rating System (CRS), which evaluates the City's floodplain management activities through a point-based system encompassing regulatory standards, public outreach, stormwater management, and floodplain preservation efforts. Based on these activities, the City has achieved a CRS Class 6 rating, which provides property owners within the SFHA with a 20% reduction in flood insurance premiums. The City's CRS accomplishments are supported through activities such as maintenance and inspection of drainage facilities, regulation of stormwater discharge, floodplain development review, public information outreach, and preservation of natural floodplain functions and wetlands.

In addition, the City continues to implement Stormwater Management Regulations requiring stormwater management plans for new development and redevelopment projects. These measures help reduce flood peaks and duration, improve water quality, provide additional flood storage capacity, and preserve environmentally sensitive areas. The city also routinely maintains and inspects its stormwater infrastructure to ensure proper function during major rainfall events and coastal storm activity.

The City's floodplain management efforts are administered through its permitting and development review processes in accordance with the Florida Building Code and NFIP regulations. Development within Special Flood Hazard Areas is carefully reviewed to ensure compliance with elevation requirements, substantial improvement regulations, flood-resistant

construction standards, and other floodplain management criteria intended to reduce future flood losses and protect the public health, safety, and welfare.
The hazards that will be analyzed in this section are natural events and the analysis concentrates on the anthropogenic effects on those events as well as the effects of those events on mankind. However, this analysis is not an assessment of technological and/or societal hazards and, therefore, these types of events are not covered under this plan or in the analysis provided in this section.

Primary attention is given to hazards considered reasonably possible to occur in the City of Fort Walton Beach. These hazards include:

- Hurricane and Tropical Storm
- Storm Surge
- Flooding
- Land Erosion
- Severe Storms
    - Tornado and Waterspout
    - Thunderstorms and Lightning
    - Winter Storms
- Heat Wave and Drought
    - Heat Wave
    - Drought
- Wildfire
- Beach Erosion
- Sea Level Rise

The following hazards have minimal or no risk to the City of Fort Walton Beach: sinkholes, expansive soils, dam safety, earthquakes, avalanches, land subsidence, landslides, volcanoes, and tsunamis. Therefore, these hazards are not analyzed in any depth in the hazard analysis. Further explanation is provided in the “Other Hazards” section.

Hazard Identification

The technical planning process begins with hazard identification. In this process, the City of Fort Walton Beach Staff, along with the staff from the Okaloosa County Growth Management Department, has identified all of the natural hazards that threaten the community.

Section 5.03.01.02 Hurricane and Tropical Storm

DEFINITIONS:
Please refer back to the Risk Assessment of the overall County for the definitions of this hazard.

HISTORICAL OCCURRENCE:
The City of Fort Walton Beach and Okaloosa County are equally susceptible to hurricanes and tropical storms, as the city is located on the bay. Hurricanes and tropical storms are extremely

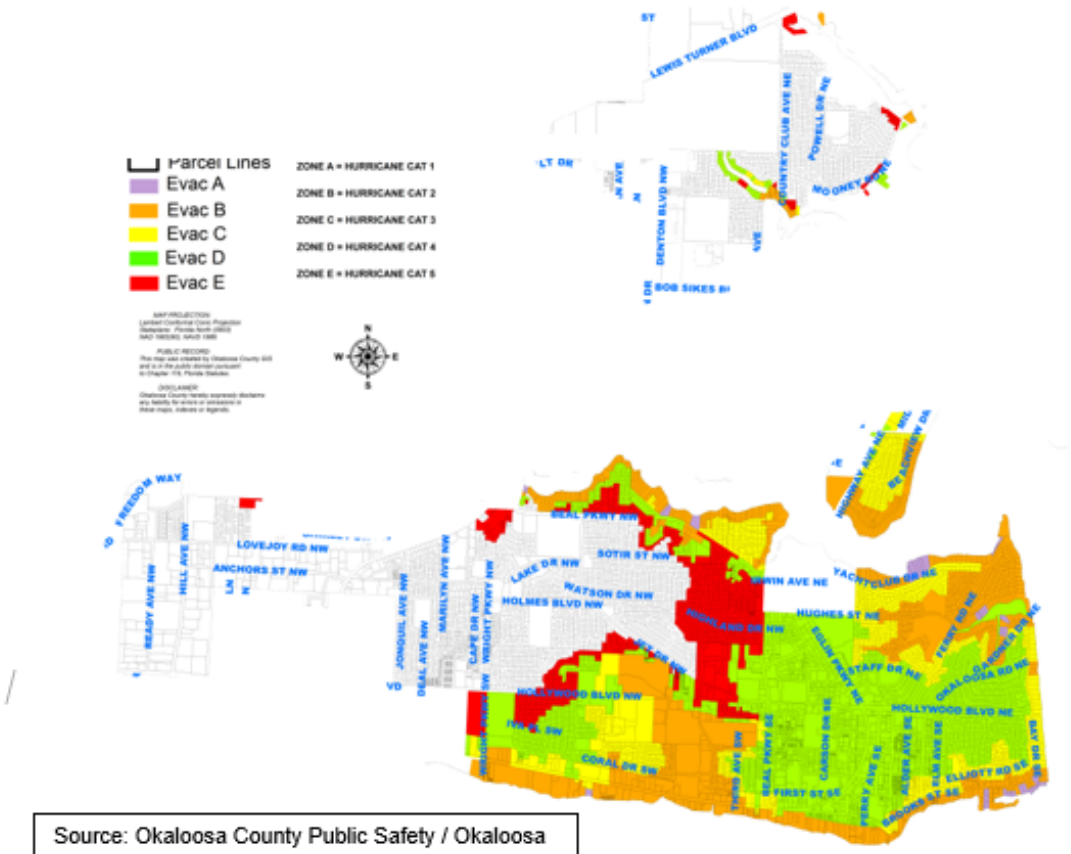
dynamic forces and their severity on a particular community is difficult to predict. Due to the large area that hurricanes and tropical storms impact, it is assumed that the City of Fort Walton Beach and the overall County experienced the same storms. Therefore, the historic hurricane record of Okaloosa County is applicable to the City of Fort Walton Beach. Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
Damage from previous storms include fallen trees, downed power lines, power outages, significant and minor structural damage, shoreline erosion, and street/concrete erosion. High winds from hurricanes are a substantial threat to all homes, especially manufactured housing. Category 3 or higher force winds would likely cause substantial damage throughout the City of Fort Walton Beach. Winds in excess of 155 MPH could be experienced in a major Category 5 hurricane in some locations. Traditional stud and brick veneer or siding homes and businesses are vulnerable, as well, especially when hurricane shutters are not used. Relatively few businesses and homes have hurricane shutters, although shelters and some critical facilities are shuttered.

In the worst case scenario of a Category 5 hurricane, there will be catastrophic damage to homes and buildings, trees, power poles, and signage. In particular to power pole damage, there would be extensive widespread system destruction anticipated, which can include transmission/substation damage. All mobile homes and most frame homes will be completely destroyed due to wind causing structural collapse. The Category 5 winds of in excess of 155 MPH will cause significant damage to all buildings, with loss of roof sheathing, broken windows, and in some cases wall failure resulting in a structural collapse. The majority of trees will be snapped and power poles downed. In some cases, this will result in power outages that could last for weeks or months. People and animals would be at an extremely high risk of injury or death as a result of the strong, forceful winds causing flying or falling debris.

Evacuation is recommended prior to a Category 5 hurricane making landfall. The expected storm surge level of up to 16.8 feet associated with a Category 5 hurricane will substantially impact the City of Fort Walton Beach. Also, severe flooding will occur and likely cause polluted water, storm sewer overflow, and damage to roadways. Storm surge will be examined in greater depth in the following section. (NOAA, 2010). The figure below displays the City of Fort Walton Beach's evacuation zones, which corresponds to the various hurricane categories.

Figure 5.03.01.02.1: Evacuation Zones for the City of Fort Walton Beach



Source: Okaloosa County Public Safety / Okaloosa County GIS, 2023

PROBABILITY:
According to Colorado State University's United States Landfalling Hurricane Probability Project, Okaloosa County, and thus the City of Fort Walton Beach, have the following future probabilities over a 50-year time period:

Table 5.03.01.02.1: 50-Year Probabilities of Named Storm, Tropical Storm, and Hurricane Making Landfall in Okaloosa County

1 or More Named Storms Making Landfall	1 or More Hurricanes Making Landfall	1 or More Intense Hurricanes Making Landfall	Tropical Storm-Force (≥ 40 mph) Wind Gusts	Hurricane-Force (≥ 75 mph) Wind Gusts	Intense Hurricane-Force (≥115 mph) Wind Gusts
>99%	99%	40.50%	>99.9%	99.60%	82.30%

Source: The United States Landfalling Hurricane Web Project, 2025

City of Fort Walton Beach

Section 5.03.01.03 Storm Surge

DEFINITION:
Please refer to the Risk Assessment of the overall County (Chapter 4) for the definition of this hazard.

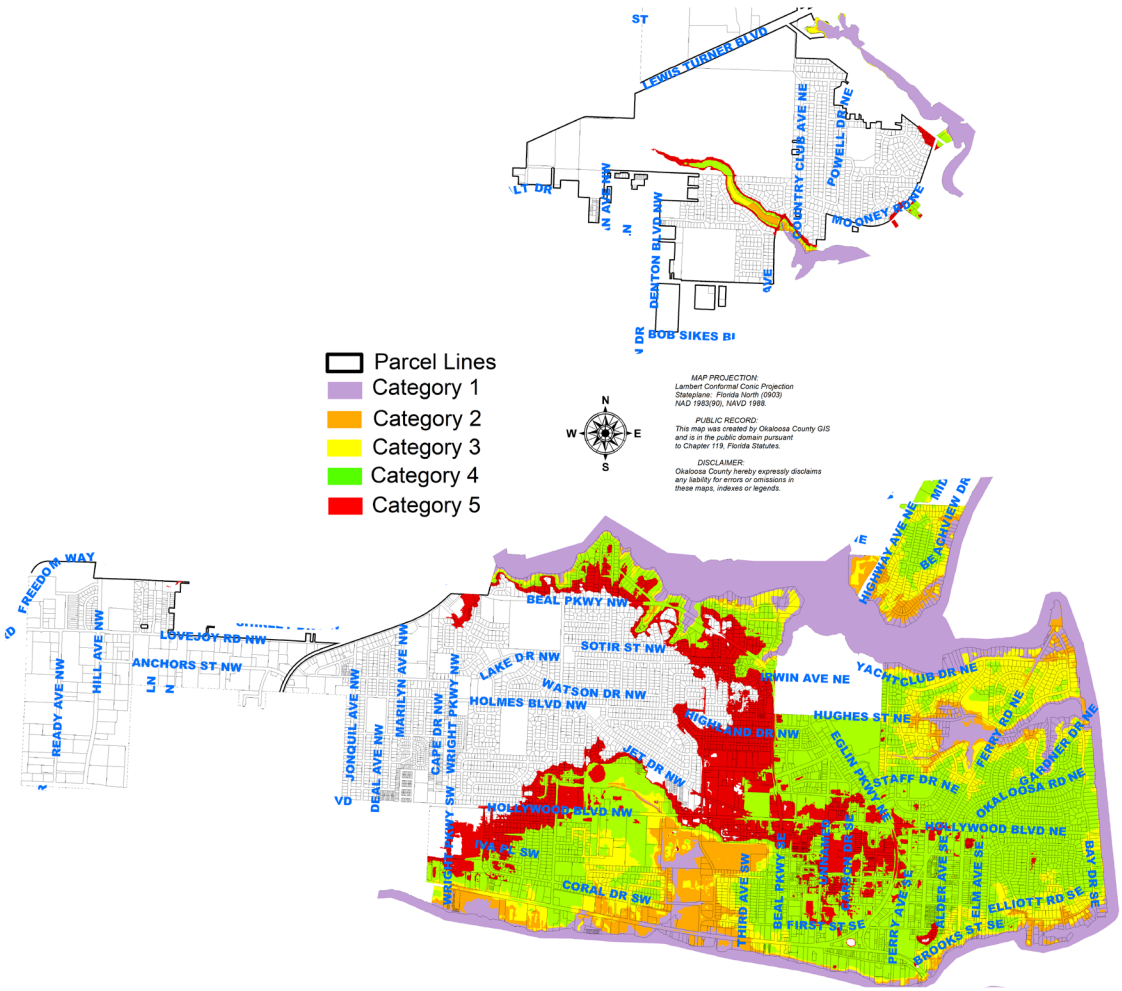
HISTORICAL OCCURRENCE:
Similar to the entire Okaloosa County coastline, Hurricanes Opal (1995) and Ivan (2004) pushed significant storm surges into the City of Fort Walton Beach. Hurricane Gustav (2008) made landfall in Louisiana but combined with the high tide caused a 6 ft storm surge in some areas in the City of Fort Walton Beach. Hurricane Sally (2020) made landfall in Florida, as a slow-moving category 1 and 2, caused parts of Fort Walton Beach to be flooded. Most of the flooding occurred on Okaloosa Island. Overnight.30 inches of rain occurred from a 2-mph hurricane. Since Okaloosa County's bay and coastal areas are equally susceptible to storm surge, and because the City of Fort Walton Beach is located on the bay, the County's historic storm surge data is relevant to the City of Fort Walton Beach. Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
In the worst case scenario, some of these areas of the City of Fort Walton Beach will experience storm surge levels up to 16.8 feet above mean sea level during a Category 5 hurricane (See Table 5.03.01.03). It is evident from the figure below that most of the southern and entire eastern portions of the city will be affected by the resulting flooding from the storm surge. The high storm surge levels will cause significant flooding of residential and commercial structures, power outages, and storm sewer overflow. The figure below shows the possible storm surge levels with each hurricane category in the City of Fort Walton Beach.

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City of Fort Walton Beach

Figure 5.03.01.03.1: The City of Fort Walton Beach's Exposure to Storm Surge



Source: Okaloosa County Public Safety / Okaloosa County GIS, 2022

PROBABILITY:
Regardless of the storms' level of intensity, the storm surges associated with each storm greatly vary. This fact is recognized in the updated Saffir-Simpson Hurricane Wind Scale where storm surge has been removed due to the difficulties in its prediction. Therefore, a probability of future storm surge occurrence shares the same probability of hurricanes and tropical storms. The potential storm surge levels have been determined from a historical point around the City of Fort Walton Beach (See Table 5.03.01.03.1, below).

Table 5.03.01.03.1: Potential Storm Surge Level for Hurricane Categories

HISTORY POINT (Description)	HURRICANE SURGE ELEVATION (in feet)				
	CAT 1	CAT 2	CAT 3	CAT 4	CAT 5
Choctawhatchee Bay (Ft. Walton Beach)	4 – 5	6 – 8	9 – 12	13 – 18	> 18

Note: Storm surge levels reflect 2021 hurricane scale update.
Source: West Florida Regional Planning Council, 2010 - 2021

Section 5.03.01.04 Flooding

DEFINITION:
Please refer to the Risk Assessment of the overall County (Chapter 4) for the definition of this hazard.

HISTORICAL OCCURRENCE:
The City of Fort Walton Beach has an average annual rainfall of 55.35 inches of per year. In 1997 and 2003, there were flash-floods reported in the City of Fort Walton Beach area. In 1997, heavy rains of 2-3 inches in a little over an hour caused street flooding and high water in some buildings in the City of Fort Walton Beach area. The water subsided shortly after the heavy rains stopped. There were no known injuries or fatalities; however, $5,000 in property damage was reported. In 2003, heavy rains of 4-6 inches from slow moving thunderstorms caused several streets to flood in the City of Fort Walton Beach area. Some side streets were closed for an hour due to high water. In 2013, heavy rains of 2-3 inches occurred within a couple of hours. In 2014, major flash flooding occurred with high rainfall. In 2020, Hurricane Sally caused many road closures including Brooks Bridge due to flooding. In 2023, heavy flooding occurred due to intense storms affecting many roads including Eglin Parkway.

All jurisdictions in Okaloosa County are equally susceptible to experiencing flooding or flash-flooding.

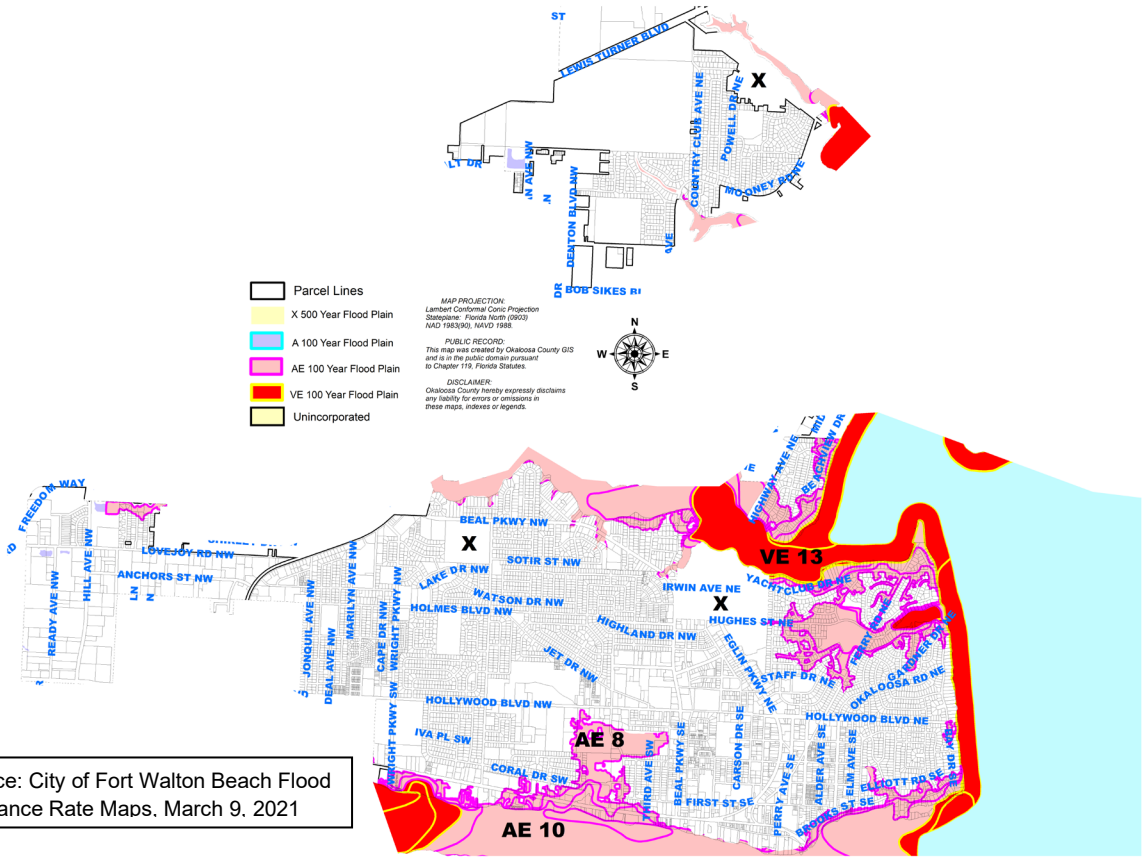
Given the minimal amount of data available at the municipal level regarding the historical occurrences of severe floods or flash-floods, overall County data of this hazard will be used. Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard because all of Okaloosa County is equally susceptible to this hazard. *Note* the data

is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
The worst case scenario in terms of flooding in the City of Fort Walton Beach would be if widespread flooding resulted in property damage and losses, power outages, storm sewer overflow, and road-closures. Properties located in the AE-8, AE-9, VE, and A flood zones will be impacted more severely than the rest of the city, which is located in flood zone X (500 year flood plain). *Note* AE-8 and AE-9 flood zone means that the area is susceptible to flooding at 8 and 9 feet above sea level, respectively. However, the vast majority of the City of Fort Walton Beach is located in the X flood zone, which is minimally susceptible to flooding. (See Figure 5.03.01.04.1).

Flooding can severely impact the road network in the City of Fort Walton Beach. There are approximately 7.70 miles of arterial and collector roads in the City of Fort Walton Beach. Out of this total, 7.10 miles of these roads are located in the NFIP X Zone (500 Year Flood Zone) and .60 miles located in the NFIP Special Flood Hazard Zone. These roads are especially susceptible to flooding during moderate to heavy rain events.

Figure 5.03.01.04.1: The City of Fort Walton Beach's Flood Zones



Source: City of Fort Walton Beach Flood Insurance Rate Maps, March 9, 2021

Temporary localized flooding can also severely impact roadways during moderate to heavy rain events, which could result in road-closures. It is particularly difficult to prepare transportation systems for “trailing” storm systems that tend to saturate land as well as overload drainage and retention systems. Arterial roads, dirt roads, and roads constructed prior to uniform standards and regulations are some of the roadways typically impacted by isolated heavy rain events. Unpaved roads are vulnerable to flooding and highly subject to washout. Culverts and small bridges can sometimes be undermined, causing people to be stranded and isolated until the repairs can be made. Some major roadways used for evacuation are subject to flooding.

PROBABILITY:
The entire County, as well as the City of Fort Walton Beach, has a future probability of a flash-flood or flood occurring annually. However, due to the localized nature of flash-flooding and flooding, a more exact probability will not be provided.

Section 5.03.01.05 Land Erosion

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
All of Okaloosa County is equally susceptible to land erosion in some localized areas. Therefore, some localized portions of the City of Fort Walton Beach may be susceptible to land erosion. Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
Sheet erosion, if left unchecked, can damage drainage ditches, fill stormwater retention ponds with sediment, and cause erosion into property, including structures. Most erosion of this nature occurs in along unpaved roadways in hilly areas. In this instance, the result is the deposition and buildup of soils/sands on the roadways and in the drainage systems.

In the worst case scenario, soil erosion will cause land to be unusable because of the degraded soil quality, structure, stability and texture. Erosion along stream and ditch banks will cause undermining of structures (bridges, etc.) and washing out of lanes, roads, and fence rows.

PROBABILITY:
Based on the existence of potentially highly erodible soils and erodible soils there is a possibility of land erosion in the City of Fort Walton Beach. The future probability of soil erosion cannot be given because no previous occurrences have been documented.

Section 5.03.01.06 Severe Storms

The Severe Storms segment of the LMS Hazards Assessment includes tornado and waterspout, thunderstorms and lightning, winter storms, and heat waves and drought (hurricanes are excluded from this section because they are covered in another section of this chapter.

Section 5.03.01.06.01 Tornado and Waterspout

DEFINITION:
Please refer to the Risk Assessment of the overall County for the definitions of these hazards.

HISTORICAL OCCURRENCE:
On three occasions in 1995 and once in 1998, tornadoes touched down in the City of Fort Walton Beach area. Some of the damages seen in these incidents were the following: trees and power lines blown down and minor roof damage. In those cases, there were no known injuries or fatalities; however, cumulatively $17,000 in property damage was reported. In 2000, 2001, and 2020, there was a waterspout spotted offshore of the City of Fort Walton Beach. In both occurrences, there were no known injuries, fatalities, or property damage reported. (NCDC, 2020).

The historic tornado record of Okaloosa County is relevant to the City of Fort Walton Beach because of the unpredictable pattern of tornadoes. The entire County, including the City of Fort Walton Beach, is vulnerable to tornado damage. Also, the County's waterspout historic record is applicable to the City of Fort Walton Beach because it is located on the bay, which is one of the areas susceptible to waterspouts. Please refer back to the Risk Assessment of the overall County for the historical occurrences of these hazards. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
Because of the unpredictable patterns of tornadoes, and because Okaloosa County has a relatively high frequency of occurrence, the entire County, including the City of Fort Walton Beach, is vulnerable to tornado damage. The damage potential for a tornado increases as a function of population density. As the number of structures and people increase, the potential damage/injury rate increases. Manufactured housing, poorly constructed or substandard housing and apartment complexes are especially susceptible to damage from a tornado. Manufactured housing and substandard housing are exceptionally susceptible because of their lack of resistance to high winds, and apartment complexes because of their size and densities.

The worst possible scenario in terms of tornado damage would be if an F-5 tornado hit the City of Fort Walton Beach. It is very unlikely that an F-5 tornado would strike Okaloosa County or the City of Fort Walton Beach, but if one did there would be complete destruction of homes and businesses that were in the tornado's path. Trees and power lines would be snapped, building debris scattered about, and severe structural damage would be evident on any building left standing.

The most common and active weather threat in the City of Fort Walton Beach for the formation of tornadoes is severe thunderstorms associated with frontal boundaries. Frontal boundaries and summertime afternoon air mass thunderstorms can reach severe limits because of atmospheric uplift. High winds relating to gust fronts and "microbursts" can create high wind speeds up to 100 MPH. Buildings and highway traffic are vulnerable to these storms.

PROBABILITY:
History records indicate a tornado touches down specifically in the City of Fort Walton Beach an average of approximately once every four years. From 1958-2025 there have been a total of 99 reported tornadoes in Okaloosa County. Based on this data the probability of a future tornado occurrence in the City of Fort Walton Beach has been determined to be less than 1.5 per year. Also, since there was only 9 reported waterspouts from 1996-2001, the future probability was determined to be less than 2 waterspouts per year.

Section 5.03.01.06.02 Thunderstorms and Lightning

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
On four occasions in 1997, once in 1998, twice in 2000, and once in 2003, strong thunderstorm winds resulted in several trees or large limbs and power lines or poles blown down in the City of Fort Walton Beach area. In one of the incidents in 2000, golf ball size hail was reported along with a couple of sheds being destroyed. Cumulatively in all those occurrences there were no injuries or fatalities; however, $57,000 in property damage was reported. On two occasions in 1993, once in 1999, once in 2000, and twice in 2003, strong thunderstorm winds resulted in some of the following damages: flying debris, destroyed or damaged automobiles, peeled-off or damaged roofs, and damaged buildings or homes. Cumulatively in all these occurrences there were no injuries or fatalities; however, $2,625,000 in property damage was reported. (NCDC, 2010).

In 1993, there was a thunderstorm, which resulted in a man being struck by lightning. There was only the one injury and no fatalities or property damage reported. In 1995, lightning strike initiated a fire that caused damage to the roof and air conditioner a restaurant. There were no injuries or fatalities; however, $5,000 in property damage was reported. On each occasion in 1998, twice in 2002, and once in 2004, lightning struck a home and caused a fire. Cumulatively in all those occurrences there were no injuries or fatalities; however, $21,500 in property damage was reported. Also, in 2003, lightning struck several transformers and knocked power lines down. There were no injuries or fatalities; however, $5,000 in property damage was reported. (NCDC, 2010).

The City of Fort Walton Beach is just as equally susceptible to thunderstorms and lightning as Okaloosa County. Therefore, the historic record of thunderstorms and lightning in Okaloosa County will be applicable to the City of Fort Walton Beach. Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
Thunderstorm damage can include traffic accidents on wet roads, flash-flooding, lightning damage to electronics and structures, lightning strikes on people, and wind and hail damage. Aside from being able to produce tornadoes, thunderstorms can produce damaging high winds. Cold upper level air descending from the top of a thunderstorm to the ground usually causes these

winds. In a worst case scenario, if the upper level air speed of descent is rapid, these cold "microbursts" can fan out as they come in contact with the ground at a high rate of speed. This is sometimes referred to as "straight line winds." These winds can cause significant property damage, injuries, and deaths similar to a F0 to F2 tornado or Category 1 or 2 hurricanes.

PROBABILITY:
Based on historical data (See Risk Assessment of overall County of this hazard's historical occurrences), the City of Fort Walton Beach has a future probability of experiencing higher than 5 severe thunderstorms per year. Also based on historical data (See Risk Assessment of overall County for this hazard's historical occurrences), the City of Fort Walton Beach is likely to experience 4 to 16 flashes of lightning per square kilometer per year.

Section 5.03.01.06.03 Winter Storms

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
According to the National Climatic Data Center (NCDC), the City of Fort Walton Beach has not experienced any snow or ice storms since 1950. Because of its subtropical climate, winter storms are generally considered a minimal hazard for the area. However, in January 2025 a snowstorm moved across the Gulf Coast, bringing an unusual 7.5 inches of snowfall to Fort Walton Beach.

From 2020-2025, the City of Fort Walton Beach had a total of 16 days where the temperature was below 32°F. The majority of those days were in January 2025. The City of Fort Walton Beach's monthly mean average temperature minimums from 2020-2025 are displayed below.

Table 5.03.01.06.03.1: Monthly Mean average temperature in degrees Fahrenheit. Fort Walton beach

	Nov	Dec	Jan	Feb	Mar
Fort Walton Beach, FL	60°	54°	51°	55°	60°

Source: Monthly historical data

Please refer back to the Risk Assessment of the overall County for the historical occurrences of winter weather because all of Okaloosa County is equally susceptible to this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
The worst case scenario in terms of winter storms in the city would be if freezing or below freezing temperatures lasted for a week or more, and if the storm responsible for such freezing temperatures knocked down power lines resulting in power loss, and the inability of residents to

heat their homes. A freeze's greatest risk is generally unprotected or under-protected water pipes in homes, businesses and infrastructure. Outdoor irrigation systems and plumbing in homes where insulation is inadequate in walls or in off-grade homes where plumbing is exposed are most vulnerable. Unmitigated older structures and manufactured housing are probably the most vulnerable structures.

An icing, glaze, or sleet incident in the City of Fort Walton Beach would likely result in severe traffic problems and safety concerns throughout the community and its roadways. With no means of salting roadways or removing ice, emergency response would be severely slowed in iced areas. Electrical service would likely be interrupted or totally absent in many areas due to power line glazing and tree branch falls. Mitigation efforts would more likely focus on sheltering and ability to receive outside mutual aid assistance, rather than on equipment and ice buildup prevention due to the infrequency and inconsistency of such events.

PROBABILITY:
Fort Walton Beach currently experiences a cool season from early December to early March. The average first frost date is around November 19 (50% chance of 32°F) and the last frost date is between March 1-10. While freezing temperatures do occur during winter cold snaps, the overall average low in the coldest month (January) is 45°F.

Climate models project that as global temperatures rise, winter temperatures in Florida will continue to increase. Statewide average winter temperatures are projected to rise above 60°F in the coming decades under various emissions scenarios.

Because a snow event in the City of Fort Walton Beach is so rare, a single snow "event" over five or ten years is probably the average.

Section 5.03.01.07 Heat Wave and Drought

Heat Wave

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of heat waves.

HISTORICAL OCCURRENCE:
Every jurisdiction in Okaloosa County is equally susceptible to heat waves as they tend to impact a relatively large geographic area. The Fort Walton Beach area is considered to have an "extreme" heat risk from increasing "feels like" temperatures. The area experiences numerous days with high heat index values (above 104°F) annually, with advisories frequently issued during summer months from 2020-2025. The City of Fort Walton Beach's monthly mean average temperature minimums from 2020-2025 are displayed below.

Table 5.03.01.07.1: Monthly Mean average temperature in degrees Fahrenheit. Fort Walton beach

	May	Jun	Jul	Aug
Fort Walton Beach, FL	73°	80°	82°	81°

Source: Monthly historical data

In 2023, it was particularly severe, with the region experiencing numerous heat events. The local area saw an unprecedented 25 separate heat advisories issued throughout the summer, peaking in August with almost daily advisories. In 2024, was the hottest summer on record for Florisa as a whole. In July of 2025, heat indices reached up to 113°.

EXTENT:
The worst case scenario in terms of a heat wave would be if excessive heat and humidity lasted for a week or more. Dangerous conditions are present when both heat and high humidity combine to make outside temperatures feel in the 103-124° F range. External danger warnings are issued when high temperatures and humidity combine to make outside temperatures feel in the 126-137° F range. Heat disorders may develop in people who work outside for long periods of time, such as construction workers. To combat the dangerous effects of excessive heat residents should dress appropriately, stay indoors, refrain from strenuous work during the hottest part of the day and stay hydrated.

The general threat to the community is to individuals without adequate cooling systems in their homes, with emphasis on low income and the elderly. Electrical system failures due to demand would only enhance problems for all of these industries and populations. There is a potential for water supply shortages in the city during a severe heat wave. The City's Water Supply Plan contains conservation measures and addresses potential water supply shortages. There are potential agricultural losses, but the losses are not on a large-scale level due to their only being personal gardens in the city. There are currently no agricultural lands within the city limits and none are proposed on the Future Land Use Map.

PROBABILITY:
Based on the City of Fort Walton Beach heat wave data, it is predicted that the future probability of a heat wave occurring in the City of Fort Walton Beach is on average and has increased to six per year.

Drought

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of drought and the categories of drought according the U.S. Drought Monitor.

HISTORICAL OCCURRENCE:
Droughts occur at a regular frequency and are cyclical in Okaloosa County. Due to the large area that droughts impact, it is assumed that the City of Fort Walton Beach had a similar number of drought occurrences. Please refer back to the Risk Assessment of the overall County for the historical occurrences of drought because all of Okaloosa County is equally susceptible to this hazard.

EXTENT:
The worst case scenario in terms of drought would be if an exceptional drought (D4) lasted for months or years (See the Risk Assessment of the overall County for drought category descriptions). An exceptional drought would cause shortages of water in reservoirs, streams, and wells. Bay swamps and bodies of water would see a drastic decline in natural water levels and water shortages in reservoirs and wells would create water emergencies. Precipitation levels would be -2.0 inches or less. Also, the risk of wildfire increases as drought deepens. (U.S. Drought Monitor, 2010).

Droughts impact the County in a number of ways. For example, declining water levels and altered hydro-periods in bay swamps can disrupt breeding cycles of fish and amphibians which can affect other species which prey on, or which are preyed upon, such fish and amphibians. Increased demand created by drought conditions on public and private water supply systems that serve the public has caused some generators and pumps to fail at critical moments, creating low or no pressure for critical facilities such as fire hydrants and medical centers.

PROBABILITY:
Recent data, particularly from 2025, shows that abnormally dry conditions are common, often encompassing large portions or all of Okaloosa County for several weeks or months at a time. Florida's official hazard plan indicates North Florida is likely to experience 11 to 15 weeks (approx. 2.5–3.5 months) of *drought* (D1 or worse) each year, implying D0 conditions occur even more frequently. The future probability of experiencing abnormally dry months is higher than 5 months per year, especially during the dry season.

Section 5.03.01.08 Wildfire

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
The City of Fort Walton Beach is susceptible to wildfire. The majority of the incorporated area is urban or residential. The City's proximity to natural lands at Hurlburt Field and Eglin Air Force Base poses a potential threat of wildfire because wildfires may spread quickly and approach urbanized areas adjacent to the natural lands. This risk is assumed to be low since there is no recorded history of wildfires spreading to the City of Fort Walton Beach from the military installations.

City of Fort Walton Beach

The wildfire record of Okaloosa County is relevant to the City of Fort Walton Beach because all jurisdictions are susceptible to wildfire. Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into specific areas of the county

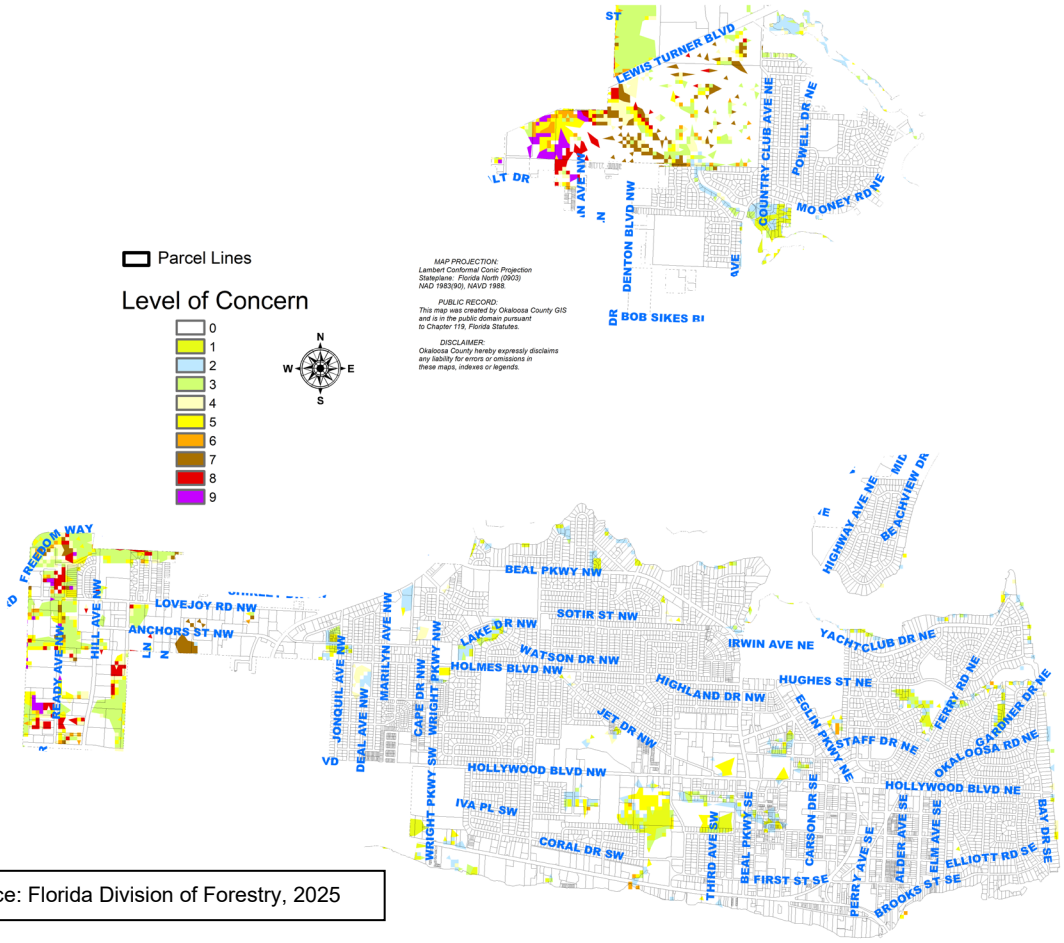
EXTENT:
Based on the Wildland Fire Risk Assessment of Okaloosa County, the worst case scenario would be if the areas with the greatest Level of Concern (LOC) experienced a massive wildfire. These areas have a greater likelihood of danger and destruction due to their inadequate infrastructure, inaccessibility to critical facilities or firefighting resource locations, and location in the wildland-urban interface. *Note* According to the Florida Department of Forestry, wildland urban interface is defined as “the zone where structures and other human development meets/intermingles with undeveloped wildland fuels and other natural features.” Fires could come into subdivisions and neighborhoods in urban and suburban areas, which could be a potentially catastrophic situation. Smoke and ash from dangerous wildfires could decrease visibility on highways and local roads.

PROBABILITY:
The Wildland Fire Risk Assessment System of the Florida Division of Forestry displays the wildfire levels of concern for the City of Fort Walton Beach. According to the map, most of the incorporated city is classified as non- or minimally burnable (2020). The figure below displays the relatively low levels of concern that wildfire has for the core area of the city. The far northern and western portions of the City of Fort Walton Beach have the highest levels of concern. Although, the City of Fort Walton Beach is susceptible to wildfire, it appears that the future probability of occurrence is relatively low.

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City of Fort Walton Beach

Figure 5.03.01.08.1: Wildfire Levels of Concern for the City of Fort Walton Beach



Source: Florida Division of Forestry, 2025

Section 5.03.01.09 Beach Erosion

DEFINTION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
Beach erosion is a naturally occurring, cyclical process in which sand particles are removed and/or replaced by wind, waves, or tides. Intensive wave action or strong storm surge during a tropical storm or hurricane can accelerate the rate of beach erosion. Beach erosion is a coastal and bay issue; therefore all jurisdictions located in those areas are susceptible to beach erosion.

Because tropical storms and hurricanes can cause beach erosion in various coastal locations throughout the county, the historical occurrences of beach erosion is relevant to all costal and bay areas of the county. Please refer to the Risk Assessment of the overall County for the historical occurrences of beach erosion. The City of Fort Walton Beach is bordered by Choctawhatchee

Bay and the Santa Rosa Sound. The majority of the beach shoreline is comprised of privately owned single family homes.

EXTENT:
The worst case scenario in terms of beach erosion would be if a major storm with significantly strong winds and storm surge washed-out the coastal areas. The damage will be much worse for portions of the coastline already critically eroded. Beach erosion will undermine the integrity of infrastructure, beachfront homes and businesses, and other structures by washing away the sediments that support the structural foundation sometimes resulting in complete destruction.

PROBABILITY:
Based on the historical data of the overall County, it appears that beach erosion will most certainly occur in the future. The frequency and extent of the erosion are highly dependent on the frequency and intensity of tropical storms and hurricanes. The natural process of beach erosion is different among coastal locations in the County due to variations in beach stability. This means there are different degrees of natural erosion rates and potential damage from storms or unusual wave action. Therefore, a numerical value will not be given for the estimated future amount of beach erosion. It must also be noted that beach erosion is a natural part of a coastal system, and can be expected to occur at various locations and at different rates over time.

Section 5.03.01.10 Other Hazards

The hazards listed below have been analyzed and determined that the impact would be minimal or non-existent in the City of Fort Walton Beach.

Section 5.03.01.10.01 Sinkholes

- The map and description prepared by the United States Geologic Survey (USGS) in its "Sinkhole, Type, Development and Distribution in Florida" (1985) indicates that Okaloosa County in its entirety is located in an area where sinkholes seldom, if ever, occur. But on August 21, 2025, a significant ground collapse (a sinkhole or subsidence incident caused by a failed drainage pipe) occurred on Beal Parkway in Fort Walton Beach. The hole was approximately 15 feet deep and 30 feet wide, demonstrating that such incidents *do* happen within the city limits. The future probability of a sinkhole or significant subsidence incident occurring is no longer less than 1%. The occurrence in August 2025 confirms that the hazard is present. The risk should be classified as low but possible, especially in areas with aging underground infrastructure.

Section 5.03.01.10.02 Expansive Soils

According to the *Soil Survey of Okaloosa County Florida* (USDA, June 1995), two types of soils are considered vulnerable to expansion. These are known as shrinking and swelling or "expansive soils." Another way of describing expansive soils is the change of volume of a soil with a change of moisture content. All of the soils listed in the expansive class are also considered erodible soils. Okaloosa County may be susceptible to expansive soils in some localized areas. There have been no previous occurrences recorded of expansive soils in the County. The

following table lists soils having moderate to high shrink swell potential in Okaloosa County. Only those soils with an associated risk of "High" are listed:

Table 5.03.01.10.02.1: Shrink/ swell potential of soils in Okaloosa County.

Soil Type	ME Soils*	HE Soils **	Total Acreage	% Total Land Area
#35-Angie (2 to 5 percent slopes)		X	1,073.26	.16
#49-Angie (5 to 12 percent slopes)		X	10,280.79	1.61
#20-Udorthents (nearly level)	X		655.31	.11
Total	**.11**	**1.77**	**12,009.36**	**1.88**

* Moderate Erodible Soils **Highly Erodible Soils

Note: Expansive soils and erodible soils are classified as the same.
Source: Soil Survey of Okaloosa County, Florida; June 1995.

Expansive soils can lessen the strength of building foundations, which could result in structural collapse or instability. In addition, these soils have limitations for use as local roads and streets because of lack of strength to support roadways and traffic. There is a possibility of shrink/swell potential or soil expansion based on the existence of moderately erodible soils and highly erodible soils in Okaloosa County. Although the specific amount of these soils in the county is known, the future probability of this occurring in the City of Fort Walton Beach is minimal because this issue is addressed during the time of construction and there are no previous records of occurrence.

Section 5.03.01.10.03 Dam Safety

There are no permitted dams located in the City of Fort Walton Beach. Therefore, the City of Fort Walton Beach is not susceptible to flooding due to dam failure. However, if there are any permitted in the future, the LMS committee will update the plan to reflect those changes.

Section 5.03.01.10.04 Earthquake

According to the U.S. Geological Survey Earthquake Probability maps, the City of Fort Walton Beach has between a 0.005 and 0.010% chance of experiencing a 5.0 magnitude earthquake within 100 years. This is considered a very minimal risk. Also, since there is no history of earthquakes in Okaloosa County or the City of Fort Walton Beach, no further analysis or risk assessment will be conducted for this plan. The future probability of an earthquake occurring in the City of Fort Walton Beach is less than 1 in 100 years.

Section 5.03.01.10.05 Avalanche

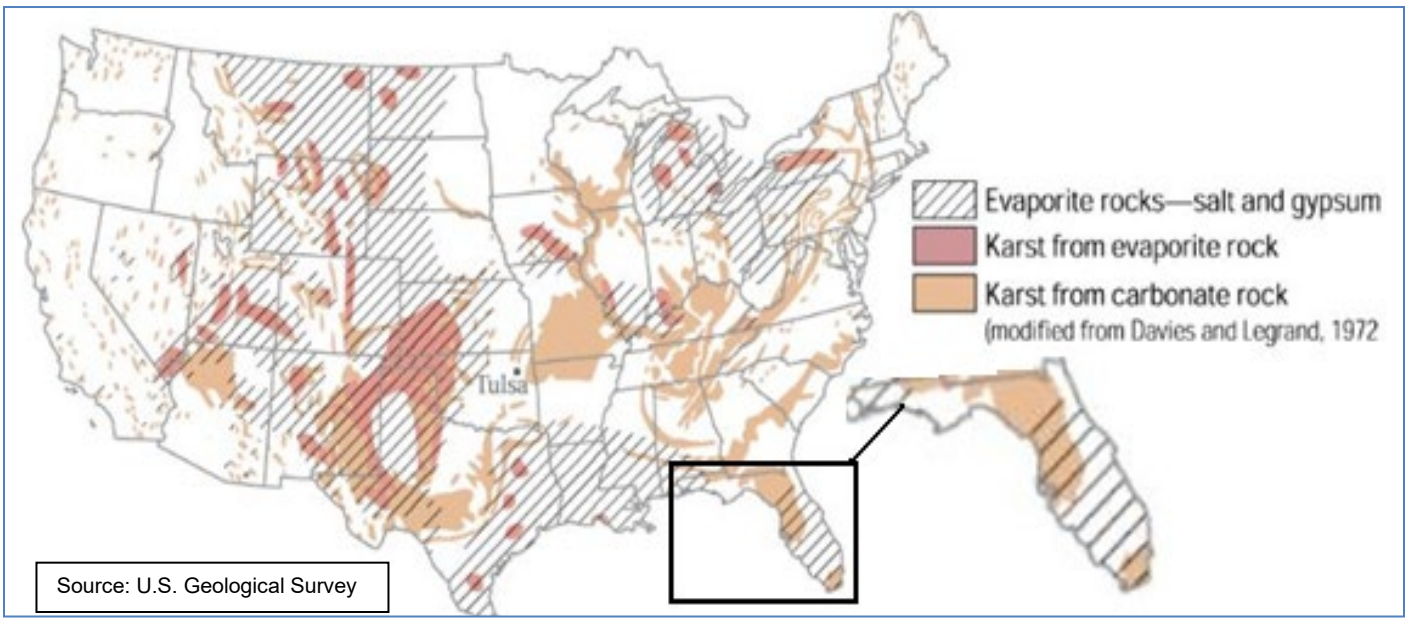
The City of Fort Walton Beach does not have topography or snowfall amounts that would create conditions for an avalanche. Since there is no history of this hazard in the county, no further

analysis or risk assessment will be conducted for this plan. The future probability of an avalanche occurring in the City of Fort Walton Beach is less than 1 in 100 years.

Section 5.03.01.10.06 Land Subsidence

According to the U.S. Geological Survey, "land subsidence occurs when large amounts of ground water have been withdrawn from certain types of rocks, such as fine-grained sediments. The rock compacts because the water is partly responsible for holding the ground up. When the water is withdrawn, the rock falls in on itself. Land subsidence is most often caused by human activities, mainly from the removal of subsurface water" (U.S. Geological Survey, 2010). The City has nine wells that supply potable water to its citizens. The City of Fort Walton Beach has a minimal amount of the most common rock types that are connected to land subsidence (See Figure 5.03.01.10.06.1). Since there is no significant history of this hazard in the City of Fort Walton Beach, no further analysis or risk assessment will be conducted for this plan. The future probability of land subsidence occurring in the City of Fort Walton Beach is less than 1 in 100 years.

Figure 5.03.01.10.06.1: Rock types connected to collapse (subsurface cavities/sinkholes) in the U.S.



Section 5.03.01.10.07 Landslide

According to U.S. Geological Survey Map of Relative Incidence and Susceptibility Map, the City of Fort Walton Beach has a very low landslide incidence with less than 1.5% area susceptible to a landslide (USGS, 2010). Landslides are therefore considered to be a minimal risk and no further analysis or risk assessment will be conducted for this plan. The future probability of a landslide occurring in the City of Fort Walton Beach is less than 1 in 100 years.

Section 5.03.01.10.08 Volcano

There are no geological features in or near Okaloosa County, the City of Fort Walton Beach, or the Southeast related to volcanism. Since there is no history of this hazard in the City of Fort Walton Beach, no further analysis or risk assessment will be conducted for this plan. The future probability of a volcanic eruption occurring in the City of Fort Walton Beach is less than 1 in 100 years.

Section 5.03.01.10.09 Tsunami

According to the U.S. Geological Survey, Okaloosa County is not located in an area that has historically been subjected to tsunamis, even though it is a coastal county. Since there is no history of this hazard in the county, including the City of Fort Walton Beach, minimum analysis and risk assessment will be conducted for this plan. The Local Mitigation Strategy Committee will monitor any developments in the ability to predict, monitor and issue warnings. There is no record of a tsunami occurring in Okaloosa County; therefore the future probability for the City of Fort Walton Beach has been determined to be less than 1 in 100 years.

Section 5.03.01.10.10 Sea Level Rise

As defined by multiple agencies, the term “sea level rise” refers to an increase in the ocean’s surface height relative to the land in a particular location. Thermal expansion of the Earth’s oceans and melting polar ice are commonly identified as the two primary causes of sea level rise, though land subsidence is also cited as a factor. While sea level rise most directly impacts coastal regions, its impacts may be felt far beyond the shoreline as impacted areas react to changing conditions and must expand substantial amounts of funds in mitigation activities that may include construction of water control structures, relocating or re-routing roads and other infrastructure, and relocation of impacted populations.

In 2023, Okaloosa County applied for and received a grant through the Resilient Florida Program to develop a Vulnerability Assessment and implementing Adaptation Plan (see Appendix E) and, pursuant to and in compliance with section 380.093, Florida Statutes, awarded a contract to Jacobs Engineering Group to develop said Vulnerability Assessment (VA) and implementing Adaptation Plan (AP). The VA and implementing AP developed by Jacobs Engineering Group is incorporated herein by reference for purposes of establishing vulnerability to sea level rise and various flooding scenarios for the entirety of Okaloosa County and all municipalities (except for the City of Destin which has undertaken its own analysis. As the County-wide Vulnerability Analysis applies to conditions within the City of Ft Walton Beach, please see Section 4.01.11.09 of this Local Mitigation Strategy for more information.

Section 5.03.01.11 Summary

The risk assessment section of this LMS document highlighted the hazards that the City of Fort Walton Beach is exposed to. This provides the foundation for the subsequent section covering how vulnerable the city is to these identified hazards. Numerous facilities, infrastructure, and

neighborhoods in the City of Fort Walton Beach need to be assessed for their vulnerability to disasters.

City of Fort Walton Beach

Section 5.03.02 Vulnerabilities

Section 5.03.02.01 Introduction

The intent of this section is to provide a vulnerability assessment for the potential damage and estimated loss to building structures in the City of Fort Walton Beach.

This section includes a brief summary description of the City of Fort Walton Beach, as well as its vulnerability to the identified hazards and the impact of each hazard. It also describes the vulnerability in terms of the types and numbers of repetitive loss properties within the City of Fort Walton Beach. Additionally, the section describes vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the City of Fort Walton Beach.

The main intent of this section is to provide an estimate of potential dollar losses to vulnerable structures and a description of the methodology used to complete the estimate. Lastly, this section describes vulnerability in terms of providing a general description of land uses and development trends within the City of Fort Walton Beach so that mitigation options can be considered in future land use decisions.

Section 5.03.02.02 Methodology

The Okaloosa County Staff used the same methods, of quantifying the estimated dollar losses to the vulnerable structures potentially impacted by each hazard, for the City of Fort Walton Beach as the overall County. Therefore, please refer to Okaloosa County's Overall Vulnerabilities, Section 4.02.02, for more information.

Section 5.03.02.03 Summary Description of the City of Fort Walton Beach

The City of Fort Walton Beach is an incorporated city located in the southern portion of Okaloosa County. As of the 2020 Census it was home to 20,922 residents, which makes it the second largest municipality in Okaloosa County by population. Within its jurisdiction, there are 5.43 miles that border Choctawhatchee Bay, 2.17 miles that border Cinco Bayou and 2.56 miles that border Santa Rosa Sound. To characterize the development of the City of Fort Walton Beach, the city has been largely built out, especially along portions of U.S. Highway 98. According to the City of Fort Walton Beach City Planner, most of the development trends within the City of Fort Walton Beach have been in the form of redevelopment in the uptown and midtown areas. There has been some development within the Commerce and Technology Park and a fair amount of waterfront development bordering U.S. Highway 98 and Brooks Street. It is expected that most of the development within the City of Fort Walton Beach will be slow in the coming years and the growth trend will stay in the form of redevelopment.

The City participates in the NFIP and enforces its floodplain management regulations pursuant to adopted local ordinances. The City adopted its most recent NFIP-compliant regulations through Ordinance 2046, January 26,2021. Pursuant to this ordinance, the Flood Insurance Rate Maps (FIRM) and associated Flood Insurance Study, along with all subsequent amendments and

revisions, have been formally adopted by reference and serve as the minimum basis for establishing flood hazard areas within the City.

Administration and enforcement of floodplain management regulations, including Special Flood Hazard Areas (SFHAs), are carried out through the City's Growth Management Department.

The City maintains a coordinated administrative structure whereby the Floodplain Manager oversees day-to-day program implementation while a full-time Certified Building Official (CBO) conducts plan review, permitting oversight, and inspections. This structure provides an internal system of checks and balances to ensure consistent interpretation and enforcement of floodplain management requirements.

NFIP Compliance Responsibility

Responsibility for maintaining compliance with NFIP requirements rests with the Floodplain Manager, with support from Growth Management Department staff. The Floodplain Manager ensures that all applicable federal, state, and local floodplain management standards are properly implemented and enforced.

The City administers SD/SI requirements through coordinated review by the Floodplain Manager and the CBO.

Project valuations are submitted during the permitting process and evaluated by the Floodplain Manager in accordance with the NFIP 50-percent rule. Where necessary, the CBO is authorized to require certified appraisals to substantiate structure values in determining whether an activity constitutes substantial improvement.

Following major storm events, substantial damage assessments are conducted by Growth Management Department staff in coordination with Code Compliance Officers, utilizing FEMA-established methodologies and standards.

The City participates in the NFIP Community Rating System (CRS) and currently maintains a Class 6 rating, reflecting implementation of floodplain management practices that exceed minimum NFIP standards. The City maintains a mapped inventory of open space properties, which is reviewed and updated on at least an annual basis. These efforts are consistent with CRS requirements and contribute to the preservation and monitoring of flood-prone lands.

Emergency management activities are coordinated through the City's Emergency Management Program in conjunction with the County's Division of Emergency Management. The City's Floodplain Manager serves as a member of the City's Emergency Management team and the LMS Committee and maintains regular coordination with municipal emergency management personnel and County staff. This organizational structure ensures ongoing interagency coordination between emergency management and floodplain management functions, particularly during hazard events and throughout post-disaster response and recovery operations.

The City of Fort Walton Beach maintains the internal capacity to support grant application and management activities. The City employs a dedicated Grants Manager responsible for

administering awarded grants in compliance with applicable requirements. As such, the City is capable of independently managing grant-funded projects and does not require assistance from the County for grant administration.

The City will incorporate the findings and recommendations of the LMS into our respective planning mechanisms through integration with comprehensive plans, capital improvement programs, land development regulations, and emergency management plans. LMS-identified hazards, vulnerabilities, and mitigation actions are considered during project prioritization, budgeting, and policy development to ensure consistency with long-term resilience objectives. Additionally, the city will utilize the LMS to support grant applications, inform development review processes, and guide post-disaster recovery and redevelopment decisions. This coordinated approach ensures that hazard mitigation principles are systematically embedded into local planning and decision-making processes.

Section 5.03.02.04 Vulnerable Populations

Hazards do not affect the entire population the same. Therefore, special attention needs to be given to the more vulnerable populations. Please refer back to the overall County's Vulnerability for further explanation on these vulnerable populations. The table below displays the City of Fort Walton Beach's vulnerable populations.

Table 5.03.02.04.1: Estimated Vulnerable Populations in the City of Fort Walton Beach, 2020

Population	2020 Census Percent Population	2020 Estimate
Elderly	19.6%	4,100
Language Isolation	16.5%	3,450
Disabled	14.0%	2,930
Single Parent	9.31%	860
Poverty	13.8%	2,885
Minority	34.2%	7,155

Source: 2020 Census ; U.S. Census Population Division

Section 5.03.02.05 Repetitive Loss and Severe Repetitive Loss Properties

The Federal emergency Management Agency defines repetitive loss and severe repetitive loss properties as follows (44 CFR Part 77 § 77.2):

Repetitive loss structure means a structure covered under an NFIP flood insurance policy that:

(1) Has incurred flood-related damage on 2 occasions, in which the cost of repair, on average, equaled or exceeded 25% of the value of the structure at the time of each such flood event; and

(2) At the time of the second incidence of flood related damage, the contract for flood insurance contains increased cost of compliance coverage.

Severe repetitive loss structure means a structure that is covered under an NFIP flood insurance policy and has incurred flood-related damage:

(1) For which 4 or more separate claims payments have been made under flood insurance coverage under subchapter B of this chapter, with the amount of each claim (including building and contents payments) exceeding $5,000, and with the cumulative amount of such claims payments exceeding $20,000; or

(2) For which at least 2 separate flood insurance claims payments (building payments only) have been made, with cumulative amount of such claims exceeding the value of the insured structure.

In Ft Walton Beach, hurricanes, tropical storms, storm surge, flooding, and thunderstorms are responsible for repetitive loss properties. These properties are more vulnerable to certain hazards than other structures in the City of Fort Walton Beach because they have already experienced significant flood damage. Please see Section 4.02.05 and Table 4.02.05.1 for this LMS' discussion of Repetitive Loss and Severe Repetitive Loss properties throughout the County, including within the City of Ft Walton Beach.

Section 5.03.02.06 Hurricane and Tropical Storm

The City of Fort Walton Beach is vulnerable to the damaging effects of tropical storms and hurricanes as it is located on the Choctawhatchee Bay, near the southern coast of the county. The City of Fort Walton Beach would experience destruction in terms of wind damage, heavy rains, and storm surge during a tropical storm or hurricane. All structures within the City of Fort Walton Beach's jurisdiction are susceptible to damage in the form of flooding due to heavy rains and strong storm surge. High winds can damage structures by removing roofs and siding and creating flying debris out of sources which are not anchored. The most vulnerable homes are those located on bay front lots. The following tables depict the hurricane evacuation zones and the vulnerable structures located within each zone.

Table 5.03.02.06.1: Evacuation Zones and the Vulnerable Residential Structures

Total:	Condominium	SFR-Townhouse	Single-Family	Mobile Home	Multi-Family
Zone A	0	7	29	0	0
Just Value	$0	$3,071,273	$33,863,047	$0	$0
Zone B	685	33	740	2	3

Just Value	$199,033,809	$11,402,531	$42,736,842	$314,911	$2,433,236
Zone C	56	02	530	0	5
Just Value	$5,186,800	$5,044,444	$284,441,887	$0	$2,933,347
Zone D	87	327	1316	2	79
Just Value	$12,557,400	$59,667,947	$361,022,805	$298,452	$70,607,368
Zone E	80	20	677	2	8
Just Value	$7,332,410	$4,598,064	$168,269,735	$453,853	$2,246,335

Note Evacuation Zones correspond with Hurricane Categories and types of structures in the zones (Ex. Evacuation Zone A = Category 1 Hurricane and includes mobile homes, campsites, and other high risk surge areas)
Source: West Florida Regional Planning Council & Okaloosa County Property Appraiser, 2025 (City of Fort Walton Beach Staff generated table from overlaying the evacuation zones and property appraiser data)

Table 5.03.02.06.2: Evacuation Zones and the Vulnerable Structures within

Total:	Commercial	Government/ Institutional
Zone A	8	0
Just Value	$2,246,335	$0
Zone B	80	39
Just Value	$36,219,490	$40,551,073
Zone C	31	4
Just Value	$44,714,112	$357,813
Zone D	448	35
Just Value	$271,248,294	$31,951,300
Zone E	53	8
Just Value	$26,151,454	$9,926,065

Note Evacuation Zones correspond with Hurricane Categories and types of structures in the zones (Ex. Evacuation Zone A = Category 1 Hurricane and includes mobile homes, campsites, and other high risk surge areas)
Source: West Florida Regional Planning Council & Okaloosa County Property Appraiser, 2025 (City of Fort Walton Beach Staff generated table from overlaying the evacuation zones and property appraiser data)

Section 5.03.02.07 Storm Surge

The City of Fort Walton Beach is vulnerable to storm surge and the structures along the Choctawhatchee Bay are the most susceptible to damage from this hazard. The strongest storm surge level during a Category 5 hurricane would be 1 as high as 18 feet above the mean sea level

along some areas boarding Choctawhatchee Bay. This would severely flood numerous homes, infrastructure, and commercial structures in this area. The following tables depict the vulnerable structures to storm surge levels, which correspond with the category of hurricane.

Table 5.03.02.07.1: Vulnerable Residential Structures to Storm Surge

Total:	Condominium	SFR-Townhouse	Single-Family	Mobile Home	Multi-Family
Surge Level 1	0	2	7	0	0
Just Value	$0	$1,034,493	$8,600,526	$0	$0
Surge Level 2	82	5	54	0	0
Just Value	$52,153,000	$2,036,780	$53,567,923	$0	$0
Surge Level 3	378	20	530	0	1
Just Value	$89,062,619	$7,526,859	$266,033,776	$0	$1,163,169
Surge Level 4	137	28	1229	1	5
Just Value	$28,091,300	$6,960,928	$418,706,262	$180,120	$3,479,497
Surge Level 5	193	291	765	3	75
Just Value	$40,231,090	$53,167,290	$238,246,286	$481,659	$34,928,799

Source: West Florida Regional Planning Council & Okaloosa County Property Appraiser, 2025 (City of Fort Walton Beach Staff generated table from overlaying the surge levels and property appraiser data)

Table 5.03.02.07.2: Other Vulnerable Structures to Storm Surge

Total:	Commercial	Government/ Institutional
Surge Level 1	0	1
Just Value	$0	$13,856
Surge Level 2	13	13
Just Value	$8,368,544	$12,935,754
Surge Level 3	76	9
Just Value	$56,430,227	$1,977,298
Surge Level 4	36	11
Just Value	$56,974,843	$15,244,569
Surge Level 5	274	6
Just Value	$172,655,737	$6,738,160

Source: West Florida Regional Planning Council & Okaloosa County Property Appraiser, 2025 (City of Fort Walton Beach Staff generated table from overlaying the surge levels and property appraiser data)

Section 5.03.02.08 Flooding

This section of the LMS considers flooding that is a result of rainfall, which includes tropical rains during a hurricane. The City of Fort Walton Beach is vulnerable to flooding and susceptible to damage from this hazard. Localized roadway flooding from heavy rains is the most commonly observed type of flooding in the City of Fort Walton Beach. During a hurricane, tropical storm, or severe storm, heavy rain might cause some homes to flood particularly in low lying areas or those with poor drainage systems. There are 188 structures located in the AE flood zone, 11 in the VE flood zone, and 7 in the A flood zone. The cumulative 'just value' for all those structures is $91,226,104. The following table depicts the vulnerable structures located in the AE and VE flood zones in the City of Fort Walton Beach.

Table 5.03.02.08.1: Structures Located in Flood Zones in the City of Fort Walton Beach

	AE Flood Zone	Just Value	VE Flood Zone	Just Value	A Flood Zone	Just Value
Condominium	5	$1,220,000	0	$0	0	$0
SFR-Townhouse	13	$3,098,556	3	$444,876	0	$0
Single-Family	134	$38,860,077	6	$3,622,911	0	$0
Multi-Family	1	$1,510,637	0	$0	0	$0
Commercial	25	$7,926,781	1	$282,241	5	$7,644,534
Government/ Institutional	9	$17,966,062	1	$4,640,607	2	$2,424,179
Critical Facility	1	$1,584,643	0	$0	0	$0

Source: Okaloosa County Department of Growth Management, 2025

Section 5.03.02.09 Land Erosion

The City of Fort Walton Beach in vulnerable to land erosion in some localized areas, and some structures are susceptible to damage from this hazard. The soil types and topography that leads to land erosion can be found in various parts of the City of Fort Walton Beach. The areas that are most susceptible to land erosion are those with steep slopes and which have highly erodible soil types. Land erosion in the City of is generally caused by disturbed soils from construction activities and usually isolated to an area less than 1 acre in size.

Section 5.03.02.10 Severe Storms

In the tables below, the estimated cost of damage to residential and non-residential structures in the event of a severe storm is provided. The numbers and estimated value represent the total number of structures in the City of Fort Walton Beach. Although it is highly unlikely that all

structures will be impacted during a singular severe storm event, all structures are equally vulnerable to severe storms and so it was deemed appropriate to list all structures in the City of Fort Walton Beach.

Table 5.03.02.10.1: Vulnerable Residential Structures to Severe Storms in City of Fort Walton Beach

Total:	Condominium	SFR-Townhouse	Single-Family	Mobile Home	Multi-Family
	835	753	6,352	12	138
Just Value	$217,750,119	$145,289,175	$2,039,389,712	$1,638,828	$120,168,044

Source: Okaloosa County Department of Growth Management, 2025

Table 5.03.02.10.2: Other Vulnerable Structures to Severe Storms in City of Fort Walton Beach

Total:	Commercial	Government/ Institutional
	825	131
Just Value	$611,044,922	$161,364,397

Source: Okaloosa County Department of Growth Management, 2025

Since severe storms includes tornadoes and waterspouts, thunderstorms and lightning, and winter storms, the values listed in the tables above apply to all those hazards.

Section 5.03.02.10.01 Tornado and Waterspout

The City of Fort Walton Beach is vulnerable to tornadoes and waterspouts, and all structures within its jurisdiction are susceptible to the impacts of this hazard due to their unpredictable nature.

The areas within the City of Fort Walton Beach that are most vulnerable to tornado damage are those with a high density or large population because the damage rate increases as a function of population density. The types of structures most vulnerable to tornado damage within the City of Fort Walton Beach are poorly constructed housing, apartment complexes, and condominiums because of their size and densities. According to the FEMA, National Risk Index, nearly all of Okaloosa County, including the City of Fort Walton Beach, has a Relatively high risk of a tornado event.

Because waterspouts occur over water, the areas in the City of Fort Walton Beach most susceptible to damage from waterspouts are those located on the Choctawhatchee Bay and Santa Rosa Sound. Waterspouts tend to not last very long, but their high winds can result in damage from flying debris. The properties bordered by the water bodies are the most vulnerable

to damage. There are 1137 structures along the City of Fort Walton Beach's coastline. The cumulative 'just value' of those structures is $651,940,955. The surrounding areas to the coastline are susceptible to damage from flying debris as well, but the specific impacts on those areas are unavailable due to the unavailability of relevant studies.

Section 5.03.02.10.02 Thunderstorms and Lightning

The City of Fort Walton Beach is vulnerable to thunderstorms and lightning, and all structures within its jurisdictions are susceptible to the damaging effects of wind, hail, and lightning associated with severe thunderstorms. Thunderstorm damage can include traffic accidents on wet roads, flash-flooding, lightning damage to electronics and structures, lightning strikes on people, and wind and hail damage to structures. According to the Mapping for Emergency Management, Parallel Hazard Information System (MEMPHIS) study in 2005, all of Okaloosa County, including the City of Fort Walton Beach, has the threat of a thunderstorm or lightning event occurring, in terms of causing economic damage or loss of over $50, of 1 in 50 per year.

Section 5.03.02.10.03 Winter Storms

The City of Fort Walton Beach is vulnerable to winter storms, and all structures within its jurisdiction are susceptible to the effects of freezing temperatures. The City of Fort Walton Beach is vulnerable to snow, freezing rain, icing, and glazing events but because these events are so rare, the City of Fort Walton Beach is unlikely to suffer serious damage from this hazard. The specific impacts of winter storms in the City of Fort Walton Beach are unavailable because there have been no studies conducted regarding these hazards' impacts in the County. Only broad general impacts of this hazard can be given, which provide an indication of what impacts are expected with winter storms. The homes in the City of Fort Walton Beach that are most vulnerable to winter storms are those with unprotected or under-protected water pipes and homes in which plumbing, and insulation is inadequate. Unmitigated older structures and manufactured housing are also very vulnerable.

Section 5.03.02.11 Heat Wave and Drought

The City of Fort Walton Beach is vulnerable to heat waves and drought. The specific impacts of heat waves and drought in the City of Fort Walton Beach are unavailable because there have been no studies conducted regarding these hazards' impacts in the County. In addition, the nature of these hazards tends to only affect the populations without adequate cooling systems in their homes, low income, elderly, children, and outside workers. Only broad general impacts of these hazards can be given, which provide an indication of what impacts are expected with heat wave and drought. Everyone living within the county is susceptible to heat exhaustion. All households are susceptible to power outages due to increased electricity demand during periods of extreme heat. Electrical system failures due to demand would only enhance problems for the entire population, especially for the vulnerable populations. All water bodies and municipal water supplies are susceptible to declining water levels and water shortages due to drought.

Section 5.03.02.12 Wildfire

City of Fort Walton Beach

Although the City of Fort Walton Beach is susceptible to wildfire, as previously mentioned in the City's Hazard Assessment, it appears that the future risk of wildfire is minimal. The areas and populations that are most vulnerable to the danger and destruction of wildfire are the ones with inadequate infrastructure, inaccessibility to critical facilities or firefighting resource locations, and located in the wildland-urban interface. The following tables depict the structures with 'medium (levels 4-6)' to 'high (levels 7-9)' wildfire level of concern. Levels 0-3 were determined to be of such minimal to low vulnerability to wildfire they were not included in this assessment.

Table 5.03.02.12.1: Medium to High Wildfire Level of Concern for Residential Structures

Total:	SFR-Townhouse	Single-Family	Mobile Home	Multi-Family
Level 1	753	6,352	12	138
Just Value	$145,289,175	$2,039,389,712	$1,638,828	$120,168,044
Level 2	0	0	0	0
Just Value	$0	$0	$0	$0
Level 3	0	0	0	0
Just Value	$0	$0	$0	$0
Level 4	0	0	0	0
Just Value	$0	$0	$0	$0

Source: Florida Division of Forestry and Okaloosa County Property Appraiser, 2025 (City of Fort Walton Beach Staff generated table from overlaying the wildfire level of concern and property appraiser data)

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Table 5.03.02.12.2: Medium to High Wildfire Level of Concern for Other Structures

Total:	Commercial	Government/ Institutional
Level 1	825	131
Just Value	$611,044,922	$151,364,397
Level 2	0	0
Just Value	$0	$0
Level 3	0	0
Just Value	$0	$0
Level 4	0	0
Just Value	$0	$0
Level 5	0	0
Just Value	$0	$0

Source: Florida Division of Forestry and Okaloosa County Property Appraiser, 2025 (City of Fort Walton Beach Staff generated table from overlaying the wildfire level of concern and property appraiser data)

Section 5.03.02.13 Beach Erosion

The areas of the City of Fort Walton Beach that are vulnerable to the effects of beach erosion are the properties that border the Choctawhatchee Bay and Santa Rosa Sound. As previously mentioned, within its jurisdiction, there are 3.35 miles of coastline along the Choctawhatchee Bay as well as 3.42 miles that border the Santa Rosa Sound. The populations that reside, work, run businesses, or own property in these parcels are the most affected by beach erosion. Beach erosion undermines the integrity of infrastructure, beachfront homes and businesses, and other structures by washing away the sediments that support the structural foundation sometimes resulting in complete destruction. There are 504 structures along the City of Fort Walton Beach's coastline. The cumulative 'just value' of those structures is $99,012,982 (See Table 5.03.02.13.1, below).

Table 5.03.02.13.1: Total Structures Susceptible to Beach Erosion

	SFR-Townhouse	Single-Family	Commercial
Total	34	370	100
Just Value	$13,176,349	$381,675,644	$47,669,069

Source: City of Fort Walton Beach GIS Division and Okaloosa County Property Appraiser
Note: Table was generated from Property Appraiser data based on the structures that were determined to be located along the coastal areas in Okaloosa County.

Section 5.03.02.14 Sea Level Rise

The 2025 Okaloosa County Vulnerability Assessment (2025 Jacobs Engineering, Appendix E) identifies in detail those areas and assets throughout Okaloosa County including the City of Ft Walton Beach that are vulnerable to sea level rise. As might be expected, those areas of the city that are closest to Choctawhatchee Bay and Santa Rosa Sound are the most vulnerable. Table 4.7 of the 2025 Okaloosa County Adaptation Plan done as a companion to the 2025 Vulnerability Assessment identifies ten (10) projects within Ft Walton Beach in response to the predicted rise in sea level.

While most of the projects are focused on drainage and road improvements, also included are the hardening of Elliott Point Elementary School (a critical facility) and hardening of sanitary sewer lift stations (critical infrastructure). The projects listed in Table 4.7 run into the tens of millions of dollars and are spread across multiple agencies including the City of Fort Walton Beach, Okaloosa County, the Florida Department of Transportation, and the Okaloosa County Public School District. It should be noted that the hardening of Elliott Point Elementary School is one of the projects found on Table ES-1, Prioritized Adaptation Projects, of the Adaptation Plan.

Section 5.03.02.15 Other Hazards

As previously stated in the Risk Assessment, the following hazards, sinkholes, expansive soils, dam safety, earthquake, avalanche, land subsidence, volcano, and tsunami have been determined to be a minimal risk to the City of Fort Walton Beach. Therefore, the City's vulnerability to these hazards has not been assessed. If any of the hazards become a greater risk in the City of Fort Walton Beach, then the LMS Committee will update this section to reflect those changes.

Section 5.03.02.16 Summary

The vulnerability assessment section of this LMS document highlighted how vulnerable the City of Fort Walton Beach is to the identified hazards from the Risk Assessment. It discussed the vulnerable populations, repetitive loss properties, and structure and infrastructure damages associated with these hazards.

City of Fort Walton Beach

Section 5.03.03 Critical Facilities

The Docie Bass Recreation Center is located at Ferry Park in Fort Walton Beach and serves primarily as an afterschool care facility and community gym. Docie Bass is never used as a shelter or other emergency staging area before, during, or after a wind, surge, or flood emergency event. Docie Bass would only be used as a shelter of last resort or staging area for emergencies such as pandemics or other non-flood related disaster events. The City will review and consider relocating Docie Bass Recreation Center should it ever need major repairs or renovation.

The following is a list of all critical facilities found inside the City of Fort Walton Beach's city limits. It is to be noted that some critical facilities belong to and are maintained by other jurisdictions.

Section 5.03.03.01 Fire Stations

Site Name	Address	X-COORD	Y-COORD
FWB FD #7	1968 LEWIS TURNER BLVD FORT WALTON BEACH FL 32547	1301850.131	539630.071
FWB MAIN FD #6	5 HOLLYWOOD BLVD NE FORT WALTON BEACH FL 32548	1303153.935	520137.595

Section 5.03.03.02 Law Enforcement

Site Name	Address	X-COORD	Y-COORD
FWB PD	7 HOLLYWOOD BLVD NE FORT WALTON BEACH FL 32548	1302933.049	520030.55

Section 5.03.03.03 Government Centers

Site Name	Address	X-COORD	Y-COORD
FWB CITY HALL	107 MIRACLE STRIP PKWY SW FORT WALTON BEACH FL 32548	1300199.028	517324.139
HEALTH DEPARTMENT	221 HOSPITAL DR NE FORT WALTON BEACH FL 32548	1306217.26	520784.112
TAX COLLECTOR	1250 EGLIN PKWY N FORT WALTON BEACH FL 32579		

City of Fort Walton Beach

Section 5.03.03.04 Adult Congregate Living Facilities

Site Name	Address	X-COORD	Y-COORD
EMERALD COAST HEALTHCARE AND REHAB CENTER	114 THIRD ST SE FORT WALTON BEACH FL 32548	1304636.5	518287.676
WESTWOOD HEALTHCARE	1001 MAR WALT DR APT 630 FORT WALTON BEACH FL 32547	1296984.574	535985.628

Section 5.03.03.05 Public Works Facilities

Site Name	Address	X-COORD	Y-COORD
FWB WASTE WATER TREATMENT PLANT	1564 PERCY L COLEMAN RD FORT WALTON BEACH FL 32547	1295160.072	541334.948
OKALOOSA CO PUBLIC WORKS	84 READY AVE NW FORT WALTON BEACH FL 32548	1284048.869	522534.962
City of FWB PUBLIC WORKS	7 HOLLYWOOD BLVD NW FORT WALTON BEACH 32548	1301850.131	539630.071

Section 5.03.03.06 Rapid Impact Assessment Team Reference Points

Site Name	Address	X-COORD	Y-COORD
CINCO BAYOU BRIDGE		1304372.452	525516.87

Section 5.03.03.07 Helicopter Landing Zones and Possible Staging Areas

Site Name	Address	X-COORD	Y-COORD
FWB FAIRGROUNDS	1968 LEWIS TURNER BLVD FORT WALTON BEACH FL 32547	1300538.659	539267.65

Section 5.03.03.08 Disaster Recovery Centers/Comfort Stations/Field Clinics

Site Name	Address	X-COORD	Y-COORD
HEDRICK RECREATION CENTER	132 JET DR NW FORT WALTON BEACH FL 32548	1299266.907	521099.949
YMCA	1127 HOSPITAL RD FORT WALTON BEACH FL 32547	1296377.236	536661.413

City of Fort Walton Beach

Section 5.03.03.09 Hurricane Shelters (See Note)

Site Name	Address	X-COORD	Y-COORD
ELLIOT POINT	301 HUGHES ST NE FORT WALTON BEACH FL 32548	7091910.098	423407.365
KENWOOD ELEM SCHOOL	15 EAGLE ST NE FORT WALTON BEACH FL 32547	1304544.046	536429.931
CHOCTAWHATCHEE HIGH SCHOOL	110 RACETRACK RD NW FORT WALTON BEACH FL 32547	1300960.431	533625.851

NOTE: It is not the intention of this plan that all shelters be opened in any given event. Opening of particular shelters will depend on the anticipated demand. Generally, only 5-7% of the evacuating public seeks refuge in a public shelter. This number could rise substantially in a short-notice event. The term "shelter" does not imply a guarantee of any level of safety. No such guarantees can be made in any hurricane. These shelters are intended as a place for the public to take refuge as they escape areas that are expected to suffer from dangerous storm surge. We do not automatically open all emergency shelters during an evacuation. Several factors determine which shelters will be open. Listen to local radio stations for updates.

Section 5.02.03.10 Mobile Home Parks and RV Campgrounds

Site Name	Address	X-COORD	Y-COORD
MIRACLE MOBILE HOME PARK I	27 MORIARTY ST NW FORT WALTON BEACH FL 32548	1301302.657	523801.958

(All such sites are considered to be in a hurricane evacuation area due to their poor wind resistance. Damage Assessment Teams should attempt to visit these areas since damage is likely to be high in a major hurricane)

City of Fort Walton Beach

Section 5.03.04 Mitigation Actions

The mitigation actions listed in this section are a compilation of adopted codes and policies from the City of Fort Walton Beach Comprehensive Plan, *Directions: The Comprehensive Plan of the City of Fort Walton Beach: 2019 - 2029*, the Fort Walton Beach Land Development Code, the Okaloosa County Comprehensive Emergency Management Plan (2023), and other documents. The actions below are enforced in an effort to reduce the City's vulnerability to natural disasters.

Section 5.03.04.01 Hurricane and Tropical Storm

1. Maintain requirements for structural wind resistance at least as restrictive as the Florida Building Code. *Status: ongoing; Building Division.*
2. Promote public education and awareness of hurricane preparedness and evacuation policies. *Status: ongoing; City of Fort Walton Beach Public Information Office and Okaloosa County Public Safety*
3. Ensure adequate clearance times for hurricane evacuation and periodically monitor hurricane evacuation clearance times. *Status: ongoing; City of Fort Walton Beach Fire Dept and Okaloosa County Public Safety.*
4. Maintain or reduce hurricane evacuation times. *Status: ongoing; Fire Dept.*
5. Support improvements to critical roadway segments of the hurricane evacuation routes, coordinating with the Fort Walton Beach MPO and the FDOT. *Status: ongoing; Planning Division and City Engineer.*
6. Ensure proposed site plans and development orders would maintain hurricane evacuation times. *Status: ongoing; Planning Division and Building Division*
7. Ensure that any Development of Regional Impact provides hurricane shelters to protect residents. *Status: ongoing; Planning Division.*
8. Ensure vehicles and equipment are available and ready to respond and properly function to carry out necessary activities for preparation and recovery. *Status: ongoing; Fire Dept and Fleet Maintenance Division.*
9. Ensure adequate and redundant communications systems, including radios and phones, are in place in the event of a natural disaster. *Status: ongoing; Fire Dept*
10. Ensure rapid dissemination of information to the public through various resources including the media, door-to-door, sirens, or other necessary means to notify the public of a pending disaster and ensure rumor control. *Status: ongoing; Public Information Office and Fire Dept.*
11. Ensure the security and protection of city records and equipment. *Status: ongoing; Information Technology Division and City Clerk Office.*
12. Ensure off-site access to city computers and backup files to run critical applications in the event of a disaster. *Status: Complete and ongoing; Information Technology Division.*
13. Coordinate with Okaloosa County and the American Red Cross to ensure adequate sheltering, food, and medical care for the public. *Status: ongoing; Fire Dept.*

14. Coordinate with Okaloosa County on regional evacuations and ensure proper mechanics and routes for local evacuations. *Status: ongoing; Fire Dept and Police Dept.*
15. Continually train and perform exercises for various disaster scenarios to be the most prepared and ready. *Status: ongoing; Fire Dept and Police Dept.*
16. Ensure timely repair/functioning of city facilities by establishing a building priority list. *Status: ongoing; Facilities Maintenance Division.*
17. Ensure a system is in place to meet financial, payroll, and other city payment obligations before, during, and after a disaster. *Status: ongoing; Information Technology Division and Finance Department*
18. Ensure maintenance of law and order, continuity of government, crowd control, traffic control, and curfew enforcement through the City's Police Department. St*atus: ongoing; Police Dept*
19. Ensure the timely restoration and continued operation of critical water, sewer, and sanitation services to the public. *Status: ongoing; City Engineer.*
20. Ensure timely and adequate debris clearance, maintenance of City streets, and signage. *Status: ongoing; Streets Division and Facility Maintenance Division.*
21. Ensure adequate communication linkages between the Emergency Operations Center and emergency incident sites, shelters, and other critical locations. *Status: ongoing; Fire Dept.*

Section 5.03.04.02 Storm Surge

1. Ensure density will not be increased within the CHHA. *Status: ongoing; Planning Division.*
2. Promote public awareness of storm surge. *Status: ongoing; Public Information Officer and Engineering/GIS Division.*
3. Ensure vehicles and equipment are available and ready to respond and properly function to carry out necessary activities for preparation and recovery. *Status: ongoing; Fire Dept and Fleet Maintenance Division.*
4. Maintain up-to-date maps that accurately depict potential storm surge and make available to the public. *Status: ongoing; Engineering/GIS Division.*
5. Ensure rapid dissemination of information to the public through various resources including the media, door-to-door, sirens, or other necessary means to notify the public of a pending disaster and ensure rumor control. *Status: ongoing; Public Information Office and Fire Dept.*
6. Ensure new construction and substantial improvements are limited to only water-dependent uses in the 50-foot Shoreline Protection Zone. *Status: ongoing; Planning Division and Building Division*

Section 5.03.04.03 Flooding

1. Regulate construction within the 100-yr floodplain and flood prone areas. *Status: ongoing; Engineering/GIS Division and Planning Division. For NFIP Compliance*
2. Ensure new construction or substantial improvements to existing structures meet the minimum specified flood elevation on the FIRM. *Status: ongoing; Engineering/GIS Division and Building Division For NFIP Compliance*
3. Complete a Stormwater Master Plan to reduce surface flooding. *Status: Not yet completed, but in-process; Stormwater Division. For NFIP Compliance*
4. Ensure drainage improvements are addressed in all road-repair projects along City-maintained emergency evacuation routes. Status: ongoing; *Stormwater Division For NFIP Compliance*
5. Ensure all future buildings are constructed to the Florida Building Code. *Status: ongoing; Building Division. For NFIP Compliance*
6. Ensure natural floodplains and stream channels are not altered in a way that would increase flood hazards in other areas. *Status: ongoing; Planning Division, Stormwater Division, and Building Division. For NFIP Compliance*
7. Ensure adequate and redundant communications systems, including radios and phones, are in place in the event of a natural disaster. *Status: ongoing; Fire Dept. For NFIP Compliance*
8. Ensure new construction and substantial improvements in flood hazard areas be constructed with materials and utility equipment resistant to flood damage. *Status: ongoing; Building Division and Facilities Maintenance Division For NFIP Compliance*
9. Ensure all future buildings are built with a minimum finished floor no lower than the Base Flood Elevation on the Flood Insurance Rate Maps for those buildings located within the AE Flood Zones. *Status: ongoing; Building Division and Engineering/GIS Division For NFIP Compliance*
10. Maintain status as an NFIP and CRS community by enforcing both the NFIP requirements and additional criteria that exceeds the NFIP for CRS compliance. *Status: ongoing; Engineering/GIS Division and Planning Division.*
11. Support activities that educate the public about the dangers of flooding. *Status: ongoing; Engineering/GIS Division and Public Information Office For NFIP Compliance*
12. Ensure rapid dissemination of information to the public through various resources including the media, door-to-door, sirens, or other necessary means to notify the public of a pending disaster and ensure rumor control. *Status: ongoing; Public Information Office and Police/Fire Dept. For NFIP Compliance*
13. Coordinate with Okaloosa County and the American Red Cross to ensure adequate sheltering, food, and medical care for the public. *Status: ongoing; Fire Dept.*
14. Ensure the timely restoration and continued operation of critical water, sewer, and sanitation services to the public. *Status: ongoing; City Engineer and Sewer Divisions.*

15. Ensure timely and adequate debris clearance, maintenance of city streets and signage. *Status: ongoing; Facilities Maintenance Division and Streets Division.*
16. Ensure adequate communication linkages between the Emergency Operations Center and emergency incident sites, shelters, and other critical locations. *Status: ongoing; Fire Dept.*
17. Ensure new construction and substantial improvements are limited to only water-dependent uses in the 50-foot Shoreline Protection Zone. *Status: ongoing; Planning Division. For NFIP Compliance*

Section 5.03.04.04 Land Erosion

1. Require proposed temporary and permanent erosion and sediment control plans are submitted with each application for construction approval. *Status: ongoing; Stormwater Division.*
2. Require no clearing, grading, excavating, filling, or other disturbance of the natural terrain shall occur until erosion and sedimentation control measures have been reviewed by the City of Fort Walton Beach. *Status: ongoing; Stormwater Division and City Engineer.*
3. Require land which has been cleared for construction and has not commenced shall be protected from erosion be appropriate techniques designed to re-vegetate the area. *Status: ongoing; Stormwater Division.*

Section 5.03.04.05 Severe Storms

1. Ensure vehicles and equipment are available and ready to respond and properly function to carry out necessary activities for preparation and recovery. *Status: ongoing; Fire Dept and Fleet Maintenance Division.*
2. Ensure adequate and redundant communications systems, including radios and phones, are in place in the event of a natural disaster. *Status: ongoing; Fire Dept.*
3. Ensure rapid dissemination of information to the public through various resources including the media, door-to-door, sirens, or other necessary means to notify the public of a pending disaster and ensure rumor control. *Status: ongoing; Public Information Office and Fire Dept.*
4. Coordinate with Okaloosa County and the American Red Cross to ensure adequate sheltering, food, and medical care for the public. *Status: ongoing; Fire Dept.*
5. Ensure the timely restoration and continued operation of critical water, sewer, and sanitation services to the public. *Status: ongoing; City Engineer and Sewer Division*
6. Ensure adequate communication linkages between the Emergency Operations Center and emergency incident sites, shelters, and other critical locations. *Status: ongoing; Fire Dept.*

Section 5.03.04.05.01 Tornado and Waterspout

1. Ensure vehicles and equipment are available and ready to respond and properly function to carry out necessary activities for preparation and recovery. *Status: ongoing; Fire Dept and Fleet Maintenance Division*
2. Ensure adequate and redundant communications systems, including radios and phones are in place in the event of a natural disaster. *Status: ongoing; Fire Dept.*
3. Ensure rapid dissemination of information to the public through various resources including the media, door-to-door, sirens, or other necessary means to notify the public of a pending disaster and ensure rumor control. *Status: ongoing; Public Information Office and Fire Dept.*
4. Coordinate with Okaloosa County and the American Red Cross to ensure adequate sheltering, food, and medical care for the public. *Status: ongoing; Fire Dept.*
5. Ensure the timely restoration and continued operation of critical water, sewer, and sanitation services to the public. *Status: ongoing; City Engineer and Sewer Division.*
6. Ensure adequate communication linkages between the Emergency Operations Center and emergency incident sites, shelters, and other critical locations. *Status: ongoing; Fire Dept.*
7. Ensure vehicles and equipment are available and ready to respond and properly function to carry out necessary activities for preparation and recovery. *Status: ongoing; Fire Dept and Fleet Maintenance Division*

Section 5.03.04.05.02 Thunderstorms and Lightning

1. Ensure adequate and redundant communications systems, including radios and phones, are in place in the event of a disaster. *Status: ongoing; Fire Dept.*
2. Ensure rapid dissemination of information to the public through various resources including the media, door-to-door, sirens, or other necessary means to notify the public of a pending disaster and ensure rumor control. *Status: ongoing; Public Information Office and Fire Dept*
3. Coordinate with Okaloosa County and the American Red Cross to ensure adequate sheltering, food, and medical care for the public. *Status: ongoing; Fire Dept*
4. Ensure the timely restoration and continued operation of critical water, sewer, and sanitation services to the public. *Status: ongoing; City Engineer and Sewer Division.*
5. Ensure timely and adequate debris clearance, maintenance of city streets and signage. *Status: ongoing; Streets Division and Facility Maintenance Division.*
6. Ensure adequate communication linkages between the Emergency Operations Center and emergency incident sites, shelters, and other critical locations. *Status: ongoing; Fire Dept.*

7. Ensure vehicles and equipment are available and ready to respond and properly function to carry out necessary activities for preparation and recovery. *Status: ongoing; Fire Dept and Fleet Maintenance Division.*

Section 5.03.04.05.03 Winter Storms

1. Ensure vehicles and equipment are available and ready to respond and properly function to carry out necessary activities for preparation and recovery. *Status: ongoing; Fire Dept and Fleet Maintenance Division*
2. Ensure adequate and redundant communications systems, including radios and phones, are in place in the event of a natural disaster. *Status: ongoing; Fire Dept*
3. Ensure rapid dissemination of information to the public through various resources including the media, door-to-door, sirens, or other necessary means to notify the public of a pending disaster and ensure rumor control. *Status: ongoing; Public Information Office and Fire Dept.*
4. Coordinate with Okaloosa County and the American Red Cross to ensure adequate sheltering, food, and medical care for the public. *Status: ongoing; Fire Dept.*
5. Ensure the timely restoration and continued operation of critical water, sewer, and sanitation services to the public. *Status: ongoing; City Engineer and Sewer Division.*
6. Ensure timely and adequate debris clearance, maintenance of City streets, and signage. *Status: ongoing; Streets Division and Facility Maintenance Division*
7. Ensure adequate communication linkages between the Emergency Operations Center and emergency incident sites, shelters, and other critical facilities. *Status: ongoing; Fire Dept.*

Section 5.03.04.06 Heat Wave and Drought

1. Ensure rapid dissemination of information to the public through various resources including the media, door-to-door, sirens, or other necessary means to notify the public of a pending disaster and ensure rumor control. *Status: ongoing; Public Information Office and Fire Dept*
2. Coordinate with Okaloosa County and the American Red Cross to ensure adequate sheltering, food, and medical care for the public. *Status: ongoing; Fire Dept.*

3. Ensure the timely restoration and continued operation of critical water, sewer, and sanitation services to the public. *Status: ongoing; City Engineer and Sewer Division.*
4. Ensure timely and adequate debris clearance, maintenance of City streets, and signage. *Status: ongoing; Streets Division and Facility Maintenance Division.*

5. Ensure adequate communication linkages between the Emergency Operations Center and emergency incident sites, shelters, and other critical locations. *Status: ongoing; Fire Dept.*

Section 5.03.04.07 Wildfire

1. Ensure vehicles and equipment are available and ready to respond and properly function to carry out necessary activities for preparation and recovery. *Status: ongoing; Fire Dept and Fleet Maintenance Division.*
2. Ensure adequate and redundant communications systems, including radios and phones, are in place in the event of a natural disaster. *Status: ongoing; Fire Dept.*
3. Ensure rapid dissemination of information to the public through various resources including the media, door-to-door, sirens, or other necessary means to notify the public of a pending disaster and ensure rumor control. *Status: ongoing; Public Information Office and Fire Dept.*
4. Coordinate with Okaloosa County and the American Red Cross to ensure adequate sheltering, food, and medical care for the public. *Status: ongoing; Fire Dept.*
5. Ensure the timely restoration and continued operation of critical water, sewer, and sanitation services to the public. *Status: ongoing; City Engineer and Streets Division*
6. Ensure adequate communication linkages between the Emergency Operations Center and emergency incident sites, shelters, and other critical locations. *Status: ongoing; Fire Dept.*

Section 5.03.04.08 Beach Erosion

1. Ensure public and private activities do not increase erosion beyond natural erosion cycles. *Status: ongoing; Planning Division and City Engineer.*
2. Ensure the preservation and restoration of native stand-stabilizing vegetation of estuarine beaches. *Status: ongoing; Planning Division.*
3. Ensure new construction and substantial improvements are limited to only water-dependent uses in the 50-foot Shoreline Protection Zone. *Status: ongoing; Planning Division and Building Division*
4. Ensure participation and coordination with the development and implementation of the Choctawhatchee River and Bay System Surface Water Improvement Plan (SWIM). *Status: ongoing; Planning Division and Stormwater Division.*

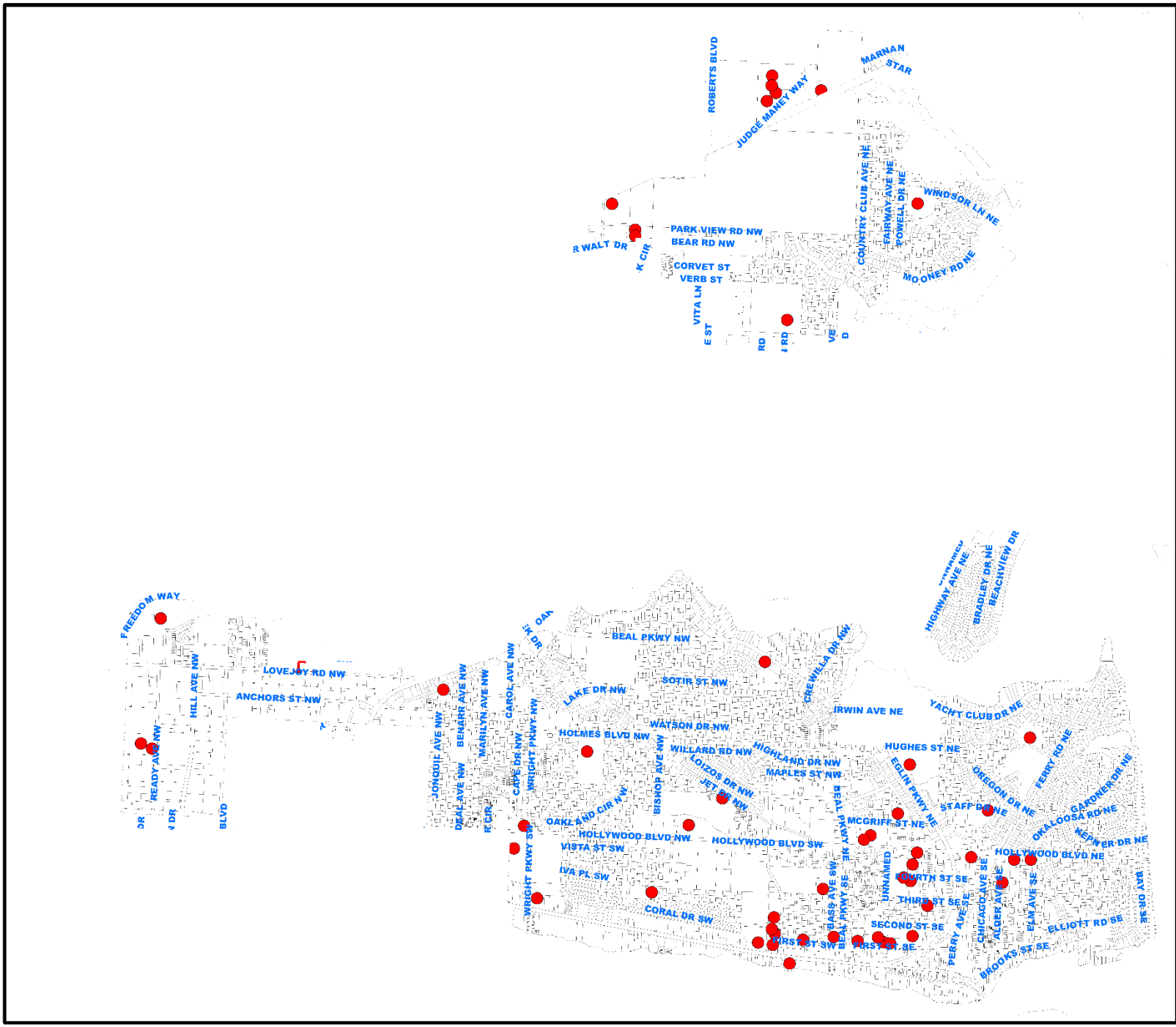
SECTION 5.03.04.09 Sea Level Rise

The mitigation actions contained in Section 5.03.04.03 Flooding will address the needs for mitigation actions for Sea Level Rise also.

Section 5.03.05 Maps

Attached to this page are maps of the City of Fort Walton Beach. They include:

1. Critical Facilities…….. 5.03-45
2. Evacuation Zones……... 5.03-46
3. Flood Zones……. 5.03-47
4. Repetitive Loss Properties……5.03-48
5. Surge Zones…… 5.03-49
6. Wildfire Level of Concern…….. 5.03-50



City of Fort Walton Beach Critical Facilities

Parcel Lines

Critical Facilities

Source: Okaloosa County Public Safety, 2025

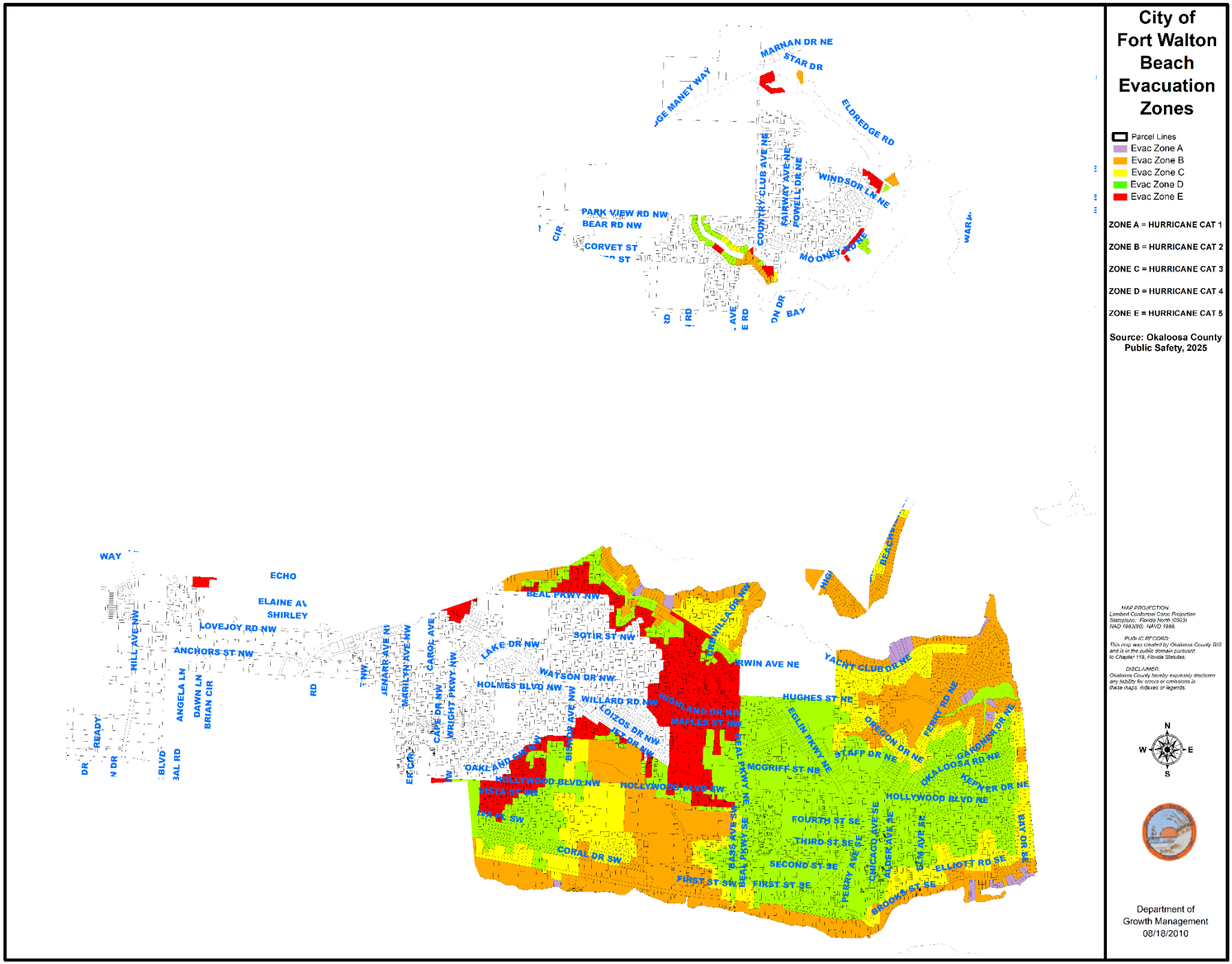
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Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
NAD 1983(90); NAVD 1988.

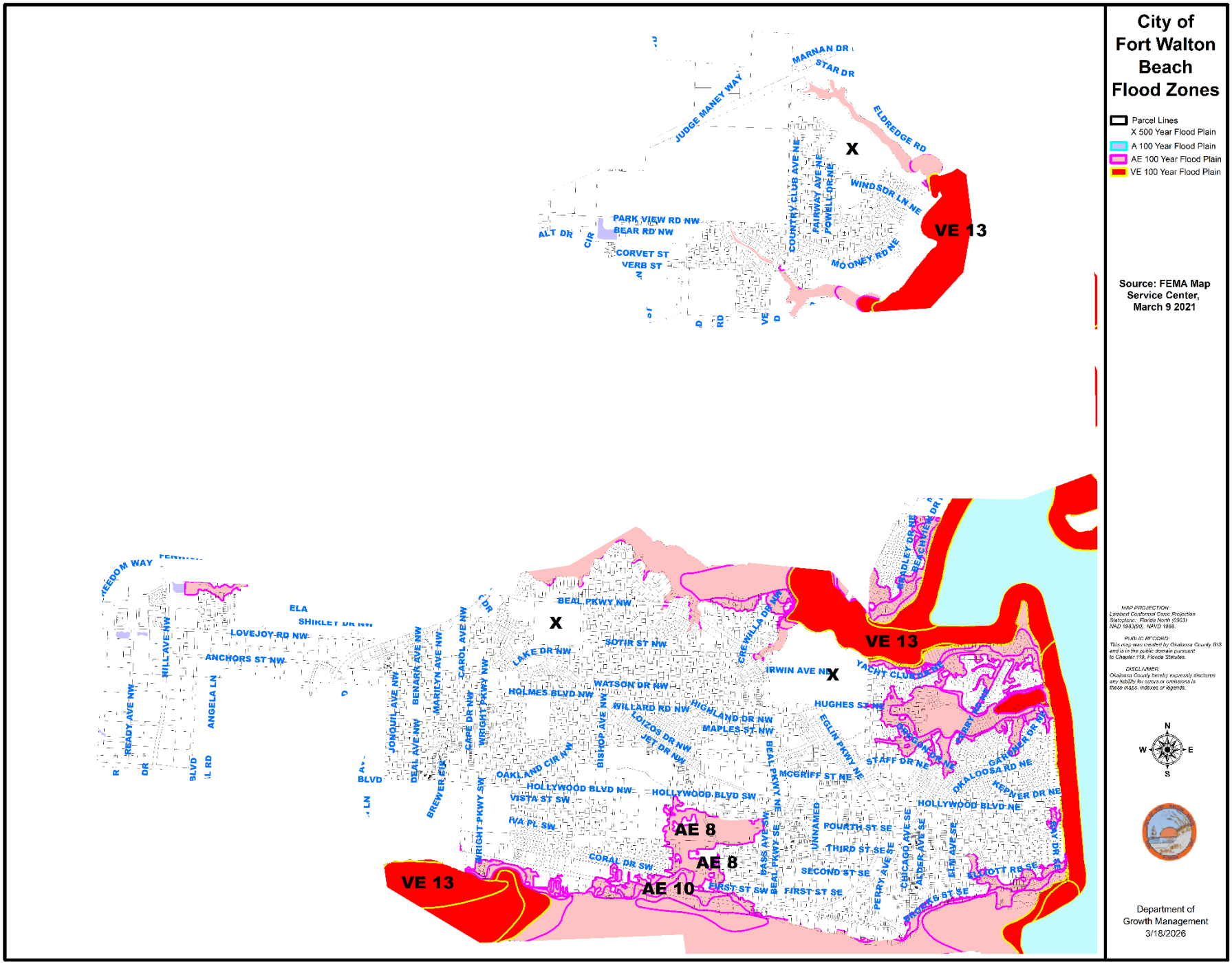
PUBLIC RECORD:
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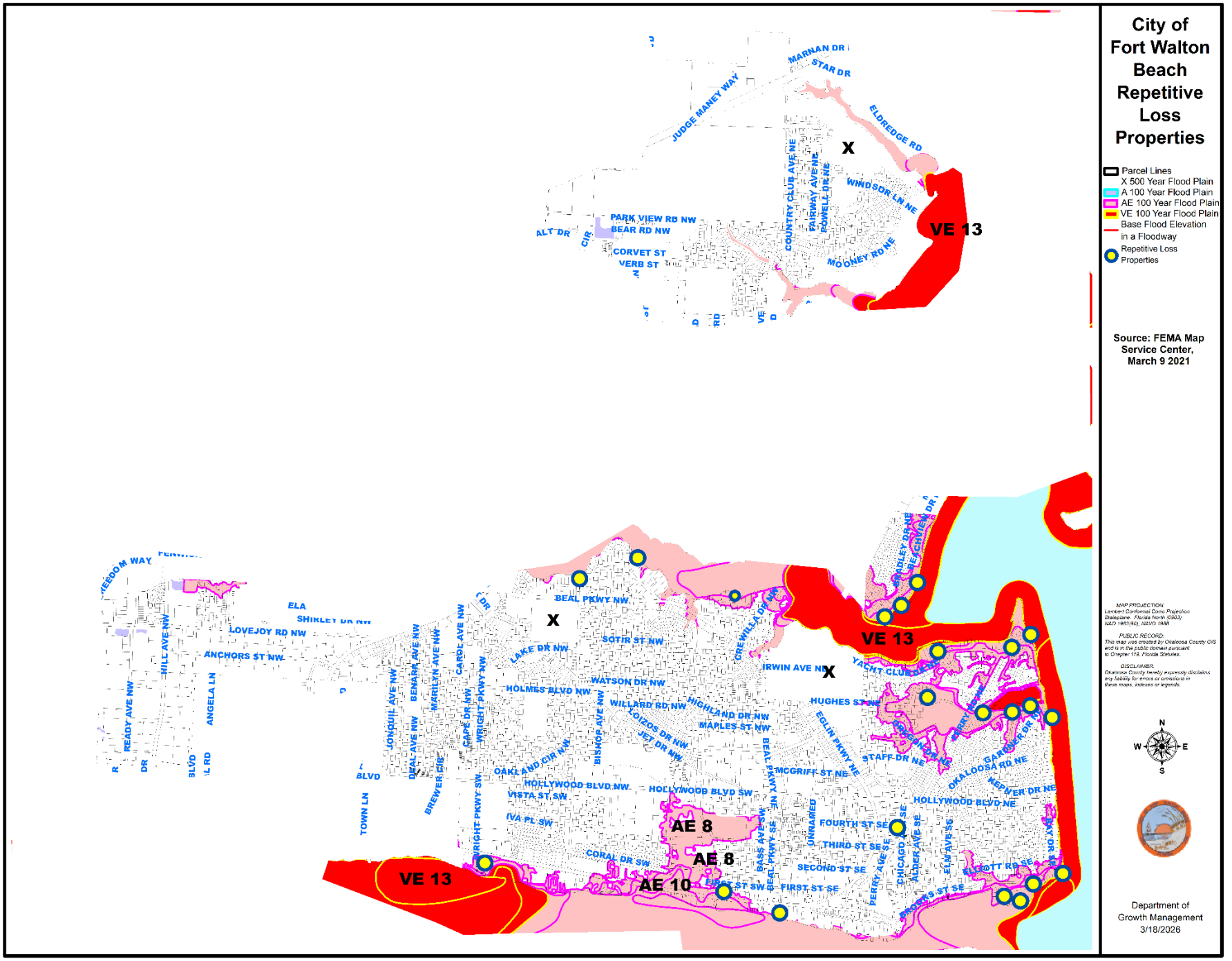
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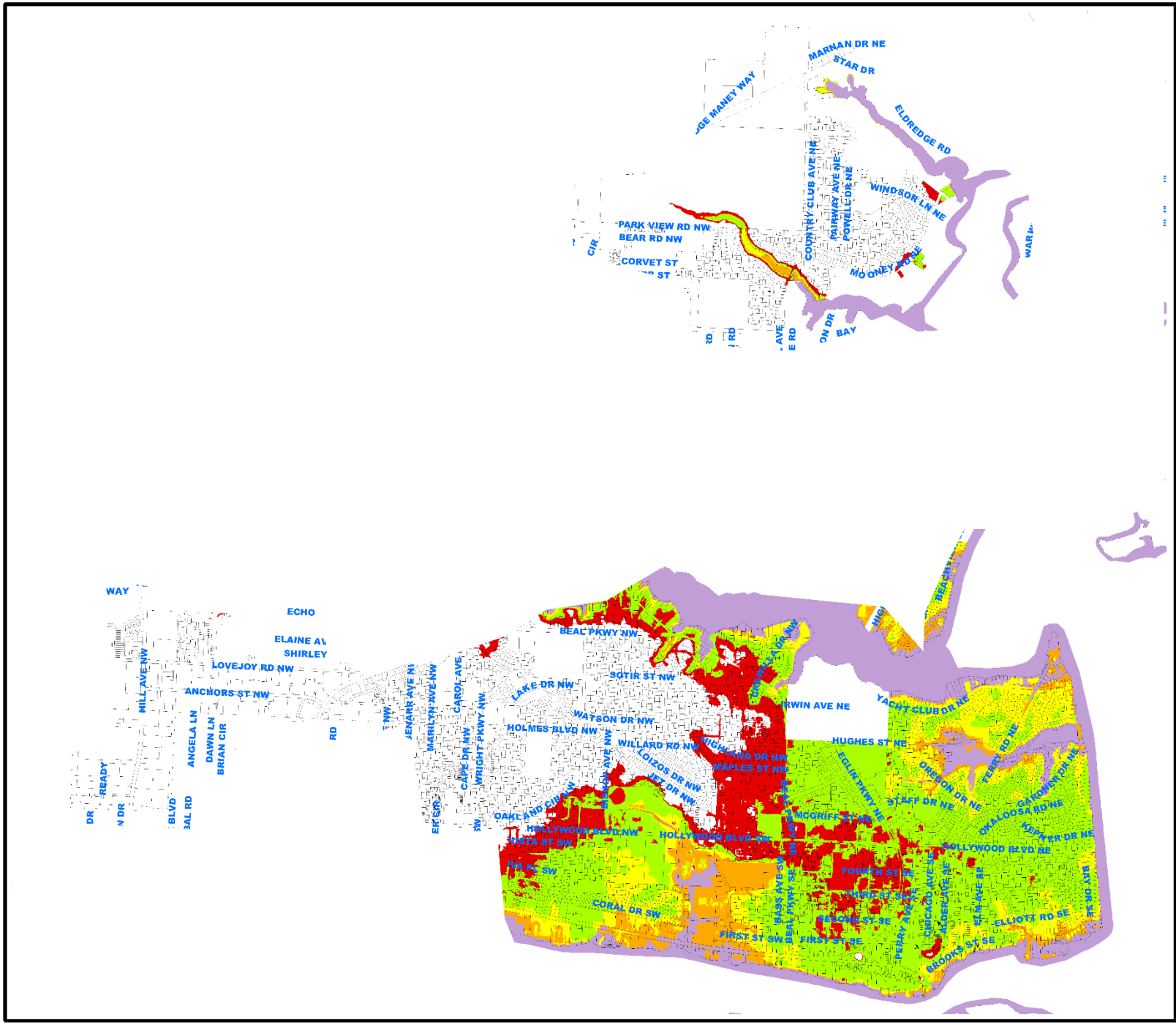
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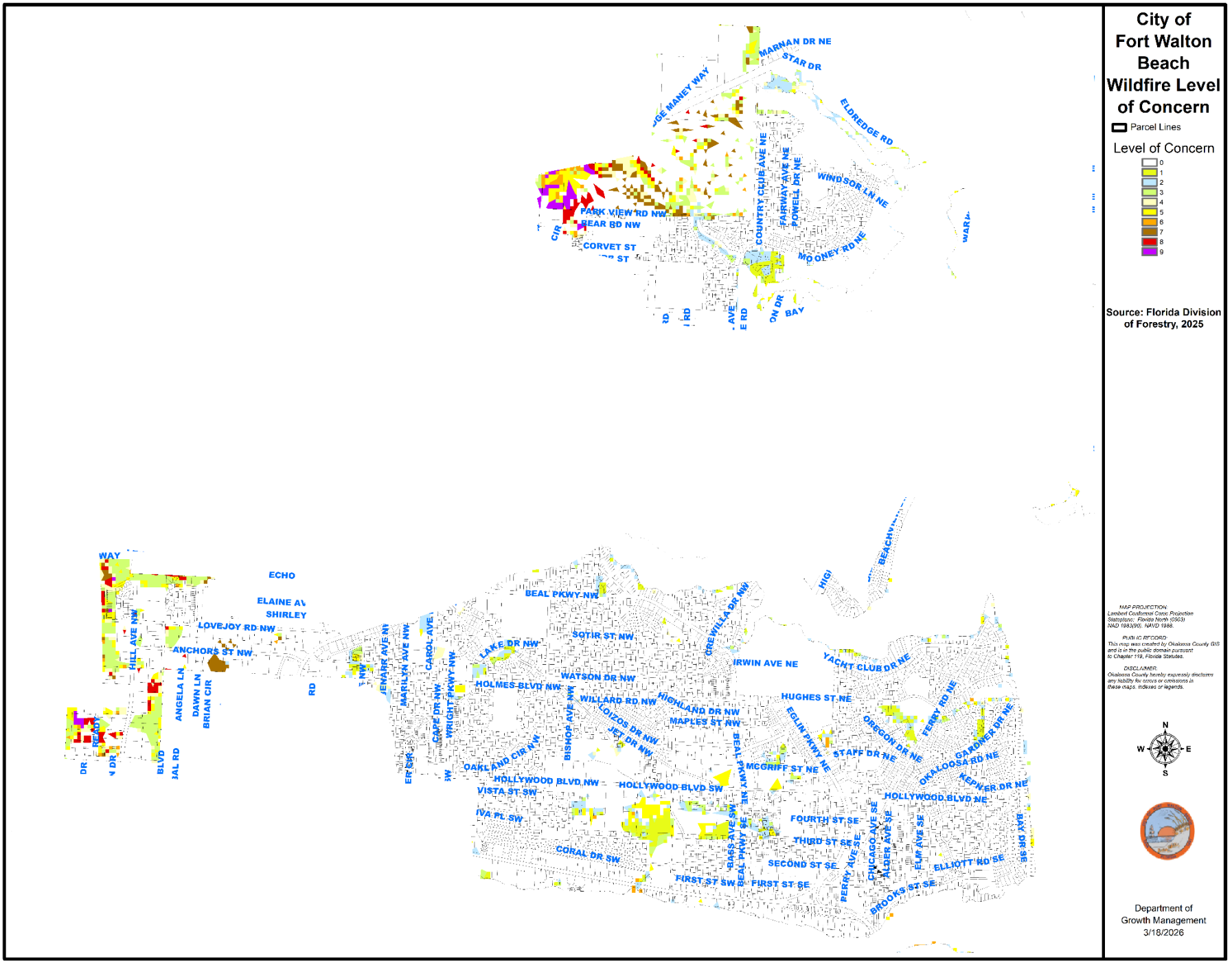
Department of Growth Management
3/18/2026


City of Fort Walton Beach Evacuation Zones
Parcel Lines
Evac Zone A
Evac Zone B
Evac Zone C
Evac Zone D
Evac Zone E
ZONE A = HURRICANE CAT 1
ZONE B = HURRICANE CAT 2
ZONE C = HURRICANE CAT 3
ZONE D = HURRICANE CAT 4
ZONE E = HURRICANE CAT 5
Source: Okaloosa County Public Safety, 2025
MAP PROJECTION:
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Statsplane: Florida North (0903)
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N
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Department of Growth Management
08/18/2010
MARNAN DR NE
STAR DR
ELDREDGE RD
WINDSOR LN NE
COUNTRY CLUB AVE NE
FAIRWAY AVE NE
POWELL DR NE
MOONEY RD NE
PARK VIEW RD NW
BEAR RD NW
CORVET ST
BAY
ECHO
SHIRLEY
LOVEJOY RD NW
ANCHORS ST NW
HILL AVE NW
ANGELA LN
DAWN LN
BRIAN CIR
READY
BEAL PKWY NW
SOTIR ST NW
LAKE DR NW
WATSON DR NW
HOLMES BLVD NW
WILLARD RD NW
LOIZOS DR NW
MAPLES ST NW
OAKLAND AVE NW
HOLLYWOOD BLVD NW
FIRST ST SW
CORAL DR SW
IRWIN AVE NE
YACHT CLUB DR NE
HUGHES ST NE
EGLIN PKWY NE
OREGON DR NE
FERRY RD NE
STAFF DR NE
MCGRIFF ST NE
OKALOOSA RD NE
HOLLYWOOD BLVD NE
FOURTH ST SE
THIRD ST SE
SECOND ST SE
FIRST ST SE
ELLIOTT RD SE
FERRY AVE SE
CHICAGO AVE SE
ALGER AVE SE
GEN AVE SE
BEAL PKWY SE
MIRACLE STRIP PKWY SE


City of Fort Walton Beach Flood Zones
Parcel Lines
X 500 Year Flood Plain
A 100 Year Flood Plain
AE 100 Year Flood Plain
VE 100 Year Flood Plain
Source: FEMA Map Service Center, March 9 2021
MAP PROJECTION:
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Statplane: Florida North (0903)
NAD 1983(90), NAVD 1988.
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N
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Department of Growth Management
3/18/2026
X
VE 13
AE 8
AE 8
AE 10
VE 13
X
X
MARNAN DR
STAR DR
JUDGE MANEY WAY
ELDREDGE RD
WINDSOR LN NE
COUNTRY CLUB AVE NE
FAIRWAY AVE NE
POWELL DR NE
MOONEY RD NE
PARK VIEW RD NW
BEAR RD NW
CORVET ST
VERB ST
ALT DR
BEAL PKWY NW
LAKE DR NW
SOTIR ST NW
CREWALLA DR NW
IRWIN AVE NW
YACHT CLUB DR NE
HOLMES BLVD NW
WATSON DR NW
WILLARD RD NW
HIGHLAND DR NW
MAPLES ST NW
HUGHES ST NE
EGLIN PKWY NE
STAFF DR NE
MCGRIFF ST NE
OAKLAND CIR NW
HOLLYWOOD BLVD NW
HOLLYWOOD BLVD SW
HOLLYWOOD BLVD NE
VISTA ST SW
IVA PL SW
CORAL DR SW
FOURTH ST SE
THIRD ST SE
SECOND ST SE
FIRST ST SW
FIRST ST SE
OKALOOSA RD NE
KEPLER DR NE
ELLIOTT RD SE
BROOKS ST SE
FERRY AVE SE
CHICAGO AVE SE
ALDER AVE SE
ELM AVE SE
BASS AVE SW
BEAL PKWY SE
BEAL PKWY NE
UNNAMED
FREEDOM WAY
LOVEJOY RD NW
ANCHORS ST NW
HILL AVE NW
ANGELA LN
READY AVE NW
JONQUIL AVE NW
BENJAMIN AVE NW
MARILYN AVE NW
CAROL AVE NW
CAPE DR NW
WRIGHT PKWY NW
WRIGHT PKWY SW
BISHOP AVE NW
LOIZOS DR NW
JET DR NW
DEAL AVE NW
BREWER CIR


City of Fort Walton Beach Repetitive Loss Properties
Parcel Lines
X 500 Year Flood Plain
A 100 Year Flood Plain
AE 100 Year Flood Plain
VE 100 Year Flood Plain
Base Flood Elevation in a Floodway
Repetitive Loss Properties
Source: FEMA Map Service Center, March 9 2021
MAP PROJECTION:
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Department of Growth Management
3/18/2026
VE 13
VE 13
VE 13
AE 8
AE 8
AE 10
X
X
X
MARNAN DR
STAR DR
JUDGE MANEY WAY
ELDREDGE RD
WINDSOR LN NE
MOONEY RD NE
COUNTRY CLUB AVE NE
FAIRWAY AVE NE
POWELL DR NE
PARK VIEW RD NW
BEAR RD NW
CORVET ST
VERB ST
ALT DR
BEAL PKWY NW
LAKE DR NW
SOTIR ST NW
CREWILLA DR NW
IRWIN AVE NW
YACHT CLUB DR
HUGHES ST NW
WATSON DR NW
HOLMES BLVD NW
WILLARD RD NW
HIGHLAND DR NW
MAPLES ST NW
LOIZOS DR NW
JET DR NW
OAKLAND CIR NW
HOLLYWOOD BLVD NW
HOLLYWOOD BLVD SW
VISTA ST SW
IVA PL SW
CORAL DR SW
FIRST ST SW
FIRST ST SE
SECOND ST SE
THIRD ST SE
FOURTH ST SE
HOLLYWOOD BLVD NE
MCGRIFF ST NE
STAFF DR NE
EGLIN PKWY NE
OKALOOSA RD NE
RIVER DR NE
ELLIOTT RD SE
ELM AVE SE
ALDER AVE SE
CHICAGO AVE SE
PERRY AVE SE
BASS AVE SW
BEAL PKWY SE
BEAL PKWY NE
WRIGHT PKWY SW
WRIGHT PKWY NW
BISHOP AVE NW
BREWER CIR
TOWN LN
DEAL AVE NW
JONQUIL AVE NW
BENARR AVE NW
MARILYN AVE NW
CAROL AVE NW
CAPE DR NW
HILL AVE NW
READY AVE NW
ANGELA LN
ANCHORS ST NW
LOVEJOY RD NW
SHIRLEY DR NW
ELA
UNNAMED


City of Fort Walton Beach Surge Zones
Parcel Lines
Category 1
Category 2
Category 3
Category 4
Category 5
Source: West Florida Regional Planning Council, 2025
MAP PROJECTION:
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Stateplane: Florida North (0903)
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Department of Growth Management
3/18/2026
MARNAN DR NE
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WINDSOR LN NE
COUNTRY CLUB AVE NE
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MOONEY RD NE
PARK VIEW RD NW
BEAR RD NW
CORVET ST
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BEAL PKWY NW
SOTIR ST NW
LAKE DR NW
WATSON DR NW
HOLMES BLVD NW
WILLARD RD NW
HIGHLAND DR NW
MAPLES ST NW
OAKLAND CIR NW
HOLLYWOOD BLVD NW
ANCHORS ST NW
LOVEJOY RD NW
ECHO
ELAINE AV
SHIRLEY
ANGELA LN
DAWN LN
BRIAN CIR
MARILYN AVE NW
CAROL AVE
WRIGHT PKWY NW
CAPE DR NW
IRWIN AVE NE
YACHT CLUB DR NE
HUGHES ST NE
FELIN PKWY NE
STAFF DR NE
OREGON DR NE
FERRY RD NE
CHALLOOSA RD NE
GARDNER DR NE
HOLLYWOOD BLVD NE
FOURTH ST NE
THIRD ST NE
SECOND ST NE
FIRST ST NE
FIRST ST SW
CORAL DR SW
ELLIOTT RD SE
BROOKS ST SE
PERRY AVE SE
CHICAGO AVE SE
ELM AVE SE
BAAS AVE SW
BEAL PKWY SW


City of Fort Walton Beach Wildfire Level of Concern
Parcel Lines
Level of Concern
0
1
2
3
4
5
6
7
8
9
Source: Florida Division of Forestry, 2025
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
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N
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Department of Growth Management
3/18/2026
MARNAN DR NE
STAR DR
ELDREDGE RD
WINDSOR LN NE
COUNTRY CLUB AVE NE
FAIRWAY AVE NE
POWELL DR NE
MOONEY RD NE
PARK VIEW RD NW
BEAR RD NW
CORVET ST
ECHO
ELAINE AV
SHIRLEY
LOVEJOY RD NW
ANCHORS ST NW
HILL AVE NW
ANGELA LN
DAWN LN
BRIAN CIR
BEAL PKWY NW
SOTIR ST NW
LAKE DR NW
CAROL AVE
WRIGHT PKWY NW
HOLMES BLVD NW
WATSON DR NW
WILLARD RD NW
LOIZOS DR NW
JET DR NW
BISHOP AVE NW
OAKLAND CIR NW
HOLLYWOOD BLVD NW
VISTA ST SW
CORAL DR SW
FIRST ST SW
HOLLYWOOD BLVD SW
HIGHLAND DR NW
MAPLES ST NW
CREWILLA DR NW
IRWIN AVE NE
HUGHES ST NE
EGLIN PKWY NE
BEAL PKWY NE
MCGRIFF ST NE
STAFF DR NE
YACHT CLUB DR NE
OREGON DR NE
FERRY RD NE
GARDNER DR NE
OKALOOSA RD NE
KEENER DR NE
HOLLYWOOD BLVD NE
FOURTH ST SE
THIRD ST SE
SECOND ST SE
FIRST ST SE
CHICAGO AVE SE
ELM AVE SE
ELLIOTT RD SE
BROOKS ST SE
PERRY AVE SE
BAY DR SE

City of Fort Walton Beach

Section 5.03.06 Post Disaster Redevelopment Plan

The City of Fort Walton Beach does not currently have a Post Disaster Redevelopment Plan. Therefore, the city will abide by the Okaloosa County Post Disaster Redevelopment Plan (PDRP) and submit the required data per the PDRP requirements.

Section 5.04

City of Laurel Hill



City of Laurel Hill

Section 5.04.01 Risk Assessments

Section 5.04.01.01 Introduction

The intent of this section is to provide information regarding the hazards threatening City of Laurel Hill.

Originally incorporated in 1905 and reincorporated in 1953, the City of Laurel Hill is located in northeast Okaloosa County and is home to about 584 people according to the 2020 Census estimate. In this section, hazard information relevant to the City of Laurel Hill is compiled and an overview of the analyses is provided.

As an incorporated city, Laurel Hill has all the powers and authority granted to municipal governments found in Chapter 166 of the Florida Statutes as well as Article VIII of Section 2 of the Florida Costitution to exercise any governmental, corporate, or proprietary power for municipal purposes, provided they are not expressly prohibited by law. These powers allow Laurel Hill to govern itself, deliver services, enact and enforce ordinances, and set policy.

The County enforces the Florida Building Code as required by Chapter 553 of the Florida Statutes for the City of Laurel Hill. This is accomplished through the Inspections Division of the County's Growth Management Department which employs a full-time Certified Building Official (CBO) as well as multiple inspectors and plans examiners all of whom are licensed pursuant to Chapter 468, Florida Statutes. For determining whether an addition or redevelopment of a structure constitutes a substantial improvement pursuant to the NFIP, these staff members coordinate with the Planning Coordinator within the same department (see below) who oversees the day-to-day implementation of the program. The CBO has the authority to request certified appraisals when considering whether a proposed activity constitutes a substantial improvement. The CBO, plans examiners, and inspectors conduct substantial damage assessments at need and are joined by the County's certified Code Enforcement Officers for damage assessment following a major storm event. The damage assessments are done in accordance with FEMA standards.

In addition to a licensed building official and inspectors, the County also employs within the Growth Management Department a Planning Coordinator who is a Certified Floodplain Manager who oversees the day-to-day implementation of the County's program. The technical aspects of the program are the responsibility of a Florida-licensed Professional Engineer within the Public Works Department who serves as the Floodplain Administrator and who co-operates with the Planning Coordinator on floodplain matters. Being in separate departments and separate chains-of-command allow these positions to serve as a check and balance in interpretation and enforcement of the program.

Emergency management activities are coordinated through the Division of Emergency Management within the County's Department of Public Safety under the Public Safety Director and Emergency Management Chief. The Emergency Management Chief is a member of the County's LMS Committee and is in regular communication with the emergency managers within the municipalities as well as the State.

City of Laurel Hill

The City of Laurel Hill has participated in the National Flood Insurance Program (42 U.S.C. §§4001 et seq.) since December 2002. Since that time, the City has regularly updated its floodplain regulations to remain consistent with the program requirements. The most recent update is the adoption of City Ordinance 338 which amended Chapter 13 to adopt flood hazard maps, to designate a floodplain administrator, to adopt procedures and criteria for development in flood hazard areas, and for other purposes.

The City of Laurel Hill participates in the NFIP Community Rating System (CRS) which assesses the City's floodplain management activities, both regulatory and programmatic and, using a point system spread across different categories, assigns a numeric rating based on its performance. As of this writing, The City of Laurel Hill has a rating of 2.0, garnering a 0% discount on flood insurance premiums. Laurel Hill experiences a predominantly minor flood risk. The FEMA flood zone designation for much of the city is Zone X, which features lower-risk and moderate-risk classifications.

The City will incorporate the findings and recommendations of the LMS into its planning mechanisms through integration with comprehensive plans, capital improvement programs, land development regulations, and emergency management plans. LMS-identified hazards, vulnerabilities, and mitigation actions are considered during project prioritization, budgeting, and policy development to ensure consistency with long-term resilience objectives. Additionally, the city will utilize the LMS to support grant applications, inform development review processes, and guide post-disaster recovery and redevelopment decisions. This coordinated approach ensures that hazard mitigation principles are systematically embedded into local planning and decision-making processes.

The hazards that will be analyzed in this section are natural events and the analysis concentrates on the anthropogenic affects on those events as well as the effects of those events on mankind. However, this analysis is not an assessment of technological and/or societal hazards and, therefore, these types of events are not covered under this plan or in the analysis provided in this section.

Primary attention is given to hazards considered reasonably possible to occur in the City of Laurel Hill. These hazards include:

- Hurricane and Tropical Storm
- Flooding
- Dam Safety
- Land Erosion
- Severe Storms
    - Tornado
    - Thunderstorms and Lightning
    - Winter Storms
- Heat Wave and Drought

    - Heat Wave

- Drought
- Wildfire

The following hazards have minimal or no risk to the City of Laurel Hill: sinkholes, expansive soils, earthquakes, avalanches, land subsidence, landslides, volcanoes, and tsunamis. Therefore, these hazards are not analyzed in any depth in the hazard analysis. Further explanation is provided in the "Other Hazards" section. Also, because of the City of Laurel Hill's topographic location and not being a coastal or bay community, it is not susceptible to storm surge, beach erosion, sea level rise, or waterspouts.

Hazard Identification

The technical planning process begins with hazard identification. In this process, the City of Laurel Hill Staff, along with the staff from the Okaloosa County Growth Management Department, has identified all of the natural hazards that threaten the City of Laurel Hill.

Section 5.04.01.02 Hurricane and Tropical Storm

DEFINITIONS:
Please refer back to the Risk Assessment of the overall County for the definitions of this hazard.

HISTORICAL OCCURRENCE:
The City of Laurel Hill, although located in the very northeast corner of the county and about 50 miles away from the coast, is susceptible to the effects of hurricane and tropical storm activity. Its primary concerns attributed to hurricanes are pockets of flooding due to heavy rain, and wind damage.

The City of Laurel Hill and Okaloosa County are equally susceptible to hurricanes and tropical storms, as a typical storm is 300 miles wide and outer rain bands can span from 50 miles to 300 miles. Hurricane-force winds can extend outwards about 150 miles in a large hurricane, while tropical-storm force winds can stretch out as far as 300 miles from the center of a large hurricane (NOAA, 1999). The degree of damage would certainly be less in the City of Laurel Hill than a coastal or bay community in the county, but the City is susceptible to damage from these storms. Therefore, the historic hurricane record of Okaloosa County is relevant to the City of Laurel Hill.

Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard because all of the jurisdictions in Okaloosa County are equally susceptible to hurricanes and tropical storms.

EXTENT:
High winds from hurricanes are a substantial threat to homes, especially manufactured housing. Traditional stud and brick veneer or siding homes and businesses are vulnerable, as well, especially when hurricane shutters are not used. Relatively few businesses and homes have hurricane shutters in the City of Laurel Hill, although some critical facilities are shuttered.

In the worst case scenario, if a Category 5 hurricane hit Okaloosa County, hurricane force winds would be felt in the City of Laurel Hill. These powerful winds would likely result in damage to homes and buildings, trees, power poles, and signage. In particular to power pole damage, there would be extensive widespread system destruction anticipated, which can include transmission/substation damage. Some mobile homes and frame homes would have visible damage. Windows may be broken, trees and power poles down (NOAA, 2010). Flooding may be particularly heavy on roadways.

PROBABILITY:
According to Colorado State University's United States Landfalling Hurricane Probability Project, Okaloosa County, and thus the City of Laurel Hill, has the following future probabilities:

Table 5.04.01.02.1: 50-Year Probabilities of Named Storm, Tropical Storm, and Hurricane Making Landfall in Okaloosa County

1 or More Named Storms Making Landfall	1 or More Hurricanes Making Landfall	1 or More Intense Hurricanes Making Landfall	Tropical Storm-Force (≥ 40 mph) Wind Gusts	Hurricane-Force (≥ 75 mph) Wind Gusts	Intense Hurricane-Force (≥115 mph) Wind Gusts
90.90%	68.60%	40.50%	>99.9%	99.60%	82.30%

Source: The United States Landfalling Hurricane Web Project, 2025

Section 5.04.01.03 Flooding

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
On March 28, 2009 a flash flood warning due to heavy rains was issued in the City of Laurel Hill (NCDC, 2010). This resulted in temporary roadway flooding. Other instances of flooding and flash flooding have been documented in north Okaloosa County surrounding the City of Laurel Hill.

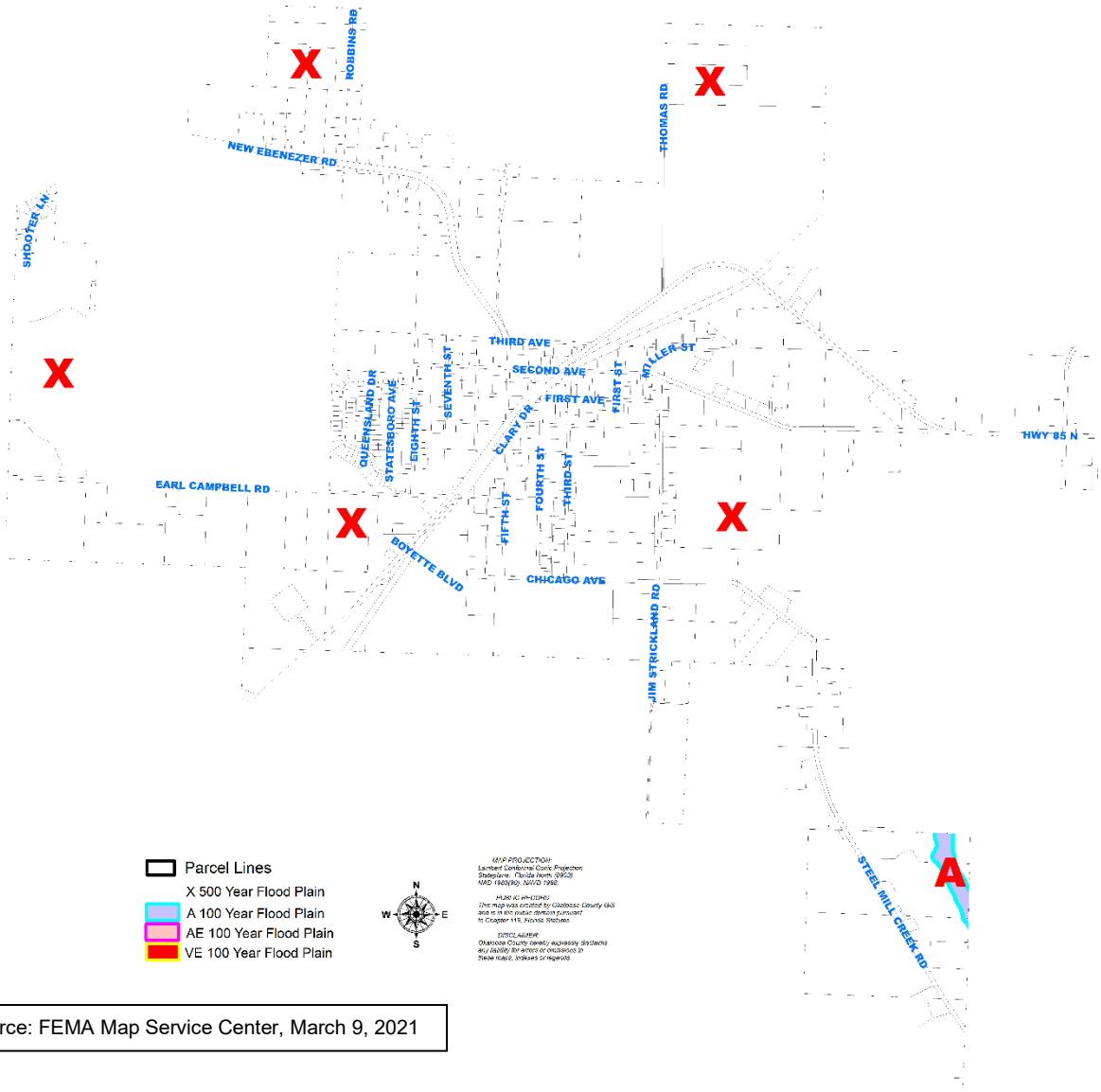
There was no data available at the municipal level regarding the historical occurrences of severe floods. Therefore, please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard because all of Okaloosa County is equally susceptible to this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
The City of Laurel Hill is susceptible to localized flooding in the areas surrounding the small streams and lakes found within the municipality, and this would likely be attributed to heavy rains associated with a hurricane, tropical storm, or severe storm. The city is not as vulnerable to severe flooding because it is not adjacent to any of the county's major rivers or in a low lying coastal area. The City of Laurel Hill just recently became a participant in NFIP, even though the majority of the City is located outside of the flood plain. In fact, there are only 3 parcels located within a

flood zone in the City of Laurel Hill, and they are all located behind small agricultural dams. These parcels are not subject to residential development.

In the worst case scenario in terms of flooding in the City of Laurel Hill, road-closures would be the result in the areas affected by the flooding. Parcels located in the unnumbered A flood zone will be impacted more severely than the rest of the City, which is located in flood zone X (500 year flood plain). (See Figure 5.04.01.03.1, below)

Figure 5.04.01.03.1: The City of Laurel Hill's Flood Zones



Source: FEMA Map Service Center, March 9, 2021

There are approximately 6.16 miles of arterial and collector roads in the City of Laurel Hill. Out of this total, 6.16 miles of these roads are located in the NFIP X Zone (500 Year Flood Zone) and 0 miles located in the NFIP Special Flood Hazard Zone. The roadways in the City of Laurel Hill, although susceptible to temporary flash flooding, are unlikely to experience severe flooding.

PROBABILITY:
The entire County, as well as the City of Laurel Hill, has a future probability of a flash-flood or flood occurring annually. However, due to the localized nature of flash-flooding and flooding, a more exact probability will not be provided. However, given the insignificant amount of reported flooding and lack of low-lying land parcels, this hazard is classified as a minimal threat to the City of Laurel Hill.

Section 5.04.01.04 Dam Safety

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
Since 2001, there have been 2 out of 178 active permitted dams to fail in Okaloosa County (NWFWMD, 2010). None of these failures occurred in or had any effect on the City of Laurel Hill.

EXTENT:
The City of Laurel Hill has 3 active permitted dams within its jurisdiction. Most of these are small agricultural dams. In the worst case scenario, if one of these dams failed, the area surrounding the dam would experience flooding and agricultural losses, but it would unlikely cause any residential flooding or highway flooding.

PROBABILITY:
Due to the rarity of dam failure in Okaloosa County, and no record of occurrence in the City of Laurel Hill, the future probability of dam failure resulting in flooding is less than 1 per year.

Section 5.04.01.05 Land Erosion

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
All of Okaloosa County is equally susceptible to land erosion in some localized areas; this includes the City of Laurel Hill. Please refer back to the Risk Assessment of the overall County for the historical occurrences of land erosion.

EXTENT:
Soil erosion, if left unchecked, can damage drainage ditches, fill storm water retention ponds with sediment, and cause erosion into property, including structures. Most erosion of this nature

occurs in some agricultural areas of the County and along unpaved roadways in hilly areas. In this instance, the result is the deposition and buildup of soils/sands on the roadways and in the drainage systems.

In the worst case scenario, soil erosion will cause land to be unusable for agriculture and other purposes because of the degraded soil quality, structure, stability and texture. Also, the yield, quality, and market value of crops will be reduced. Erosion along stream and ditch banks will cause loss of productive farmland, undermining of structures (bridges, etc.), and washing out of lanes, roads, and fencerows.

PROBABILITY:
Based on the existence of potentially highly erodible soils and erodible soils there is a possibility of land erosion in the City of Laurel Hill. The future probability of soil erosion cannot be given because no occurrence of land erosion has been documented in the City of Laurel Hill.

Section 5.04.01.06 Severe Storms

The Severe Storms segment of the LMS Hazards Assessment includes tornado, thunderstorms and lightning, winter storms, and heat waves and drought (hurricanes are excluded from this section because they are covered in another section of this chapter).

Section 5.04.01.06.01 Tornado

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
A tornado struck very close to the City of Laurel Hill in 1914, destroying barns, killing livestock, and uprooting thousands of trees (NOAA). There was no estimated damage given with this account. More recently, an F-0 tornado developed on July 06, 2005 on the fringes of Tropical Storm Cindy and touched down just northeast of the City of Laurel Hill. Trees and power lines were taken down and the total damage associated with this tornado was $15,000 (NCDC, 2009).

Due to the unpredictable paths of tornadoes, and because of the relatively high frequency of tornadoes in Okaloosa County, every jurisdiction in Okaloosa County is susceptible to tornadoes. Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard.

EXTENT:
The damage potential for a tornado increases as a function of population density. As the number of structures and people increase, the potential damage/injury rate increases. Manufactured housing, poorly constructed or substandard housing and apartment complexes are especially susceptible to damage from a tornado.

The worst possible scenario in terms of tornado damage would be if an F-5 tornado hit the City of Laurel Hill. It is very unlikely that an F-5 tornado would strike the City of Laurel Hill, but if one did

there would be complete destruction of homes and businesses that were in the tornado's path. Trees and power lines would be snapped, building debris scattered about, and severe structural damage would be evident on any building left standing.

The most common and active weather threat in the City of Laurel Hill for the formation of tornadoes is severe thunderstorms associated with frontal boundaries. Frontal boundaries and summertime afternoon air mass thunderstorms can reach severe limits because of atmospheric uplift. High winds relating to gust fronts and "microbursts" can create high wind speeds up to 100 MPH.

PROBABILITY:
As stated previously, the tornado history of Okaloosa County is equally relevant to the City of Laurel Hill. Therefore, the future tornado probability of Okaloosa County is the same for the City of Laurel Hill. From 1958-2009 there have been a total of 94 reported tornadoes in Okaloosa County. Based on this data the probability of a future tornado occurrence in the City of Laurel Hill is less than 2 tornadoes per year.

Section 5.04.01.06.02 Thunderstorms and Lightning

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
Between 2000 and 2009, there have been 2 accounts of damaging winds as a result of thunderstorms in the City of Laurel Hill. The total damage associated with both of these events was $15,000 and resulted mostly in trees and power lines down (NCDC, 2010).

In 1997, a home near the City of Laurel Hill was struck by lightning which resulted in the home catching on fire. There were no known injuries or fatalities but resulted in $10,000 worth of property damage (NCDC, 2010). The City of Laurel Hill is just as equally susceptible to thunderstorms and lightning as Okaloosa County. Therefore, the historic record of thunderstorms and lightning in Okaloosa County will be applicable to the City of Laurel Hill.

Please refer back to the Risk Assessment of the overall County for the historical occurrences of these hazards. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
Thunderstorm damage can include traffic accidents on wet roads, flash-flooding, lightning damage to electronics and structures, lightning strikes on people, and wind and hail damage. Aside from being able to produce tornadoes, thunderstorms can produce damaging high winds. Cold upper level air descending from the top of a thunderstorm to the ground usually causes these winds. In a worst case scenario, if the upper level air speed of descent is rapid, these cold "microbursts" can fan out as they come in contact with the ground at a high rate of speed. This is sometimes referred to as "straight line winds." These winds can cause significant property damage, injuries, and deaths similar to a F0 to F2 tornado or Category 1 or 2 hurricanes.

PROBABILITY:
Based on historical data (See Risk Assessment of overall County of this hazard's historical occurrences), the City of Laurel Hill has a future probability of experiencing less than 5 severe thunderstorms per year. Also based on historical data (See Risk Assessment of overall County for this hazard's historical occurrences), the City of Laurel Hill is likely to experience 4 to 16 flashes of lightning per square kilometer per year.

Section 5.04.01.06.03 Winter Storms

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
Historical temperature data specific to the City of Laurel Hill are not readily available. The closest municipality with a daily temperature record is the City of Crestview, and the temperature was recorded at Bob Sikes Airport. Assuming with reasonable certainty that the number of below freezing days in the City of Crestview is similar to the record of freezing days in the City of Laurel Hill, it is predicted that the City of Laurel Hill experienced about 160 days of below freezing temperatures between 2005 and 2009 (Weather Underground, Inc., 2010). Snow in the City of Laurel Hill is considered a very rare event and generally melts off quickly. No historical, scientific data was found regarding snowfall in the City of Laurel Hill. However, during Winter Storm Enzo in January of 2025, there were local reports of up to 9 inches in 2 days in and around the City of Laurel Hill. It caused road closures and power outages. Local businesses and schools closed.

EXTENT:
The worst case scenario in terms of winter storms in the City of Laurel Hill would be if freezing or below freezing temperatures lasted for a week or more, and if the storm responsible for such freezing temperatures knocked down power lines resulting in power loss, and the inability of residents to heat their homes. A freeze's greatest risk is generally unprotected or under-protected water pipes in homes, businesses and infrastructure. Outdoor irrigation systems and plumbing in homes where insulation is inadequate in walls or in off-grade homes where plumbing is exposed are most vulnerable. Unmitigated older structures and manufactured housing are probably the most vulnerable structures.

An icing, glaze, or sleet incident in the City of Laurel Hill would likely result in severe traffic problems and safety concerns throughout the community and its roadways. With no means of salting roadways or removing ice, emergency response would be severely slowed in iced areas. Electrical service would likely be interrupted or totally absent in many areas due to power line glazing and tree branch falls. Mitigation efforts would more likely focus on sheltering and ability to receive outside mutual aid assistance, rather than on equipment and ice buildup prevention due to the infrequency and inconsistency of such events.

PROBABILITY:
Based on the best available data of total below freezing days, the future probability of freezing temperature days in the City of Laurel Hill is estimated to be 100 days over a 5-year time period.

Because a snow event in the City of Laurel Hill is so rare, a single snow "event" over five or ten years is probably the average.

Section 5.04.01.07 Heat Wave and Drought

Heat Wave

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
As previously mentioned, historical temperature data specific to the City of Laurel Hill is not readily available. The closest municipality to the City of Laurel Hill with a temperature record is the City of Crestview, and the temperature was recorded at Bob Sikes Airport. Assuming with reasonable certainty that the number of heat wave days experienced in the City of Crestview is similar to the number of heat wave days in the City of Laurel Hill, it is predicted that the City of Laurel Hill experienced three heat waves from 2005-2009 with high temperatures ranging from 91°F-102°F and average humidity ranging from 58-84 (Weather Underground, Inc., 2010).

EXTENT:
The worst case scenario in terms of a heat wave would be if excessive heat and humidity lasted for a week or more. Dangerous conditions are present when both heat and high humidity combine to make outside temperatures feel in the 103-124° F range. External danger warnings are issued when high temperatures and humidity combine to make outside temperatures feel in the 126-137° F range. Heat disorders may develop in people who work outside for long periods of time, such as construction workers or agricultural workers. To combat the dangerous effects of excessive heat residents should dress appropriately, stay indoors, refrain from strenuous work during the hottest part of the day and stay hydrated. The general threat to the community is to agricultural crops, livestock, poultry, and individuals without adequate cooling systems in their homes, with emphasis on low income and the elderly. Electrical system failures due to demand would only enhance problems for all of these industries and populations (NOAA Watch: Heat Wave).

PROBABILITY:
Based on the data above, it is predicted that the future probability of a heat wave occurring in the City of Laurel Hill is on average three times during a 5-year period.

Drought

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of drought and the categories of drought according the U.S. Drought Monitor.

HISTORICAL OCCURRENCE:
Okaloosa County and the City of Laurel Hill are equally susceptible to droughts as they tend to affect a large geographic area. Therefore the drought record of Okaloosa County is relevant to the City of Laurel Hill. Please refer back to the Risk Assessment of the overall county for the

historical occurrences of drought because the City of Laurel Hill is equally susceptible to this hazard.

EXTENT:

The worst case scenario in terms of drought would be if an exceptional drought (D4) lasted for months or years in Okaloosa County and the City of Laurel Hill (See the Risk Assessment of the overall County for drought category descriptions). An exceptional drought would cause shortages of water in reservoirs, streams, and wells. Bay swamps and bodies of water would see a drastic decline in natural water levels, agricultural losses would be widespread, and water shortages in reservoirs and wells would create water emergencies. Precipitation levels would be -2.0 inches or less. Also, the risk of wildfire increases as drought deepens (U.S. Drought Monitor, 2010).

PROBABILITY:
The abnormally dry drought intensity is the condition of dryness before and after a period of actual drought. From 2000-2009, a total of 49 out of 120 months were abnormally dry. Based on this data, the City of Laurel Hill has a future probability of experiencing less than 5 abnormally dry months every year. Also, from 2000-2009, there were a total of 51 out of 120 months where moderate, severe, extreme, or exceptional drought occurred in Okaloosa County. These drought intensities are the varying severity of actual droughts. The future probability of a moderate to severe drought occurring in the City of Laurel Hill is on average 5 months per year.

Section 5.04.01.08 Wildfire

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
The City of Laurel Hill is vulnerable to wildfire. The entire municipality is only 3.17 square miles, and the majority of this acreage is urban or residential, but vast acres of open forest lands surround the City of Laurel Hill, and these lands consists of natural vegetation historically related to the Longleaf Pine or upland Southeastern forests. Fire plays an important role in the health of these forests.

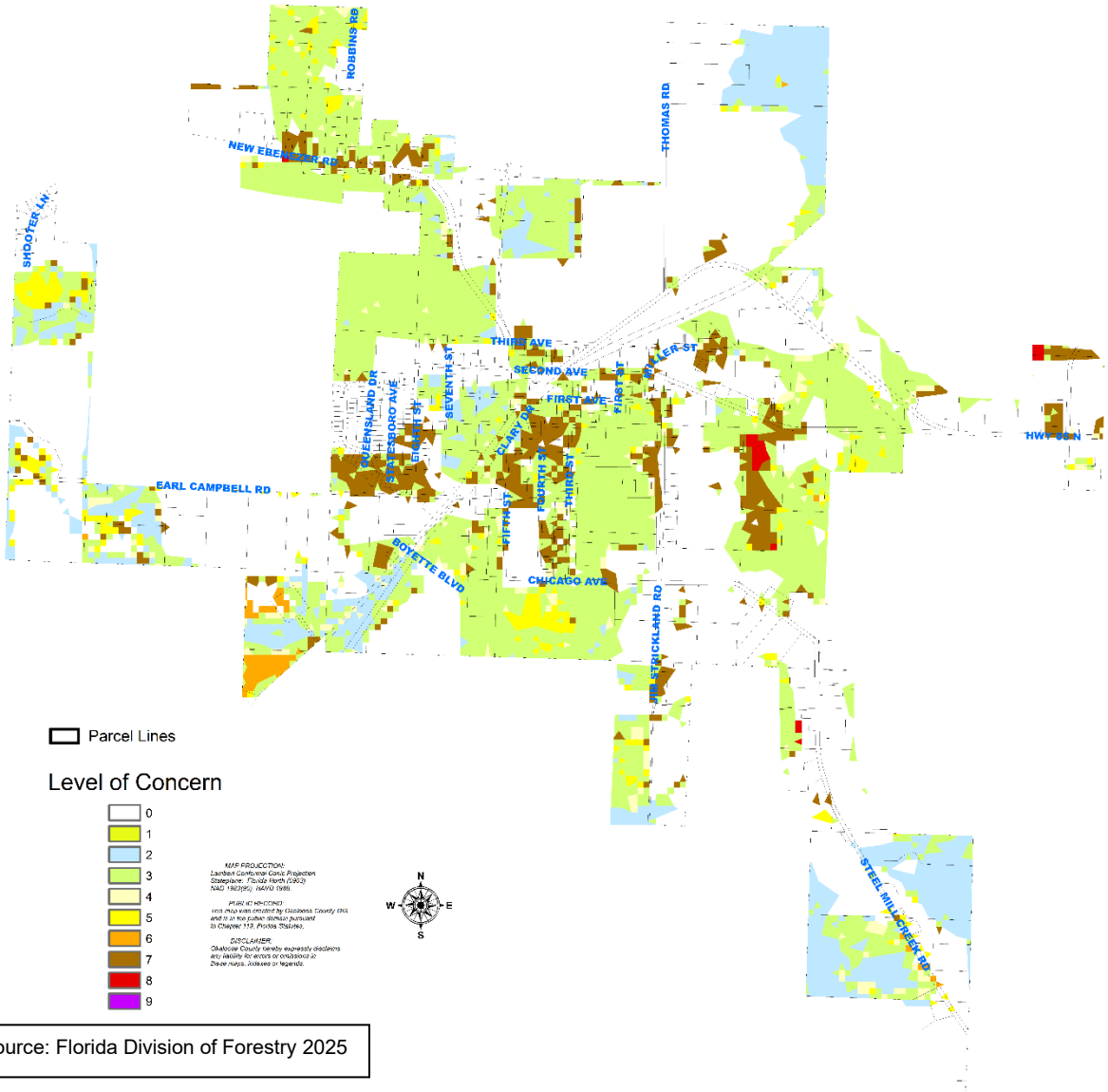
EXTENT:
Based on the Wildland Fire Risk Assessment of Okaloosa County, the worst case scenario would be if the areas with the greatest Level of Concern (LOC) experienced a massive wildfire. These areas have a greater likelihood of danger and destruction due to their inadequate infrastructure, inaccessibility to critical facilities or firefighting resource locations, and connection to the wildland-urban interface. *Note* According to the Florida Department of Forestry, wildland urban interface is defined as “the zone where structures and other human development intermingles with undeveloped wildland fuels and other natural features.” Fires could come into subdivisions and neighborhoods in urban and suburban areas, which could be a potentially catastrophic situation. Smoke and ash from dangerous wildfires could decrease visibility on highways and local roads.

City of Laurel Hill

PROBABILITY:
The Wildland Fire Risk Assessment System map from the Florida Division of Forestry displays the wildfire levels of concern for the City of Laurel Hill. According to the map, most of the incorporated City is classified with "lower" levels of concern (2010). The figure below displays the

levels of wildfire concern for the entire City of Laurel Hill. It appears that the City of Laurel Hill's future probability of wildfire occurrence is moderately low.

Figure 5.04.01.08.1: Wildfire Levels of Concern for the City of Laurel Hill



Source: Florida Division of Forestry 2025

Section 5.04.01.09 Other Hazards

The hazards listed below have been analyzed and determined that the impact would be minimal or non-existent in the City of Laurel Hill.

Section 5.04.01.09.01 Sinkholes

The map and description prepared by the United States Geologic Survey (USGS) in its "Sinkhole, Type, Development and Distribution in Florida" (1985) indicates that Okaloosa County in its entirety is located in an area where sinkholes seldom, if ever, occur. The Florida Geologic Survey's statewide sinkhole database indicates no sinkholes in the County. Since there is no history of this hazard in the County, no further analysis or risk assessment will be conducted for this plan. However, should conditions change and geological features be discovered which contribute to the development of sinkholes, the LMS committee will include any new occurrence information in ongoing updates. The future probability of a sinkhole occurring in City of Laurel Hill is less than 1% based upon no documented sinkholes in the county and the soil strata is non-conducive to the formation of sinkholes.

Section 5.04.01.09.02 Expansive Soils

According to the *Soil Survey of Okaloosa County Florida* (USDA, June 1995), two types of soils are considered vulnerable to expansion. These are known as shrinking and swelling or "expansive soils." Another way of describing expansive soils is the change of volume of a soil with a change of moisture content. All of the soils listed in the expansive class are also considered erodible soils. Okaloosa County may be susceptible to expansive soils in some localized areas. There have been no previous occurrences recorded of expansive soils in the County. The following table lists soils having moderate to high shrink swell potential in Okaloosa County. Only those soils with an associated risk of "High" are listed:

Table 5.04.01.09.02.1: Shrink/ swell potential of soils in Okaloosa County.
Note: Expansive soils and erodible soils are classified as the same.

Soil Type	ME Soils*	HE Soils**	Total Acreage	% Total Land Area
#35-Angie (2 to 5 percent slopes)		X	1,073.26	.16
#49-Angie (5 to 12 percent slopes)		X	10,280.79	1.61
#20-Udorthents (nearly level)	X		655.31	.11
Total	**.11**	**1.77**	**12,009.36**	**1.88**

* Moderate Erodible Soils **Highly Erodible Soils

Source: Soil Survey of Okaloosa County, Florida; June 1995.

Expansive soils can lessen the strength of building foundations, which could result in structural collapse or instability. In addition, these soils have limitations for use as local roads and streets because of lack of strength to support roadways and traffic. There is a possibility of shrink/swell potential or soil expansion based on the existence of moderately erodible soils and highly erodible

soils in Okaloosa County. Although the specific amount of these soils in the county is known, the future probability of this occurring in the City of Laurel Hill is minimal because this issue is addressed during the time of construction and there are no previous records of occurrence.

Section 5.04.01.09.03 Earthquake

According to the U.S. Geological Survey Earthquake Probability maps, the City of Laurel Hill has between a 0.005 and 0.010% chance of experiencing a 5.0 magnitude earthquake within 100 years. This is considered a very minimal risk. Also, since there is no history of earthquakes in Okaloosa County, no further analysis or risk assessment will be conducted for this plan. The future probability of an earthquake occurring in the City of Laurel Hill is less than 1 in 100 years.

Section 5.04.01.09.04 Avalanche

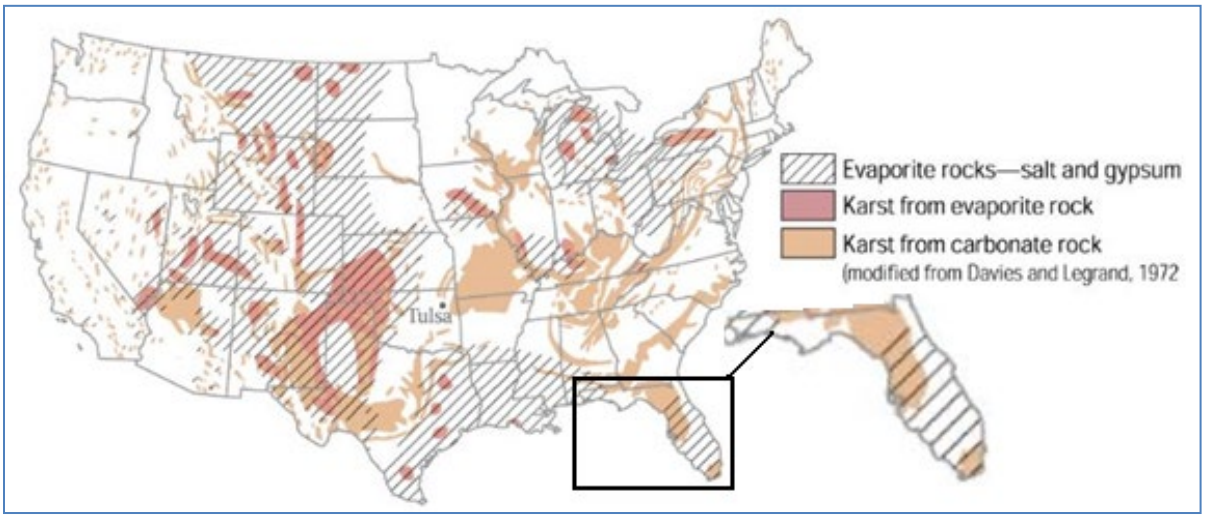
The City of Laurel Hill does not have topography nor snowfall amounts that would create conditions for an avalanche. Since there is no history of this hazard in the county, no further analysis or risk assessment will be conducted for this plan. The future probability of an avalanche occurring in the City of Laurel Hill has is less than 1 in 100 years.

Section 5.04.01.09.05 Land Subsidence

According to the U.S. Geological Survey, “land subsidence occurs when large amounts of ground water have been withdrawn from certain types of rocks, such as fine-grained sediments. The rock compacts because the water is partly responsible for holding the ground up. When the water is withdrawn, the rock falls in on itself. Land subsidence is most often caused by human activities, mainly from the removal of subsurface water” (U.S. Geological Survey, 2010). The City of Laurel Hill has a minimal amount of the most common rock types that are connected to land subsidence (See Figure 5.04.01.09.05.1). Since there is no history of this hazard in the City of Laurel Hill, no further analysis or risk assessment will be conducted for this plan. The future probability of land subsidence occurring is less than 1 in 100 years.

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Figure 5.04.01.09.05.1: Rock types connected to collapse (subsurface cavities/sinkholes) in the U.S.



Source: U.S. Geological Survey

Section 5.04.01.09.06 Landslide

According to U.S. Geological Survey Map of Relative Incidence and Susceptibility Map, the City of Laurel Hill has a very low landslide incidence with less than 1.5% area susceptible to a landslide (USGS, 2010). Landslides are therefore considered to be a minimal risk and no further analysis or risk assessment will be conducted for this plan. The future probability of a landslide occurring in the City of Laurel Hill is less than 1 in 100 years.

Section 5.04.01.09.07 Volcano

There are no geological features in or near Okaloosa County, the City of Laurel Hill, or the Southeast related to volcanism. Since there is no history of this hazard in the City of Laurel Hill, no further analysis or risk assessment will be conducted for this plan. The future probability of a volcanic eruption occurring in the City of Laurel Hill is less than 1 in 100 years.

Section 5.04.01.09.08 Tsunami

According to the U.S. Geological Survey, the City of Laurel Hill is not located in an area that has historically been subjected to tsunamis. Since there is no history of this hazard in the City of Laurel Hill, minimum analysis and risk assessment will be conducted. Therefore, the future probability has been determined to be less than 1 in 100 years.

Section 5.04.01.10 Summary

The risk assessment section of this LMS document highlighted the hazards that the City of Laurel Hill is exposed to. This provides the foundation for the subsequent section covering how vulnerable the City of Laurel Hill is to these identified hazards. The facilities, infrastructure, and neighborhoods in the City of Laurel Hill need to be assessed for their vulnerability to disasters.

Section 5.04.02 Vulnerabilities

Section 5.04.02.01 Introduction

The intent of this section is to provide a vulnerability assessment for the potential damage and estimated loss to building structures in the City of Laurel Hill.

This section includes a brief summary description of the City of Laurel Hill, as well as its vulnerability to the identified hazards and the impact of each hazard. It also describes the vulnerability in terms of the types and numbers of repetitive loss properties within the City of Laurel Hill. Additionally, the section describes vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the City of Laurel Hill.

The main intent of this section is to provide an estimate of potential dollar losses to vulnerable structures and a description of the methodology used to complete the estimate. Lastly, this section describes vulnerability in terms of providing a general description of land uses and development trends within the City of Laurel Hill so that mitigation options can be considered in future land use decisions.

Section 5.04.02.02 Methodology

The Okaloosa County Staff used the same methods, of quantifying the estimated dollar losses to the vulnerable structures potentially impacted by each hazard, for the City of Laurel Hill as the overall County. Therefore, please refer to Okaloosa County's Overall Vulnerabilities, Section 4.02.02, for more information.

Section 5.04.02.03 Summary Description of the City of Laurel Hill

The City of Laurel Hill is an incorporated city located in the northeastern portion of Okaloosa County. According to the 2020 US Census, Laurel Hill had a 2020 population estimated at 584 residents with a 2024 population estimate of 606, which makes it the second smallest municipality in Okaloosa County by population. The City of Laurel Hill is comprised mostly of residential development. There are a few small commercial establishments, such as hair salons, a convenience store/gas station, and a local diner, but there haven't been any major growth trends in the City, nor are there any expected to occur. Within the city limits is a small industry that manufactures trailers but other than those few commercial and industrial examples, most of the development is residential. The City of Laurel Hill is expected to grow only minimally.

Section 5.04.02.04 Vulnerable Populations

Hazards do not affect the entire population the same. Therefore, special attention needs to be given to the more vulnerable populations. Please refer back to the overall County's Vulnerability for further explanation on these vulnerable populations. The table below displays the City of Laurel Hill's vulnerable populations.

Table 5.04.02.04.1: Estimated Vulnerable Populations in the City of Laurel Hill, 2020

Population	2020 Census Percent Population	2020 Estimate
Elderly	20.0%	117
Language Isolation	.6%	3
Disabled	10.3%	60
Single Parent	17%	99
Poverty	13.3%	78
Minority	21.8%	127

Source: 2020 Census; U.S. Census Population Division

Section 5.04.02.05 Repetitive Loss and Severe Repetitive Loss Properties

The Federal emergency Management Agency defines repetitive loss and severe repetitive loss properties as follows (44 CFR Part 77 § 77.2):

Repetitive loss structure means a structure covered under an NFIP flood insurance policy that:

(1) Has incurred flood-related damage on 2 occasions, in which the cost of repair, on average, equaled or exceeded 25% of the value of the structure at the time of each such flood event; and

(2) At the time of the second incidence of flood related damage, the contract for flood insurance contains increased cost of compliance coverage.

Severe repetitive loss structure means a structure that is covered under an NFIP flood insurance policy and has incurred flood-related damage:

(1) For which 4 or more separate claims payments have been made under flood insurance coverage under subchapter B of this chapter, with the amount of each claim (including building and contents payments) exceeding $5,000, and with the cumulative amount of such claims payments exceeding $20,000; or

(2) For which at least 2 separate flood insurance claims payments (building payments only) have been made, with cumulative amount of such claims exceeding the value of the insured structure.

Historically, these properties are more vulnerable to certain hazards than other structures in the County because they have already experienced significant flood damage. As of 2025 the City of

Laurel Hill does not have any current repetitive loss or severe repetitive loss properties; however, the LMS Committee will update this if this changes in the future.

Section 5.04.02.06 Hurricane and Tropical Storm

The City of Laurel Hill is vulnerable to the damaging effects of tropical storms and hurricanes, even though it is located in the northeast corner of the county and about 50 miles away from the coast. The City of Laurel Hill would experience destruction in terms of wind damage and pockets of flooding due to the heavy rains. All structures within the City of Laurel Hill's jurisdiction are susceptible to damage in the form of flooding due to heavy rains and strong storm surge. High winds can damage structures by removing roofs and siding, and create flying debris out of sources which are not anchored. The City of Laurel Hill does not have designated evacuation zones for the different categories of hurricanes. This is due to their more northerly location away from the coastal areas by the Gulf of Mexico, which is where the storms typically make landfall. Historically, storms generate their power over bodies of water and lose their strength as they make landfall. Therefore, as the storm travels further north in the County, the communities are not impacted as severely as the coastal areas. The specific impacts of hurricanes and tropical storms on the City of Laurel Hill are unable to be provided due to a lack of conducted studies.

Section 5.04.02.07 Flooding

For purposes of this LMS, flooding only considers flooding that is a result of rainfall, which includes tropical rains during a hurricane. The City of Laurel Hill is vulnerable to flooding and susceptible to damage from this hazard. Localized roadway flooding from heavy rains is the most commonly observed type of flooding in the City of Laurel Hill. During a hurricane, tropical storm or severe storm heavy rains might cause some homes to flood particularly in low lying areas or those with poor drainage systems. Currently, there are no structures located in any of the unnumbered A flood zones in the City of Laurel Hill. However, the LMS Committee will update this if this changes in the future.

Section 5.04.02.08 Dam Safety

The City of Laurel Hill has 3 active permitted dams within its jurisdiction (see Figure 4.01.05.1**:** Permitted Dams in Okaloosa County, for location). Most of these are small agricultural dams. The specific impacts of dam failure in Okaloosa County are unavailable because there have been no studies conducted on the impact that dam failure would have on the potentially affected areas. Only broad general impacts can be given, which provide an indication of what impacts are expected with dam failure. The concern with dam safety is if one of these dams failed, the area surrounding the dam has the potential to experience flooding and agricultural losses.

Section 5.04.02.09 Land Erosion

The City of Laurel Hill is vulnerable to land erosion in some localized areas, and some structures are susceptible to damage from this hazard. The soil types and topography that lead to land erosion can be found in various parts of the City of Laurel Hill. The areas that are most susceptible to land erosion are those with steep slopes and which have highly erodible soil types. Land

erosion in the City of Laurel Hill is generally caused by disturbed soils from construction activities and usually isolated to an area less than 1 acre in size.

Section 5.04.02.10 Severe Storms

In the table below, the estimated cost of damage to residential and non-residential structures in the event of a severe storm is provided. The numbers and estimated value represent the total number of structures in the City of Laurel Hill. Although it is highly unlikely that all structures will be impacted during a singular severe storm event, all structures are equally vulnerable to severe storms and so it was deemed appropriate to list all structures in the City of Laurel Hill.

Table 5.04.02.10.1: Residential and Non-residential Structures Vulnerable to Severe Storms in City of Laurel Hill

Total:	Single-Family	Multi Family	Commercial	Government/ Institutional
	279	1	14	30
Just Value	$35,986,522	$150,183	$2,593,821	$3,859,488

Source: Okaloosa County Property Appraiser and Department of Growth Management, 2026

Since severe storms includes tornadoes, thunderstorms and lightning, and winter storms, the values listed in the tables above apply to all those hazards.

Section 5.04.02.10.01 Tornado

The City of Laurel Hill is vulnerable to tornadoes, and all structures within its jurisdiction are susceptible to the impacts of this hazard due to their unpredictable nature.

The areas within the City of Laurel Hill that are most vulnerable to tornado damage are those with a high density or large population because the damage rate increases as a function of population density. The types of structures most vulnerable to tornado damage within the City of Laurel Hill are poorly constructed housing, apartment complexes, and condominiums because of their size and densities. According to the Mapping for Emergency Management, Parallel Hazard Information System (MEMPHIS) study in 2005, nearly all of Okaloosa County, including the City of Laurel Hill, has a medium risk, 1 in 250 per year, of a tornado event occurring. According to the National Oceanographic and Atmospheric Administration's tornado archive, the last tornado to pass through Laurel Hill was an EF1 tornado on March 13, 1975 that caused an estimated $250,000 in damage.

Section 5.04.02.10.02 Thunderstorms and Lightning

The City of Laurel Hill is vulnerable to thunderstorms and lightning, and all structures within its jurisdictions are susceptible to the damaging effects of wind, hail, and lightning associated with severe thunderstorms. Thunderstorm damage can include traffic accidents on wet roads, flash-flooding, lightning damage to electronics and structures, lightning strikes on people, and wind and hail damage to structures. According to the Mapping for Emergency Management, Parallel Hazard Information System (MEMPHIS) study in 2005, all of Okaloosa County, including the City of Laurel Hill, has the threat of a thunderstorm or lightning event occurring, in terms of causing economic damage or loss of over $50, of 1 in 50 per year.

Section 5.04.02.10.03 Winter Storms

The City of Laurel Hill is vulnerable to winter storms, and all structures within its jurisdiction are susceptible to the effects of freezing temperatures. The City of Laurel Hill is vulnerable to snow, freezing rain, icing and glazing events but because these events are rare, the City of Laurel Hill is unlikely to suffer serious damage from this hazard. The specific impacts of winter storms in the City of Laurel Hill are unavailable because there have been no studies conducted regarding these hazards' impacts in the County. However, as described in Chapter 4, the effects of Winter Storm Enzo which struck Northwest Florida in January 2025 provide a good example of the kinds of impacts that would occur in Laurel Hill as a result of a winter storm event. sustain The homes in the City of Laurel Hill that are most vulnerable to winter storms are those with unprotected or under-protected water pipes and homes in which plumbing and insulation is inadequate. Unmitigated older structures and manufactured housing are also very vulnerable.

As discussed in Section 4.01.07.03 of this LMS, three winter storm events have impacted north Okaloosa County including the City of Laurel Hill, in recent years. On January 29, 2014 an icing event occurred in the northern portion of the County. Roads resulting in school closures and citizens were advised to stay indoors. Winter Storm Benji impacted the Gulf Coast on December 8-9, 2017 with flurries resulting in accumulation of up to a ½ inch of snow throughout the County. In addition to school closures and temporary suspension of public transportation, over 300 miles of Interstate I-10 was closed. Finally, Winter Storm Enzo brought over 9" of snow to Okaloosa County on January 21st-23rd, 2025. Interstate I-10 closed from mile marker (m) 5 in Pensacola to mm 70 near SR 285 near Tallahassee. No injuries or fatalities were reported, though schools were again closed and public transportation temporarily suspended until the roads were safe to drive.

Section 5.04.02.11 Heat Wave and Drought

The City of Laurel Hill is vulnerable to heat waves and drought. The specific impacts of heat waves and drought in the City of Laurel Hill are unavailable because there have been no studies conducted regarding these hazards' impacts in the County. In addition, the nature of these hazards tends to only affect the populations without adequate cooling systems in their homes, low income, elderly, children, and outside workers. Only broad general impacts of these hazards can be given, which provide an indication of what impacts are expected with heat wave and

drought. Everyone living within the county is susceptible to heat exhaustion. All households are susceptible to power outages due to increased electricity demand during periods of extreme heat. Electrical system failures due to demand would only enhance problems for the entire population, especially for the vulnerable populations. All water bodies and municipal water supplies are susceptible to declining water levels and water shortages due to drought.

Section 5.04.02.12 Wildfire

The City of Laurel Hill is only 3.17 square miles in area, the majority of which is urban or residential. However, vast areas of open lands surround the City, consisting of natural vegetation historically related to the Longleaf Pine or upland Southeastern forests. Although the City of Laurel Hill is susceptible to wildfire, as previously mentioned in the City's Hazard Assessment, it appears that the future risk of wildfire is moderately low. The areas and populations that are most vulnerable to the danger and destruction of wildfire are the ones with inadequate infrastructure, inaccessibility to critical facilities or firefighting resource locations, and located in the wildland-urban interface. Table 5.04.02.12.1 depicts the structures with 'medium (levels 4-6)' to 'high (levels 7-9)' wildfire level of concern. Levels 0-3 were determined to be of such minimal to low vulnerability to wildfire they were not included in this assessment.

Table 5.04.02.12.1: Medium to High Wildfire Level of Concern for Structures

Total:	Single-Family	Mobile Home	Commercial	Government/ Institutional	Trailer Park
Level 4	39	13	2	0	0
Just Value	$5,844,747	$1,026,846	$559,170	$0	$0
Level 5	22	8	0	0	0
Just Value	$3,535,081	$768.025	$0	$0	$0
Level 7	62	28	7	10	0
Just Value	$9,840,200	$2,036,818	$1,386,601	$2,857,378	$0

Source: Florida Division of Forestry and Okaloosa County Property Appraiser, 2026 (Okaloosa County Staff generated table from overlaying the wildfire level of concern and property appraiser data)

Section 5.04.02.13 Other Hazards

As previously stated in the Risk Assessment, the following hazards, sinkholes, expansive soils, earthquake, avalanche, land subsidence, volcano, sea level rise, and tsunami have been determined to be a minimal risk to the City of Laurel Hill. Therefore, the City's vulnerability to these hazards has not been assessed. If any of the hazards become a greater risk in the City of Laurel Hill, then the LMS Committee will update this section to reflect those changes.

Section 5.04.02.14 Summary

The vulnerability assessment section of this LMS document highlighted how vulnerable the City of Laurel Hill is to the identified hazards from the Risk Assessment. It discussed the vulnerable populations, repetitive loss properties, and structure and infrastructure damages associated with these hazards.

Section 5.04.03 Critical Facilities

The following is a list of all critical facilities found inside the City of Laurel Hill's city limits.

Section 5.04.03.01 Fire Stations

Site Name	Address	X-COORD	Y-COORD
LAUREL HILL VFD	8209 HWY 85 N LAUREL HILL FL 32567	1354663.839	720760.258

Section 5.04.03.02 Government Centers

Site Name	Address	X-COORD	Y-COORD
LAUREL HILL CITY HALL	8209 HWY 85 N LAUREL HILL FL 32567	1354640.939	720699.068

Section 5.04.03.03 Rapid Impact Assessment Team Reference Points

Site Name	Address	X-COORD	Y-COORD
LAUREL HILL	8209 HWY 85 N LAUREL HILL FL 32567	1354603.706	720670.232

Section 5.04.03.04 Mobile Home Parks and RV Campgrounds

Site Name	Address	X-COORD	Y-COORD
GANTTS TRAILER PARK	3783 NEW EBENEZER RD LOT 18 LAUREL HILL FL 32567	1349826.51	724276.409

(All such sites are considered to be in a hurricane evacuation area due to their poor wind resistance. Damage Assessment Teams should attempt to visit these areas since damage is likely to be high in a major hurricane)

Section 5.04.04 Mitigation Actions

Section 5.04.04.01 Hurricane and Tropical Storm

1. Support efforts to shutter critical facilities.
2. Ensure the public is informed of pending conditions. (Responsible party: Okaloosa County Public Safety)
3. Enforce Florida Building Codes for new structures. (Florida Building Codes)
4. Ensure communications are wind and electrical-failure resistant to allow for 24/7 communications during the first 72 hours flowing a disaster. (Responsible party: Okaloosa County Public Safety)
5. Ensure adequate and safe public risk shelters are available in all location in the County to prevent homelessness, including adequate dining facilities and to maintain sanitary conditions. (Responsible party: Okaloosa County Public Safety, private businesses)
6. Promote and support funding that allows for buildings to remain functional before, during and after a hurricane or tropical storm event in order to support the function of Okaloosa County Emergency Management's mandates.
7. Promote public awareness of hurricane and tropical storm hazards. (Responsible party: Okaloosa County Public Safety)
8. Promote ways that private structure owners and landowners can mitigate using governmental or private sector investment. (Responsible party: Growth Management)
9. Ensure communications systems are capable to communicate during and following hurricanes/tropical storms. Also to include the ability to erect temporary repeaters to restore communications. (Responsible party: Okaloosa County Public Safety)
10. Ensure internet systems are redundant to ensure continued availability of disaster management software throughout the county. (Responsible party: Okaloosa County Public Safety; private businesses)
11. Support activities that educate the public about the dangers of hurricanes/tropical storms. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office. (Responsible party: Okaloosa County Public Safety)

Section 5.04.04.02 Flooding

1. Ensure all future buildings are constructed to the Florida Building Code. (Land Development Code)
2. Provide opportunities for property owners to elevate existing structures or move them to higher ground in order to reduce overall community vulnerability to flooding. (Land Development Code, FEMA)
3. Ensure that all public buildings that serve first response and critical emergency/public needs, including recording/data collection and communication centers/infrastructure, are located outside of flood zones or flood prone areas. (FEMA, Land Development Code)
4. Ensure communications systems are capable to communicate during and following flood events.
5. Ensure the public is informed of pending conditions. (Responsible party: Okaloosa County Public Safety)

Section 5.04.04.03 Dam Safety

1. Support efforts that document hazards and risks associated with structural and earthen dams and upkeep. (Responsible party: NWFLWMD)
2. Support efforts that create partnerships with property owners that promote the overall goal of communitywide and stream valley safety. (Responsible party: NWFLWMD)

Section 5.04.04.04 Land Erosion

1. Support efforts that allow public and private sector entities to gain control of problem erosion locations, gullies and rills that reduce unnatural sedimentation accumulation and cutting into natural hillsides and land, and to control coastal erosion where seawalls are necessary. (Land Development Code, NRCS, DEP, ACE)
2. Support efforts that help to eliminate or reduce coastal erosion due to boat/ship wake issues, while weighing the interests of the boating public. (Responsible party: Coast Guard)

Section 5.04.04.05 Severe Storms

1. Ensure the public is informed of pending conditions. (Responsible party: Okaloosa County Public Safety)
2. Ensure communications systems are capable to communicate during and following severe storms. (Responsible party: Okaloosa County Public Safety, private businesses
3. Ensure internet systems are redundant to ensure continued availability of disaster management software throughout the county. (Responsible party: Okaloosa County Public Safety)
4. Support activities that educate the public about the dangers of severe storms. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office. (Responsible party: Okaloosa County Public Safety)

Section 5.04.04.05.01 Tornado

1. Ensure communications systems are capable to communicate during and following tornados. (Responsible party: Okaloosa County Public Safety, private businesses)
2. Support activities that educate the public about the dangers of tornados and waterspouts. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office. (Responsible party: Okaloosa County Public Safety)
3. Ensure the public is informed of pending conditions. (Responsible party: Okaloosa County Public Safety)
4. Ensure internet systems are redundant to ensure continued availability of disaster management software throughout the county. (Responsible party: Okaloosa County Public Safety, private businesses)

Section 5.04.04.05.02 Thunderstorms and Lightning

1. Ensure communications systems are capable to communicate during and following thunderstorms and lightning. (Responsible party: Okaloosa County Public Safety, private businesses)
2. Support activities that educate the public about the dangers of thunderstorms and lightning. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office. (Responsible party: Okaloosa County Public Safety)
3. Ensure the public is informed of pending conditions. (Responsible party: Okaloosa County Public Safety)
4. Ensure internet systems are redundant to ensure continued availability of disaster management software throughout the county. (Responsible party: Okaloosa County Public Safety, private businesses)

Section 5.04.04.05.03 Winter Storms

1. Ensure communications systems are functional and able to communicate during and following winter storms.
2. Support activities that educate the public about the dangers of winter storms. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office.
3. Reduce or eliminate the vulnerability to freezing or provide secondary heating or electrical systems for public facilities.
4. Ensure the public is informed of pending conditions.

Section 5.04.04.06 Heat Wave and Drought

1. Ensure communications systems are capable to communicate during and following heat waves and droughts.
2. Support activities that educate the public about the dangers of heat waves and droughts. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office.
3. Ensure the public is informed of pending conditions.

Section 5.04.04.07 Wildfire

1. Ensure communications systems are capable to communicate during and following wildfire events.
2. Ensure the public is informed of pending conditions.
3. Support activities that educate the public about the dangers of wildfire. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office or the local fire department or the Florida Division of Forestry.

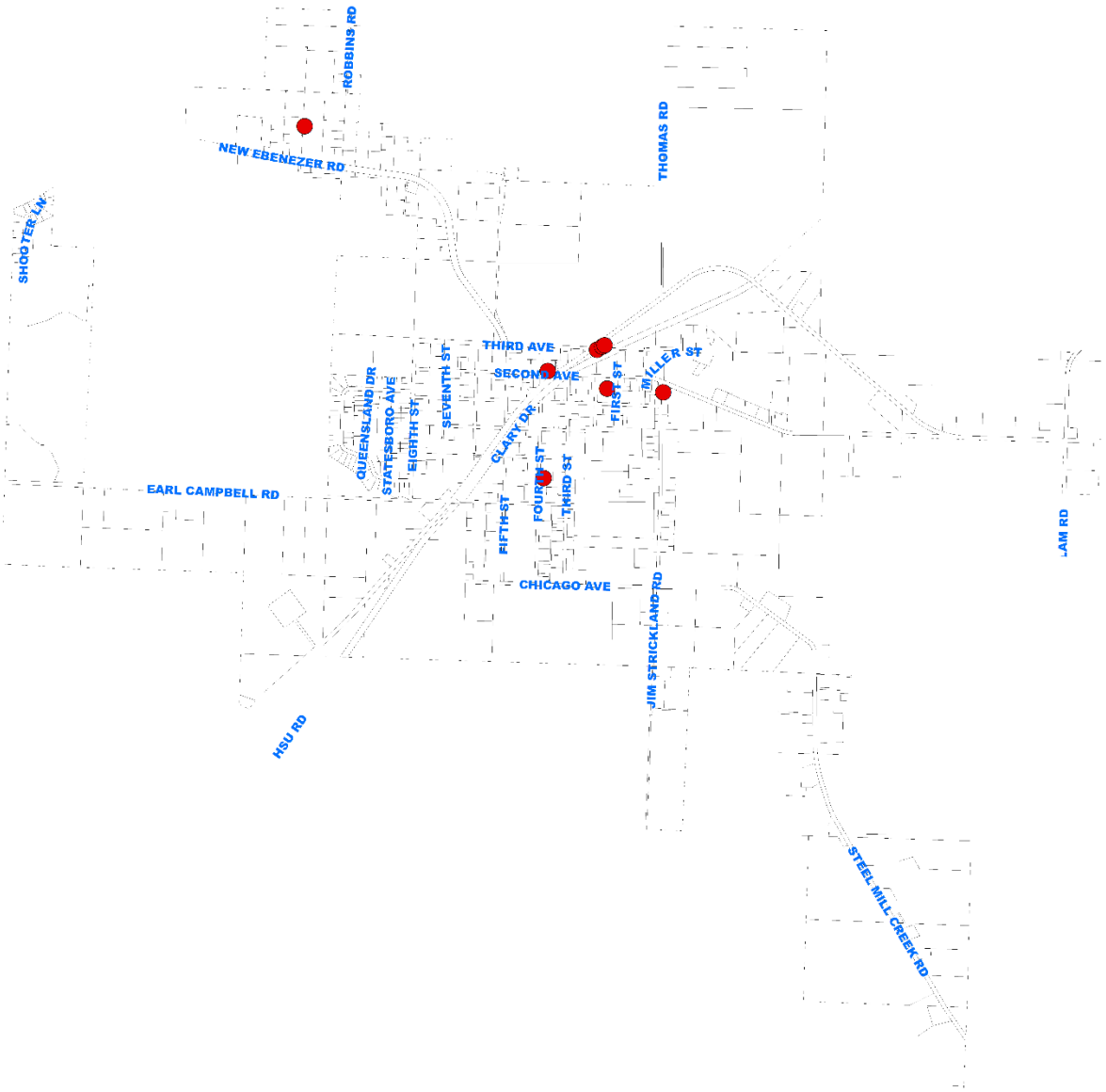
4. Require new subdivisions plats and new commercial structures to designed and built to National Fire Codes
5. Support public and private mitigation efforts to provide fire hydrants to locations at risk along the urban/rural interface where water systems exist to provide such services.

Section 5.04.05 Maps

Attached to this page are maps of the City of Laurel Hill. They include:

1. Critical Facilities…….. 5.04-28
2. Evacuation Zones……... 5.04-29
3. Flood Zones…… 5.04-30
4. Repetitive Loss Properties…….5.04-31
5. Surge Zones…… 5.04-32
6. Wildfire Level of Concern…….. 5.04-33

City of Laurel Hill Critical Facilities



Parcel Lines

Critical Facilities

Source: Okaloosa County Public Safety, 2025

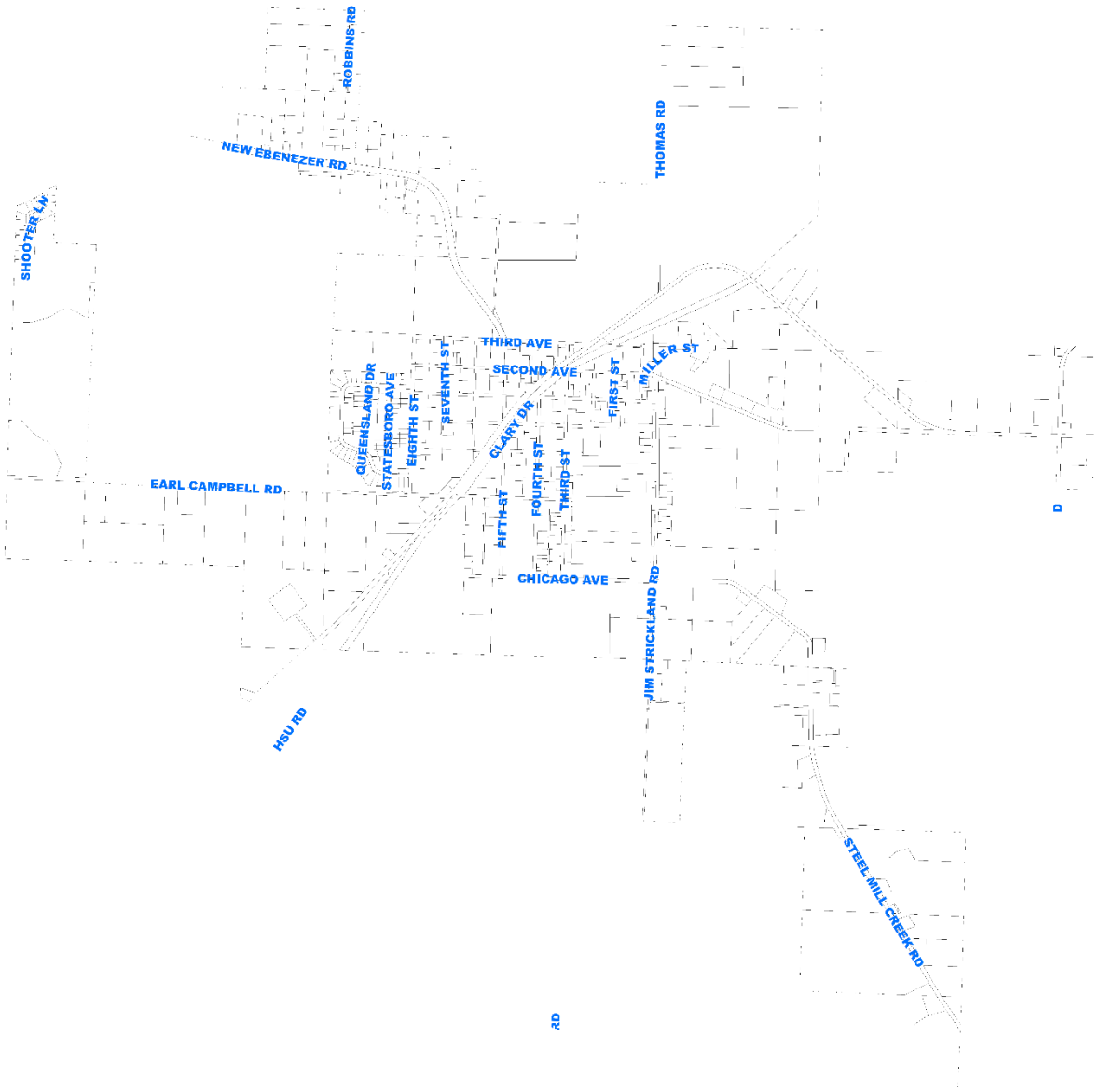
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
NAD 1983(90), NAVD 1988.

PUBLIC RECORD:
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City of Laurel Hill Evacuation Zones

- Parcel Lines
- Evac Zone A
- Evac Zone B
- Evac Zone C
- Evac Zone D
- Evac Zone E

ZONE A = HURRICANE CAT 1

ZONE B = HURRICANE CAT 2

ZONE C = HURRICANE CAT 3

ZONE D = HURRICANE CAT 4

ZONE E = HURRICANE CAT 5

Note: There are no Evacuation Zones in the City of Laurel Hill

Source: Okaloosa County Public Safety, 2025

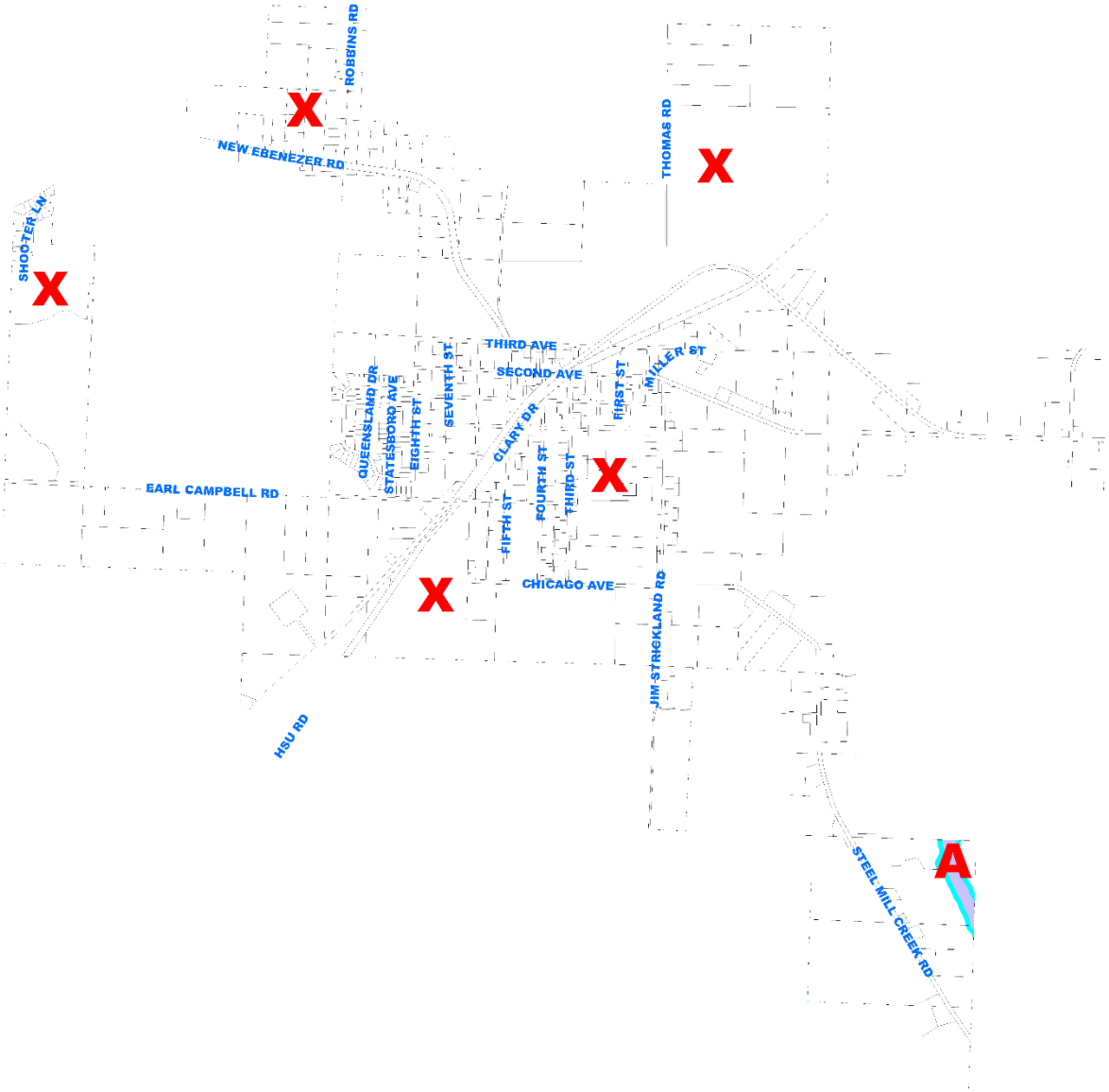
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City of Laurel Hill Flood Zones

- Parcel Lines
- X 500 Year Flood Plain
- A 100 Year Flood Plain
- AE 100 Year Flood Plain
- VE 100 Year Flood Plain

Source: FEMA Map Service Center, March 9, 2021

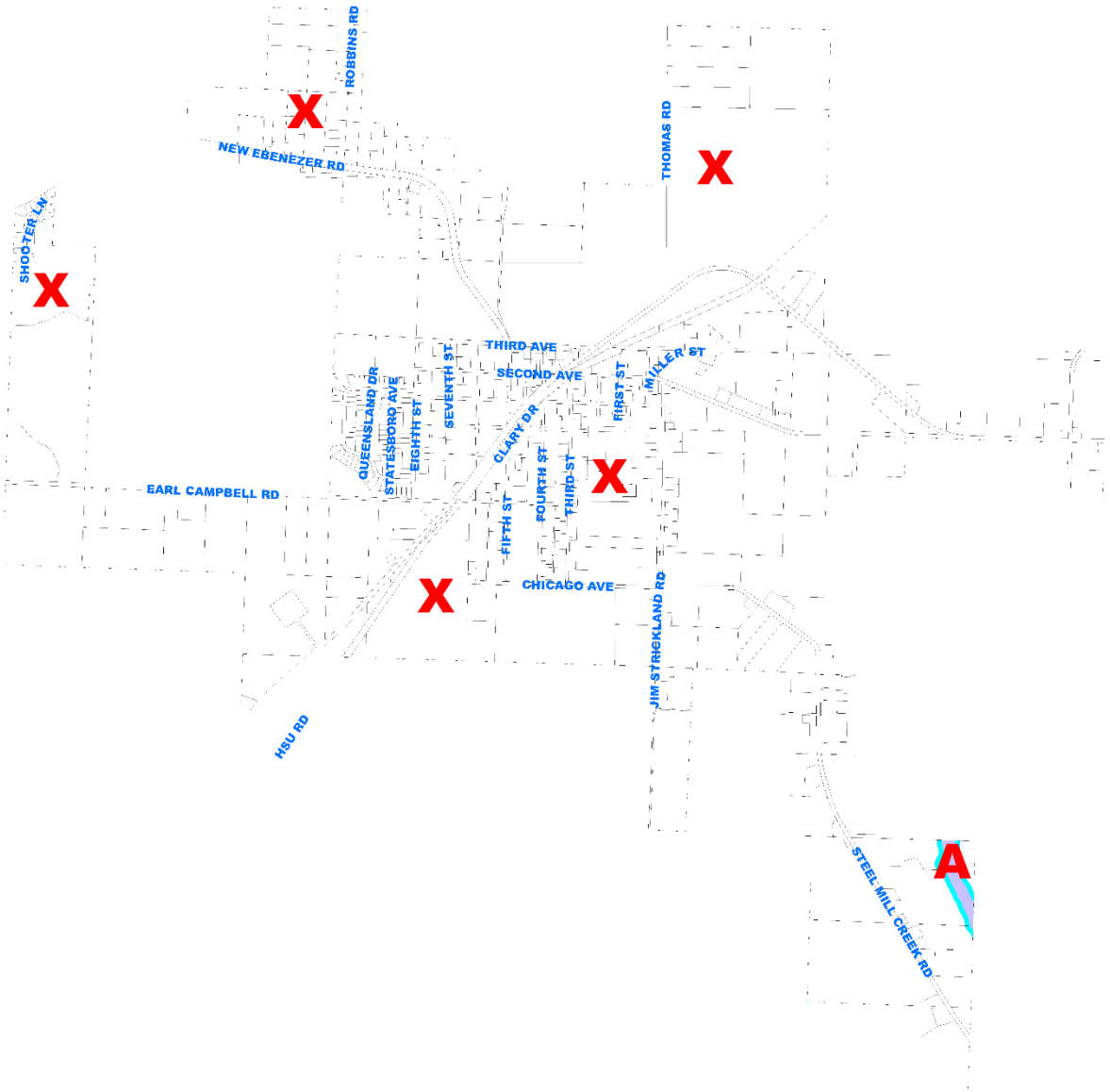
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City of Laurel Hill Repetitive Loss Properties

- Parcel Lines
- X 500 Year Flood Plain
- A 100 Year Flood Plain
- AE 100 Year Flood Plain
- VE 100 Year Flood Plain
- Base Flood Elevation in a Floodway
- Repetitive Loss Properties

Note: The City of Laurel Hill does not have any Repetitive Loss Properties in its jurisdiction

Source: FEMA Map Service Center, March 9, 2021

MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
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City of Laurel Hill Surge Zones

- Parcel Lines
- Category 1
- Category 2
- Category 3
- Category 4
- Category 5

Note: There are no Surge Zones in the City of Laurel Hill

Source: West Florida Regional Planning Council, 2025

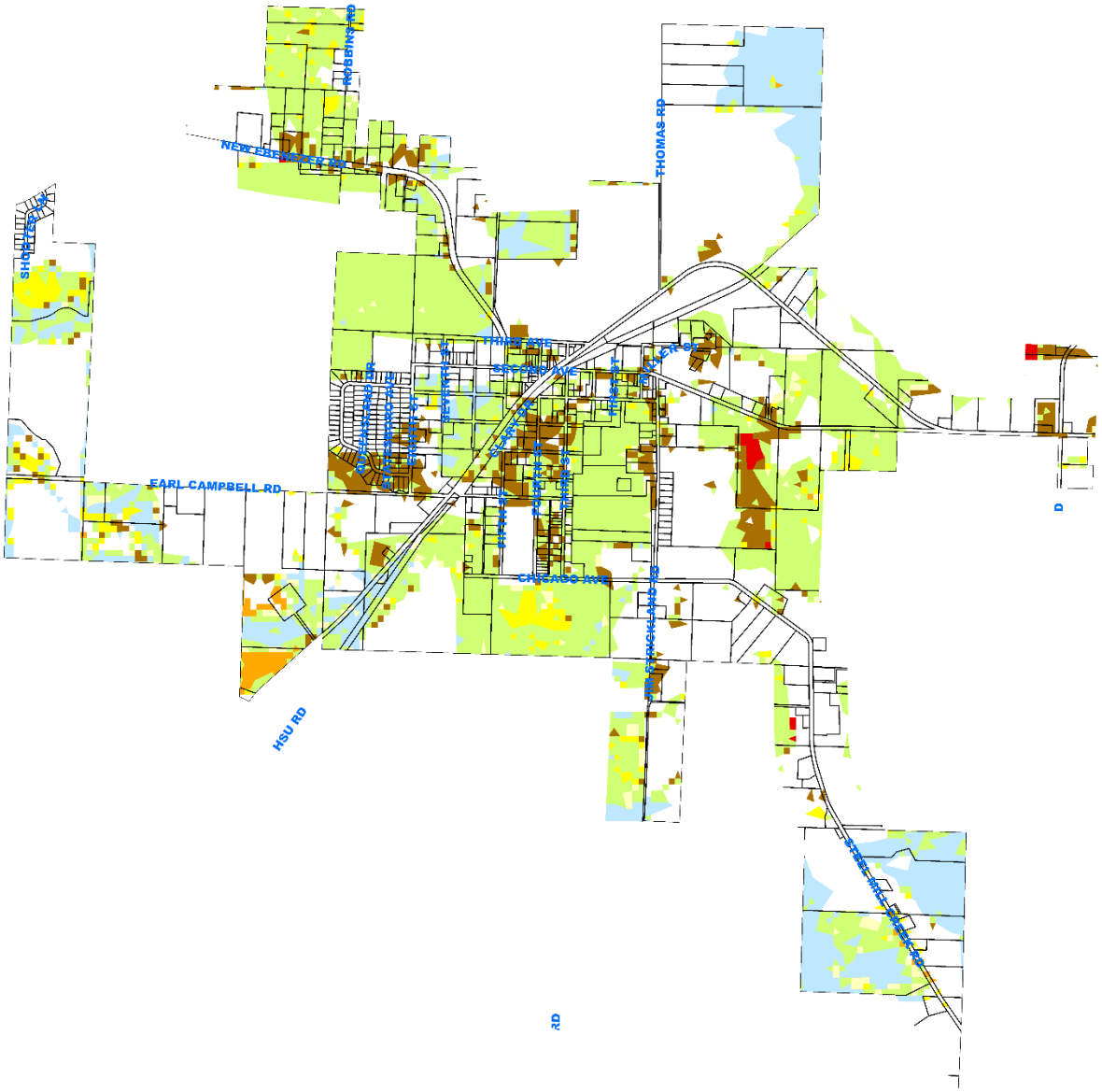
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City of Laurel Hill Wildfire Level of Concern

Parcel Lines

Level of Concern

0
1
2
3
4
5
6
7
8
9

Source: Florida Division of Forestry, 2025

MAP PROJECTION:
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Stateplane: Florida North (0903)
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Section 5.04.06 Post Disaster Redevelopment Plan

The City of Laurel Hill does not currently have a Post Disaster Redevelopment Plan. Therefore, the city will abide by the Okaloosa County Post Disaster Redevelopment Plan (PDRP) and submit the required data per the PDRP requirements.

Section 5.05

City of Mary Esther



City of Mary Esther

Section 5.05.01 Risk Assessments

Section 5.05.01.01 Introduction

The intent of this section is to provide information regarding the hazards threatening the City of Mary Esther. The City is a waterfront community situated along the Santa Rosa Sound to the south. According to the Census Bureau, its population was 3,982 as of the 2020 Census with an estimated 2025 population of 4,457 according to the University of Floria's Bureau of Economic and Business Research. In this section, information relevant to City Mary Esther is compiled and an overview of the analyses is provided.

The City of Mary Esther was incorporated in 1946 in the southwest portion of Okaloosa County. As an incorporated city, Mary Esther has all the powers and authority granted to municipal governments provided by Chapter 166 of the Florida Statutes as well as Article VIII of Section 2 of the Florida Costitution to exercise any governmental, corporate, or proprietary power for municipal purposes, provided they are not expressly prohibited by law. These powers allow Mary Esther to govern itself, deliver services, enact and enforce ordinances, and set policy.

The County enforces the Florida Building Code within the City pursuant to an interlocal agreement as provided in Chapter 553, Florida Statutes. Mary Esther participates in the National Flood Insurance Program pursuant to the National Flood Insurance Act of 1968 (42 U.S.C. §§4001 et seq.). The City of Mary Esther has adopted a comprehensive plan as provided in Chapter 163, Florida Statutes, and has adopted by ordinance implementing land development regulations including provisions for zoning and floodplain management. The City has all the financial resources granted by the Florida Constitution and Florida Statutes which are available to support the mitigation strategies discussed in this section.

The hazards that will be analyzed in this section are natural events and the analysis concentrates on the anthropogenic effects on those events as well as the effects of those events on mankind. However, this analysis is not an assessment of technological and/or societal hazards and, therefore, these types of events are not covered under this plan or in the analysis provided in this section.

Primary attention is given to hazards considered reasonably possible to occur in the City of Mary Esther. These hazards include:

- Hurricane and Tropical Storm
- Storm Surge
- Flooding
- Severe Storms
    - Tornado and Waterspout
    - Thunderstorms and Lightning
    - Winter Storms
- Heat Wave and Drought
    - Heat Wave

- Drought
- Wildfire
- Beach Erosion
- Sea Level Rise

The following hazards have minimal or no risk to the City of Mary Esther: land erosion, sinkholes, expansive soils, dam safety, earthquakes, avalanches, land subsidence, landslides, volcanoes, and tsunamis. Therefore, these hazards are not analyzed in any depth in the hazard analysis. Further explanation is provided in the "Other Hazards" section.

Hazard Identification

The technical planning process begins with hazard identification. In this process, the City of Mary Esther Staff, along with the staff from the Okaloosa County Growth Management Department, has identified all of the natural hazards that threaten the community.

Section 5.05.01.02 Hurricane and Tropical Storm

DEFINITIONS:
Please refer back to the Risk Assessment of the overall County (Chapter 4) for the definitions of this hazard.

HISTORICAL OCCURRENCE:
The City of Mary Esther and Okaloosa County are equally susceptible to hurricanes and tropical storms, as the city is located near the coast. Due to the large area that hurricanes and tropical storms impact, it is assumed that the City of Mary Esther and the overall County experienced the same storms. Therefore, the historic hurricane record of Okaloosa County is applicable to the City of Mary Esther. Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

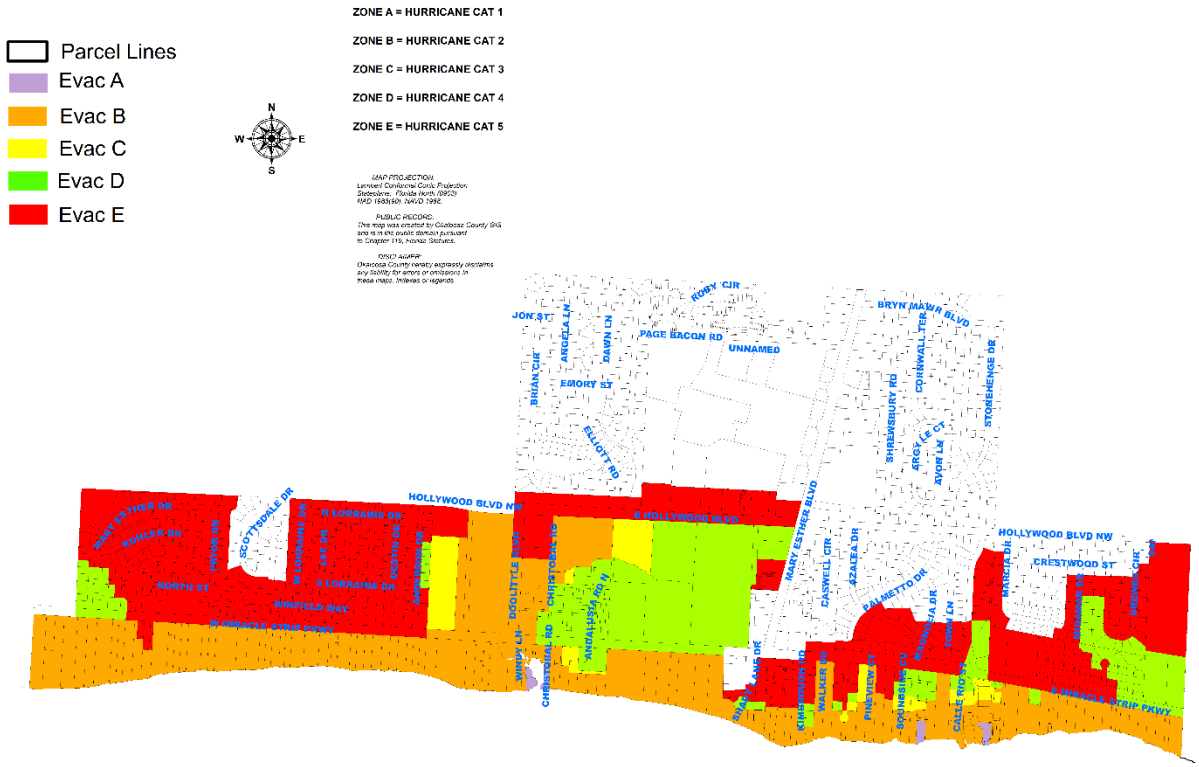
EXTENT:
High winds from hurricanes are a substantial threat to all homes, especially manufactured housing. Category 3 or higher force winds would likely cause substantial damage throughout the City of Mary Esther. Winds in excess of 155 MPH could be experienced in a major Category 5 hurricane in some locations. Traditional stud and brick veneer or siding homes and businesses are vulnerable, as well, especially when hurricane shutters are not used. Relatively few businesses and homes have hurricane shutters in the City of Mary Esther, although shelters and some critical facilities are shuttered.

In a worst case scenario of a Category 5 hurricane, there will be catastrophic damage to homes and buildings, trees, power poles, and signage. In particular to power pole damage, there would be extensive widespread system destruction anticipated, which can include transmission/substation damage. All mobile homes and most frame homes will be completely destroyed due to wind causing structural collapse. The Category 5 winds of in excess of 155 MPH will cause significant damage to all buildings, with loss of roof sheathing, broken windows, and in

some cases wall failure resulting in a structural collapse. The majority of trees will be snapped and power poles downed. In some cases, this will result in power outages that could last for weeks or months. People and animals would be at an extremely high risk of injury or death as a result of the strong, forceful winds causing flying or falling debris.

Evacuation is recommended prior to a Category 5 hurricane making landfall. The expected storm surge level of up to 17.2 feet associated with a Category 5 hurricane will substantially impact the City of Mary Esther. Also, severe flooding will occur and likely cause polluted water, storm sewer overflow, and damage to roadways. Storm surge will be examined in greater depth in the following section. (NOAA, 2010). The figure below displays the City of Mary Esther's evacuation zones, which corresponds to the various hurricane categories.

Figure 5.05.01.02.1: Evacuation Zones for the City of Mary Esther



Source: Okaloosa County Public Safety / Okaloosa County GIS, 2023

PROBABILITY:
According to Colorado State University's United States Landfalling Hurricane Probability Project, Okaloosa County, and thus the City of Mary Esther, have the following future probabilities over a 50-year time period:

Table 5.05.01.02.1: 50-Year Probabilities of Named Storm, Tropical Storm, and Hurricane Making Landfall in Okaloosa County

1 or More Named Storms Making Landfall	1 or More Hurricanes Making Landfall	1 or More Intense Hurricanes Making Landfall	Tropical Storm-Force (≥ 40 mph) Wind Gusts	Hurricane-Force (≥ 75 mph) Wind Gusts	Intense Hurricane-Force (≥115 mph) Wind Gusts
90.90%	68.60%	40.50%	>99.9%	99.60%	82.30%

Source: The United States Landfalling Hurricane Web Project, 2025

Section 5.05.01.03 Storm Surge

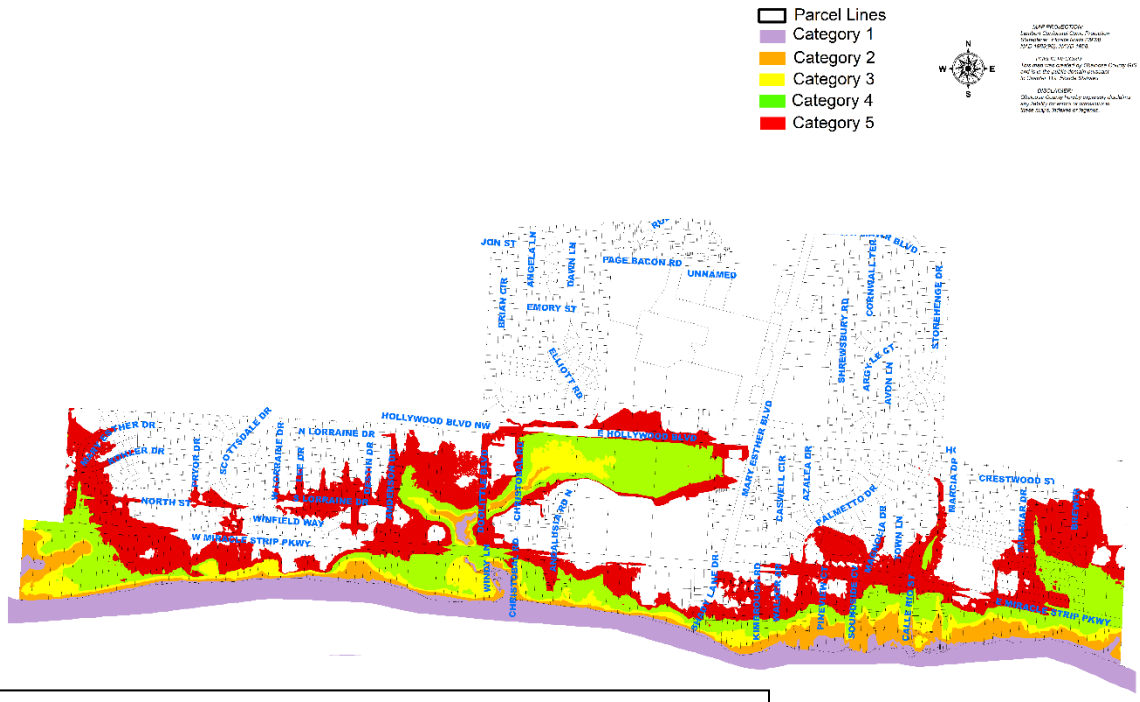
DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
Since Okaloosa County's bay and coastal areas are equally susceptible to storm surge, and the City of Mary Esther is located on the Santa Rosa Sound, the County's historic storm surge data is relevant to Mary Esther. Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
In the worst case scenario, some of these areas of the City of Mary Esther will experience storm surge levels up to 17.2 feet above mean sea level during a Category 5 hurricane (see Table 5.05.01.03.1). It appears that only a minimal amount of the City of Mary Esther will be affected by the resulting flooding from the storm surge (See Figure 5.05.01.03.1). The high storm surge levels will cause significant flooding of residential and commercial structures, power outages, and storm sewer overflow. The figure below shows the possible storm surge levels with each hurricane category in the City of Mary Esther.

City of Mary Esther

Figure 5.05.01.03.1: The City of Mary Esther's Exposure to Storm Surge



Source: Okaloosa County Public Safety / Okaloosa County GIS, 2022

PROBABILITY:

It is evident that, regardless of the storms' level of intensity, the storm surges associated with each storm greatly vary. This fact is recognized in the updated Saffir-Simpson Hurricane Wind Scale where storm surge has been removed due to the difficulties in its prediction. Therefore, a probability of future storm surge occurrence shares the same probability of hurricanes and tropical storms. The potential storm surge levels have been determined from a historical point near the City of Mary Esther (See Table 5.05.01.03.1, below).

Table 5.05.01.03.1: Potential Storm Surge Level for Hurricane Categories

HISTORY POINT (Description)	HURRICANE SURGE ELEVATION (in feet)				
	CAT 1	CAT 2	CAT 3	CAT 4	CAT 5
Santa Rosa Sound near Mary Esther	3.3	4.8	9.9	15.3	17.2

Note: Storm surge levels reflect 2025 hurricane scale update.
Source: West Florida Regional Planning Council, 2025

Section 5.05.01.04 Flooding

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
On September 16, 2020 heavy rains and storm surge from Hurricane Sally in the southern part of the county and City of Mary Esther resulted in roadway flooding. Several streets between the City of Mary Esther and the City of Fort Walton were closed for a number of hours due to high water. According to the National Weather Service, Mary Esther received 17.33 inches of rain as a result of Hurricane Sally. On May 10, 1995 a flash-flood warning was issued in the City of Mary Esther as heavy rains caused streets to flood (NCDC, 2010). Although the City of Mary Esther is susceptible to localized flooding, particularly during the summer months, no major flood event has been documented.

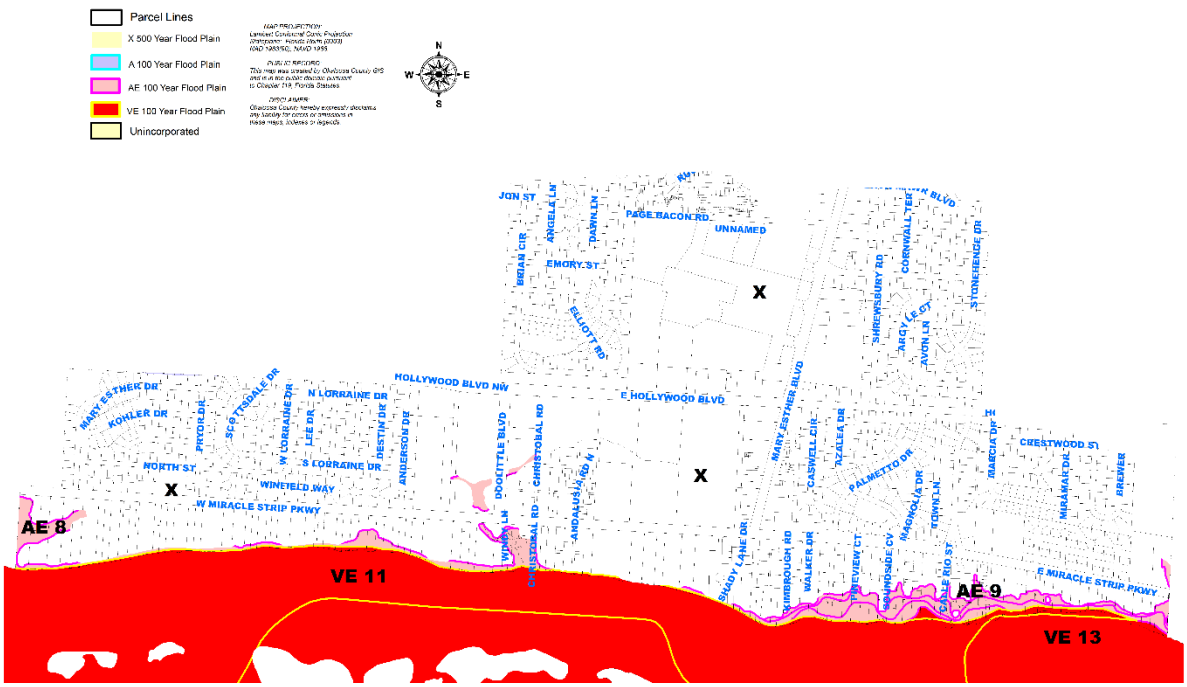
There was no data available on municipal level regarding the historical occurrences of severe floods. Therefore, please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard because all of Okaloosa County is equally susceptible to this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
The worst case scenario in terms of flooding in the City of Mary Esther would be if widespread flooding resulted in property damage and losses, power outages, storm sewer overflow, and road-closures. Properties located in the AE and A flood zones will be impacted more severely than the rest of the city, which is located in flood zone X (500 year flood plain). (See figure below).

Flooding can severely impact the road network in the City of Mary Esther. There are approximately 3.46 miles of arterial and collector roads in the City of Mary Esther. Out of this total, 3.46 miles of these roads are located in the NFIP X Zone (500 Year Flood Zone) and 0 miles located in the NFIP Special Flood Hazard Zone. These roads are especially susceptible to flooding during moderate to heavy rain events.

City of Mary Esther

Figure 5.05.01.04.1: The City of Mary Esther's Flood Zones



Source: FEMA Map Service Center, March 9, 2021

Temporary localized flooding can also severely impact roadways during moderate to heavy rain events, which could result in road-closures. It is particularly difficult to prepare transportation systems for "trailing" storm systems that tend to saturate land as well as overload drainage and retention systems. Arterial roads, dirt roads, and roads constructed prior to uniform standards and regulations are some of the roadways typically impacted by isolated heavy rain events. Unpaved roads are vulnerable to flooding and highly subject to washout. Culverts and small bridges can sometimes be undermined, causing people to be stranded and isolated until the repairs can be made. Some major roadways used for evacuation are subject to flooding.

PROBABILITY:
The entire County, as well as the City of Mary Esther, has a future probability of a flash-flood or flood occurring annually. However, due to the localized nature of flash-flooding and flooding, a more exact probability will not be provided.

Section 5.05.01.05 Severe Storms

The Severe Storms segment of the LMS Hazards Assessment includes tornado and waterspout, thunderstorms and lightning, winter storms, and heat waves and drought (hurricanes are excluded from this section because they are covered in another section of this chapter).

Section 5.05.01.05.01 Tornado and Waterspout

DEFINITION:
Please refer back to the Risk Assessment of the overall County, Chapter 4, for the definitions of these hazards.

HISTORICAL OCCURRENCE:
According the U.S. Storms Database, from 1996-2001, there were four reported waterspouts near the City of Mary Esther in the years of 1998, 1999, and 2001. There were no known injuries, fatalities, or property damages reported. In 1995, there was a reported tornado to touch down in the City of Mary Esther as a result of Hurricane Erin. There were no known injuries or fatalities; however, $3,000 in property damages was reported. (NCDC, 2010).

The historic tornado record of Okaloosa County is relevant to the City of Mary Esther because of the unpredictable pattern of tornadoes. The entire County, including the City of Mary Esther, is vulnerable to tornado damage. Also, the County's waterspout historic record is applicable to the City of Mary Esther because it is located on Santa Rosa Sound, which is one of the areas susceptible to waterspouts. Please refer back to Chapter 4, the Risk Assessment of the overall County, for the historical occurrences of these hazards. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
Because of the unpredictable patterns of tornadoes, and because Okaloosa County has a relatively high frequency of occurrence, the entire County, including the City of Mary Esther, is vulnerable to tornado damage. The damage potential for a tornado increases as a function of population density. As the number of structures and people increase, the potential damage/injury rate increases. Manufactured housing, poorly constructed or substandard housing and apartment complexes are especially susceptible to damage from a tornado.

Manufactured housing and substandard housing are exceptionally susceptible because of their lack of resistance to high winds, and apartment complexes because of their size and densities.

The worst possible scenario in terms of tornado damage would be if an F-5 tornado hit the City of Mary Esther. It is very unlikely that an F-5 tornado would strike even the County, but if one did there would be complete destruction of homes and businesses that were in the tornado's path. Trees and power lines would be snapped, building debris scattered about, and severe structural damage would be evident on any building left standing.

The most common and active weather threat in the City of Mary Esther for the formation of tornadoes is severe thunderstorms associated with frontal boundaries. Frontal boundaries and

summertime afternoon air mass thunderstorms can reach severe limits because of atmospheric uplift. High winds relating to gust fronts and "microbursts" can create high wind speeds up to 100 MPH. Buildings and highway traffic are vulnerable to these storms.

PROBABILITY:
As stated in Chapter 4, from 1950-2025 there have been a total of 100 reported tornadoes in Okaloosa County. Based on this data, the probability of a future tornado occurrence in the City of Mary Esther has been determined to be less than 2 per year. Also, since there were only 9 reported waterspouts from 1996-2001, the future probability was determined to be less than 2 waterspouts per year.

Section 5.05.01.05.02 Thunderstorms and Lightning

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
In 1995, 1997, and 2003 there were lightning strikes near a person, which resulted in injuries that required hospitalization. In 1996, 11 men working on an aircraft when it was struck by lightning. There was one fatality and 10 injuries as a result. Also, in 2005, a lift-station was struck by lightning, which resulted in the station being down for a few hours. In this incident, there were no known injuries or fatalities; however, $5,000 in property damage was reported (NCDC, 2010).

The City of Mary Esther is just as equally susceptible to thunderstorms and lightning as Okaloosa County. Therefore, the historic record of thunderstorms and lightning in Okaloosa County will be applied to the City of Mary Esther. Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
Thunderstorm damage can include traffic accidents on wet roads, flash-flooding, lightning damage to electronics and structures, lightning strikes on people, and wind and hail damage. Aside from being able to produce tornadoes, thunderstorms can produce damaging high winds. Cold upper level air descending from the top of a thunderstorm to the ground usually causes these winds. In a worst case scenario, if the upper level air speed of descent is rapid, these cold "microbursts" can fan out as they come in contact with the ground at a high rate of speed. This is sometimes referred to as "straight line winds." These winds can cause significant property damage, injuries, and deaths similar to a F0 to F2 tornado or Category 1 or 2 hurricanes.

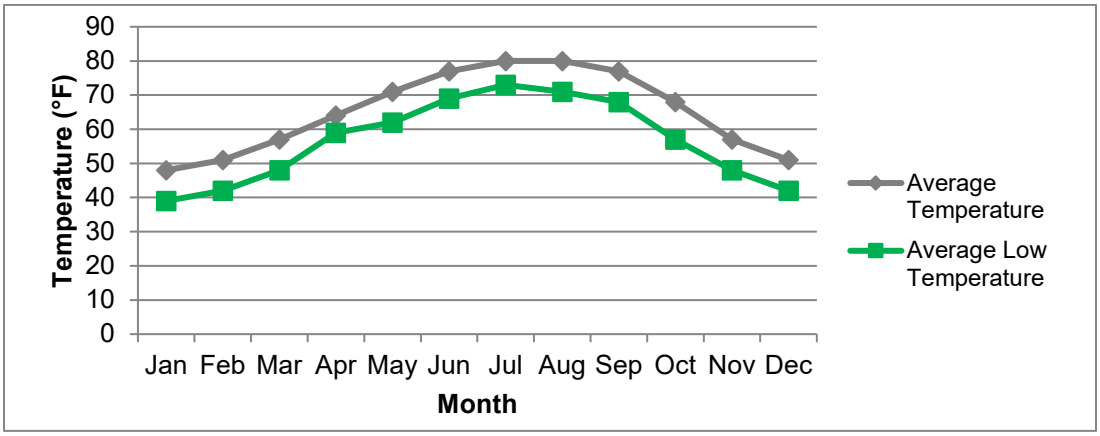
PROBABILITY:
Based on historical data (See Risk Assessment of overall County of this hazard's historical occurrences), the City of Mary Esther has a future probability of experiencing less than 5 severe thunderstorms per year. Also based on historical data (See Risk Assessment of overall County for this hazard's historical occurrences), the City of Mary Esther is likely to experience 4 to 16 flashes of lightning per square kilometer per year.

Section 5.05.01.05.03 Winter Storms

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
Please see the discussions of the icing event of January 2104, Winter Storm Benji of 2017, and Winter Storm Enzo of 2025 as provided in Chapter 4. Freezes almost every winter, mostly in January. The average winter low temperature during the month of January is 36.9° F or 2.7° C with some nightly temperatures reaching below freezing (*WorldClimate,* 2008). Generally, the second night following the passage of a strong cold front is the coldest night when skies are clear and humidity is lowest. Most low temperatures involving freezes occur at night and in the hours near dawn. In most instances, temperatures even on the coldest winter days rise above freezing during daylight hours. In the table below, the average temperature and average minimum temperature are shown for the City of Mary Esther.

Figure 5.05.01.05.03.1: Average Temperature vs. Average Low Temperature in the City of Mary Esther



Source: Weatherbase.com (data used to generate graph)

Temperatures lower than 40° F. (-9.4° C.) for an extended period would cause cold weather shelters to be opened for those who had inadequate heating in their homes. The cold weather shelter in the City of Mary Esther is open from 6 p.m. until 8 a.m. when evening temperatures are predicted to reach below 40 degrees, and is located at the Mary Esther Methodist Church.
Icing, glaze, and sleet are very rare occurrences in the City of Mary Esther but certainly a possibility. Snow is also considered a very rare event and will generally melt off very quickly.

EXTENT:
The worst case scenario in terms of winter storms in the City of Mary Esther would be if freezing or below freezing temperatures lasted for a week or more, and if the storm responsible for such

freezing temperatures knocked down power lines resulting in power loss, and the inability of residents to heat their homes. A freeze's greatest risk is generally unprotected or under-protected water pipes in homes, businesses and infrastructure. Outdoor irrigation systems and plumbing in homes where insulation is inadequate in walls or in off-grade homes where plumbing is exposed are most vulnerable. Unmitigated older structures and manufactured housing are probably the most vulnerable structures.

An icing, glaze, or sleet incident in the City of Mary Esther would likely result in severe traffic problems and safety concerns throughout the community and its roadways. With no means of salting roadways or removing ice, emergency response would be severely slowed in iced areas. Electrical service would likely be interrupted or totally absent in many areas due to power line glazing and tree branch falls. Mitigation efforts would more likely focus on sheltering and ability to receive outside mutual aid assistance, rather than on equipment and ice buildup prevention due to the infrequency and inconsistency of such events.

PROBABILITY:
Based on the data of total below freezing days, the future probability of freezing temperature days in the City of Mary Esther is estimated to be 55 days in a 5-year time frame. Because a snow event in the City of Mary Esther is so rare, a single snow "event" over five or ten years is probably the average.

Section 5.05.01.06 Heat Wave and Drought

Heat Wave

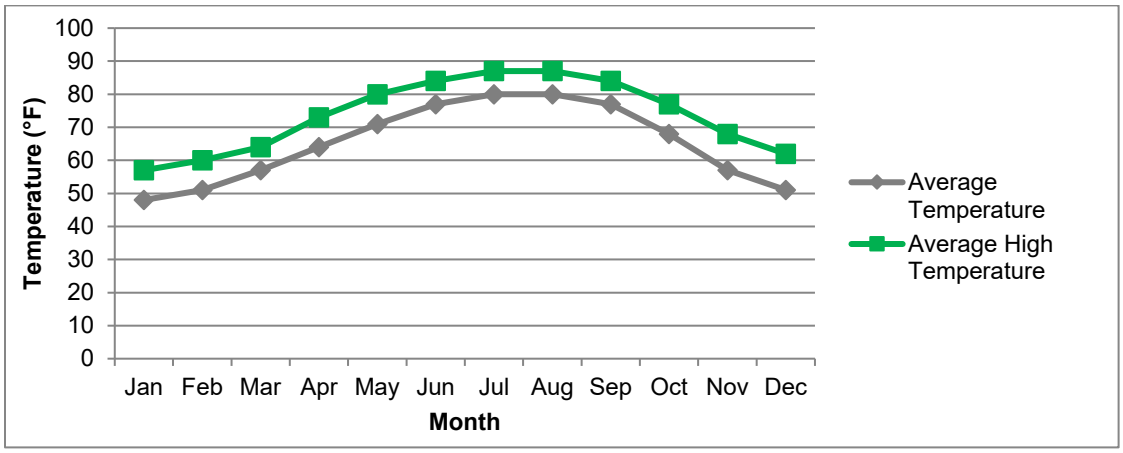
DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of heat waves.

HISTORICAL OCCURRENCE:
Every jurisdiction in Okaloosa County is equally susceptible to heat waves as they tend to impact a relatively large geographic area. Daily temperature data specific to the City of Mary Esther are not readily available. The closest jurisdiction to the City of Mary Esther with a daily temperature record is the City of Niceville. Assuming with reasonable certainty that the number of heat wave days experienced in the City of Niceville was similar to that of the City of Mary Esther, it is predicted that it experienced three heat waves from 2005-2009 with high temperatures ranging from 91°F-102°F, and average humidity ranging from 58-84 (Weather Underground, Inc., 2025).

On July 1, 2000 an excessive heat advisory was issued for coastal Okaloosa County, which included the City of Mary Esther. Temperatures over 100°F were recorded. On August 8, 2007 another excessive heat advisory was issued for coastal Okaloosa County due to a combination of high temperatures and high humidity. The heat index was recorded between 110°F and 115°F and a number of local churches provided air conditioned shelter from the excessive heat. At such a high heat index, prolonged exposure may result in heat disorders.
The figure below shows the average monthly temperatures and average monthly high temperatures for the City of Mary Esther. The average high temperature during the summer

months range from the mid to upper eighties, although the temperature can rise several degrees above this average.

Figure 5.05.01.06.1: Average Temperature vs. Average High Temperature in the City of Mary Esther



Source: Weatherbase.com (data used to generate graph)

EXTENT:
The worst case scenario in terms of a heat wave would be if excessive heat and humidity lasted for a week or more. Dangerous conditions are present when both heat and high humidity combine to make outside temperatures feel in the 103-124° F range. External danger warnings are issued when high temperatures and humidity combine to make outside temperatures feel in the 126-137° F range. Heat disorders may develop in people who work outside for long periods of time, such as construction workers. To combat the dangerous effects of excessive heat residents should dress appropriately, stay indoors, refrain from strenuous work during the hottest part of the day and stay hydrated.

Electrical system failures due to demand is a true possibility during excessive heat conditions. The general threat to the community is individuals without adequate cooling systems in their homes, with emphasis on low income and the elderly. Electrical system failures due to demand would only enhance problems for all of these industries and populations. (NOAA Watch: Heat Wave).

PROBABILITY:
Based on the City of Niceville heat wave data, it is predicted that the future probability of a heat wave occurring in the City of Mary Esther is on average three times during a 5-year period.

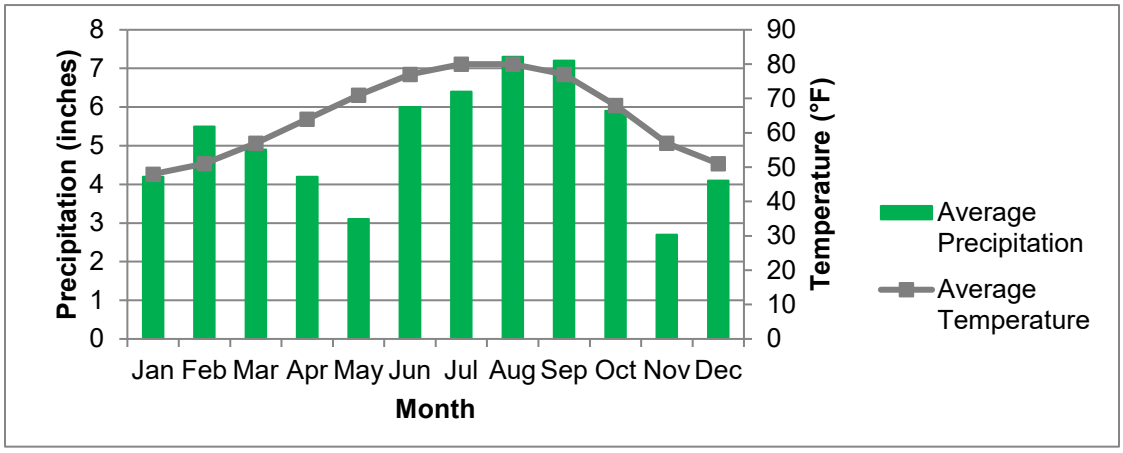
Drought

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of drought and the categories of drought according the U.S. Drought Monitor.

HISTORICAL OCCURRENCE:
Droughts occur at a regular frequency and are cyclical in Okaloosa County. Due to the large area that droughts impact, it is assumed that the City of Mary Esther had a similar number of drought occurrences. Please refer back to the Risk Assessment of the overall County for the historical occurrences of drought because all of Okaloosa County is equally susceptible to this hazard.

Since temperature and precipitation are factors that determine drought severity, the monthly average temperatures and precipitation have been provided for the City of Mary Esther (See Figure 5.05.01.06.2, below).

Figure 5.05.01.06.2: The City of Mary Esther's Average Precipitation and Temperature



Source: Weatherbase.com (data used to generate graph)

EXTENT:
The worst case scenario in terms of drought would be if an exceptional drought (D4) lasted for months or years (See the Risk Assessment of the overall County for drought category descriptions). An exceptional drought would cause shortages of water in reservoirs, streams, and wells. Bay swamps and bodies of water would see a drastic decline in natural water levels and water shortages in reservoirs and wells would create water emergencies. Precipitation levels would be -2.0 inches or less. Also, the risk of wildfire increases as drought deepens. (U.S. Drought Monitor, 2025).

Droughts impact the City of Mary Esther in a number of ways. For example, declining water levels and altered hydro-periods in bay swamps can disrupt breeding cycles of fish and amphibians

which can affect other species which prey on, or which are preyed upon, such fish and amphibians. Increased demand created by drought conditions on public and private water supply systems that serve the public has caused some generators and pumps to fail at critical moments, creating low or no pressure for critical facilities such as fire hydrants and medical centers.

PROBABILITY:
The abnormally dry drought intensity is the condition of dryness before and after a period of actual drought. From 2000-2009, a total of 49 out of 120 months were abnormally dry. Based on this data, the City of Mary Esther has a future probability of experiencing less than 5 abnormally dry months every year. Also, from 2000-2009, there were a total of 51 out of 120 months where moderate, severe, extreme, or exceptional drought occurred in Okaloosa County. These drought intensities are the varying severity of actual droughts. The future probability of a moderate to severe drought occurring in the City of Mary Esther is on average 5 months per year.

Section 5.05.01.07 Wildfire

DEFINITION:
Please refer to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
The City of Mary Esther is susceptible to wildfire. The majority of the incorporated area is urban or residential, but many acres of open forest lands surround the city, and these lands consist of natural vegetation historically related to the Longleaf Pine or upland Southeastern forests. The wildfire record of Okaloosa County is relevant to the City of Mary Esther. Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into specific areas of the county.

EXTENT:
Based on the Wildland Fire Risk Assessment of Okaloosa County, the worst case scenario would be if the areas with the greatest Level of Concern (LOC) experienced a massive wildfire. These areas have a greater likelihood of danger and destruction due to their inadequate infrastructure, inaccessibility to critical facilities or firefighting resource locations, and location in the wildland-urban interface. *Note* According to the Florida Department of Forestry, wildland urban interface is defined as “the zone where structures and other human development meets/intermingles with undeveloped wildland fuels and other natural features.” Fires could come into subdivisions and neighborhoods in urban and suburban areas, which could be a potentially catastrophic situation. Smoke and ash from dangerous wildfires could decrease visibility on highways and local roads.

PROBABILITY:
The Wildland Fire Risk Assessment System of the Florida Division of Forestry displays the wildfire levels of concern for the City of Mary Esther. According to the map, most of the incorporated city is classified as non-burnable (2010). The figure below displays the relatively low levels of concern that wildfire has for the city. Although, the City of Mary Esther is susceptible to wildfire, it appears that the future probability of occurrence is low.

City of Mary Esther

Figure 5.05.01.07.1: Wildfire Levels of Concern for the City of Mary Esther



Source: Florida Division of Forestry 2025

Section 5.05.01.08 Beach Erosion

DEFINTION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
Beach erosion is a naturally occurring, cyclical process in which sand particles are removed and/or replaced by wind, waves, or tides. Intensive wave action or strong storm surge during a tropical storm or hurricane can accelerate the rate of beach erosion. Beach erosion is a coastal and bay issue; therefore, all jurisdictions located in those areas are susceptible to beach erosion. This includes the City of Mary Esther because it is located on the Santa Rosa Sound. Because tropical storms and hurricanes can cause beach erosion in various coastal locations throughout the county, the historical occurrences of beach erosion is relevant to all costal and bay areas of the county. Please refer to the Risk Assessment of the overall County for the historical ccurrences of beach erosion.

EXTENT:
The worst case scenario in terms of beach erosion would be if a major storm with significantly strong winds and storm surge washed-out the coastal areas. The damage will be much worse for portions of the coastline already critically eroded. Beach erosion will undermine the integrity of

infrastructure, beachfront homes and businesses, and other structures by washing away the sediments that support the structural foundation sometimes resulting in complete destruction.

PROBABILITY:
Based on the historical data of the overall County, it appears that beach erosion will most certainly occur in the future. The frequency and extent of the erosion are highly dependent on the frequency and intensity of tropical storms and hurricanes. The natural process of beach erosion is different among coastal locations in the County due to variations in beach stability.

This means there are different degrees of natural erosion rates and potential damage from storms or unusual wave action. Therefore, a numerical value will not be given for the estimated future amount of beach erosion in the City of Mary Esther. It must also be noted that beach erosion is a natural part of a coastal system, and can be expected to occur at various locations and at different rates over time.

Section 5.05.01.09 Other Hazards

The hazards listed below have been analyzed and determined that the impact would be minimal or non-existent in the City of Mary Esther.

Section 5.05.01.09.01 Land Erosion

Land erosion, also known as soil erosion, is “the removal and thinning of the soil layer due to climatic and physical processes, such as high rainfall,” which can be greatly accelerated by human activities (Encyclopedia.com, 2010). All of Okaloosa County is susceptible to land erosion in some localized areas. Therefore, some localized portions of the City of Mary Esther may be susceptible to land erosion. However, the City of Mary Esther’s topographic location is non-conducive to land erosion. Therefore, even though land erosion is possible, the future risk of this hazard in the City of Mary Esther is minimal because there have been no previous occurrences recorded.

Section 5.05.01.09.02 Sinkholes

The map and description prepared by the United States Geologic Survey (USGS) in its “Sinkhole, Type, Development and Distribution in Florida” (1985) indicates that Okaloosa County in its entirety is located in an area where sinkholes seldom, if ever, occur. The Florida Geologic Survey’s statewide sinkhole database indicates no sinkholes in the County. Since there is no history of this hazard in the County, no further analysis or risk assessment will be conducted for this plan. However, should conditions change and geological features be discovered which contribute to the development of sinkholes, the LMS committee will include any new occurrence information in ongoing updates.

The future probability of a sinkhole occurring in City of Mary Esther is less than 1% based upon no documented sinkholes in the county and the soil strata is non-conducive to the formation of sinkholes.

Section 5.05.01.09.03 Expansive Soils

According to the *Soil Survey of Okaloosa County Florida* (USDA, June 1995), two types of soils are considered vulnerable to expansion. These are known as shrinking and swelling or "expansive soils." Another way of describing expansive soils is the change of volume of a soil with a change of moisture content. All of the soils listed in the expansive class are also considered erodible soils. Okaloosa County may be susceptible to expansive soils in some localized areas. There have been no previous occurrences recorded of expansive soils in the County. The following table lists soils having moderate to high shrink swell potential in Okaloosa County. Only those soils with an associated risk of "High" are listed:

Table 5.05.01.09.03.1: Shrink/ swell potential of soils in Okaloosa County.

Soil Type	ME Soils*	HE Soils**	Total Acreage	% Total Land Area
#35-Angie (2 to 5 percent slopes)		X	1,073.26	.16
#49-Angie (5 to 12 percent slopes)		X	10,280.79	1.61
#20-Udorthents (nearly level)	X		655.31	.11
Total	**.11**	**1.77**	**12,009.36**	**1.88**

* Moderate Erodible Soils **Highly Erodible Soils

Note: Expansive soils and erodible soils are classified as the same.
Source: Soil Survey of Okaloosa County, Florida; June 1995.

Expansive soils can lessen the strength of building foundations, which could result in structural collapse or instability. In addition, these soils have limitations for use as local roads and streets because of lack of strength to support roadways and traffic. There is a possibility of shrink/swell potential or soil expansion based on the existence of moderately erodible soils and highly erodible soils in Okaloosa County. Although the specific amount of these soils in the county is known, the future probability of this occurring in the City of Mary Esther is minimal because this issue is addressed during the time of construction and there are no previous records of occurrence.

Section 5.05.01.09.04 Dam Safety

There are no permitted dams located in the City of Mary Esther. Therefore, the City of Mary Esther is not susceptible to flooding due to dam failure. However, if there are any permitted in the future, the LMS committee will update the plan to reflect those changes.

Section 5.05.01.09.05 Earthquake

According to the U.S. Geological Survey Earthquake Probability maps, the City of Mary Esther has between a 0.005 and 0.010% chance of experiencing a 5.0 magnitude earthquake within 100 years. This is considered a very minimal risk. Also, since there is no history of earthquakes in Okaloosa County or the City of Mary Esther, no further analysis or risk assessment will be

conducted for this plan. The future probability of an earthquake occurring in the City of Mary Esther is less than 1 in 100 years.

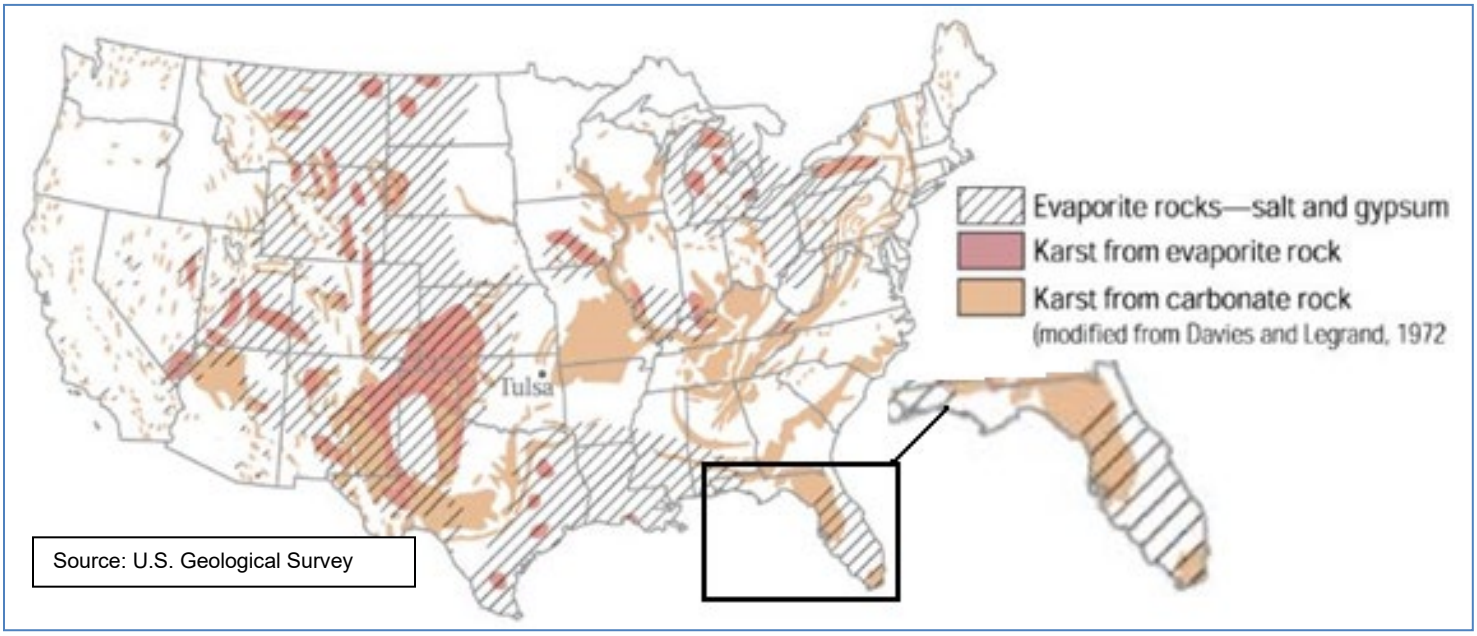
Section 5.05.01.09.06 Avalanche

The City of Mary Esther does not have topography or snowfall amounts that would create conditions for an avalanche. Since there is no history of this hazard in the county, no further analysis or risk assessment will be conducted for this plan. The future probability of an avalanche occurring in the City of Mary Esther is less than 1 in 100 years.

Section 5.05.01.09.07 Land Subsidence

According to the U.S. Geological Survey, "land subsidence occurs when large amounts of ground water have been withdrawn from certain types of rocks, such as fine-grained sediments.
The rock compacts because the water is partly responsible for holding the ground up. When the water is withdrawn, the rock fall in on itself. Land subsidence is most often caused by human activities, mainly from the removal of subsurface water" (U.S. Geological Survey, 2010). The City of Mary Esther has a minimal amount of the most common rock types that are connected to land subsidence (See Figure 5.05.01.09.07.1, below). Since there is no history of this hazard in the City of Mary Esther, no further analysis or risk assessment will be conducted for this plan. The future probability of land subsidence occurring in the City of Mary Esther is less than 1 in 100 years.

Figure 5.05.01.09.07.1: Rock types connected to collapse (subsurface cavities/sinkholes) in the U.S



Source: U.S. Geological Survey

Section 5.05.01.09.08 Landslide

According to U.S. Geological Survey Map of Relative Incidence and Susceptibility Map, the City of Mary Esther has a very low landslide incidence with less than 1.5% area susceptible to a landslide (USGS, 2010). Landslides are therefore considered to be a minimal risk and no further analysis or risk assessment will be conducted for this plan. The future probability of a landslide occurring in the City of Mary Esther is less than 1 in 100 years.

Section 5.05.01.09.09 Volcano

There are no geological features in or near Okaloosa County, the City of Mary Esther, or the Southeast related to volcanism. Since there is no history of this hazard, no further analysis or risk assessment will be conducted for this plan. The future probability of a volcanic eruption occurring in the City Mary Esther is less than 1 in 100 years.

Section 5.05.01.09.10 Tsunami

According to the U.S. Geological Survey, Okaloosa County is not located in an area that has historically been subjected to tsunamis, even though it is a coastal county. Since there is no history of this hazard in the county, minimum analysis and risk assessment will be conducted for this plan. The Local Mitigation Strategy Committee will monitor any developments in the ability to predict, monitor and issue warnings. There is no record of a tsunami occurring in Okaloosa County, therefore the future probability for the City of Mary Esther has been determined to be less than 1 in 100 years.

Section 5.05.01.09.11 Sea Level Rise

As defined by multiple agencies, the term “sea level rise” refers to an increase in the ocean’s surface height relative to the land in a particular location. Thermal expansion of the Earth’s oceans and melting polar ice are commonly identified as the two primary causes of sea level rise, though land subsidence is also cited as a factor While sea level rise most directly impacts coastal regions, its impacts may be felt far beyond the shoreline as impacted areas react to changing conditions and must expand substantial amounts of funds in mitigation activities that may include construction of water control structures, relocating or re-routing roads and other infrastructure, and relocation of impacted populations.

In 2023, Okaloosa County applied for and received a grant through the Resilient Florida Program to develop a Vulnerability Assessment and implementing Adaptation Plan (attached hereto as Appendix E) pursuant to and in compliance with section 380.093, Florida Statutes. The Vulnerability Assessment (VA) and implementing Adaptation Plan (AP) were developed by Jacobs Engineering Group and completed in August, 2025. The VA and implementing AP developed by Jacobs Engineering Group is incorporated herein by reference for purposes of establishing vulnerability to sea level rise and various flooding scenarios for the entirety of Okaloosa County and all municipalities (except for the City of Destin which has undertaken its own analysis. As the County-wide Vulnerability Analysis applies to conditions within the City of Mary Esther, please see Section 4.01.11.09 of this Local Mitigation Strategy for more information.

City of Mary Esther

Section 5.05.01.10 Summary

The risk assessment section of this LMS document highlighted the hazards that the City of Mary Esther is exposed to. This provides the foundation for the subsequent section covering how vulnerable the city is to these identified hazards. Numerous facilities, infrastructure, and neighborhoods in the City of Mary Esther need to be assessed for their vulnerability to disasters.

Section 5.05.02 Vulnerabilities

Section 5.05.02.01 Introduction

The intent of this section is to provide a vulnerability assessment for the potential damage and estimated loss to building structures in the City of Mary Esther.

This section includes a brief summary description of the City of Mary Esther, as well as its vulnerability to the identified hazards and the impact of each hazard. It also describes the vulnerability in terms of the types and numbers of repetitive loss properties within the City of Mary Esther. Additionally, the section describes vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the City of Mary Esther.

The main intent of this section is to provide an estimate of potential dollar losses to vulnerable structures and a description of the methodology used to complete the estimate. Lastly, this section describes vulnerability in terms of providing a general description of land uses and development trends within the City of Mary Esther so that mitigation options can be considered in future land use decisions.

Section 5.05.02.02 Methodology

The Okaloosa County Staff used the same methods, of quantifying the estimated dollar losses to the vulnerable structures potentially impacted by each hazard, for the City of Mary Esther as the overall County. Therefore, please refer to Okaloosa County's Overall Vulnerabilities, Section 4.02.02, for more information.

Section 5.05.02.03 Summary Description of the City of Mary Esther

The City of Mary Esther is an incorporated city located in the southern portion of Okaloosa County. As of the 2020 Census, it was home to 3,982 residents. Within its jurisdiction, there are 2.92 miles that border the Santa Rosa Sound. Nearly all development in the City of Mary Esther is tightly clustered along the southernmost boundary of the city, which borders Santa Rosa Sound. Since the city is substantially built out, development consists primarily of redevelopment of existing developed areas including, notably, the Santa Rosa Mall which is substantively closed as a shopping facility and is now being redeveloped as a mixed-use project including multi-family residential apartments. Elsewhere in the city, re-development and renovation of single-family housing remains the predominant activity.

The City participates in the NFIP and enforces its floodplain management regulations pursuant to adopted local ordinances. The City adopted its NFIP-compliant regulations, with the most recent update occurring through Ordinance 2021-02, adopted February 1, 2021. Pursuant to this ordinance, the Flood Insurance Rate Maps (FIRM) and associated Flood Insurance Study, along with all subsequent amendments and revisions, have been formally adopted by reference and serve as the minimum basis for establishing flood hazard areas within the City.

City of Mary Esther

Administration and enforcement of floodplain management regulations, including Special Flood Hazard Areas (SFHAs), are carried out through the City's Community Development Department.

The City maintains a coordinated administrative structure whereby the Floodplain Coordinator and Code Compliance Officer oversees day-to-day program implementation while a full-time Community Development Director and a contracted Certified Building Official (CBO) conducts plan review, permitting oversight, and inspections. This structure provides an internal system of checks and balances to ensure consistent interpretation and enforcement of floodplain management requirements.

Responsibility for maintaining compliance with NFIP requirements rests with the Floodplain coordinator, with support from Community Development Department staff. The Floodplain coordinator/ Code Compliance Officer ensures that all applicable federal, state, and local floodplain management standards are properly implemented and enforced.

The City administers Substantial Damage/Substantial Improvement requirements through coordinated review by the Floodplain coordinator, Community Development Director, Public Works Director and the Certified Building Official (CBO). Project valuations are submitted during the permitting process and evaluated by the Floodplain Coordinator in accordance with the NFIP 50-percent rule. Where necessary, the CBO is authorized to require certified appraisals to substantiate structure values in determining whether an activity constitutes substantial improvement.

Following major storm events, substantial damage assessments are conducted by Community Development Department staff in coordination with Code Compliance Officer, utilizing FEMA-established methodologies and standards.

The City participates in the NFIP Community Rating System (CRS) and currently maintains a Class 6 rating, reflecting implementation of floodplain management practices that exceed minimum NFIP standards. The City maintains a mapped inventory of open space properties, which is reviewed and updated on at least an annual basis. These efforts are consistent with CRS requirements and contribute to the preservation and monitoring of flood-prone lands.

Emergency management activities are coordinated through the City's Emergency Management Program in conjunction with the County's Division of Emergency Management. The City's Floodplain Coordinator/Code Compliance Officer serves as a member of the City's Emergency Management team and the LMS Committee and maintains regular coordination with municipal emergency management personnel and County staff. This organizational structure ensures ongoing interagency coordination between emergency management and floodplain management functions, particularly during hazard events and throughout post-disaster response and recovery operations.

The City will incorporate the findings and recommendations of the LMS into our respective planning mechanisms through integration with comprehensive plans, capital improvement programs, land development regulations, and emergency management plans. LMS-identified hazards, vulnerabilities, and mitigation actions are considered during project prioritization,

budgeting, and policy development to ensure consistency with long-term resilience objectives. Additionally, the city will utilize the LMS to support grant applications, inform development review processes, and guide post-disaster recovery and redevelopment decisions. This coordinated approach ensures that hazard mitigation principles are systematically embedded into local planning and decision-making processes.

Section 5.05.02.04 Vulnerable Populations

Hazards do not affect the entire population the same. Therefore, special attention needs to be given to the more vulnerable populations. Please refer to Chapter 4 which provides the overall County's Vulnerability for further explanation on these vulnerable populations. The table below displays the City of Mary Esther's vulnerable populations.

Table 5.05.02.04.1: Estimated Vulnerable Populations in the City of Mary Esther, 2010

Population	2020 Census	2024 Estimate
Elderly	16.6%	21.5%
Language Isolation (Households)	10	22
Disabled	12.7%	21%
Single Parent	5.6%	65
Poverty	6.0%	6.3%
Minority	24%	24%

Source: US Census Bureau https://data.census.gov

Section 5.05.02.05 Repetitive Loss and Severe Repetitive Loss Properties

The Federal emergency Management Agency defines repetitive loss and severe repetitive loss properties as follows (44 CFR Part 77 § 77.2):

Repetitive loss structure means a structure covered under an NFIP flood insurance policy that:

(1) Has incurred flood-related damage on 2 occasions, in which the cost of repair, on average, equaled or exceeded 25% of the value of the structure at the time of each such flood event; and

(2) At the time of the second incidence of flood related damage, the contract for flood insurance contains increased cost of compliance coverage.

Severe repetitive loss structure means a structure that is covered under an NFIP flood insurance policy and has incurred flood-related damage:

(1) For which 4 or more separate claims payments have been made under flood insurance coverage under subchapter B of this chapter, with the amount of each claim (including building and contents payments) exceeding $5,000, and with the cumulative amount of such claims payments exceeding $20,000; or

(2) For which at least 2 separate flood insurance claims payments (building payments only) have been made, with cumulative amount of such claims exceeding the value of the insured structure.

Hurricanes, tropical storms, storm surge, flooding, and thunderstorms are responsible for repetitive loss properties in the City of Mary Esther. These properties are more vulnerable to certain hazards than other structures in the City they have already experienced significant flood damage. Please see Section 4.02.05 and Table 4.02.05.1 for this LMS' discussion of Repetitive Loss and Severe Repetitive Loss properties throughout the County, including within the City of Mary Esther.

Section 5.05.02.06 Hurricane and Tropical Storm

The City of Mary Esther is vulnerable to the damaging effects of tropical storms and hurricanes as it is located on the Santa Rosa Sound, near the southern coast of the county. The City of Mary Esther would experience destruction in terms of wind damage, heavy rains, and storm surge during a tropical storm or hurricane. All structures within the City of Mary Esther's jurisdiction are susceptible to damage in the form of flooding due to heavy rains and strong storm surge. High winds can damage structures by removing roofs and siding, and create flying debris out of sources which are not anchored. The most vulnerable homes are those located on bay front lots. The following table depicts the hurricane evacuation zones and the vulnerable structures located within each zone.

Table 5.05.02.06.1: Evacuation Zones and the Vulnerable Structures within

Total:	Condominium	Single-Family	Multi-Family	Commercial	Government/ Institutional
Zone A	0	1	0	0	0
Just Value	$0	$1,320,048	$0	$0	$0
Zone B	130	128	6	4	7
Just Value	$11,972,000	$128,423,303	$5,528,642	$3,209,058	$7,849,759
Zone C	0	30	1	1	2
Just Value	$0	$14,285,349	$542,132	$238,689	$1,083,331
Zone D	0	122	0	12	5
Just Value	$0	$38,205,066	$0	$11,635,000	$5,173,963
Zone E	21	506	0	12	15
Just Value	$1,496,690	$126,278,373	$0	$14,694,075	$11,466,514

Note Evacuation Zones correspond with Hurricane Categories (Ex. Evacuation Zone 1 = Category 1 Hurricane)
Source: West Florida Regional Planning Council & Okaloosa County Property Appraiser, 2026 (Okaloosa County Staff generated table from overlaying the evacuation zones and property appraiser data)

Section 5.05.02.07 Storm Surge

The City of Mary Esther is vulnerable to storm surge and the structures along the Choctawhatchee Bay are the most susceptible to damage from this hazard. The strongest storm surge level during a Category 5 hurricane would be 17.2 feet above the mean high water line along the some areas boarding the Santa Rosa Sound. This would severely flood numerous homes, infrastructure, and commercial structures in this area. The following table depicts the vulnerable structures to storm surge levels, which correspond with the category of hurricane.

Table 5.05.02.07.1: Vulnerable Structures to Storm Surge

Total:	Condominium	Single-Family	Multi-Family	Commercial
Surge Level 1	130	102	4	2
Just Value	$11,972,000	$113,799,200	$4,155,749	$1,930,233
Surge Level 2	130	127	4	3
Just Value	$11,972,000	$125,167,227	$5,364,702	$2,155,720
Surge Level 3	130	146	6	3
Just Value	$11,972,000	$151,093,520	$5,795,384	$2,155,720
Surge Level 4	130	207	5	10
Just Value	$11,972,000	$189,256,099	$4,697,881	$12,169,174
Surge Level 5	130	451	10	18
Just Value	$11,972,000	$195,925,063	$7,587,676	$24,829,934

Source: West Florida Regional Planning Council & Okaloosa County Property Appraiser, 2026
(Okaloosa County Staff generated table from overlaying the surge levels and property appraiser data)

Section 5.05.02.08 Flooding

Our definition of flooding only considers flooding that is a result of rainfall, which includes tropical rains during a hurricane. The City of Mary Esther is vulnerable to flooding and susceptible to damage from this hazard. Localized roadway flooding from heavy rains is the most commonly observed type of flooding in the City of Mary Esther. During a hurricane, tropical storm or severe storm heavy rains might cause some homes to flood particularly in low lying areas or those with poor drainage systems. In the City of Mary Esther, there are 17 structures in the AE flood zone, 1 structure in the VE flood zone, and 6 structures in the A flood zone. The cumulative ‘just value’ of all those structures in the AE, VE, and A flood zones is $14,000,118. The following table depicts the vulnerable structures located in the AE, VE, and A flood zones in the City of Mary Esther.

Table 5.05.02.08.1: Structures Located in Flood Zones in the City of Mary Esther

	AE Flood Zone	Just Value	VE Flood Zone	Just Value	A Flood Zone	Just Value
Single-Family	28	$25,985,423	0	$0	0	$0

Source: Okaloosa County Property Appraiser, 2026

Section 5.05.02.09 Severe Storms

In the tables below, the estimated cost of damage to residential and non-residential structures in the event of a severe storm is provided. The numbers and estimated value represents the total number of structures in the City of Mary Esther. Although it is highly unlikely that all structures will be impacted during a singular severe storm event, all structures are equally vulnerable to severe storms and so it was deemed appropriate to list all structures in the City of Mary Esther.

Table 5.05.02.10.1: Residential Structures Vulnerable to Severe Storms in City of Mary Esther

Total:	Condominium	Single-Family	Multi-Family	SFR-Townhouse
	130	658	15	1
Just Value	$11,972,000	$385,181,162	$12,285,557	$261,048

Source: Okaloosa County Property Appraiser, 2026

Table 5.05.02.10.2: Other Structures Vulnerable to Severe Storms in City of Mary Esther

Total:	Commercial	Government/ Institutional
	28	43
Just Value	$36,999,108	$55,056,681

Source: Okaloosa County Property Appraiser, 2026

Since severe storms includes tornadoes and waterspouts, thunderstorms and lightning, and winter storms, the values listed in the tables above apply to all those special hazards.

Section 5.05.02.09.01 Tornado and Waterspout

City of Mary Esther

The City of Mary Esther is vulnerable to tornadoes and waterspouts, and all structures within its jurisdiction are susceptible to the impacts of this hazard due to their unpredictable nature.

The areas within the City of Mary Esther that are most vulnerable to tornado damage are those with a high density or large population because the damage rate increases as a function of population density. The types of structures most vulnerable to tornado damage within the City of Mary Esther are poorly constructed housing, apartment complexes, and condominiums because of their size and densities. According to the Mapping for Emergency Management, Parallel Hazard Information System (MEMPHIS) study in 2005, nearly all of Okaloosa County, including the City of Mary Esther, has a medium risk, 1 in 250 per year, of a tornado event occurring.

Because waterspouts occur over water, the areas in the City of Mary Esther most susceptible damage from waterspouts are those located on the Santa Rosa Sound. Waterspouts tend to not last very long, but their high winds can result in damage from flying debris. The properties bordered by the water bodies are the most vulnerable to damage from flying debris. However, the specific impacts on those areas are unavailable due to the lack of relevant studies conducted regarding this hazard.

Section 5.05.02.09.02 Thunderstorms and Lightning

The City of Mary Esther is vulnerable to thunderstorms and lightning, and all structures within its jurisdictions are susceptible to the damaging effects of wind, hail, and lightning associated with severe thunderstorms. Thunderstorm damage can include traffic accidents on wet roads, flash-flooding, lightning damage to electronics and structures, lightning strikes on people, and wind and hail damage to structures. According to the Mapping for Emergency Management, Parallel Hazard Information System (MEMPHIS) study in 2005, all of Okaloosa County, including the City of Mary Esther, has the threat of a thunderstorm or lightning event occurring, in terms of causing economic damage or loss of over $50, of 1 in 50 per year.

Section 5.05.02.09.03 Winter Storms

The City of Mary Esther is vulnerable to winter storms, and all structures within its jurisdiction are susceptible to the effects of freezing temperatures. The City of Mary Esther is vulnerable to snow, freezing rain, icing and glazing events but because these events are so rare, the City of Mary Esther is unlikely to suffer serious damage from this hazard. The specific impacts of winter storms in the City of Mary Esther are unavailable because there have been no studies conducted regarding these hazards' impacts in the County. Only broad general impacts of this hazard can be given, which provide an indication of what impacts are expected with winter storms. The homes in the City of Mary Esther that are most vulnerable to winter storms are those with unprotected or under-protected water pipes and homes in which plumbing and insulation is inadequate. Unmitigated older structures and manufactured housing are also very vulnerable.

Section 5.05.02.10 Heat Wave and Drought

The City of Mary Esther is vulnerable to heat waves and drought. The specific impacts of heat waves and drought in the City of Mary Esther are unavailable because there have been no studies

conducted regarding these hazards' impacts in the County. In addition, the nature of these hazards tends to only affect the populations without adequate cooling systems in their homes, low income, elderly, children, and outside workers. Only broad general impacts of these hazards can be given, which provide an indication of what impacts are expected with heat wave and drought. Everyone living within the county is susceptible to heat exhaustion. All households are susceptible to power outages due to increased electricity demand during periods of extreme heat. Electrical system failures due to demand would only enhance problems for the entire population, especially for the vulnerable populations. All water bodies and municipal water supplies are susceptible to declining water levels and water shortages due to drought.

Section 5.05.02.11 Wildfire

Although the City of Mary Esther is susceptible to wildfire, as previously mentioned in the City's Hazard Assessment, it appears that the future risk of wildfire is minimal. The areas and populations that are most vulnerable to the danger and destruction of wildfire are the ones with inadequate infrastructure, inaccessibility to critical facilities or firefighting resource locations, and located in the wildland-urban interface. The following tables depict the structures with 'medium (levels 4-6)' to 'high (levels 7-9)' wildfire level of concern. Levels 0-3 were determined to be of such minimal to low vulnerability to wildfire they were not included in this assessment.

Table 5.05.02.11.1: Medium to High Wildfire Level of Concern for Structures

Total:	Condominium	Single-Family	Multi-Family	Commercial	Government/ Institutional
Level 4	0	17	1	2	5
Just Value	$0	$13,824,275	$614,591	$6,077,721	$11,415,258
Level 5	0	18	0	1	1
Just Value	$0	$14,110,172	$0	$1,095,717	$1,356,621
Level 6	0	0	0	0	1
Just Value	$0	$0	$0	$0	$5,006,836
Level 7	1	3	0	2	1
Just Value	$65,000	$1,076,314	$0	$6,077,721	$3,925,800
Level 8	0	3	0	0	3
Just Value	$0	$3,033,268	$0	$0	$6,013,927
Level 9	0	1	0	0	0
Just Value	$0	$207,032	$0	$0	$0

Source: Florida Division of Forestry and Okaloosa County Property Appraiser, 2026 (Okaloosa County Staff generated table from overlaying the wildfire level of concern and property appraiser data)

Section 5.05.02.12 Beach Erosion

The areas of the City of Mary Esther that are vulnerable to the effects of beach erosion are the properties that border the Choctawhatchee Bay. As previously mentioned, within its jurisdiction, there are 2.92 miles of coastline along the Santa Rosa Sound. The populations that reside, work, run businesses, or own property in these parcels are the most affected by beach erosion. Beach erosion undermines the integrity of infrastructure, beachfront homes and businesses, and other structures by washing away the sediments that support the structural foundation sometimes resulting in complete destruction. Data on the specific impacts of beach erosion on the City of Mary Esther were unavailable because there have been no studies conducted for this municipality. However, the LMS Committee will update this section, regarding the impacts that beach erosion has on structures, to reflect those changes.

Section 5.05.02.13 Sea Level Rise

The 2025 Okaloosa County Vulnerability Assessment (2025 Jacobs Engineering, (Appendix E) identifies in detail those areas and assets throughout Okaloosa County including the City of Mary Esther, that are vulnerable to sea level rise. Those areas of the city that are closest to Santa Rosa Sound are the most vulnerable, as depicted in Figures 8-9 and 8-11 of the Assessment that show the vulnerability of the city's roads and shorelines to flooding. Of particular concern is US 98 which is the main east-west arterial serving the City.

In addition to roadways and the shoreline, the Vulnerability Assessment also identifies three sanitary sewer lift stations as being vulnerable to flooding due to sea level rise: Sleepy Hollow Road, Calle Rio, and Islandview Drive.

Section 5.05.02.14 Other Hazards

As previously stated in the Risk Assessment, the following hazards, land erosion, sinkholes, expansive soils, dam safety, earthquake, avalanche, land subsidence, volcano, and tsunami have been determined to be a minimal risk to the City of Mary Esther. Therefore, the City's vulnerability to these hazards has not been assessed. If any of the hazards become a greater risk in the City of Mary Esther, then the LMS Committee will update this section to reflect those changes.

Section 5.05.02.15 Summary

The vulnerability assessment section of this LMS document highlights the vulnerability of the City of Mary Esther to the hazards identified in the Risk Assessment. It discussed the vulnerable populations, repetitive loss properties, and structure and infrastructure damages associated with these hazards.

City of Mary Esther

Section 5.05.03 Critical Facilities

The following is a list of all critical facilities found inside the City of Mary Esther's city limits.

Section 5.05.03.01 Fire Stations

Site Name	Address	X-COORD	Y-COORD
MARY ESTHER FD	195 CHRISTOBAL RD MARY ESTHER FL 32569	1286466.909	520160.81

Section 5.05.03.02 Government Centers

Site Name	Address	X-COORD	Y-COORD
MARY ESTHER CITY HALL	195 CHRISTOBAL RD MARY ESTHER FL 32569	1286444.864	520065.173

Section 5.05.03.04 Disaster Recovery Centers/Comfort Stations/Field Clinics

Site Name	Address	X-COORD	Y-COORD
SANTA ROSA MALL	300 MARY ESTHER BLVD UNIT 117 MARY ESTHER FL 32569	1288101.638	521065.929
MARY ESTHER BAPTIST CHURCH	28 NORTH ST MARY ESTHER FL 32569	1282523.673	519530.845

Section 5.05.04 Mitigation Actions

The mitigation actions listed within this document were developed to maintain a level of safety provided to the City of Mary Esther, its residents, businesses, employees, and all property.

Section 5.05.04.01 Hurricane and Tropical Storm

These actions are to be carried out and performed by the maintenance department, planning & zoning department, code enforcement, water department, and fire department. These actions are an ongoing effort to promote safety and lower and prevent the loss of property and life.

1. The city shall maintain a minimum roadway clearance time for hurricane evacuation of 12 hours on roads under local jurisdiction.
2. Immediate recovery actions needed to protect the public health and safety shall take priority in permitting decisions following hurricane storm events.
3. The city shall cooperate with Okaloosa County so as to manage and implement the "Peace Time Emergency Plan, Okaloosa County, Florida" and utilize the recommendations and guidance provided in the Tri-State Hurricane Evacuation Study, Appendix C, Transportation Analysis, June 1986, by the U.S. Army Corps of Engineers, Mobile District. These plans are to be integrated into the Regional Hurricane Evacuation.
4. Following a damaging hurricane or any other disaster, and/or enactment of a building moratorium, it is the intent of the city to allow rebuilding and reconstruction in an orderly manner. The city will control the issuance of building permits to manage the location, timing and sequence of reconstruction and repair. It is further the intent of the post-disaster redevelopment plan that the city establish prior to the disaster event, a special reconstruction task force which will oversee the recovery and reconstruction process and serve as an advisory body to the city council. A main responsibility of this body will be to advise the city council on the policies of the plan which are structured to mitigate future hurricane damages through the management of reconstruction. To further the intent of this plan, the city will make every effort to develop its capacity to identify and orchestrate various post-disaster redevelopment, while at the same time ensuring maximum local control over the redevelopment process.
5. Support community outreach activities and events that educate the public about the hazards and dangers of tropical storms/hurricanes.
6. Support efforts to ensure that critical facilities are shuttered and protected to the best of the City's ability.
7. Ensure that all roadways, buildings, structures, and installations are designed and engineered for the amount of wind, surge, flooding, and debris that can be expected from a hurricane or tropical storm event.
8. Ensure that all communications systems are capable of sending and receiving communications before, during, and after hurricanes/tropical storms.

9. Ensure that all roadways in order from priority/major roads to non- priority/major roads are cleared for travel following a severe storm.
10. Ensure the public is informed of pending conditions and kept up to date on all developments.

Section 5.05.04.02 Storm Surge

These actions are to be carried out and performed by the maintenance department, planning & zoning department and code enforcement. These actions are an ongoing effort to promote safety and lower and prevent the loss of property and life.

1. Promote public awareness of storm surge to include information prior, during, and after any conditions that may be of result.
2. Ensure all flood zone maps are accurate and up to date.
3. Ensure that all roadways, buildings, structures, and installations are designed and engineered for the amount of storm surge that can occur during hurricanes and tropical storms.
4. Support community outreach activities and events that educate the public about the hazards and dangers of storm surge.

Section 5.05.04.03 Flooding

These actions are to be carried out and performed by the maintenance department, planning & zoning department and code enforcement. These actions are an ongoing effort to promote safety and lower and prevent the loss of property and life.

1. Ensure that all future buildings are built with a minimum finished floor height of one (1) foot above the established Base Flood Elevation for buildings located within the AE flood zones. *For NFIP Compliance*
2. Support community outreach activities and events that educate the public about the hazards and dangers of flooding. *For NFIP Compliance*
3. Provide the community with a Flood Insurance Rate Map. *For NFIP Compliance*
4. Ensure that all roadways, buildings, structures, and installations are designed and engineered for the amount of flooding that may occur in the event of heavy rain, hurricanes and tropical storms. *For NFIP Compliance*
5. Maintain status as a NFIP and CRS community.
6. Ensure the public is adequately informed of pending conditions. *For NFIP Compliance*

Section 5.05.04.04 Severe Storms

These actions are to be carried out and performed by the maintenance department, planning & zoning department, code enforcement, water department, and fire department. These actions are an ongoing effort to promote safety and lower and prevent the loss of property and life.

1. Promote public awareness of severe storms to include information prior, during, and after any conditions that may be of result.
2. Ensure that all roadways, buildings, structures, and installations are designed and engineered for the amount of wind, surge, flooding, and debris that can be expected from a severe storm,.
3. Support efforts to ensure that critical facilities are shuttered and protected to the best of the city's ability.
4. Support community outreach activities and events that educate the public about the hazards and dangers of severe storms.
5. Ensure that all communications systems are capable of sending and receiving communications before, during, and after severe storms.
6. Ensure that all roadways in order from priority/major roads to non- priority/major roads are cleared for travel following a severe storm.

Section 5.05.04.04.01 Tornado and Waterspout

These actions are to be carried out and performed by the maintenance department, planning & zoning department, code enforcement, water department, and fire department. These actions are an ongoing effort to promote safety and lower and prevent the loss of property and life.

1. Ensure that all communications systems are capable of sending and receiving communications before, during, and after a tornado and/or water spout.
2. Ensure that all roadways in order from priority/major roads to non-priority/major roads are cleared for travel following a tornado and/or water spout.
3. Support community outreach activities and events that educate the public about the hazards and dangers of tornadoes and water spouts.
4. Ensure the public is informed of pending conditions and kept up to date on all developments.

Section 5.05.04.04.02 Thunderstorms and Lightning

These actions are to be carried out and performed by the maintenance department, planning & zoning department, code enforcement, water department, and fire department. These actions are an ongoing effort to promote safety and lower and prevent the loss of property and life.

1. Ensure that all communications systems are capable of sending and receiving communications before, during, and after a thunderstorm and/or lightning.
2. Ensure that all roadways in order from priority/major roads to non- priority/major roads are cleared for travel following a thunderstorm and/or lightning.
3. Support community outreach activities and events that educate the public about the hazards and dangers of thunderstorms and lightning.
4. Ensure the public is informed of pending conditions.

Section 5.05.04.04.03 Winter Storms

These actions are to be carried out and performed by the maintenance department, planning & zoning department, code enforcement, water department, and fire department. These actions are an ongoing effort to promote safety and lower and prevent the loss of property and life.

1. Ensure that all communications systems are capable of sending and receiving communications before, during, and after a winter storm.
2. Ensure that all roadways in order from priority/major roads to non- priority/major roads are cleared for travel following a winter storm.
3. Support community outreach activities and events that educate the public about the hazards and dangers of a winter storm.
4. Ensure the public is informed of pending conditions.
5. Reduce the susceptibleness to freezing by providing a secondary heating and/or electrical system for public facilities.

Section 5.05.04.05 Heat Wave and Drought

These actions are to be carried out and performed by the maintenance department, planning & zoning department, code enforcement, water department, and fire department. These actions are an ongoing effort to promote safety and lower and prevent the loss of property and life.

1. Ensure public facilities are capable of providing cooling systems.
2. Ensure the public is informed of pending conditions and kept up to date on all developments.
3. Support community outreach activities and events that educate the public about the hazards and dangers of a heat wave and/or drought.

Section 5.05.04.06 Wildfire

These actions are to be carried out and performed by the maintenance department, planning & zoning department, code enforcement and fire department. These actions are an ongoing effort to promote safety and lower and prevent the loss of property and life.

1. Support community outreach activities and events that educate the public about the hazards and dangers of a wildfire.
2. Ensure that all communications systems are capable of sending and receiving communications before, during, and after a wildfire.
3. Ensure the public is informed of pending conditions and kept up to date on all developments.
4. Require new subdivisions plats and new commercial structures to be designed and built in accordance with National Fire Codes.
5. Support mitigation efforts that would prevent or lower the risks of wildfire.

Section 5.05.04.07 Beach Erosion

These actions are to be carried out and performed by the maintenance department, planning & zoning department and code enforcement. These actions are an ongoing effort to promote safety and lower and prevent the loss of property and life.

1. Support community outreach activities and events that educate the public about the hazards and dangers of beach erosion.
2. Ensure compliance with the Florida Department of Environmental Protection (FDEP).
3. Ensure that all ordinances and/or codes are enforced pertaining to erosion.
4. Protect environmentally sensitive areas.
5. Support City projects to prevent or lower the risks of erosion.

Section 5.05.04.08 Sea Level Rise

The mitigation actions contained in Section 5.05.04.03 Flooding will address the needs for mitigation actions for Sea Level Rise also.

Section 5.05.05 Maps

Attached to this page are maps of the City of Mary Esther. They include:

1. Critical Facilities…….. 5.05-36
2. Evacuation Zones……... 5.05-37
3. Flood Zones…… 5.05-38
4. Repetitive Loss Properties…….5.05-39
5. Surge Zones…… 5.05-40
6. Wildfire Level of Concern…….. 5.05-41



City of Mary Esther Critical Facilities

Parcel Lines

Critical Facilities

Source: Okaloosa County Public Safety, 2025

MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane Florida North (0903)
NAD 1983(90), NAVD 1988.

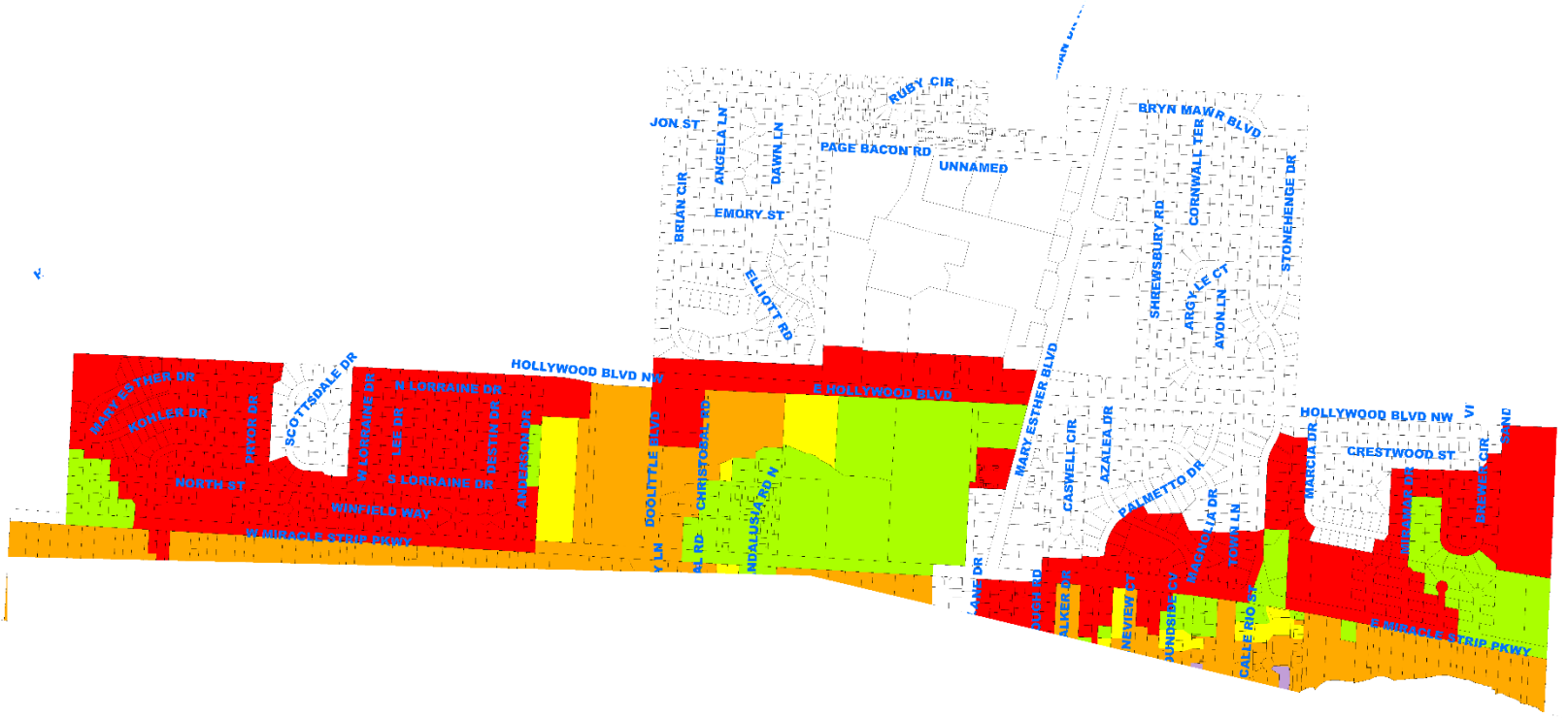
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Department of Growth Management
3/18/2026

City of Mary Esther Evacuation Zones



Parcel Lines
Evac Zone A
Evac Zone B
Evac Zone C
Evac Zone D
Evac Zone E

ZONE A = HURRICANE CAT 1

ZONE B = HURRICANE CAT 2

ZONE C = HURRICANE CAT 3

ZONE D = HURRICANE CAT 4

ZONE E = HURRICANE CAT 5

Source: Okaloosa County Public Safety, 2025

MAP PROJECTION:
Lambert Conformal Conic Projection
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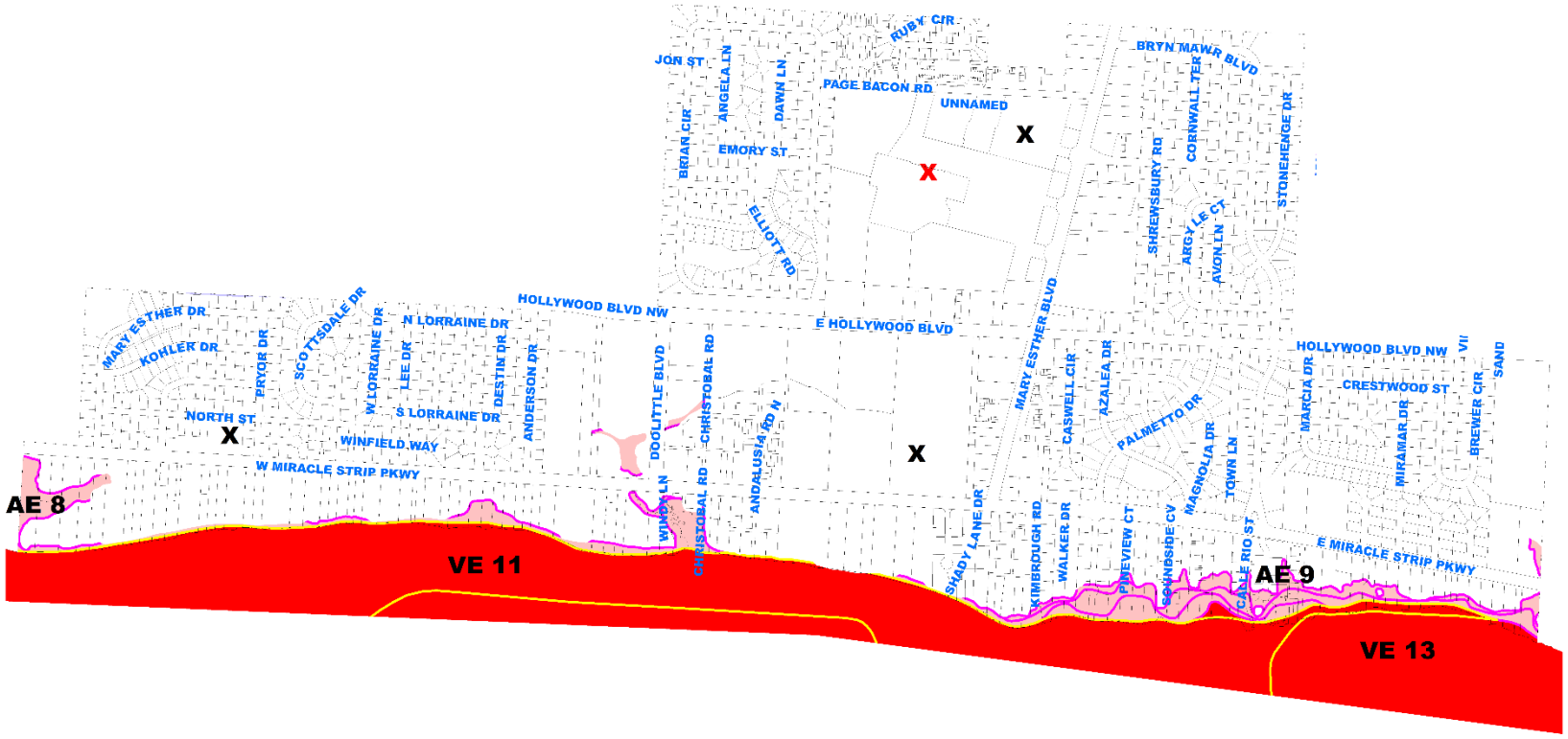
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Department of Growth Management
3/18/2026

City of Mary Esther Flood Zones

- Parcel Lines
- X 500 Year Flood Plain
- A 100 Year Flood Plain
- AE 100 Year Flood Plain
- VE 100 Year Flood Plain

Source: FEMA Map Service Center, March 9 2021

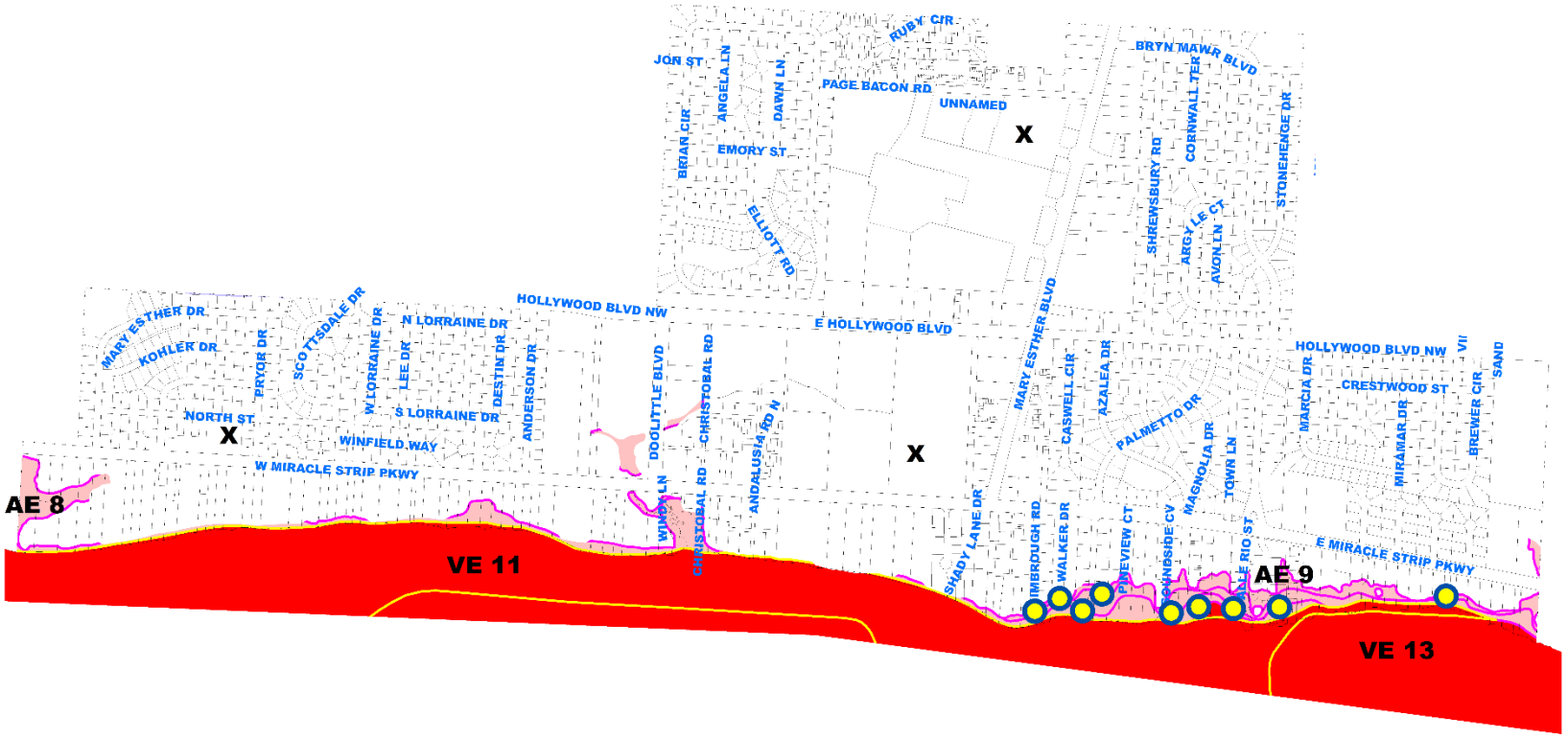


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Department of Growth Management
3/18/2026



City of Mary Esther Repetitive Loss Properties

- Parcel Lines
- X 500 Year Flood Plain
- A 100 Year Flood Plain
- AE 100 Year Flood Plain
- VE 100 Year Flood Plain
- Base Flood Elevation in a Floodway
- Repetitive Loss Properties

Source: FEMA Map Service Center, March 9 2021

MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
NAD 1983(90), NAVD 1988

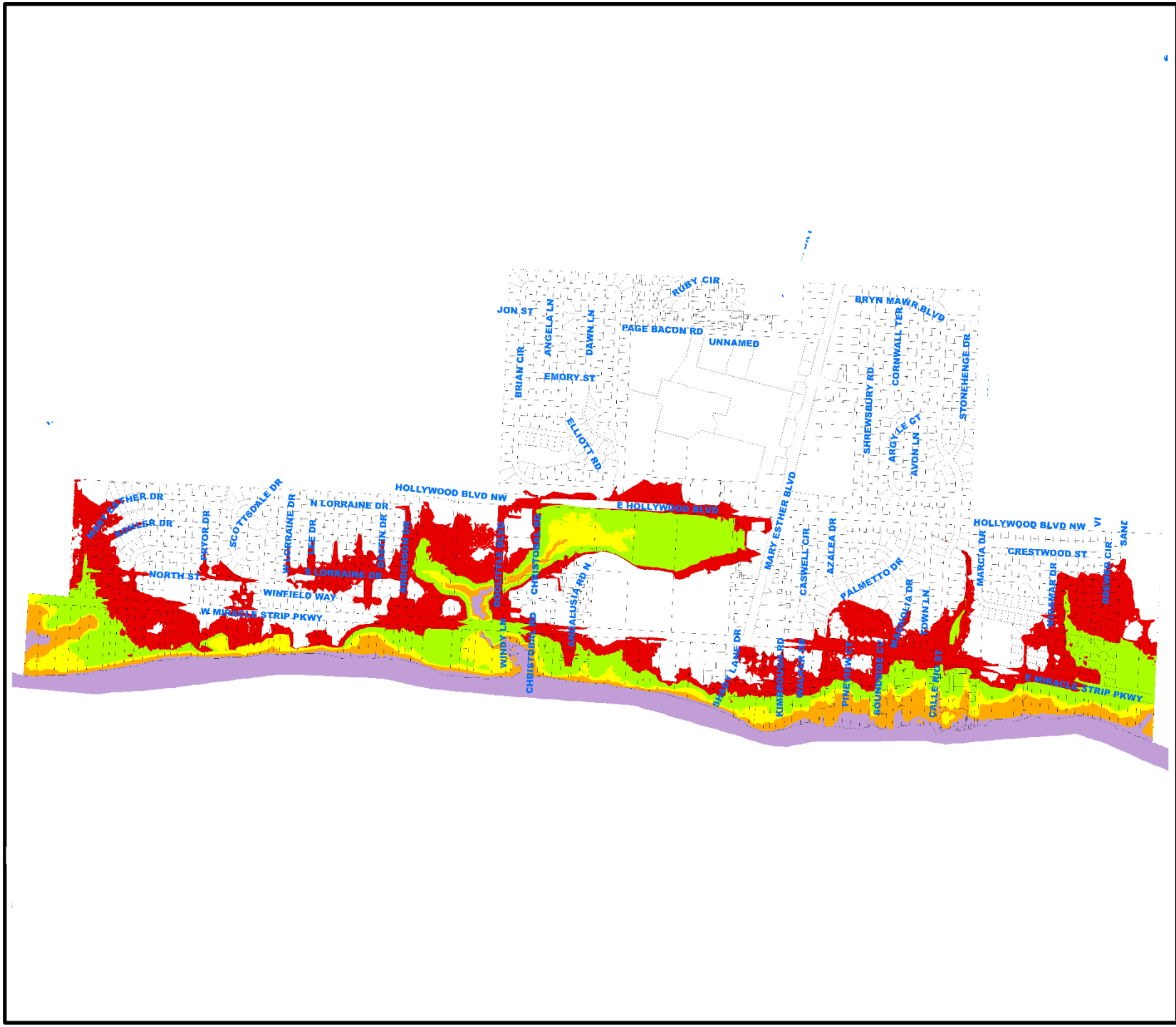
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Department of Growth Management
3/18/2026

City of Mary Esther Surge Zones



Source: West Florida Regional Planning Council, 2025

Parcel Lines
Category 1
Category 2
Category 3
Category 4
Category 5

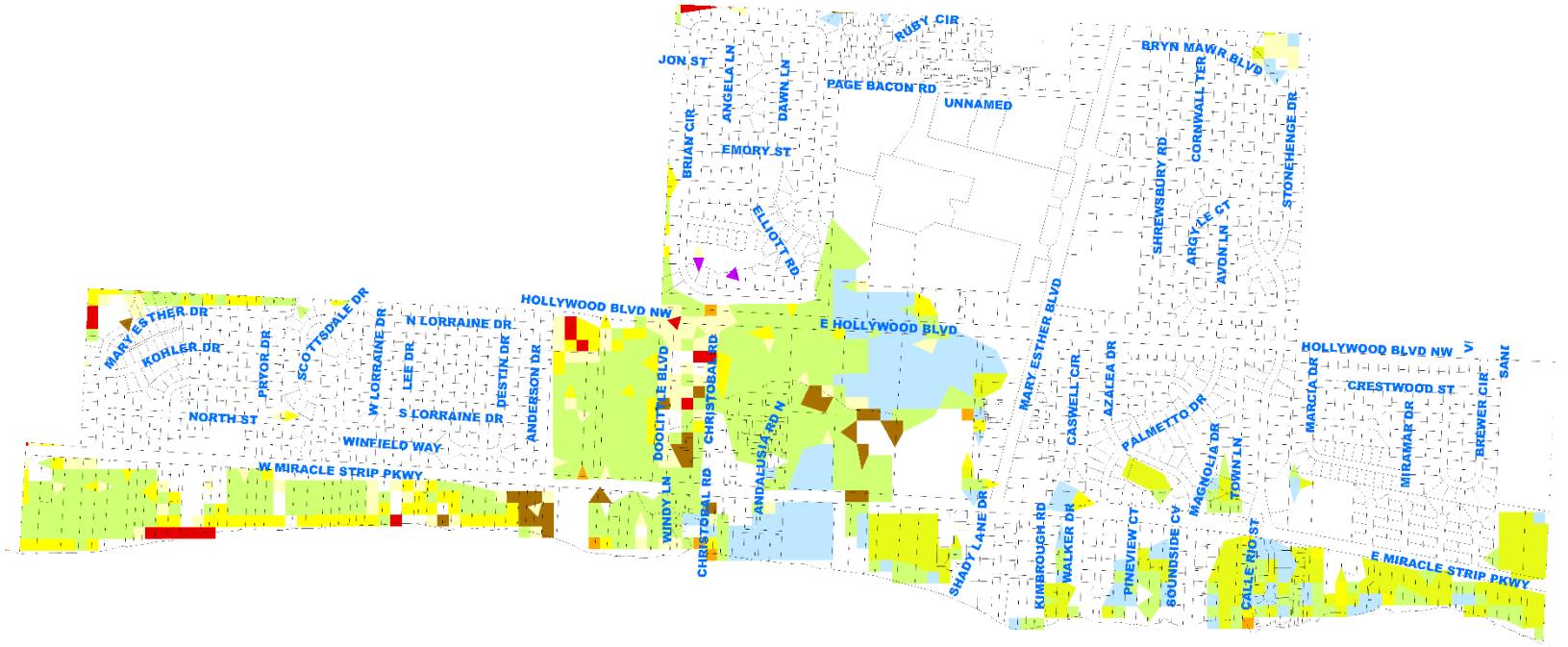
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Stateplane: Florida North (0903)
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Department of Growth Management
08/18/2010



City of Mary Esther Wildfire Level of Concern

Parcel Lines

Level of Concern

0
1
2
3
4
5
6
7
8
9

Source: Florida Division of Forestry, 2025

MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
NAD 1983(90), NAVD 1988

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Department of Growth Management
3/24/2026

Section 5.05.06 Post Disaster Redevelopment Plan

Attached to this page is the post disaster redevelopment plan that the City of Mary Esther adopted by the city in June of 2007. This plan is still in effect.



City of Mary Esther Debris Management Plan
12 June 2007

195 Christobal Road, North
Mary Esther, FL 32569

PLEASE REVIEW AND PROVIDE COMMENTS BY 9/11/07

CITY OF MARY ESTHER DEBRIS MANAGEMENT PLAN – 07

FIRE CHIEF
INSPECTION
CITY CLERK
MAINT DEPT
UTILITIES DIR
FINANCE

June 12, 2007

MISSION

To facilitate and coordinate the removal, collection, and disposal of debris following a disaster, to mitigate against any potential threat to the health, safety, and welfare of the impacted citizens, and expedite recovery efforts in the impacted area, and address any threat of significant damage to improved public or private property.

SITUATION

Natural and man-made disasters precipitate a variety of debris that includes, but is not limited to, such things as trees, sand, gravel, building/construction materials, vehicles, personal property, etc.

The quantity and type of debris generated from any particular disaster is a function of the location and kind of event experienced, as well as its magnitude, duration, and intensity.

The quantity and type of debris generated, its location, and the size of the area over which it is dispersed directly impacts the type of collection and disposal methods used to address the debris problem, associated costs incurred, and the speed with which the problem can be addressed.

In a major or catastrophic disaster, Mary Esther may have difficulty in locating staff, equipment, and funds to devote to debris removal, in the short as well as long term.

Private contractors play a significant role in the debris removal, collection, reduction, and disposal process.

The debris management program implemented by Mary Esther will be based on the waste management approach of reduction, reuse, reclamation. Resources recovery, incineration, and landfilling, respectively.

ORGANIZATION AND CONCEPT OF OPERATIONS

The Mary Esther Maintenance Department is responsible for the debris removal function. The Maintenance Department (MD) will work in conjunction with designated support agencies utility companies, waste management firms, and trucking companies, to facilitate the debris clearance, collection, reduction, and disposal needs following a disaster. MD will be responsible for removing debris from the public right-of-way. Only when pre approved and it is deemed in the public interest will MD remove debris from private property. MD will further stage equipment in strategic locations locally as well as regionally, if necessary, to protect the equipment from damage, preserve the decision maker's flexibility for employment of the equipment, and allow for the clearing crews to begin work immediately after the disaster.
Because of the limited quantity of resources and service commitments following the disaster, Mary Esther will be relying heavily on private contractors to remove, collect, and manage

debris for reuse, resource recovery, reduction, and disposal. Using private contractors instead of government workers in debris removal activities has a number of benefits. It shifts the burden of conducting the work from Mary Esther to the private sector, freeing up government personnel to devote more time to their regularly assigned duties. Private contracting also stimulates local, regional, and State economies impacted by the storm, as well as maximizes State and local governments' level of financial assistance from the Federal government. Private contracting allows the State and its political subdivisions to more closely tailor their contract services to their specific needs. The entire process (i.e., clearance, collection, transporting, reduction, and disposal, etc.) or segments of the process can be contracted out.

The MD will also develop and maintain a list of approved contractors who have the capability to provide debris removal, collection, and disposal in a cost effective, expeditious, and environmentally sound manner following a disaster.

STAFF DEVELOPMENT & RESPONSIBILITIES

The City of Mary Esther is responsible for the developing a debris management plan and shall select a "Debris Manager" to coordinate the activities of the "Debris Management Staff'. The staff shall be comprised of personnel to perform:

1. Administration (Finance)
   Function: Housekeeping, supplies, equipment, funding, accounting.
2. Contracting and Procurement (Finance)
   Function; Bidding requirements, forms, advertisements for bids, instructions to bidders, contract development.
3. Legal (City Manager, City Attorney)
   Function: Contract review, right of entry permits, community liability condemnation of buildings, land acquisition for temporary staging and reduction sites, land acquisition for disposal sites, insurance.
4. Operations (Maintenance Department)
   Function: Supervision of government and contract resources and overall project management. Recover and re-establish storm water utilities.
5. Engineering (City Manager, Inspection Dept, Maintenance Dept, Fire Dept)
   Function: Detailed damage assessment, identification of project tasks, assignments of tasks, preparation of estimates, plans, specifications, and recommendation of contract award.
6. Public Information (City Clerk)
   Function: Coordinate press releases, contacts with local organizations, individuals and media; and public notices for debris removal and disposal contracts.
7. Utilities (OMI)
   Function: Recover and re-establish water and wastewater utilities.

The staff shall coordinate with all State and Federal agencies responsible for disaster response and recovery operations. The staff will be assigned the task of:

1. Reviewing and updating the Debris Management Plan.
2. Developing an analysis and debris management capability
3. Discourage development in hazardous zones.
4. Develop public information and education programs.
5. Train personnel in debris management techniques.

6. Maintain pre-disaster maps, blueprints, photos and other documents.
7. Make a list of critical facilities (streets, roads, and bridges).
8. Identify non-government groups that could assist (Mary Esther Green, OTNP Committee).

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CONTRACT AND COOPERATIVE AGREEMENTS

Mary Esther Finance Department is responsible for developing and maintaining contracts for debris removal services on an annual basis.

The Departments will be responsible for managing the debris contract from project inception to completion. Managing the debris contract includes such things as monitoring of performance, contract modifications, inspections, acceptance, payment, and closing out of activities. Mary Esther is encouraged to enter into cooperative agreements with other State agencies and local governments to maximize public assets. The development of such agreements must comply with the guidelines established in their agency procurement manual. All State agencies and local governments that wish to participate in such agreements should be identified prior to the development and implementation of the agreement.

The three types of contracts required are the:

1. Time and Materials Contract. Will be limited to the first 70 hours of operation and only after all State and local equipment has been committed. The price for equipment applies only when the equipment is operating, the City can terminate the contract at its convenience, and the City does not guarantee a minimum number of hours.

2. Lump Sum Contract. The price of the work is fixed unless there is a change in the scope of work to be performed. Lump sum contracts will be calculated on either the "area" method or the "pass" method. The lump sum contract shall only be used when the scope of work is clearly defined and the areas of work can be specifically quantified.

3. The Unit Price Contract. Is the most accurate account of actual quantities removed. Requires field inspectors to eliminate contractor mistakes and in-accuracies. All contractor trucks must be measured. Requires load tickets identifying truck number, contract number, contractor's name, date, time departed site, and estimated volume.

Mary Esther has existing contracts which are attached to this plan as an annex.
Mary Esther may establish Mutual Aid Agreements with the following entities to provide assistance with debris removal in the event of a disaster resulting in copious amounts of debris:

(1) Okaloosa County
(2) FDOT
(3) Other volunteering governmental agencies

These agreements may include utilization of personnel, equipment, temporary landfill sites, emergency services, and law enforcement.

Mary Esther will attempt to get certain volunteer (VOAD), State and Federal agencies ready to assist. These agencies include Civic Clubs, Church organizations, Salvation Army, State Department of Transportation, National Guard, scrap dealers, and U.S. Department of Labor. These VOAD organizations will be coordinated by the State.

SITE SELECTION

Debris storage and reduction sites will be identified and evaluated by interagency site selection teams comprised of a multi-disciplinary staff who are familiar with the area. A listing of appropriate local, State, and Federal contacts will be developed by the appropriate agencies to expedite the formation of the interagency, multi-disciplinary site selection teams.

Initially, debris may be placed in temporary holding areas, determined before the onset of the disaster, until such time as a detailed plan of debris collection and disposal is prepared. This is not anticipated until after the local traffic has been restored. Temporary debris collection sites should be readily accessible by recovery equipment and should not require extensive preparation or coordination for use. Collection sites will be on public property when feasible to facilitate the implementation of the mission and mitigate against any potential liability requirements. Activation of sites will be under the control of the Maintenance Department, and will be coordinated with other recovery efforts through the emergency operations center.

The following is a list of temporary debris storage and reduction sites (TDSR):

1. Old Kaiser Mill Pit
2. Wright Sanitary Landfill

DEBRIS REMOVAL PRIORITIES

The debris removal process must be initiated promptly and conducted in an orderly, effective manner in order to protect public health and safety following a major or catastrophic event. To achieve this objective, the first priority will be to clear debris from key roads in order to provide access for emergency vehicles and resources into the impacted area. Key roads in Mary Esther are identified as follows:

1. Christobal Road
2. Hollywood Blvd
3. Mary Esther Drive
4. US Hwy 98
5. Roserito Pl
6. Town Ln

The need and demand for critical services will be increased significantly following a disaster. Therefore, the second priority that debris removal resources will be assigned is providing access to critical facilities pre-identified by State and local governments. Critical facilities in Mary Esther have been identified as:

1. Sewer Lift Stations
2. Water Wells/Plants
3. Sewer Plant
4. City Hall/Fire Dept

The third priority for the debris removal teams to address will be the elimination of debris related threats to public health and safety. This will include such things as the repair, demolition, or barricading of heavily damaged and structurally unstable buildings, systems, or facilities that pose a danger to the public. Any actions taken to mitigate or eliminate the threat to the public health and safety must be closely coordinated with the owner or responsible party. If access to the area can be controlled, the necessary actions can be deferred.

DEBRIS CLASSIFICATION

To facilitate the debris management process, debris will be segregated by type. It is recommended that the categories of debris established for recovery operations will be standardized. The City will adopt the categories established for recovery operations by the U.S. Army Corps of Engineers following Hurricane Andrew. Debris removed will consist of two broad categories (clean wood debris and construction and demolition debris).

Definition of classifications of debris are as follows:

Burnable Materials: Burnable materials will be of two types with separate burn locations:

Burnable Debris: Burnable debris includes, but is not limited to, damaged and disturbed trees; bushes and shrubs; broken, partially broken and severed tree limbs; and bushes. Burnable debris consists predominately of trees and vegetation. Burnable debris does not include garbage or construction and demolition material debris.

Burnable Construction Debris: Burnable construction and demolition debris consists of non-creosote structural timber, wood products, and other materials designated by the coordinating agency representative.

Non-burnable Debris: Non-burnable construction and demolition debris includes, but is not limited to, creosote timber, plastic, glass, rubber and metal products, sheet rock, roofing shingles, carpet, tires, and other materials as may be designated by the coordinating agency. Garbage will be considered non-burnable debris.

Stumps: Stumps will be considered tree remnants exceeding 24 inches in diameter; but no taller than 18 inches above grade, to include the stump ball. Any questionable stumps shall be referred to the designated coordinating agency representative for determination of its disposition.

Ineligible Debris: Ineligible debris to remain in place includes, but is not limited to, chemicals, petroleum products, paint products, asbestos, and power transformers.

Any material that is found to be classified as hazardous or toxic waste (HTW) shall be reported immediately to the designated coordinating agency representative. At the coordinating agency representative's direction, this material shall be segregated from the remaining debris in such a way as to allow the remaining debris to be loaded and transported. Standing broken utility poles, damaged and downed utility poles and appurtenances, transformers and other electrical material will be reported to the coordinating agency representative. Emergency workers shall exercise due caution with existing overhead and underground utilities and above ground appurtenances, and advise the appropriate authorities of any situation that poses a health or safety risk to workers on site or to the general population.

ESTIMATING DEBRIS QUANTITIES Corp of Engineers

The formula for estimating debris quantity is: Q=H(C)(V)(B)(S)

H (Households)=Population/3 (3 persons per household)
C (Category of Storm)=Factor (See table below)
V (Vegetation Multiplier)= Factor (See table below)
B (Commercial Density Multiplier)= Factor (See table below)
S (Precipitation Multiplier)= Factor (See table below)

Hurricane Category	Value of "C" Factor
1	2 CY
2	8 CY
3	26 CY
4	50 CY
5	80 CY

Vegetative Cover	Value of "V" Multiplier
Light	1.1
Medium	1.3
Heavy	1.5

Commercial Density	Value of "B" Multiplier
Light	1.0
Medium	1.2
Heavy	1.3

Precipitation	Value of "S" Multiplier
None to Light	1.0

DEBRIS DISPOSAL AND REDUCTION

Once the debris is removed from the damage sites, it will be taken to temporary or permanent land fills. The three methods of disposal are burning, recycling, and grinding/chipping.

Grinding and chipping will be utilized as a viable reduction method. Grinding and chipping reduces the volume on a 4 to 1 ratio. For grinding and chipping to be feasible, 25% of volume remaining must have some benefit or use.

The three primary burning methods are open burning, air curtain pit burning, and incineration. Controlled open burning is a cost-effective method for reducing clean woody debris in rural areas. Burning reduces the volume by 95%, leaving only ash residue to be disposed of. Air curtain pit burning substantially reduces environmental concerns. The blower unit must have adequate air velocity to provide a "curtain effect" to hold smoke in and to feed air to the fire below. Portable incinerators use the same methods as air curtain pit systems. The only difference is that portable incinerators utilize a pre-manufactured pit in lieu of an onsite constructed earth/limestone pit.

Metals, wood, and soils are prime candidates for recycling. Most of the non-ferrous metals are suitable for recycling. Specialized contractors are available to bid on disposal of debris by recycling if it is well sorted.

SITE CLOSE-OUT PROCEDURES

Each temporary debris staging and reduction site will eventually be emptied of all material and be restored to its previous condition and use.

Before activities begin ground or aerial photos and/or surveys will be taken, important features such as structures, fences, culverts, and landscaping will be noted. Random soil samples will be taken. The site will be checked for volitale organic compounds.

After activities begin, monitoring of air quality and soil samples will take place. Photo, maps, and sketches of the site will be updated and fuel spills will be noted.

At close-out final testing of soil and air quality will be compared to original conditions. All ash will be removed and any remediation actions will be taken.

DEBRIS MANAGEMENT ACTIONS

The Debris Management Plan is separated into four stages:

1. Normal Operations

Establish pre-existing contract for debris removal services to expedite the implementation of their debris management strategies.

Develop mutual aid agreements with other State agencies and local governments, as appropriate, following guidelines established in agency procurement manual.

Identify and pre-designate potential debris storage sites for the type and quantity of debris anticipated following a catastrophic event.

Pre identify local and regional critical routes in cooperation with contiguous and regional jurisdictions.

Identify and coordinate with appropriate regulatory agencies regarding potential regulatory issues and emergency response needs.

Develop the necessary right of entry and hold harmless agreements indemnifying all levels of government against any potential claims.

Establish debris assessment process to define scope of problem.

Develop and coordinate pre-scripted announcements with the City Clerk regarding debris removal process, collection times, temporary storage sites use of private contractors, environmental and health issues, etc.

2. Increased Readiness

(A natural or man-made disaster is threatening the local area)

Review and update plans, standard operating procedures, contracts, and checklists relating to debris removal, storage, reduction, and disposal process.

Alert local departments that have debris removal responsibilities ensuring that personnel, facilities, and equipment are ready and available for emergency use.

Relocate personnel and resources out of harm's way and stage in areas where they can be effectively mobilized.

Review potential local, regional, and debris staging and reduction sites that may be used in the response and recovery phases in the context of the impeding threat.

Alert existing debris removal contractor of pending need for their services . Make necessary arrangements to ensure their availability in the event of the disaster.

3. Response

Activate debris management plan, coordinate with needs assessment team.

Begin documenting costs.

Coordinate and track resources (public and private).

Establish priorities regarding allocation and use of available resources.

Identify and establish debris temporary storage and disposal sites (local, regional).

Address any legal, environmental, and health issues relating to the debris removal process.

Continue to keep public informed through the PIO.

4. Recovery

Continue to collect, store, reduce, and dispose of debris generated from the event in a Cost-effective and environmentally responsible manner.

Continue to document costs.

Upon completion of debris removal mission, close out debris storage and reduction sites by developing and implementing the necessary site restoration actions.

Perform necessary audits of operation and submit claim for Federal assistance.

SAMPLE DEBRIS PLAN ANNEX

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Sample: Notice to public
Sample: Mutual Aid Agreement
Sample: Intergovernmental Emergency Mutual Aid Agreement
Sample: Unit Price Contract
Sample: Right of Entry Agreement
Sample: Road Priority List

MASTER COPY

FILE

City of Mary Esther

POST-DISASTER REDEVELOPMENT PLAN

JANUARY 6, 1992

Read

Review

J. E. Dorman & Associates, Inc.
Destin, Florida

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ARTICLE ONE

LEGAL

1.1 Legal:

WHEREAS, the City of Mary Esther is vulnerable to a variety of hazards which result or may result in emergencies causing substantial injury or harm to the population or substantial damage to or loss of property; and

WHEREAS, Chapter 252, F.S., provides the City Council the authority to declare a state of local emergency and take actions necessary to ensure the safety and well being of its residents, visitors and property during emergencies caused by these hazards; and

WHEREAS, the City of Mary Esther has prepared a Comprehensive Plan in compliance with Chapter 163, F.S. and Rule 9J-5, F.A.C.; and

WHEREAS, the City of Mary Esther has adopted its Comprehensive Plan and Objective 11.A.8 requires the City to develop and adopt a Post-Disaster Redevelopment Plan which will reduce or eliminate the exposure of human life and public and private property to natural hazards; now

THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF MARY ESTHER, FLORIDA that this Ordinance is hereby adopted in conformance with Chapter 163, F.S., and Rule 9J-5, F.A.C. and the City adopted Comprehensive Plan and provides an effective date and repeals all provisions of ordinances or resolutions in conflict.

1.2 Title: This Ordinance shall be known as the "The City of Mary Esther Post-Disaster Redevelopment Plan" and also may be known as "Ordinance 92-2".

1.3 Jurisdiction: The lands subject to this Plan shall be the incorporated areas of Mary Esther except lands owned by Federal, State or local political entities.

1.4 Intent: Following a damaging hurricane or any other disaster, and/or enactment of a building moratoria, it is the intent of the City to allow rebuilding and reconstruction in an orderly manner. The City will control the issuance of building permits to manage the location, timing and sequence of reconstruction and repair. It is further the intent of the Post-Disaster Redevelopment Plan that the City establish prior to the disaster event, a special Reconstruction Task Force which will oversee the recovery and reconstruction process and serve as an

advisory body to the City Council. A main responsibility of this body will be to advise the City Council on the policies of the Plan which are structured to mitigate future hurricane damages through the management of reconstruction. To further the intent of this Plan, the City will make every effort to develop its capacity to identify and orchestrate various post-disaster redevelopment, while at the same time ensuring maximum local control over the redevelopment process.

1.5 **Effective Date:** The effective date of this Ordinance is January 6, 1992.

ARTICLE TWO

FOREWORD

In 1987, the United Nations General Assembly passed a resolution calling for a decade dedicated to reducing "loss of life, property damage and social and economic disruptions caused by natural disasters". To assist in preparing for the International Decade for Natural Reduction, the Secretary-General appointed an International Adhoc Group of Experts. In January, 1990, the group's 25 findings and recommendations for immediate and long term emergency management priorities for the Decade were revealed. To illustrate the direction and intent of the ideas behind the Decade, two of the group's findings are presented below:

- Most of the world views natural disasters with fatalism. This attitude is wrong and must be changed. Societies, communities, and individuals, prepared through education, training, policy and legislation, and investment can be both disaster resistant and disaster resilient.

- Reorient government thinking to integrate pre-disaster planning into the mainstream of the government policy and decision making process, including medical preparedness for disasters, improved building codes, and land use planning.

From the United Nations General Assembly comes a mandate to conduct pre-disaster planning for the events during and following a natural disaster. Of all natural disasters, Mary Esther is most vulnerable to hurricanes due to its coastline and its geographic location. The Florida State Land Development Plan (1989) has an objective that all coastal cities will have developed post-disaster redevelopment plans by 1993. Chapter 163, Part II, F.S. and Rule 9J-5 F.A.C and Objective 11.A.8 of the adopted Comprehensive Plan each require the City to prepare a Post-Disaster Redevelopment Plan by 1992. This Plan is a continuation of the City's Comprehensive Planning efforts and is designed to accommodate and compliment the requirements of that Plan. The Post-Disaster Redevelopment Plan is not intended to require a revision of the work already documented by emergency management officials and their planning for the immediate recovery phase after a major disaster.

In the aftermath of a hurricane or other major disaster, the ability of local governments to take effective advantage of opportunities to guide redevelopment in a way that reduces exposure to the effects of future disasters will be strongly

influenced by the regulatory environment established prior to the event. Previously established regulations help to define long-term goals and objectives for the policies that will be implemented during redevelopment. Attempts to mitigate development in high hazard areas are often constrained by the possibility of litigation resulting from restrictions imposed on the development potential of individual properties. A local government's pursuit of the general health, safety and welfare constitutes a legitimate legal basis for measures designed to reduce the impact of hurricanes/disasters, but the actual application of the principle may still subject that government to legal challenges. Property rights questions derive directly from federal constitutional principles which have been incorporated into state constitutions and statutes and include concerns over due process, the taking of private property without just compensation, and equal protection.

By the same token, the failure to take appropriate mitigative measures can potentially expose a local government to judicial findings of negligence, subjecting it to substantial liability for damages actually sustained. This is an important reason for local governments to formulate pre-hazard mitigation strategies together with post-hazard redevelopment plans.

ARTICLE THREE

INTRODUCTION AND PURPOSE

The City of Mary Esther is periodically threatened by severe weather phenomena: tornados, hail storms, flooding, high winds and hurricanes. The proximity to major military installations and large bodies of water could cause it to be subject to the effects of man made disasters (e.g. aircraft accidents, radioactive fallout, oil spills, etc.). Other emergency situations, such as accidents involving hazardous/dangerous materials may occur and require pre-disaster planning.

During a major disaster event, many structures will be either damaged or destroyed. The residents of homes will need temporary housing as they pursue financial assistance for repairs or relocation. The local building permitting office will be besieged with building permit requests. At this point, many questions will arise. Without a process in place, inefficient and inconsistent decision making may result in poor land use decisions or spot zoning challenges in the turmoil of post-disaster efforts. Coordinated, centralized, informed decision-making, frequent and accurate media communiques, accurate record keeping and prioritization of recovery activities which are flexible, but never broken, are key points necessary to deal effectively with any massive disaster.

It is recognized that a plan such as this can not anticipate all of the redevelopment scenarios and problems that one will face. Nor can any local government be expected to anticipate all of the redevelopment scenarios it will face after a hurricane or major disaster. Recognizing this, it is the goal of this Plan to establish the background of data, requirements, precedence and sources of information necessary to support and adopt a Post-Disaster Redevelopment Plan and to suggest policies which will guide reconstruction and redevelopment. Thus, this Plan is designed to assist you when considering alternate policies to guide redevelopment. Further, it is designed to provide in cooperation with State, Federal, County and City governments a plan for the purpose of minimizing exposure of human life and public and private property to any type of disaster, whether natural or man-made. Pre and post-disaster planning allows a community to capitalize more fully on mitigation opportunities after a disaster, and when developed and adopted with public involvement prior to a disaster, identifies and alleviates controversial issues that often arise after disasters.

ARTICLE FOUR

DEFINITIONS

4.1 Minor Damaged Structures. A structure that can be made habitable in a short period of time with minimal repairs. Damage may include doors, windows, floors, furnaces, water heaters, and other minor structural damage. An indicator for this category is if the cost of repair is 25% or less of the replacement cost at the time of damage.

4.2 Major Damaged Structures. A structure that can be made habitable with extensive repairs. Damage may include foundation, roof structure and major structural components. The indicator for this category is if the cost of repair is greater than 25% and less than 50% of the replacement cost at the time of damage.

4.3 Destroyed Structures. A structure that is a total loss or damaged to such an extent that repairs are not technically or economically feasible, i.e., 50% or more of replacement cost at the time of damage or destruction. Structures experiencing total destruction shall be visibly labeled condemned by a local official. Generally, FEMA requires all private structures damaged greater than 50% of their pre-disaster replacement value to be rebuilt to existing local codes and regulations.

4.4 Damage Assessment Teams. A damage assessment team's function is to assess losses to property immediately after a disaster. These teams should be identified and trained in advance of a disaster so they will be ready when needed. The following are suggestions for disaster assistant team membership:

a) City engineer

b) Utility company personnel

c) Public safety and fire officers

d) Tax assessor

e) Building inspectors

f) Agricultural Extension agents

g) Health officials

h) Red Cross officials

i) Real estate appraisers

j) Insurance agency representatives

4.5 Post-Disaster Reconstruction Task Force - The Reconstruction Task Force shall be responsible for advising and making recommendations to the City Council on a wide range of post-storm reconstruction/redevelopment issues. The Task Force will be composed of the following individuals, reflecting a broad based representation of community interest and shall be appointed annually by the City Council:

a) two elected officials

b) City Manager or his representative

c) Chief Inspector

d) Water and Sewer Supervisor

e) Public safety representative

f) Fire Department representative

g) one representative from either or both the real estate or construction industry.

4.6 Coastal High Hazard Area. Coastal high hazard areas shall be defined as any land seaward of the FEMA V-zone elevation line within the City.

ARTICLE FIVE

PLANNING PHASES

5.1 **Comprehensive Planning:** Ever since the Second World War, emergency management has focused primarily on preparedness. But being prepared is only one phase of comprehensive emergency management. The City has the opportunity to deal with emergencies before they strike and the responsibility to aid recovery after a disaster. As a result, current thinking defines four phases of comprehensive emergency management. They are mitigation, preparedness, response and recovery. Each phase results from the previous one and establishes the requirements of the next one, estimates in one phase may overlap those in the previous phase and merge into the next one. Preparedness moves swiftly into response when disaster strikes. Response yields to recovery at different times depending on the extent and kind of damage. Similarly, recovery should trigger mitigation, motivating attempts to prevent or reduce the potential of a next disaster. Finally, the disaster phases know no beginning or end. The recognition of a threat can motivate mitigation as well as an actual emergency can.

5.1.1 **Mitigation (Long Term):** Any activities which actually eliminate or reduce the probability of occurrence or the effects of a disaster. It also includes long term activities which reduce the effects of unavoidable accidents. These activities can occur before, during and after a disaster and overlap all phases of emergency management. In addition to reducing hazard impacts through mitigation actions, improving preparedness, response and recovery capabilities can also reduce loss of life and property.

5.1.2 **Preparedness (To Respond):** Preparedness activities are necessary to the extent that mitigation measures have not or can not prevent disasters. Preparedness activities include the development of response procedures, design and installation of warning systems, exercising emergency operational procedures, and training of emergency personnel. Training also includes indoctrination of public officials, including senior administrative and administration officials and members of the City Council. In preparedness, governments, organizations and individuals develop plans to save lives and minimize disaster damage.

5.1.3 **Response (To Emergency):** Response activities follow an emergency or disaster. These include evacuation, rescue operations, emergency medical/care, shelter programming and other emergency assistance for casualties. They also seek to reduce

the probability of secondary damage and to speed recovery operations.

5.1.4 **Recovery (Short and Long-Term):** Recovery activities begin after disaster and continue until all systems return to a normal or improved level. These include repairs to roads, bridges, electrical power, water/sewer and other public facilities and activities that restore normal service to a community. Short-term recovery returns vital life-support systems to minimum operating standards. Long-term may continue for a number of years and may include the complete redevelopment of damaged areas.

5.2 **Redevelopment Planning Policies:** Chapter 9J-5, F.A.C., requires the City develop goals and policies and a concurrency management system that will ensure mitigation of impacts concurrent with development. It is likely that the Capital Improvements Element (CIE) for any given municipality, including Mary Esther, and the levels of service documented within will be rendered immediately ineffective after a hurricane.

Chapter 9J-11.006(1)(a)3.c provides for emergency amendments to the local comprehensive plan outside of the twice a year amendment procedures. However, it is unlikely that a planning staff will be able to assemble the necessary details to submit and adopt an amendment to the comprehensive plan immediately after a hurricane.

Therefore, a procedure which contemplates this must be considered. An emergency ordinance or a short-term moratorium on building may be implemented. Incorporating the policies of the local government to be exercised in an emergency can legally reinforce planning activities in an emergency situation.

ARTICLE SIX

POTENTIAL MITIGATION POLICIES

6.1 Mitigation Policies: This article presents a list of potential policies for hazard mitigation. It is useful to divide policies into those which might apply when no future development or rebuilding should take place and those which would be appropriate when conditional development or rebuilding should be allowed. A policy to prohibit development or rebuilding would mean essentially designating land for conservation, recreation or open space uses. In this case, the policy options for the City are few and often not politically or financially feasible.

6.2 Future Development or Rebuilding: The following policies could be instituted to condition future development or rebuilding in the aftermath of a hurricane or any other type of disaster:

- Changes from residential to commercial uses in order to reduce evacuation needs;
- Reduction in residential density (i.e. from multi-family to single-family);
- Clustering of development on the most protected portions of the lots;
- Building and rebuilding strictly to code (including flood insurance standards);
- Relocation of public infrastructure away from hazard zones;
- Assessment of impact fees for public infrastructure and services in hazard zones (including the building of shelters in non-hazard zones); and
- Rezoning which would result in existing development becoming a non-conforming use.

6.2.1 Development Regulation: Several different regulations may be developed and implemented to assist local governments in the implementation of hazard mitigation policies and plans.

6.2.1.1 Zoning: One zoning option for coastal communities is simply to designate hazard areas as open space or conservation zones in which all future development is prohibited. Even if this were a politically feasible option, in coastal areas where

agriculture and other non-developed uses do not yield reasonable economic returns, it invites a constitutional challenge of a "taking" of private property without just compensation. A more pragmatic approach is one which seeks to reduce the overall quantity of development at risk (such as reducing development density through down-zoning).

6.2.1.1.1 Conventional Zoning: Reduce the quantity of development exposed.

- Local zoning ordinances must be in accordance with local comprehensive plan.
- An increase in the minimum lot size or a reduction in the number of dwelling units permitted per acre would decrease the overall density of development.
- Certain high density uses in high hazard areas can be zoned out and declared non-conforming uses through changes in zoning districts, and, in time, a slow process of land use change might be expected. A shorter-term approach uses the non-conforming use concept as a way of preparing for and managing reconstruction after a hurricane occurs.

6.2.1.1.2 Bonus or Incentive Zoning: Developers may be granted additional development density if projects incorporate hazard-reduction features. These features may include the purchasing and deeding of high hazard lands to the public, or the provision of design features which may increase the ability of structures to withstand hurricane forces. However, it may counteract other hazard mitigation strategies to encourage or permit additional densities in coastal hazard areas, even if public amenities and hazard-reduction features are provided as compensation.

6.2.1.1.3 Performance Zoning: This approach sets standards for each zone based on the permissable effects of a development rather than specifically enumerating the types of uses, dimensions or densities permitted. If these prescribed standards are met, any use is allowed in the zone.

6.2.2 Land and Property Acquisition: Public acquisition of land can serve to influence the direction and timing of growth and development in a locality. Outright purchase of land in coastal areas experiencing moderate or high levels of market demand will tend to be prohibitively expensive for most local governments. The locality must be prepared, however, to take advantage of bargain sales after a hurricane when some property owners may

wish to vacate the hazard area due to the increase in cost of rebuilding.

6.2.3 Transfer of Development Rights (TDR): The basic concept underlying TDR is that ownership of land which includes the right to develop the land, a right which may be separated from other ownership rights and transferred to someone else. Under a mandatory program, a locality would simply zone the hurricane hazard area so that fewer units of development are allowed (or prohibit new development entirely), and the owner of the land within this zone would then be permitted to transfer all or some of this unused development density to parcels outside of the hazard-prone areas or to sell the TRDs on the open market to others who own land in areas designated for development. The local government would then permit increased levels of development in the non-hazard prone zone as a result of possessing extra development rights, thus creating a natural market for transferable development rights.

6.2.4 Taxation and Fiscal Incentives: In contrast to the public acquisition of hurricane-prone lands, a taxation policy might seek to reduce development by decreasing the holding costs of open space and vacant lands, in turn reducing the opportunity cost of not developing such lands for more intensive uses.

6.2.5 Special Assessments and Impact Fees: People who build in and inhabit coastal hazard areas often impose substantially more costs on the public than those who dwell elsewhere. An impact fee could be designed to recoup and mitigate the overall impacts of a project or development on the community at large.

6.3 Capital Facilities and Public Infrastructure Policy: Coastal development - its type, location, density and timing - is highly influenced by capital facilities, such as roads, sewer and water services. Such public investments have been aptly termed "growth shapers".

6.3.1 Policies to Prevent Location of Public Facilities in High Risk Areas: A locality can develop an explicit set of capital facilities extension policies designed to avoid high hazard areas, thus reducing the amount of development and property which will be attracted to the area and reducing the potential threats to lives and property. This approach can only become an effective deterrent, however, if development in high hazard areas is dependent upon the existence of public facilities.

6.3.2 Relocation or Strengthening of Capital Investments After a Hurricane: It may be possible, if the facilities are sufficiently damaged, that roads and sewers can be rebuilt in areas which are less susceptible to damage from future hurricanes. Even if the facilities are not relocated, they my be repaired and reconstructed in ways which make them stronger or less susceptible to hazards from hurricanes or other disasters. Roads and sewers can be elevated,for instance, and sewer and water lines can be flood-proofed. Also, placing power and telephone lines underground after the hurricane may help ensure safer evacuation when the next hurricane threatens.

6.4 Information Dissemination: More informed consumers make more rational and allocable efficient market decisions. This implies the need for an additional set of mitigation strategies which aims primarily at supplementing and enlightening individual market decisions regarding hurricane preparedness, recovery and redevelopment. Attempts to educate the housing consumer about hurricane might include brochures and other materials distributed to new and prospective residents of the community, informing them of the nature and location of hurricane hazards and informing them about what to look for in a new home or business (such as elevation and flood-proofing). The dissemination of information on the supply side might take the form of construction practice seminars for coastal builders and developers, introducing both conventional and innovative approaches to building and designing structures and to siting and planning the orientation of buildings in vulnerable locations.

ARTICLE SEVEN

DAMAGE ASSESSMENT PROCESS

7.1 Damage Assessment. One of the most important parts of a City's response to an emergency or disaster situation is damage assessment. It is a key step in caring for the long-term needs of the people in the community. The process determines what has happened, what the effects are, which areas are hardest hit, what situations must be given priority and what types of assistance are needed (e.g. local, state, or federal).

7.2 Damage Assessment Teams. Trained observers should be used to assess damage. This can be accomplished by the local Damage Assessment Team (DAT), reference Article 4, Section 4.4. To conduct an accurate damage survey, local governments must have capable DATs. These teams should be identified and trained in advance of the disaster. The composition will vary depending on the severity, type of damage and the availability of personnel. Each team should have a team leader who makes sure the team has the proper forms, maps with identified areas marked, and transportation. During joint damage assessment activities involving the State/FEMA, the City should have a team member to match up with State and Federal DAT members at all times.

7.3 Sequence of Events Leading to a Presidential Declaration. Public Law 100-707, the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 (replaces Public Law 93-288, the Disaster Relief Act of 1974), which is the authorization for Federal assistance to local or State governments through a Presidential Declaration of an emergency or major disaster, requires "as a condition of any disaster loan or grant made under the provisions of this Act, the state or local government shall agree that the natural hazards in the areas in which the proceeds of the grants and loans are to be used shall be evaluated and appropriate action shall be taken to mitigate such hazards, including safe land use and construction practices, in accordance with standards prescribed or approved by the President after adequate consultation with appropriate elected officials of general purpose local governments and the state shall furnish such evidence of compliance with this section as may be required by regulation" (FEMA, 1989). The following sections explain how a Declaration is secured and how local governments get involved.

7.3.1 Initial Damage Assessment. Immediately following a disaster, an initial damage assessment must be performed by the City to assess the impacts of the disaster. An official of the City will be designated to conduct this generalized, preliminary

post-disaster damage assessment and provide to the City Emergency Management Director within 24 hours. This assessment should provide a rough estimate of the type and extent of damage. Often this will require the coordination of the various municipal governments who will also perform their own damage assessments. Once the information has been generated, it should be transmitted to the City Emergency Management Office by telephone or facsimile and followed up with a submittal of a General Emergency Incident Report Form (Appendix A). Often in the aftermath of a major disaster that has generated obvious, extensive damages, the State and FEMA, upon request, will join the local government in completing the initial damage assessment.

7.3.2 Local Declaration of Emergency. Local jurisdictions have the authority to declare a local "state of emergency" pursuant to Section 252.38(6)(e), F.S. Even though a local state of emergency declaration can be initiated by a City at any time, it must be declared prior to requesting response or recovery assistance from the County/State. Doing so lets decision-makers know that the emergency situation is beyond the response or recovery capabilities of the local jurisdiction. The State will not initiate the damage assessment process, nor seek a Presidential Declaration for a city that is not declared a local state of emergency.

The enactment of such a declaration would enable municipalities/counties to

- request State assistance, if needed;
- evoke emergency related mutual-aid assistance;
- waive the procedures and formalities otherwise required of the political subdivision by law, to respond to the emergency.

These measures pertain to:

- the performance of public works;
- entering into contracts;
- incurring obligations;
- hiring permanent/temporary workers;
- using volunteers;
- securing rental equipment;

- the acquisition and distribution of supplies; and
- the appropriation and expenditure of public funds.

7.3.3 Preliminary State/Local Assessment. In situations where it is not an obvious conclusion that a disaster has had a major impact on a City, the State will initiate a damage assessment with the affected local government. The action is taken to document the severity of the impact and justify the need to pursue a request for Presidential Declaration. When the damage is of such a magnitude that it would appear a Declaration is eminent, this assessment would be combined with FEMA, thereby eliminating this step and the assessment process.

If this step is initiated, local jurisdictions can expedite the process by having the appropriate maps of the damaged areas, personnel, and transportation available to take State damage assessor to effected sites. The more expediously the data can be collected, the quicker a potential disaster Declaration can be obtained.

7.3.4 State of Emergency by the Governor. If a city determines the emergency or disaster is beyond their ability to effectively respond, a state of emergency can be declared by the Governor through an executive order or proclamation. The action of the governor will be in support of the local jurisdictions expressed needs. The Declaration of a state of emergency does the following:

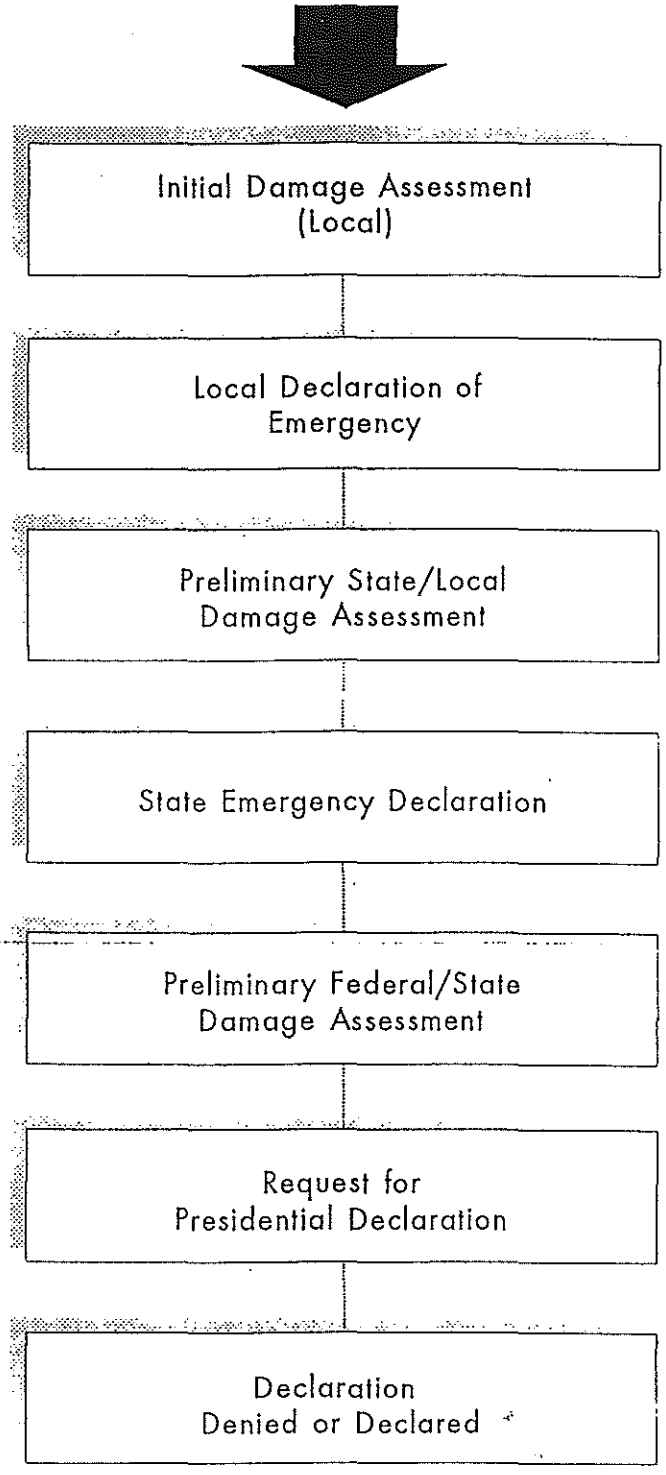
- activates the emergency response, recovery, mitigation phases of the State and local emergency management plans; and
- provides authority for mobilization and deployment of all resources to which the plans refer, pursuant to Section 252.31-60, F.S., or any other provisions of law relating to emergencies.

7.3.5 Preliminary Federal/State Damage Assessment. Prior to recommending a disaster declaration for a city, FEMA will perform a damage assessment to determine if there is sufficient damages to justify a request for a Presidential Declaration. If it is obvious that there is sufficient damage for such a request, FEMA will be asked to participate in a joint local/State preliminary damage assessment to further substantiate the request. This approach will eliminate the need to conduct separate local, State, and Federal assessments. The data collected during the preliminary damage assessment will be used by the State when

preparing the formal request for Federal disaster aid.

7.3.6 Request for Presidential Disaster Declaration. When State and local resources are inadequate to effectively respond to an emergency or major disaster, public law 100-707, allows for Federal assistance through a Presidential Disaster Declaration. This assistance is requested through the Governor if the situation meets the criteria for a Declaration. The Governor submits a written request to the President through the Federal Emergency Management Agency, Region IV, in Atlanta, Georgia. If FEMA concurs with the request, it is sent to the President, who determines whether the request will be approved or rejected. The response is transmitted through FEMA, Region IV, back to the Governor.

SEQUENCE OF EVENTS LEADING TO A PRESIDENTIAL DECLARATION



7.4 Public and Private Damage Assessment. In the aftermath of a disaster, both public and private damage assessments must be performed because of the corresponding types of Federal/State assistance available. Each type of assessment is designed to quantify the eligible amount of damage a community incurred. Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, the Hazard Mitigation Grant Program, creates a new program to fund additional hazard mitigation measures "which substantially reduce the risk of future damage, hardship, loss or suffering in any area affected by a major disaster". Specifically, this program can be used to relocate susceptible property that was not damaged by a hurricane and prevent it from future damage. Hence, this section provides an opportunity for the disaster area to fund large scale mitigation land use scenarios that previously were not funded by FEMA (FEMA, 1989). Section 406 provides an assistance program for public entities. This program provides funding for public relocation projects such as roadways. Section 406 authorizes "Large In-Lieu Contributions" for public and certain private non-profit facilities. If the local government or landowner determines that the public welfare would not best be served by repairing, restoring, or replacing the damaged facility, it may elect to receive a contribution not to exceed 65% of the federal contribution of eligible work of repair.

7.4.1 Public Damages. With the expansion of FEMA regulations addressing hazard mitigation assistance for public facilities (Hazard Mitigation Grant Program, section 404), it is more important than ever for local governments to have identified mitigation measures prior to a declaration. This includes any damage incurred by a publicly owned structure or facility which is owned by a public entity. This could include roads, bridges, buildings, utilities, etc. To be eligible, the damages must fall in one of the seven basic categories of eligibility. They include:

Debris Clearance - this category includes all storm induced debris on: public roads, including the rights-of-way; other public property; and private property when undertaken by local government forces. It can also cover the cost of public structure demolition when a structure was made unsafe by the disaster.

Protected Measures - this category addresses a need to provide emergency measures designed to protect life, safety, property and health. For example, evacuation, traffic control, barricades, etc.

Road Systems - this category includes roads, streets, bridges, culverts and traffic control devices. The categories of damage might range from some minor damage requiring repairs to complete washout or destruction.

Water Control Facilities - eligible damages under this category include dikes, levies, dams, drainage channels and irrigation works.

Public Building and Equipment - this should include the number and cost of buildings, supplies and/or inventory and vehicle or equipment damaged or destroyed.

Public Utility Systems - public utility systems that sustain damage could include the water system, sanitary sewer, storm drains, light and power and other utilities.

Other - the "other" category includes park and recreational facilities, public facilities under construction, and other public facility damages that do not reasonably fit in one of the six other categories.

7.4.1.1 **Public Damage Assessment Reporting.** Public damage assessment is performed in the field using Form A (Appendix B). It is used to report the damage done on each individual site. Four individual site entries can be made on each Form. Once the public damage information has been collected on Form A, Form B is used to summarize, by category, information gathered at all sites within each political jurisdiction within the city that received damage to public property (Appendix C).

7.4.2 **Private or Business Categories.** The purpose of individual damage assessment is to determined the extent to which individuals and private business have been impacted by the disaster. There are two basic categories of eligible individual damage that can be reported and assessed for damages. They include:

Damage to Private or Individual Dwelling - a person whose residence has been damaged due to a disaster may qualify for various forms of disaster assistance. Water damage on the interior or wind damage to shingles, windows or siding are examples. Mobile homes should be included in this category as a separate entry. When damage assessor go into the field, they will estimate the victim's insurance coverage, estimate the victim's income, and determine the inhabitability and type of the victim's home.

Damages to Business and Agriculture - privately owned business that were damaged or destroyed by the disaster can qualify for individual assistance programs. Businesses include buildings, inventory and equipment. Agricultural damage should consist of partial and total damage to farm buildings, the number of livestock missing or destroyed and the number of acres of crops destroyed.

7.4.2.1 Individual Assessment Forms. Performing damage assessments to quantify individual loss and suffering is much different from performing public damage assessments. By using Forms C & D and instructions on Appendixes D and E, assessors are able to document the extent of individual damages to homes, businesses, agriculture and jobs.

ARTICLE EIGHT

DISASTER RECONSTRUCTION AND REDEVELOPMENT

8.1 Intent: Following a damaging disaster and enactment of a building moratorium, it is the intent of the City to allow rebuilding and redevelopment in an orderly manner. The City will control the issuance of building permits to manage the locations, timing and sequence of reconstruction and repair. It is further the intent of this Article that the City establish, prior to a disaster, a special Reconstruction Task Force as defined in Article 4, Section 4.5 of this Plan. The Task Force will oversee the recovery and reconstruction process and serve as an advisory body to the City Council on reconstruction/redevelopment issues. The main responsibility of this body will be to identify opportunities to mitigate future storm damages through the management of redevelopment standards. To further the intent of this Section, the City will make effort to develop its capacity to identify and orchestrate various post-disaster reconstruction resources, while at the same time ensuring maximum local controls over the reconstruction and redevelopment process.

8.2 Disaster Reconstruction/Redevelopment: Disaster reconstruction/redevelopment addresses the removal, relocation or structural modification of damaged structures for both short and long-term repair or replacement. As a condition of any Federal disaster loan or grant, the City shall agree that the natural hazards in the areas in which the proceeds of the grants and loans are to be used shall be evaluated and appropriate action shall be taken to mitigate such hazards, including safe land use and construction practices; thus indicating a long-term, comprehensive approach to mitigation.

8.2.1 Determination of Damage: A primary task of the local damage assessment team is to identify structures which, as a result of the disaster event, have been damaged. The local damage assessment team will recommend to the Building Inspector those structures which have: 1) been destroyed; 2) received major damage; or 3) received minor damage. The Building Inspector will then inspect the damaged structure and place each structure in one of the above categories.

8.2.2 Declaration of a Building Moratorium: The initial post-storm reconstruction moratorium shall be declared in effect upon the occurrence of the following:

8.2.2.1 The City is declared a disaster area by either the Governor of the State of Florida or the President of the United States.

8.2.2.2 The City Council declares a local "state of emergency" and begins the initial building moratorium when the Council finds that a moratorium is necessary for the protection of lives, safety and property, or due to the inability of the City to maintain acceptable levels of public order and service. The City Council, based upon the above finding, may extend the initial moratorium until such time as a state of emergency no longer exists.

8.2.3 Initial Building Moratorium: Upon the declaration of a building moratorium, the initial post-moratorium shall be in effect for a minimum period of 48 hours. No building permits shall be issued during this time period. After expiration of this initial moratorium, the following moratorium shall apply:

8.2.3.1 Destroyed Structure Moratorium: No building permit shall be issued within thirty (30) days following the expiration of the initial moratorium for the replacement of any structure which has been destroyed, as defined in Section 4.3 of this Plan. All the replacement buildings shall be subject to meeting all the requirements of the Land Use Codes, zoning ordinances, zoning maps and all applicable sections of City and Municipal Ordinances and applicable codes prior to the issuance of a building permit. Non-conforming uses destroyed shall be designed and constructed consistent with the adopted Future Land Use Plan Map, Land Development Code and current building regulations.

8.2.3.2 Major Damaged Structures Moratorium: No building permit for repairs of a major damaged structure shall, as defined in Section 4.2 of this Plan, be issued for at least seven (7) days following the expiration of the initial moratorium. All repairs to a major damaged structure shall meet the requirements of the Land Use Codes, zoning ordinances, zoning maps and all applicable sections of City and Municipal Ordinances and applicable building codes prior to the issuance of a building permit. All non-conforming structures must be upgraded and will be inspected prior to issuance of Certificate of Occupancy.

8.2.3.3 Minor Damaged Structures Moratorium: Permits for the repair of minor damaged structures, as defined in Section 4.1 of this Plan, may be issued 48 hours following the expiration of the initial moratorium. All repairs to minor damaged structures shall meet the requirements of the Land Use Codes, zoning

ordinances, zoning maps and all applicable sections of City and Municipal Ordinances and applicable codes prior to issuance of a building permit.

8.2.3.4 Outstanding Building Permits Moratorium: All building permits which were issued prior to the storm event shall be revoked and shall not be reissued for a minimum period of thirty (30) days following the expiration of the initial moratorium, unless upon finding by the Chief Building Inspector on a case-by-case basis that sufficient inspection staff is available to adequately inspect the structures, should construction again resume. All permits issued prior to the disaster event must meet additional requirements of the Land Use Codes, zoning ordinances, and zoning maps before building can resume. Application for building permits revoked in this Section shall be reissued at no charge.

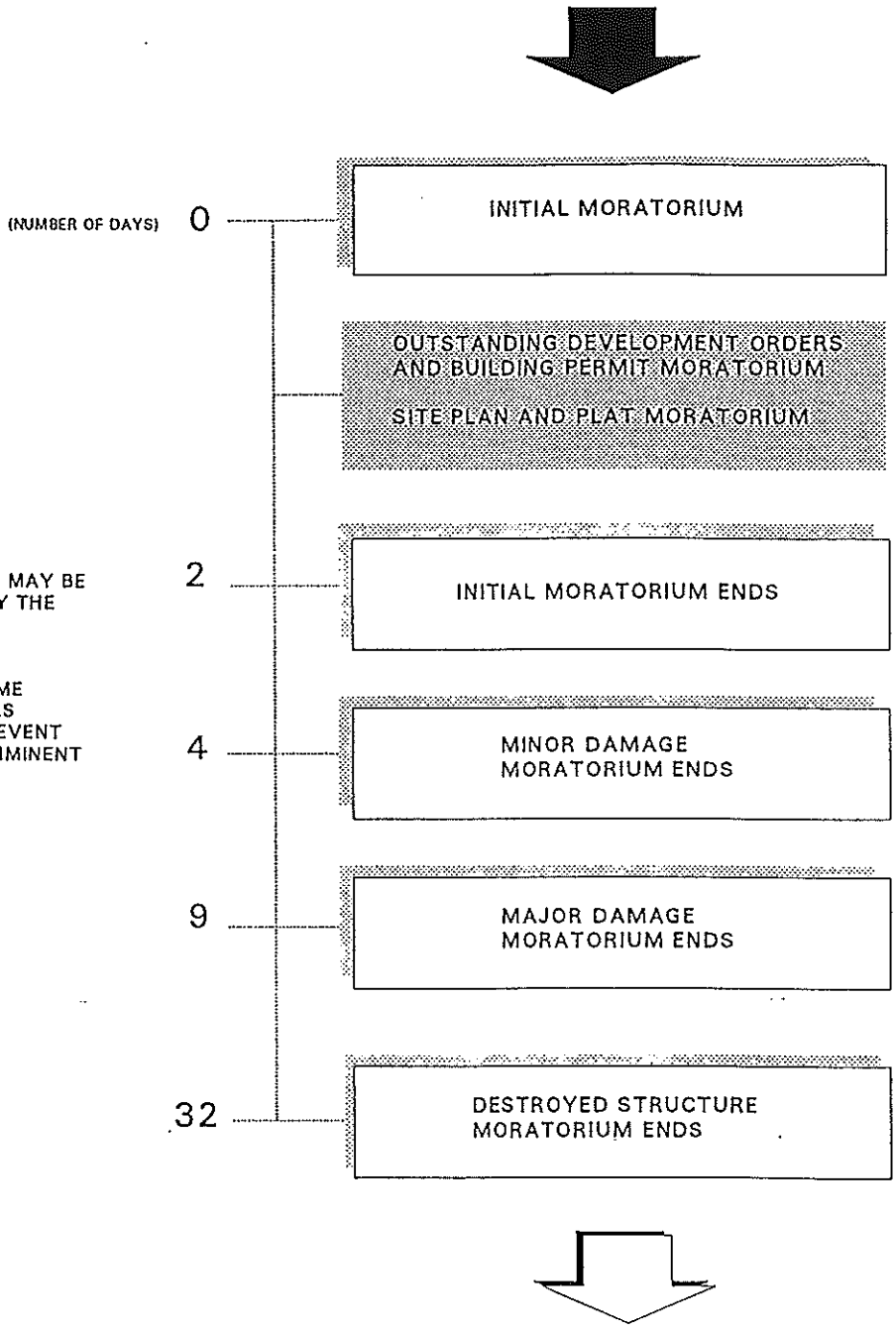
8.2.3.5 Site Plan Review: Site plans which have been submitted to the City prior to the disaster shall not be reviewed by the staff, Planning and Zoning Board or City Council for a period of thirty (30) days following the expiration of initial moratorium. All submitted dates and review periods shall be adjusted accordingly to reflect a time period covered by the thirty (30) day moratorium.

8.2.3.6 Review Procedures Moratorium: No new site plans, zoning requests or subdivision plats shall be accepted by the City for a period of thirty (30) days following the expiration of the initial moratorium. All submittal dates and review periods shall be adjusted accordingly to reflect the time period covered by this thirty (30) day moratorium.

8.2.3.7 Duration of Moratorium: All moratoriums other than the initial moratorium as in Section 9.2.3 shall be in effect for the length of time described above and may be cancelled or extended by the City Council.

8.2.4 Emergency Repairs: While a moratorium is in effect, no construction or reconstruction activities may be undertaken, except in only minor interior repairs and emergency repairs necessary to prevent injury or loss of life or imminent collapse or other substantial additional damage to a structure. For illustrative purposes only, items that constitute minor repair may include temporary roof repairs to avoid further water damage, minor repairs to steps and a temporary shoring up of a structure to avoid imminent collapse.

DISASTER



* DURATION OF MORATORIUM MAY BE CANCELLED OR EXTENDED BY THE CITY COUNCIL.

EMERGENCY REPAIRS ANYTIME (EX. MINOR INTERIOR REPAIRS REPAIRS NECESSARY TO PREVENT INJURY, LOSS OF LIFE OR IMMINENT COLLAPSE.)

PRE-DISASTER STATUS

8.3 Reconstruction Task Force: The Reconstruction Task Force, created as defined in Section 4.5 of the Plan, shall be activated and mobilized upon the declaration of the initial building moratorium. The Task Force shall advise and make recommendations to the City Council on a wide range of post-storm reconstruction issues.

8.3.1 Responsibilities of the Reconstruction Task Force: The Reconstruction Task Force's primary function is to receive and review damage reports and other analysis of post-storm circumstances and to compare these circumstances with mitigation opportunities identified prior to the storm to discern appropriate areas for post-storm change and innovation. When needed, the Reconstruction Task Force can review in a more specific fashion alternative mechanisms for bringing these changes about and recommend the coordination of internal and external resources for achieving these ends.

8.3.2 Review and Mitigative Recommendations: In addition to the responsibilities above, the Reconstruction Task Force shall review the nature of damages, identify and evaluate alternative program approaches for repairs and reconstruction, and formulate recommendations for handling community recovery. The Task Force shall also have the following responsibilities:

- Recommend rezoning changes in areas of damage
- Reduction in residential density (i.e. from multi-family to single-family)
- Change from residential to commercial or mixed use in order to reduce evacuation needs
- Set a calendar of milestones for reconstruction tasks in conjunction with the City Council and Department Heads
- Insure building and rebuilding is strictly to code
- Initiate requests for repairs to critical water, sewer and other facilities
- Recommend the expiration or extension of a moratorium for a "major" and "minor" repairs
- Recommend the lifting or extension of a moratorium for new development
- Evaluate hazards and the effectiveness of mitigation policy and recommend the amendment of

policies if necessary

- Recommend clustering of development on the most protected portions of lots
- Initiate recommendations for negotiations for relocation and acquisition of property
- Recommend relocation of public infrastructure and services in hazard zones
- Participate in Federal hazard mitigation planning

The Task Force shall recommend any changes in zoning, subdivision regulation, setback, density, elevation requirements, building codes or any other ordinances or land uses which it deems necessary or advisable to prevent a recurrence of a disaster of this nature. Within the coastal high hazard area, the City shall allow no new permanent residential structures which do not meet the construction standards established in the Land Development Code.

8.3.3 Non-Mitigative Recommendations: The Reconstruction Task Force may also undertake a similar process for non-mitigative local objectives and opportunities. The Task Force may recommend the City Council's consideration for the following specific opportunities:

- enhancement of local recreational and open space opportunities
- enhancement of public access to Santa Rosa Sound
- enhancement and restoration of local natural ecosystems
- reduction of traffic congestion, noise, and other traffic-related problems
- enhancement of the long-term economic vitality of the local commercial and industrial base
- other objectives which further the stated goals and policies of the City's Comprehensive Plan and Land Development Codes.

8.4 Conditions for Issuance of Building Permits: Upon expiration or cancellation of an applicable building moratorium enacted in Section 9.2 of this Plan, the following additional

requirements, in addition to all applicable planning and zoning codes, shall be met prior to issuance of a building permit. Permitting of new development and redevelopment in the coastal high hazard area shall also be in consideration of impacts on hurricane evacuation times.

8.4.1 Destroyed Structures: The following additional requirements must be met prior to the issuance of any building permit for construction of a new structure.

- A post-storm survey and/or site plans as applicable, of the lot and proposed structure.
- Site plan approval as provided by applicable planning and zoning ordinances, zoning maps and LDC.
- On-site inspection of lot by Chief Building Inspector or his representative.
- Water and sewer will be restorable at street frontage of lot.
- Direct, uninterrupted, approved vehicular access to lot.
- Electrical service restorable to building site.
- All debris removed from lot.
- Septic system improvement permits issued, if required.

8.4.2 Major Damaged Structures: The following additional requirements must be met prior to issuance of a building permit for a major damaged structure.

- A post-storm survey and/or site plan, as applicable, of the lot and structure if there is a proposed increase of footprint of a structure over the pre-storm structure. In addition, the following information shall be provided on a survey/site plan:
- the location of all property boundary lines
- require the upgrading of non-conforming structures
- site plan approval

- on-site inspection of lot by the Chief Building Inspector or his representative
- water and sewer will be restorable on street frontage of lot
- direct, uninterrupted, approved vehicular access to lot
- electrical service restorable to building site
- septic system improvement permits issued, if required

8.4.3 Minor Damaged Structures: The following additional requirements must be met prior to issuance of a building permit to repair a minor damaged structure:

- A post-storm survey and/or site plan, as applicable, of the lot and structure if there is a proposed increase in the footprint of the structure over the pre-storm structure. In addition, the following information shall be provided on the survey/site plan:
- the location of all property boundary lines
- site plan approval
- on-site inspection of lot by the Chief Building Inspector or his representative
- vehicular access to lot
- all debris removed from lot
- septic system improvement permits issued, if required.

8.5 Policy on Reconstruction of Roads, Easements and Infrastructure: Provide roads, public facilities and services which guarantee to the greatest extent possible the health, safety and welfare of the community and which does not require future expenditures for the public infrastructure in the Coastal High Hazard Area.

8.5.1 Public Facilities: Repair in place facilities which are essential to the immediate health, safety, or welfare of citizens, or work to provide the impaired service to residents

through alternative means. The City shall coordinate the planning and provision of emergency water and sewer services with Okaloosa County and the City of Fort Walton Beach. This shall include, but is not limited to, executing and entering into local agreements, locating and inventorying existing lines, installing meters and conducting engineering studies to determine the amount of pressure/capability available as compared to required. In case of an emergency disaster effecting water and sewer facilities, contact the County Emergency Management Director at 651-0314 (office), 664-8152 (beeper), 244-2522 (home) or 582-1239 (cellular). Also, for emergency water supply to critical areas, contact Fort Walton Beach Public Works Department at 243-3141 (City Hall), 243-2070 (field office) or 863-2266 (home). For sewer only, contact Environmental Waste Systems at 862-7141 (office) or 244-3878 (home).

8.5.2 Public Roads and Easements: Prior to the consideration of an expenditure of public funds for the repair or construction of City roads which are destroyed or damaged by a disaster, the City shall conduct adequate studies and explore alternative solutions, including, but not limited to, abandonment procedures, special assessment and condemnation.

8.5.3 Infrastructure: No public infrastructure shall be allowed in the coastal high hazard area, except for that needed to provide public access to the shoreline, to serve public parks that have been approved by the City, state and federal agencies, and protect or enhance natural resources. Public expenditures in the CHHA shall be limited to maintaining the existing service capacity, except for recreation facilities. Provision of water and sewer service at private expense to existing lots or record will be permitted, as long as such provision does not result in conflict with policies for: criteria adopted for determining when structures can be rebuilt; the land development regulations; and the state policy to limit public expenditures that subsidize development permitted in coastal high hazard areas, except for enhancement of natural resources. New sanitary sewer facilities in the coastal high hazard area shall be flood-proofed.

8.5.4 Private Roads and Easements: It shall be the policy of the City not to expend public funds for the repair reconstruction of any private road or vehicular easement where it is damaged or destroyed as a result of a disaster, except in conjunction with the repair and maintenance of the City's water and sewer system.

8.6 Acquisition of Property: The aftermath of a disaster can present an opportunity to achieve substantial progress in hazard mitigation by the rapid acquisition of land. The City will take

advantage of opportunities which may arise to acquire or purchase land following disaster. To this extent, the City will establish purpose and identify in advance where priority areas are located and will develop in advance decision making and funding mechanisms to ensure rapid acquisition. The selection of parcels to be purchased based on a criterion of hazard reduction per dollar spent could maximize the use of public money for such a program. The City shall identify objectives acquisition areas which would satisfy multiple community objectives, including, but not limited to, open space, parks and recreation sites, historic or scenic areas, or areas for location of City facilities and any other use allowed by law.

ARTICLE NINE

FEDERAL ASSISTANCE PROGRAMS AND PROCESS

9.1 Federal and State Disaster Aid Programs. Following a major disaster, there are a large number of Federal and State programs available to aid in disaster relief and reconstruction. The programs can provide assistance or funds to local government units as well as providing information about assistance that is available to individuals, business, families and non-profit associations. Some programs can only be implemented upon declaration of a major disaster by the President of the United States. Other programs can be made available independently of a Presidential Declaration or a major disaster or emergency.

9.2 Policy. It should be the policy of the City to appoint an assistant facilitator-consultant who, as directed by the City, will be responsible:

- determining the types of assistance available to the City and the type of assistance most need
- assisting in the coordination of Federal disaster recovery efforts
- coordinating Federal and State programs of assistance
- informing the community of types of assistance programs available
- recommending to the Recovery Task Force and the City Council programs which are available to the City and then act as facilitator in securing these programs

9.3 Federal Assistance Process. When all of the eligible public and individual damages have been assessed, and the request for a Presidential Disaster Declaration has been prepared and approved by the President, a variety of Federal programs can be made available to public entities and individuals. These programs are designed to bring a community, and its residents, back to a pre-disaster condition. It is important to note that there is no longer separate public and individual disaster declarations. When a Presidential Disaster Declaration is approved, both individuals and public assistance are automatically offered. The following is a brief explanation of both types of assistance.

9.3.1 Public Assistance. Public assistance is that part of disaster relief through which the Federal government supplements the efforts of State and local governments to return the disaster area to pre-disaster conditions. These efforts primarily address the repair and restoration of public facilities, infrastructure, or services which have been damaged of destroyed. There are two types of public assistance authorized: "emergency" and "permanent" work. Emergency work includes efforts to save lives, protect property and maintain operation of essential facilities on a short-term basis until permanent restoration can be made. Permanent work involves action necessary to repair, restore, restruct or replace public, and certain private non-profit, facilities damaged or destroyed.

Project application for public assistance may be approved to fund a variety of projects that fall within the eligibility categories identified in Section 7.4.1 of this Plan.

9.3.2 Flood Insurance Requirements. One very important element in receiving public assistance are the requirements concerning flood insurance. Public Law 100-707 makes it very clear that all applicants for public assistance must have flood insurance. If they do not have flood insurance at the time of the disaster, eligible cost will be reduced by the maximum amount of flood insurance proceeds the applicant could have received had the facility been fully covered by flood insurance. Also, applicants will be required to commit to maintaining insurance coverage for the total eligible amount of the damaged as a condition to receive public assistance. No assistance for any facility will be available in future disasters, unless the required insurance has been obtained and maintained.

9.4 Method of Funding. Recent changes in Public Law 93-288 (Public Law 100-707) have streamlined the funding methods for public assistance programs. Currently, there are two types of grants (funding methods) available that are based on the cost of the project, and two funding options available, either of which can be used under each of the grants. Each grant is explained below.

9.4.1 Large Project Grant. When the total cost to repair or replace eligible public damage is $36,500.00 (adjusted annually according to the Consumer Price Index) or more, a large public grant can be secured. Such grants are used to restore public or private non-profit facilities to their pre-disaster condition.

9.4.2 Small Project Grant. When the total cost to repair or replace eligible damage is less than $36,500.00, a small project grant can be secured. Once approved, these funds are made totally available to the beginning of the project. At its completion, the applicant certifies the work is completed. The State will perform a final inspection.

9.5 Funding Options. The following funding options can be used by the applicant if they feel it will benefit their situation. They are designed to give the applicant a greater degree of flexibility. Both options can be used under large or small project grants, and are voluntary.

9.5.1 Alternate Projects. Often, when a community applies for a large or small grant, they will determine that the public welfare would not be best served by repairing, restoring, reconstructing, or replacing a damaged facility. Under the "alternate project" option, they community could receive 67.5% of the original damage estimate for use on: other public facilities; constructing new facilities; or, funding hazard mitigation activities. Funds necessary for completing the alternate project would come from local sources.

9.5.2 Improved Projects. When the applicant decides to exceed the original design and value of a damaged facility instead of simply restoring to its pre-disaster condition, the "improved project" option can be approved. The applicant could receive 87.5% (Federal/State contribution) of the original damage estimate and provide the remaining funds necessary to complete the project.

9.6 Public Assistance Process. The process for securing public assistance for a community site, once a Presidential Declaration has been declared, is described below. The process involves all levels of government at various stages.

9.6.1 Applicants Briefing (Step 1). As soon as possible, following the President's Declaration of an emergency or major disaster, the State Coordinating Officer and the State Public Assistance Officer will coordinate an applicant's briefing at the local level. This meeting acquaints the applicants with a public assistance process and project administration. Appropriate City personnel should attend the applicant's briefing, including those who will:

- know the general location of all disaster damages;
- have the authority to sign for Federal assistance for the City, including the "Notice of Interest" form (Appendix F); and
- be responsible for recording data and maintaining documentation of time, repairs and costs.

9.6.2 Inspector's Briefing (Step 2). Once Notice of Interest (NOI) forms are collected, they are reviewed to determine the types of public damages applicants have identified. At this point, Damage Assessment Teams (DAT) are formed based on the need expressed on the NOIs. Each DAT should have Federal/State and local membership. These assessors are briefed on their appropriate procedures to do a site-by-site detail damage assessment, and how to prepare a damaged survey report.

9.6.3 Damage Survey Report Preparation (Step 3). The DATs are then sent into the field. Each damage site is surveyed and a Damage Survey Report (DSR) is prepared. The FEMA DAT member will prepare the DSR. The State and local DAT members sign the DSR upon completion, certifying that they concur or do not concur with the scope of work and the estimated repair costs.

9.6.4 FEMA and State Review (Step 4). As the DSRs are prepared, they are reviewed by FEMA and the State Public Assistance Officer for completeness. Problems are discussed in an effort to resolve them prior to FEMA's formal review.

9.6.5 Application Preparation (Step 5). Once the State has approved the DSRs, a State Project Application is prepared that includes all DSRs, and submitted to the Disaster Recovery Manager (FEMA) for approval.

9.6.6 Advance Funds (Step 6). Once the Project Application has been approved, funds are advanced to the State through a letter of credit. For (large project) grants, the State then forwards the money to the approved applicants on a cost reimbursement basis. For (small project) grants, the entire amount of the proposed project is forwarded to the applicant.

9.6.7 Completion of Work (Step 7). When the "large project" is completed, the applicant will submit a Project Summary of Documentation Form to DEM, along with request for final inspection. Once the State has reviewed the Documentation Form,

a final inspection will be scheduled. When a "small project" is completed, the applicant must submit to the DEM a certification that the work has been completed in accordance with the Project Application. If the total amount of the grant was not used, the applicant can use the remaining funds for other appropriate purposes, subject to State approval.

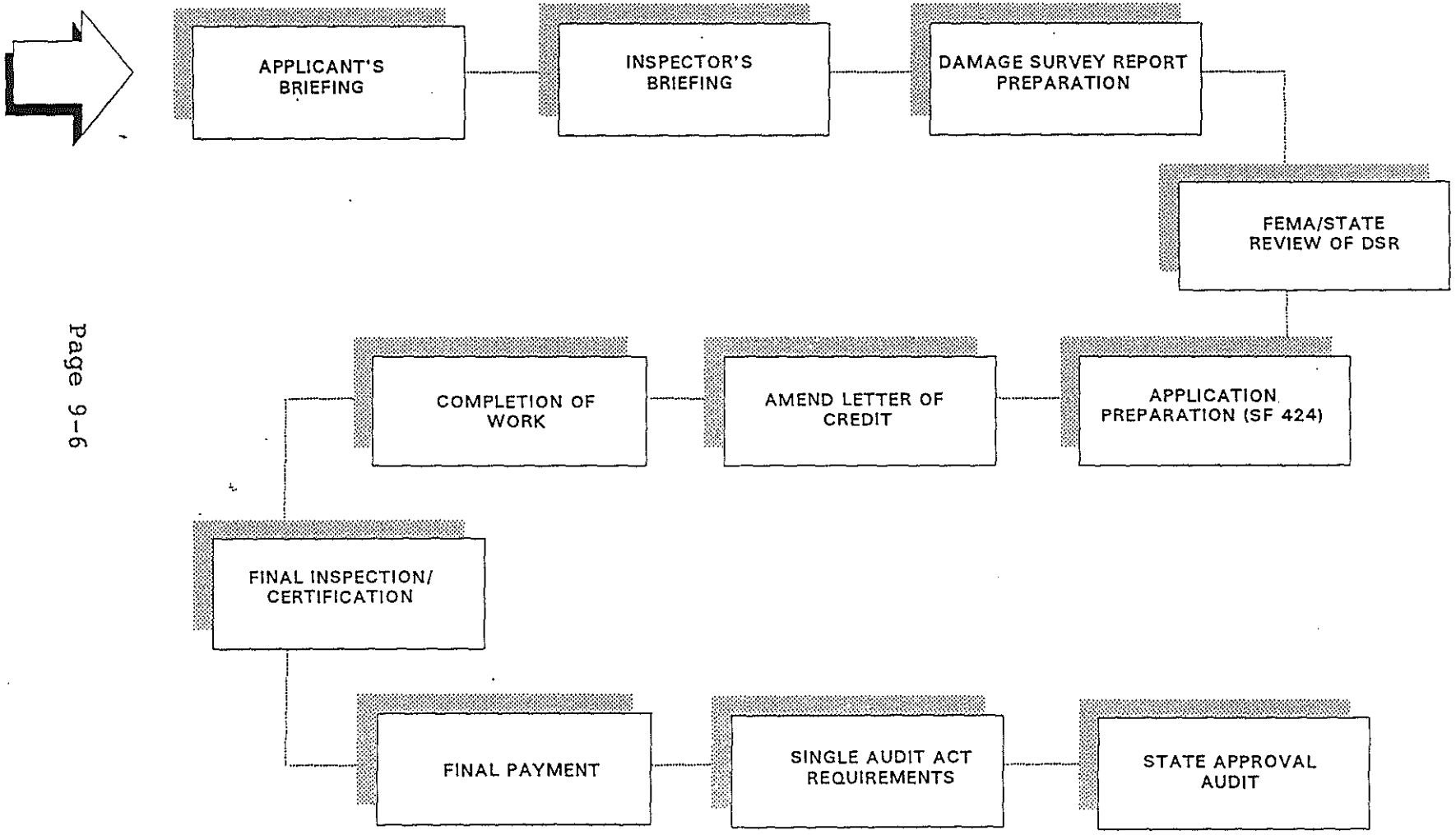
9.6.8 Final Inspection and Certification (Step 8). The State will perform the final inspection to ensure the project was completed per the scope of work, and certify that the work and cost are in compliance with the provisions of the FEMA/State Agreement.

9.6.9 Final Payment (Step 9). For large projects, once the final inspections are completed and any discrepancies are resolved, the applicant will submit a request for final payment.

9.6.10 Single Audit Act (Step 10). All recipients of public assistance will be audited per the requirements of the Single Audit Act of 1984, Circular OMB A-128.

9.6.11 State Approval of Audit (Step 11). Once the audits are performed, the State must approve the audit report. All audit exceptions and discrepancies will be resolved prior to closing out the project.

PUBLIC ASSISTANCE FLOW CHART



9.7 Individual Assistance. After the President signs the disaster Declaration, it is important to inform affected individuals of the programs available to them, and to assist them in obtaining any aid to which they may be entitled. To make it convenient for affected individuals to obtain information and assistance, disaster application centers may be established in each of the declared Counties. Representatives of Federal, State, local and volunteer organizations are then made available at these centers to assist disaster victims applying for assistance. There is a wide range of programs providing disaster assistance to individuals including the following:

9.7.1 Small Business Administration (SBA). Once implemented, the SBA program can offer low interest loans to individuals, business and farmers for refinancing, repair, rehabilitation or replacement of damaged property (real and personal). A SBA declaration can be independently or in concert with a Presidential Declaration. There must be a minimum of 25 homes or businesses with 40% or more insured losses and/or 5 business with substantial economic or physical losses.

9.7.2 Temporary Housing. In the event of a presidentially declared disaster, a Temporary Housing Program may be authorized in order to meet the housing needs of disaster victims. The Program has several components including:

9.7.2.1 Mortgage and Rental Assistance Program. Applicable for individuals or families who have received written notice of eviction or foreclosure due to financial hardship caused by the disaster.

9.7.2.2 Rental Assistance. Provided to homeowners of renters whose dwelling is determined unlivable as a direct result of the disaster.

9.7.2.3 Minimal Repairs Program. Provides money for an owner occupied, primary residences which have sustained minor damage, and are unlivable as a direct result of the disaster.

9.7.2.4 Mobile Homes or Other Readily Fabricated Dwellings. When all other avenues are exhausted, FEMA may initiate the mobile home program. Such homes are moved to, or near, the disaster site and set-up. The State of Florida does not have a temporary housing program. Therefore, FEMA will manage the temporary housing program, should it be needed in Florida.

9.7.3 Individual and Family Grant Programs. The Individual and Family Grant Program provides grants up to $10,000.00 to help families meet serious needs and necessary expenses that are not covered by other governmental assistance programs, insurance or other conventual forms of assistance. Financial aid can be provided under the following categories

- medical expenses;
- transportation costs;
- home repair;
- replacement of essential property;
- protective measures; and
- funeral expenses.

75% of the costs are funded by FEMA and 25% by the State and/or the local government.

9.8 Disaster Unemployment Assistance. Individuals unemployed as a result of a major disaster, and not covered by regular State or private unemployment insurance programs, will be eligible for unemployment benefits. The weekly compensation received will not exceed the maximum amount of payment under the Unemployment Compensation Program of Florida, and may be provided until an individual is re-employed, or up to 26 weeks after the major disaster is declared, whichever is the shortest period.

Other individual assistance programs that could be activated, if appropriate, are:

- food coupons (U.S. Department of Agriculture)
- food commodities
- legal services
- crisis counseling
- economic injury loans
- tax information
- emergency conservation measures program
- agriculture assistance

- Veterans Assistance
- Cora Brown Fund
- waiver of penalty for early withdrawal of funds or certain time deposits

9.9 Conclusion. This Article is designed to briefly described the sequence of events necessary to secure assistance following an emergency or disaster. More detailed information is available by consulting the "disaster assistance manual" (prepared by the Florida Department of Community Affairs, Division of Emergency Management), and the State of Florida Peace Time Emergency Plan (1985 version). Copies of these documents can be obtained through the Division of Emergency Management, 2740 Centerview Drive, Tallahassee, Florida 32399-2100, or by telephone at 904-487-4915.

GENERAL EMERGENCY INCIDENT REPORT FORM

GENERAL EMERGENCY INCIDENT REPORT FORMAT

DATE		TIME
AGENCY	PERSON	COMMUNICATION/SYSTEM
INCIDENT DATE/TIME	INCIDENT TYPE	LOCATION/COUNTY/CITY/LOCALITY

INCIDENT CONCLUDED DATE/TIME	OR CONTINUES

	FATALITIES	
	INJURED (HOSPITALIZED)	LOCATION
	INJURED OTHER	

	HOMES DESTROYED		DAMAGED
	BUSINESS DESTROYED		DAMAGED
	OTHER DESTROYED		DAMAGED

EVACUATION NEEDED	Yes No	EVACUATION NOW OCCURING	Yes No	SHELTERS OPENED	Yes No

NUMBER TO BE EVACUATED NUMBER OF SHELTERS TOTAL EXPECTED TO EVACUATE			
RED CROSS ☐	COUNTY ☐	DHRS ☐	OTHER (DESCRIBE) ☐

SHELTER NAME(S)	LOCATIONS

REQUEST FOR STATE ASSISTANCE

STATE ASSISTANCE REQUESTED	☐ Yes ☐ No ☐ Not Neeeded	Describe.

PUBLIC PROPERTY PRELIMINARY DAMAGE ASSESSMENT ESTIMATE FORM AND INSTRUCTIONS

Public damage assessment is performed in the field using Form A. It is to be used to report the damage done on each individual site. Four individual site entries can be made on each Form A. Brief instructions on how to fill out Form A follows:

DATE: Date form is filled out.

COUNTY: County damage occurred in.

NAME OF APPLICANT: Governmental jurisdiction filling out form.

NAME OF LOCAL CONTACT: Person state/federal personnel should contact.

PHONE NUMBER: Telephone number of contact person.

SITE NUMBER: Sequential number assigned the site.

CATEGORY: The appropriate eligible category (A-G).

LOCATION: Best applicable address available.

DESCRIPTION OF DAMAGE: Brief, but concise description of damage.

IMPACT: Describe impact damage is having on community system.

PERCENT COMPLETE: Percent of repair already undertaken.

COST ESTIMATE: Estimated cost to replace/repair damage.

PUBLIC PROPERTY
PRELIMINARY DAMAGE ASSESSMENT ESTIMATE

DATE COUNTY

APPLICANT INFORMATION

NAME OF APPLICANT	NAME OF LOCAL CONTACT	PHONE NUMBER

DAMAGE CATEGORIES

A.	DEBRIS CLEARANCE	D.	WATER CONTROL FACILITIES	G.	OTHER
B.	PROTECTIVE MEASURES	E.	BUILDING AND EQUIPMENT		
C.	ROADS SYSTEM	F.	PUBLIC UTILITY SYSTEM		

SITE NO.	CATEGORY	LOCATION (Use map, location, address, etc.)

DESCRIPTION OF DAMAGE

IMPACT	% COMPLETE	COST ESTIMATE

SITE NO.	CATEGORY	LOCATION (Use map, location, address, etc.)

DESCRIPTION OF DAMAGE

IMPACT	% COMPLETE	COST ESTIMATE

SITE NO.	CATEGORY	LOCATION (Use map, location, address, etc.)

DESCRIPTION OF DAMAGE

IMPACT	% COMPLETE	COST ESTIMATE

NAME OF INSPECTOR	AGENCY	PHONE NUMBER(S)

PUBLIC PROPERTY PRELIMINARY DAMAGE ASSESSMENT SUMMARY FORM AND INSTRUCTIONS

Once the public damage information has been collected on Form A, Form B is used to summarize, by category, information gathered at all sites within a given political jurisdiction. Form B must be completed for each political jurisdiction within the county that received damage to public property. Brief instructions for completing Form B are as follows:

DATE: Date form is filled out.

COUNTY: County damage occurred in.

NAME OF APPLICANT: Political jurisdiction filling out form.

NAME OF LOCAL CONTACT: Appropriate contact person.

PHONE NUMBER: Telephone number of local person.

POPULATION: Population of applicant's jurisdiction.

TOTAL BUDGET: Total budget of applicant and current balance.

DEPARTMENT BUDGET: Leave blank.

YTD EXPEND: Leave blank.

DATE FY BEGINS: Date local fiscal year begins.

CATEGORY: Appropriate categories (A-G).

NUMBER OF SITES: List the number of sites per category.

TYPES OF DAMAGE: Brief summary of damages.

COST ESTIMATE: Estimated cost to repair/replace category summary.

FUND/ACCOUNT: Leave blank unless there is a contingency fund. Enter total.

AVAILABLE BALANCE: Enter balance of contingency fund.

GENERAL IMPACT 1-2-3: Answer questions briefly.

RESPONSE CAPABILITY: Provide brief explanation.

IMPACT ON PUBLIC SERVICES
IF DECLARATION IS NOT MADE: Provide brief explanation.

NAME OF INSPECTORS: Name of person who did inspection.

AGENCY: Who the inspector works for.

PHONE NUMBER: Telephone number of inspector.

PUBLIC PROPERTY
PRELIMINARY DAMAGE ASSESSMENT ESTIMATE

DATE

NAME OF APPLICANT		NAME OF LOCAL CONTACT	PHONE NUMBER
COUNTY	POPULATION	TOTAL BUDGET	DATE FY BEGINS
DEPARTMENT BUDGET			YTD EXPENDITURES

CATEGORY	NO. OF SITES	TYPES OF DAMAGE	COST ESTIMATE	LOCAL FUND RECOVERY ACCOUNT	BALANCE

A. GENERAL IMPACT

1. Identify and describe damages which contitute a health and/or safety hazard to the general public.

2. Population adversely affected directly or indirectly by the loss of public facilities or damages.

3. What economic activities are affected by the loss of public facility or damages?

B. RESPONSE CAPABILITY

Can the applicant respond and recover from the damages quickly and without degredation of public services? Describe.

C. IMPACT ON PUBLIC SERVICES IF DECLARATION IS NOT MADE
(e.g. referral of permanent repairs, impact on ongoing services and capital improvements, etc.) Describe.

NAME OF INSPECTOR	AGENCY	PHONE NUMBER(S)

PRELIMINARY HOUSING DAMAGE ASSESSMENT ESTIMATES FORM AND INSTRUCTIONS

Performing damage assessment to quantify individual loss and suffering is much different from performing public damage assessment. By using Forms C and D, assessors are able to document the extent of individual damages to homes, businesses and jobs. Brief instructions for filling out each form follow, starting with C.

HEADING: Fill in the city, county, state, and type of disaster.

COLUMN (a): Enter house or apartment number for each unit.

COLUMN (b): Enter best address available for each structure.

COLUMNS (c-d): Check if home is primary or secondary residence.

COLUMNS (e-g): Check if home is a single family, multi-family or mobile home.

COLUMNS (h-i): Check if residence is owner occupied or rented.

COLUMN (j): Check if damage to home is minor, meaning dwelling is uninhabitable, but can be repaired in two days at less than $3,000.00.

COLUMN (k): Major, meaning it will take two or more days, not exceeding $3,000.00.

COLUMN (l): Destroyed, meaning it is not feasible to repair.

COLUMN (m): Inaccessible/no utilities are available.

COLUMN (n): Inhabitable - affected - the basic living unit is unaffected, but a porch, garage, etc., is damaged.

COLUMNS (o-p): Write in the height of the water over the first or second floor.

COLUMN (q): Is the damage site suitable for a mobile home?

COLUMNS (r-t): Check the appropriate column if estimated owner income is low, medium, or high.

COLUMN (u): Check if the basic living unit is substandard.

COLUMN (v): Enter the percent of insured loss.

BUSINESS AND INDUSTRY PRELIMINARY DAMAGE ASSESSMENT RECORD FORM AND INSTRUCTIONS

COLUMN (20): Enter number of employees who will be entitled to receive unemployment insurance.

COLUMN (21): Determine the number of employees needing Disaster Unemployment Assistance by subtracting Column 20 from 18.

COLUMN (22): Determine the estimated days employees needing Disaster Unemployment Assistance will be out of work.

NOTICE OF INTEREST

FEDERAL EMERGENCY MANAGEMENT AGENCY

NOTICE OF INTEREST IN APPLYING FOR FEDERAL DISASTER ASSISTANCE

OMB NO. 3067-0033

DECLARATION NUMBER	PROJECT APPLICATION NUMBER	NOI DATE
FEMA - DR		

THE PURPOSE OF THIS FORM IS TO LIST DAMAGES TO PROPERTY AND FACILITIES SO THAT INPSECTORS MAY BE APPROPROATELY ASSIGNED FOR A FORMAL SURVEY.

REQUIREMENTS FOR FEDERAL DAMAGE SURVEY

A. DEBRIS CLEARANCE

- ☐ On public roads/streets including ROW
- ☐ Other Public Property
- ☐ Private Property *(When undertaken by local Govt. forces)*
- ☐ Strucuture Demolition

B. PROTECTIVE MEASURES

- ☐ Life and Safety
- ☐ Property
- ☐ Health
- ☐ Stream/Drainage

C. ROAD SYSTEM

- ☐ Roads ☐ Streets ☐ Traffic Ctrl
- ☐ Bridges ☐ Culverts ☐ Other

D. WATER CONTROL FACILITIES

- ☐ Dikes ☐ Dams
- ☐ Drainage ☐ Irrigation
- ☐ Levees ☐ Other

E. BUILDINGS AND EQUIPMENT

- ☐ Buildings and Equipment
- ☐ Supplies or Inventory
- ☐ Vehicles or other equipment
- ☐ Transportation Systems
- ☐ Other

F. PUBLIC UTILITY SYSTEMS

- ☐ Water
- ☐ Sanitary Sewerage
- ☐ Storm Drainage
- ☐ Light/Power
- ☐ Other

G. OTHER (Not in the above categories)

- ☐ Park Facilities
- ☐ Recreational Facilities

* Indicate type of facility NOTE: If private non-profit, provide name of facility and/or private non-profit owner.

NAME OF POLITICAL SUBDIVISION OR ELIGIBLE APPLICANT	PRIVATE NON-PROFIT	COUNTY

AGENT/TITLE

BUSINESS ADDRESS (include Zip Code)

BUSINESS TELEPHONE (include Area Code and extension)	HOME TELEPHONE (include Area Code)

BUSINESS AND INDUSTRY
PRELIMINARY DAMAGE ASSESSMENT
RECORD

CITY	COUNTY	STATE	PAGE OF

TYPE OF DISASTER

☐ TORNADO ☐ FLOOD ☐ HURRICANE

DAMAGE ASSESSMENT TEAM	DATE	MAP

NAME	ADDRESS	TYPE	ONE OF A KIND	SERV TO COMM	EMPLOY-MENT	OTHER EXPLAIN	OPR AFF/CID	INOP MIN DMG	INOP MAJ DMG	INOP DESC	INACC-ESSBLE	NO UTIL	H20 DEPTH BLDG	UNINS LOSS	DAYS OUT OPER	TOTAL EMPLOY	UNEMPLOYED				
																	DUE TO DIS	NO. DAYS	NO UI COV	NO NEED DUA	NO. DAY DUA

PRELIMINARY HOUSING
DAMAGE ASSESSMENT ESTIMATES

CITY	COUNTY	STATE	PAGE	OF

TYPE OF DISASTER

☐ TORNADO ☐ FLOOD ☐ HURRICANE *other*

SURVEY AREA	DATE	MAP

HOUSE # BUILDING/APT# BOX	ADDRESS	HOME		TYPE			STATUS		UNINHABITABLE				INHAB	WATER DEPTH		SUIT	EST. INCOME					
		PRIN	SEC	SR	MR	MH	OWN	RENT	MIN	MAJ	DEST	INACC NO UT	AFFEC	1-FL	2-FL	MH	LOW	MED	HIGH	SUB STD	UNINS. LOSS	OFFICE USE ONLY P/ASSIST.

Section 5.06

City of Niceville



City of Niceville

Section 5.06.01 Risk Assessments

Section 5.06.01.01 Introduction

The intent of this section is to provide information regarding the hazards threatening the City of Niceville which is an incorporated city located in the southern portion of Okaloosa County. As of the 2020 Census estimate it was home to 17,119 residents. In this section, information relevant to the City of Niceville is compiled and an overview of the analyses is provided.

The City of Niceville was incorporated in 1939 in the southern part of Okaloosa County. As an incorporated municipality, Niceville has all the powers and authority granted to municipal governments found in Chapter 166 of the Florida Statutes as well as Article VIII of Section 2 of the Florida Costitution to exercise any governmental, corporate, or proprietary power for municipal purposes, provided they are not expressly prohibited by law. These powers allow Niceville to govern itself, deliver services, enact and enforce ordinances, and set policy.

The City of Niceville enforces the Florida Building Code as required by Chapter 553 of the Florida Statutes and participates in the National Flood Insurance Program pursuant to the National Flood Insurance Act of 1968 (42 U.S.C. §§4001 et seq.). The City of Niceville has adopted a comprehensive plan as provided in Chapter 163, Florida Statutes, and has adopted by ordinance implementing land development regulations including provisions for zoning and floodplain management. The City has all the financial resources granted by the Florida Constitution and Florida Statutes which are available to support the mitigation strategies discussed in this section.

The hazards that will be analyzed in this section are natural events and the analysis concentrates on the anthropogenic affects on those events as well as the effects of those events on mankind. However, this analysis is not an assessment of technological and/or societal hazards and, therefore, these types of events are not covered under this plan or in the analysis provided in this section.

Primary attention is given to hazards considered reasonably possible to occur in the City of Niceville. These hazards include:

- Hurricane and Tropical Storm
- Storm Surge
- Flooding
- Land Erosion
- Severe Storms
    - Tornado and Waterspout
    - Thunderstorms and Lightning
    - Winter Storms
- Heat Wave and Drought
    - Heat Wave
    - Drought
- Wildfire

- Beach Erosion
- Sea Level Rise

The following hazards have minimal or no risk to the City of Niceville: sinkholes, expansive soils, dam safety, earthquakes, avalanches, land subsidence, landslides, volcanoes, and tsunamis. Therefore, these hazards are not analyzed in any depth in the hazard analysis. Further explanation is provided in the "Other Hazards" section.

Hazard Identification

The technical planning process begins with hazard identification. In this process, the City of Niceville Staff, along with the staff from the Okaloosa County Growth Management Department, has identified all of the natural hazards that threaten the community.

Section 5.06.01.02 Hurricane and Tropical Storm

DEFINITIONS:
Please refer back to the Risk Assessment of the overall County for the definitions of this hazard.

HISTORICAL OCCURRENCE:
The City of Niceville and Okaloosa County are equally susceptible to hurricanes and tropical storms, as Niceville is located near the coast. Due to the large area that hurricanes and tropical storms impact, it is assumed that the City of Niceville and the overall County experienced the same storms. Therefore, the historic hurricane record of Okaloosa County is applicable to the City of Niceville. Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

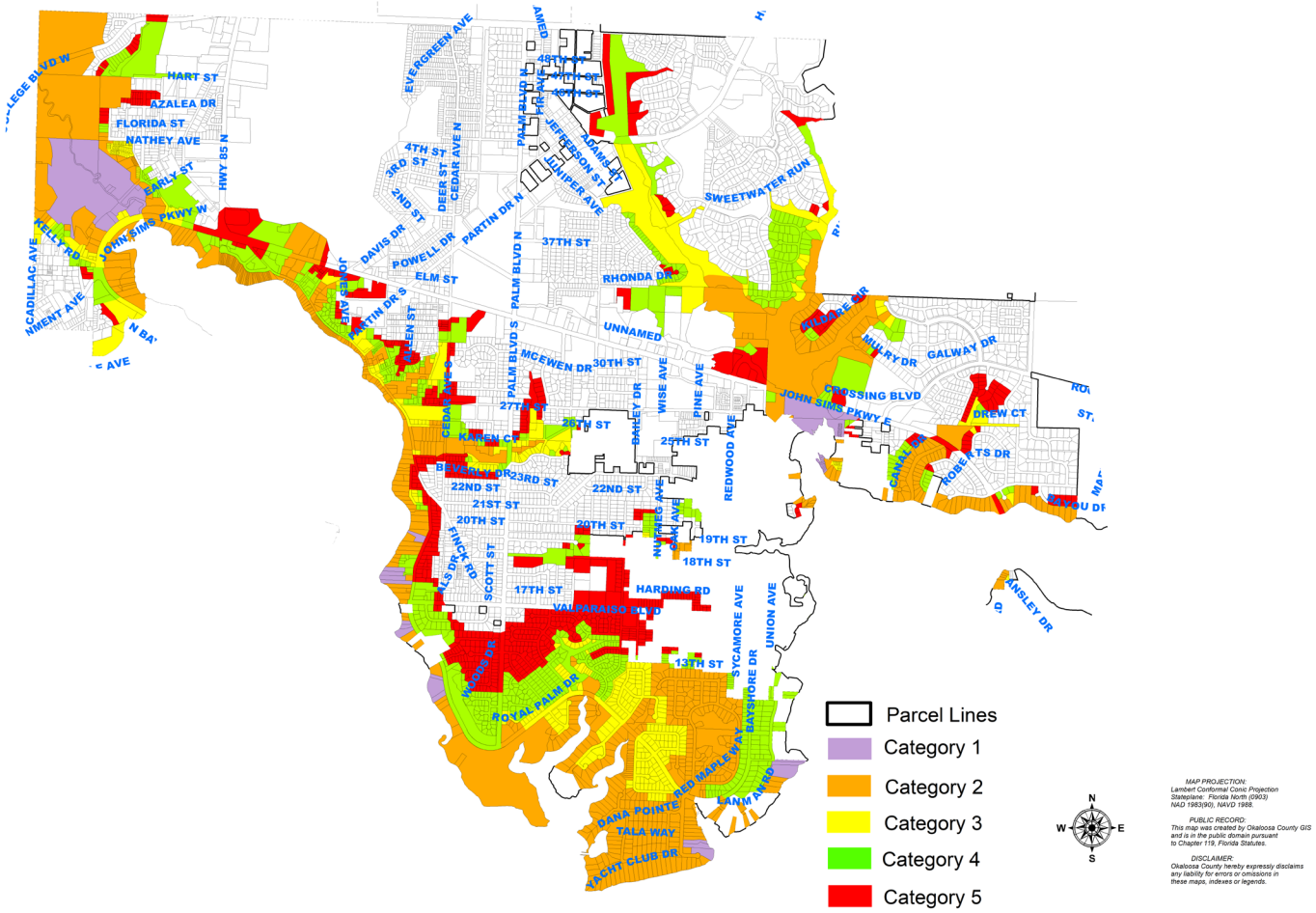
EXTENT:
High winds from hurricanes are a substantial threat to all homes, especially manufactured housing. Category 3 or higher force winds would likely cause substantial damage throughout the city. Winds in excess of 155 MPH could be experienced in a major Category 5 hurricane in some locations. Traditional stud and brick veneer or siding homes and businesses are vulnerable, as well, especially when hurricane shutters are not used. Relatively few businesses and homes have hurricane shutters, although shelters and some critical facilities are shuttered.

In the worst case scenario of a Category 5 hurricane, there will be catastrophic damage to homes and buildings, trees, power poles, and signage. In particular to power pole damage, there would be extensive widespread system destruction anticipated, which can include transmission/substation damage. All mobile homes and most frame homes will be completely destroyed due to wind causing structural collapse. The Category 5 winds of in excess of 155 MPH will cause significant damage to all buildings, with loss of roof sheathing, broken windows, and in some cases wall failure resulting in a structural collapse. The majority of trees will be snapped and power poles downed. In some cases, this will result in power outages that could last for weeks or months. People and animals would be at an extremely high risk of injury or death as a result of the strong, forceful winds causing flying or falling debris.

City of Niceville

Evacuation is recommended prior to a Category 5 hurricane making landfall. The expected storm surge level of up to 16.4 feet associated with a Category 5 hurricane will substantially impact the City of Niceville. Also, severe flooding will occur and likely cause polluted water, storm sewer overflow, and damage to roadways. Storm surge will be examined in greater depth in the following section. (NOAA, 2010). The figure below displays the City of Niceville's evacuation zones, which corresponds to the various hurricane categories.

Figure 5.06.01.02.1: Evacuation Zones for the City of Niceville



Source: Okaloosa County Public Safety / Okaloosa County GIS, 2023

PROBABILITY:
According to Colorado State University's United States Landfalling Hurricane Probability Project, Okaloosa County, and thus the City of Niceville, have the following future probabilities over a 50-year time period:

Table 5.06.01.02.1: 50-Year Probabilities of Named Storm, Tropical Storm, and Hurricane Making Landfall in Okaloosa County

1 or More Named Storms Making Landfall	1 or More Hurricanes Making Landfall	1 or More Intense Hurricanes Making Landfall	Tropical Storm-Force (≥ 40 mph) Wind Gusts	Hurricane-Force (≥ 75 mph) Wind Gusts	Intense Hurricane-Force (≥115 mph) Wind Gusts
90.90%	68.60%	40.50%	>99.9%	99.60%	82.30%

Source: The United States Landfalling Hurricane Web Project, 2025

Section 5.06.01.03 Storm Surge

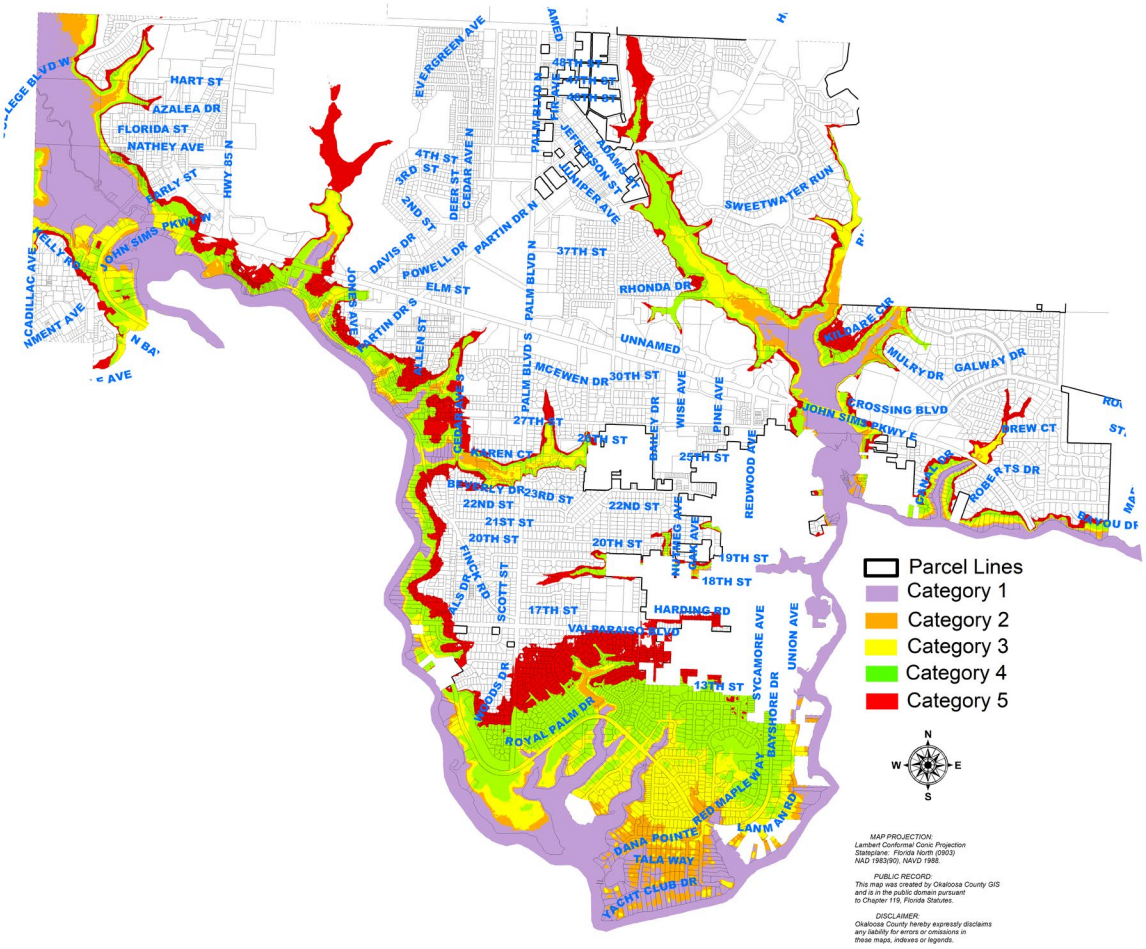
DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
Since Okaloosa County's bay and coastal areas are equally susceptible to storm surge, and because the City of Niceville is located on the bay, the County's historic storm surge data is relevant to the City of Niceville. Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
In the worst case scenario, some of these areas of the City of Niceville will experience storm surge levels up to 16.4 feet above mean sea level during a Category 5 hurricane (See Table 5.06.01.03.1). It is evident from the figure below that a majority of the city will not be affected by the resulting flooding from the storm surge, but only a few concentrated areas. The high storm surge levels will cause significant flooding of residential and commercial structures, power outages, and storm sewer overflow. The figure below shows the possible storm surge levels with each hurricane category in Niceville.

City of Niceville

Figure 5.06.01.03.1: The City of Niceville's Exposure to Storm Surge



Source: West Florida Regional Planning Council, 2022

PROBABILITY:
Regardless of the storms' level of intensity, the storm surges associated with each storm greatly vary. This fact is recognized in the updated Saffir-Simpson Hurricane Wind Scale where storm surge has been removed due to the difficulties in its prediction. Therefore, a probability of future storm surge occurrence shares the same probability of hurricanes and tropical storms. The potential storm surge levels have been determined from a historical point near the City of Niceville (see table below).

Table 5.06.01.03.1: Potential Storm Surge Level for Hurricane Categories

HISTORY POINT (Description)	HURRICANE SURGE ELEVATION (in feet)				
	CAT 1	CAT 2	CAT 3	CAT 4	CAT 5
Upper Rocky Bayou (Niceville)	4.3	6.6	79	13.4	16.4

Note: Storm surge levels reflect 2025 hurricane scale update.
Source: West Florida Regional Planning Council, 2025

Section 5.06.01.04 Flooding

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

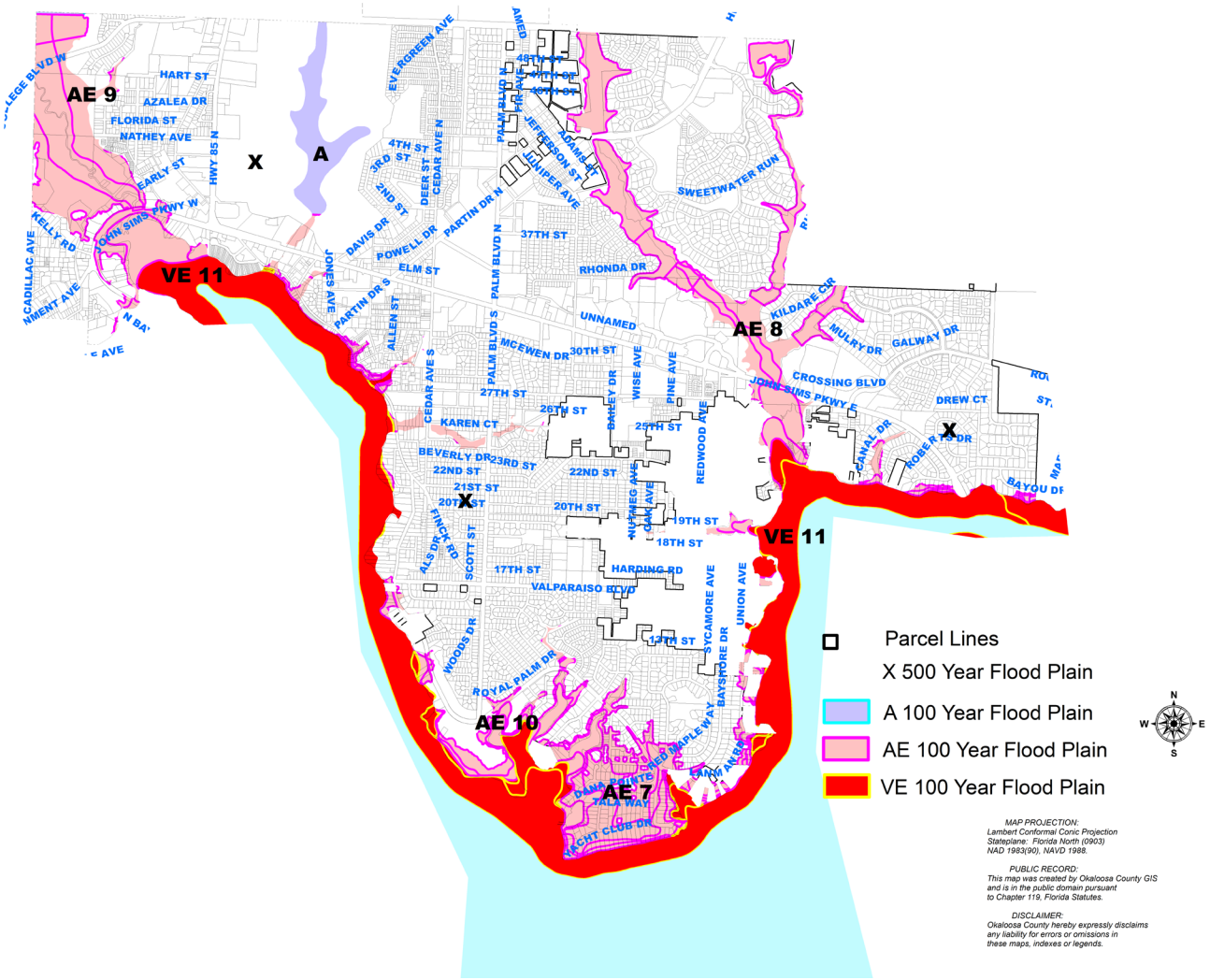
HISTORICAL OCCURRENCE:
In 1995, heavy rains caused streets to flood in the City of Niceville. The water receded and thus there was no need for road-closures. (NCDC, 2010). Given the minimal amount of data available at the municipal level regarding the historical occurrences of severe floods or flash-floods, overall County data of this hazard will be used. Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard because all of Okaloosa County is equally susceptible to this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
The worst case scenario in terms of flooding in the City of Niceville would be if widespread flooding resulted in property damage and losses, power outages, storm sewer overflow, and road-closures. Properties located in the AE-7, AE-8, and A flood zones will be impacted more severely than the rest of the city, which is located in flood zone X (500 year flood plain). *Note* AE-7 and AE-8 flood zone means that the area is susceptible to flooding at 7 and 8 feet above sea level, respectively. (See Figure 3).

Flooding can severely impact the road network in the City of Niceville. There are approximately 12.70 miles of arterial and collector roads in the city. Out of this total, 10.76miles of these roads are located in the NFIP X Zone (500 Year Flood Zone) and 1.78 miles located in the NFIP Special Flood Hazard Zone. These roads are especially susceptible to flooding during moderate to heavy rain events.

City of Niceville

Figure 5.06.01.04.1: The City of Niceville's Flood Zones



Source: FEMA Map Service Center, March 9, 2021

Temporary localized flooding can also severely impact roadways during moderate to heavy rain events, which could result in road-closures. It is particularly difficult to prepare transportation systems for "trailing" storm systems that tend to saturate land as well as overload drainage and retention systems. Arterial roads, dirt roads, and roads constructed prior to uniform standards and regulations are some of the roadways typically impacted by isolated heavy rain events. Unpaved roads are vulnerable to flooding and highly subject to washout. Culverts and small bridges can sometimes be undermined, causing people to be stranded and isolated until the repairs can be made. Some major roadways used for evacuation are subject to flooding.

PROBABILITY:
The entire County, as well as the City of Niceville, has a future probability of a flash-flood or flood occurring annually. However, due to the localized nature of flash-flooding and flooding, a more exact probability will not be provided.

Section 5.06.01.05 Land Erosion

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
All of Okaloosa County is equally susceptible to land erosion in some localized areas. Therefore, some localized portions of the City of Niceville may be susceptible to land erosion. Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
Sheet erosion, if left unchecked, can damage drainage ditches, fill stormwater retention ponds with sediment, and cause erosion into property, including structures. Most erosion of this nature occurs along unpaved roadways in hilly areas. In this instance, the result is the deposition and buildup of soils/sands on the roadways and in the drainage systems.

In the worst case scenario, soil erosion will cause land to be unusable because of the degraded soil quality, structure, stability and texture. Erosion along stream and ditch banks will cause undermining of structures (bridges, etc.) and washing out of lanes, roads, and fence rows.

PROBABILITY:
Based on the existence of potentially highly erodible soils there is a possibility of land erosion in the City of Niceville. The future probability of soil erosion cannot be given because no previous occurrences have been documented.

Section 5.06.01.06 Severe Storms

The Severe Storms segment of the LMS Hazards Assessment includes tornado and waterspout, thunderstorms and lightning, winter storms, and heat waves and drought (hurricanes are excluded from this section because they are covered in another section of this chapter).

Section 5.06.01.06.01 Tornado and Waterspout

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definitions of these hazards.

HISTORICAL OCCURRENCE:
In 1995, there was a tornado spotted east of the City of Niceville. There were no known injuries, fatalities, or property damage reported. (NCDC, 2010).

The historic tornado record of Okaloosa County is relevant to the City of Niceville because of the unpredictable pattern of tornadoes. The entire County, including the City of Niceville, is vulnerable to tornado damage. Also, the County's waterspout historic record is applicable to the City of Niceville because it is located on Choctawhatchee Bay, which is one of the areas susceptible to waterspouts. Please refer back to the Risk Assessment of the overall County for the historical occurrences of these hazards. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
Because of the unpredictable patterns of tornadoes, and because Okaloosa County has a relatively high frequency of occurrence, the entire County, including the City of Niceville, is vulnerable to tornado damage. The damage potential for a tornado increases as a function of population density. As the number of structures and people increase, the potential damage/injury rate increases. Manufactured housing, poorly constructed or substandard housing and apartment complexes are especially susceptible to damage from a tornado. Manufactured housing and substandard housing are exceptionally susceptible because of their lack of resistance to high winds, and apartment complexes because of their size and densities.

The worst possible scenario in terms of tornado damage would be if an F-5 tornado hit the City of Niceville. It is very unlikely that an F-5 tornado would strike Okaloosa County or the City of Niceville, but if one did there would be complete destruction of homes and businesses that were in the tornado's path. Trees and power lines would be snapped, building debris scattered about, and severe structural damage would be evident on any building left standing.

The most common and active weather threat in the City of Niceville for the formation of tornadoes is severe thunderstorms associated with frontal boundaries. Frontal boundaries and summertime afternoon air mass thunderstorms can reach severe limits because of atmospheric uplift. High winds relating to gust fronts and "microbursts" can create high wind speeds up to 100 MPH. Buildings and highway traffic are vulnerable to these storms.

PROBABILITY:
From 1958-2024 there have been a total of 105 reported tornadoes in Okaloosa County. Based on this data the probability of a future tornado occurrence in the City of Niceville has been determined to be less than 2 per year. Also, since there were only 9 reported waterspouts from 1996-2001, the future probability was determined to be less than 2 waterspouts per year.

Section 5.06.01.06.02 Thunderstorms and Lightning

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
In 1995, 1998, 2000, 2003, 2011, and 2017 there were strong thunderstorm winds that resulted in some of the following damage: trees and power lines blown over, large tree limbs brought down, and shingles torn from roofs. The most significant incident occurred in 1995, when the temporary roofing at Niceville High School's gym and auditorium was damaged, which resulted in rain damage in the auditorium. There were no known injuries or fatalities reported in any of these occurrences. However, cumulatively there was $440,000 in reported property damage. (NOAA, 2025).

In 1998, a home was struck by lightning, which resulted in a hole in the roof and damage to several home appliances. There were no known injuries or fatalities; however, $10,000 in property damage was reported. Also in 1998, a garage was struck by lightning, which resulted in damage to an automobile and a hole in the concrete floor. There was $25,000 in reported property damage. In 2010, a thunderstorm produced lightning that caused minor injuries during a training exercise at Eglin Reservation. There were 4 injuries and no fatalities or property damage reported. (NCDC, 2010). In 2012, a lightning strike caused damage to several homes, resulting in $25,000 in damage reported. (NOAA, 2025)

The City of Niceville is just as equally susceptible to thunderstorms and lightning as Okaloosa County. Therefore, the historic record of thunderstorms and lightning in Okaloosa County will be applicable to the City of Niceville. Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
Thunderstorm damage can include traffic accidents on wet roads, flash-flooding, lightning damage to electronics and structures, lightning strikes on people, and wind and hail damage. Aside from being able to produce tornadoes, thunderstorms can produce damaging high winds. Cold upper level air descending from the top of a thunderstorm to the ground usually causes these winds. In a worst case scenario, if the upper level air speed of descent is rapid, these cold "microbursts" can fan out as they come in contact with the ground at a high rate of speed. This is sometimes referred to as "straight line winds." These winds can cause significant property damage, injuries, and deaths similar to a F0 to F2 tornado or Category 1 or 2 hurricanes.

PROBABILITY:
Based on historical data (See Risk Assessment of overall County of this hazard's historical occurrences), the City of Niceville has a future probability of experiencing less than 5 severe thunderstorms per year. Also based on historical data (See Risk Assessment of overall County for this hazard's historical occurrences), the City of Niceville is likely to experience 4 to 16 flashes of lightning per square kilometer per year.

Section 5.06.01.06.03 Winter Storms

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
From 2005-2009, the City of Niceville had a total of 49 days where the temperature was below 32°F. It appears that from December to February, the monthly mean temperature minimums in the City of Niceville are below freezing. (See Table 5.06.01.06.03.1, below).

Table 5.06.01.06.03.1: Monthly Mean Temperature Minimums in degrees Fahrenheit, 1991-2020

	Nov	Dec	Jan	Feb	Mar
Niceville, FL	45.1°	41.0°	38.0°	40.8°	46.4°

Source: NOWData – NOAA Weather Data, 2025

Please refer back to the Risk Assessment of the overall County for the historical occurrences of winter weather because all of Okaloosa County is equally susceptible to this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
The worst case scenario in terms of winter storms in the City of Niceville would be if freezing or below freezing temperatures lasted for a week or more, and if the storm responsible for such freezing temperatures knocked down power lines resulting in power loss, and the inability of residents to heat their homes. A freeze's greatest risk is generally unprotected or under-protected water pipes in homes, businesses and infrastructure. Outdoor irrigation systems and plumbing in homes where insulation is inadequate in walls or in off-grade homes where plumbing is exposed are most vulnerable. Unmitigated older structures and manufactured housing are probably the most vulnerable structures.

An icing, glaze, or sleet incident in the City of Niceville would likely result in severe traffic problems and safety concerns throughout the community and its roadways. With no means of salting roadways or removing ice, emergency response would be severely slowed in iced areas. Electrical service would likely be interrupted or totally absent in many areas due to power line glazing and tree branch falls. Mitigation efforts would more likely focus on sheltering and ability to receive outside mutual aid assistance, rather than on equipment and ice buildup prevention due to the infrequency and inconsistency of such events.

PROBABILITY:
Based on the data of total below freezing days, the future probability of freezing temperature days in the City of Niceville is estimated to be 55 days in a 5-year time frame. Because a snow event in the City of Niceville is so rare, a single snow "event" over five or ten years is probably the average.

Section 5.06.01.07 Heat Wave and Drought

Heat Wave

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of heat waves.

HISTORICAL OCCURRENCE:
Every jurisdiction in Okaloosa County is equally susceptible to heat waves as they tend to impact a relatively large geographic area. The City of Niceville experienced three heat waves from 2005-2009 with high temperatures ranging from 91°F-102°F, and average humidity ranging from 58-99 (Weather Underground, Inc., 2010). Table 4, below, depicts the City of Niceville's monthly mean temperature maximums.

Table 5.06.01.07.1: Monthly Mean Temperature Maximums in degrees Fahrenheit, 1991-2020

	May	Jun	Jul	Aug
Niceville, FL	83.5°	88.2°	89.9°	89.7°

Source: NOWData – NOAA Weather Data, 2025

On July 1, 2000 an excessive heat advisory was issued for coastal Okaloosa County, which included the City of Niceville. Temperatures over 100°F were recorded. On August 8, 2007 another excessive heat advisory was issued for coastal Okaloosa County due to a combination of high temperatures and high humidity. The heat index was recorded between 110°F and 115°F and a number of local churches provided air conditioned shelter from the excessive heat. At such a high heat index, prolonged exposure may result in heat disorders.

EXTENT:
The worst case scenario in terms of a heat wave would be if excessive heat and humidity lasted for a week or more. Dangerous conditions are present when both heat and high humidity combine to make outside temperatures feel in the 103-124° F range. External danger warnings are issued when high temperatures and humidity combine to make outside temperatures feel in the 126-137° F range. Heat disorders may develop in people who work outside for long periods of time, such as construction workers. To combat the dangerous effects of excessive heat residents should dress appropriately, stay indoors, refrain from strenuous work during the hottest part of the day and stay hydrated.

The general threat to the community is individuals without adequate cooling systems in their homes, with emphasis on low income and the elderly. Electrical system failures due to demand would only enhance problems for all of these industries and populations. (NOAA Watch: Heat Wave).

PROBABILITY:
Based on the historical heat wave data, it is predicted that the future probability of a heat wave occurring in the City of Niceville is on average three times during a 5-year period.

Drought

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of drought and the categories of drought according the U.S. Drought Monitor.

HISTORICAL OCCURRENCE:
Droughts occur at a regular frequency and are cyclical in Okaloosa County. Due to the large area that droughts impact, it is assumed that the City of Niceville had a similar number of drought occurrences. Please refer back to the Risk Assessment of the overall County for the historical occurrences of drought because all of Okaloosa County is equally susceptible to this hazard.

EXTENT:
The worst case scenario in terms of drought would be if an exceptional drought (D4) lasted for months or years. Bay swamps and bodies of water would see a drastic decline in natural water levels and water shortages in reservoirs and wells would create water emergencies. Precipitation levels would be -2.0 inches or less. Also, the risk of wildfire increases as drought deepens. (U.S. Drought Monitor, 2025).

Droughts impact the City of Niceville in a number of ways. For example, declining water levels and altered hydro-periods in bay swamps can disrupt breeding cycles of fish and amphibians which can affect other species which prey on, or which are preyed upon, such fish and amphibians. Increased demand created by drought conditions on public and private water supply systems that serve the public has caused some generators and pumps to fail at critical moments, creating low or no pressure for critical facilities such as fire hydrants and medical centers.

PROBABILITY:
The abnormally dry drought intensity is the condition of dryness before and after a period of actual drought. From 2010-2024, a total of 109 out of 180 months were abnormally dry. Based on this data, the City of Niceville has a future probability of experiencing more than 7 abnormally dry months every year. Also, from 2010-2024, there were a total of 73 out of 180 months where moderate, severe, extreme, or exceptional drought occurred in Okaloosa County. These drought intensities are the varying severity of actual droughts. The future probability of a moderate to severe drought occurring in the City of Niceville is on average 5 months per year.

Section 5.06.01.08 Wildfire

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

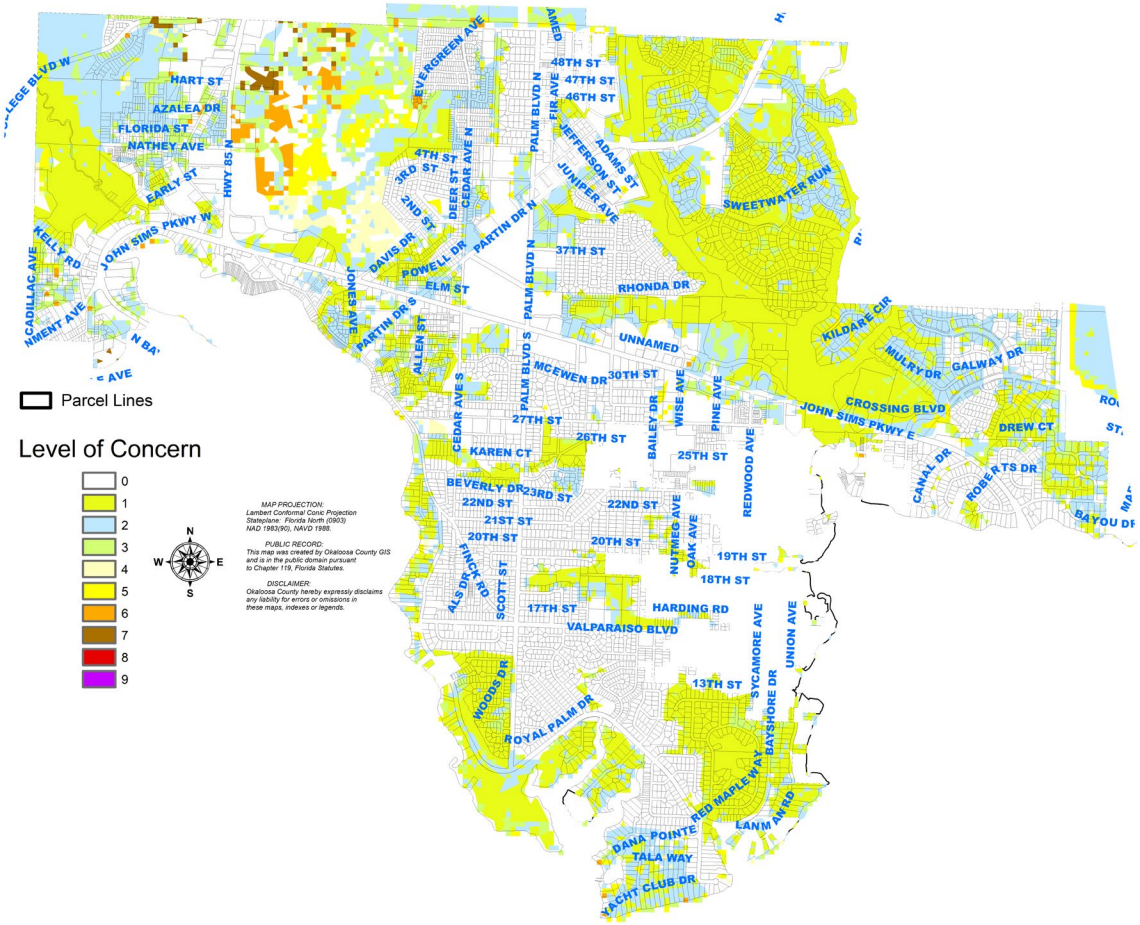
City of Niceville

HISTORICAL OCCURRENCE:
The City of Niceville is susceptible to wildfire. The majority of the incorporated area is urban or residential. The wildfire record of Okaloosa County is relevant to the City of Niceville. Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into specific areas of the county

EXTENT:
Based on the Wildland Fire Risk Assessment of Okaloosa County, the worst case scenario would be if the areas with the greatest Level of Concern (LOC) experienced a massive wildfire. These areas have a greater likelihood of danger and destruction due to their inadequate infrastructure, inaccessibility to critical facilities or firefighting resource locations, and location in the wildland-urban interface. *Note* According to the Florida Department of Forestry, wildland urban interface is defined as “the zone where structures and other human development meets/intermingles with undeveloped wildland fuels and other natural features.” Fires could come into subdivisions and neighborhoods in urban and suburban areas, which could be a potentially catastrophic situation. Smoke and ash from dangerous wildfires could decrease visibility on highways and local roads.

PROBABILITY:
The Wildland Fire Risk Assessment System of the Florida Division of Forestry displays the wildfire levels of concern for the City of Niceville. According to the map, most of the incorporated city is classified as non- or minimally burnable (2010). The figure below displays the relatively low levels of concern that wildfire has for the city. There are areas of higher levels of concern, but they are located in the outer-rings of the city. Although, the City of Niceville is susceptible to wildfire, it appears that the future probability of occurrence is moderately low.

Figure 5.06.01.08.1: Wildfire Levels of Concern for the City of Niceville



Source: Florida Division of Forestry, 2025

Section 5.06.01.09 Beach Erosion

DEFINTION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
Beach erosion is a naturally occurring, cyclical process in which sand particles are removed and/or replaced by wind, waves, or tides. Intensive wave action or strong storm surge during a

tropical storm or hurricane can accelerate the rate of beach erosion. Beach erosion is a coastal and bay issue; therefore all jurisdictions located in those areas, including the City of Niceville, are susceptible to beach erosion. Because tropical storms and hurricanes can cause beach erosion in various coastal locations throughout the county, the historical occurrences of beach erosion is relevant to all costal and bay areas of the county. Please refer to the Risk Assessment of the overall County for the historical occurrences of beach erosion.

EXTENT:
The worst case scenario in terms of beach erosion would be if a major storm with significantly strong winds and storm surge washed-out the coastal areas. The damage will be much worse for portions of the coastline already critically eroded. Beach erosion will undermine the integrity of infrastructure, beachfront homes and businesses, and other structures by washing away the sediments that support the structural foundation sometimes resulting in complete destruction.

PROBABILITY:
Based on the historical data of the overall County, it appears that beach erosion will most certainly occur in the future. The frequency and extent of the erosion are highly dependent on the frequency and intensity of tropical storms and hurricanes. The natural process of beach erosion is different among coastal locations in the County due to variations in beach stability. This means there are different degrees of natural erosion rates and potential damage from storms or unusual wave action. Therefore, a numerical value will not be given for the estimated future amount of beach erosion for the City of Niceville. It must also be noted that beach erosion is a natural part of a coastal system, and can be expected to occur at various locations and at different rates over time.

Section 5.06.01.10 Other Hazards

The hazards listed below have been analyzed and determined that the impact would be minimal or non-existent in the City of Niceville.

Section 5.06.01.10.01 Sinkholes

The map and description prepared by the United States Geologic Survey (USGS) in its “Sinkhole, Type, Development and Distribution in Florida” (1985) indicates that Okaloosa County in its entirety is located in an area where sinkholes seldom, if ever, occur. The Florida Geologic Survey’s statewide sinkhole database indicates no sinkholes in the County. Since there is no history of this hazard in the County, no further analysis or risk assessment will be conducted for this plan. However, should conditions change and geological features be discovered which contribute to the development of sinkholes, the LMS committee will include any new occurrence information in ongoing updates.

The future probability of a sinkhole occurring in City of Niceville is less than 1% based upon no documented sinkholes in the county and the soil strata is non-conducive to the formation of sinkholes.

Section 5.06.01.10.02 Expansive Soils

According to the *Soil Survey of Okaloosa County Florida* (USDA, June 1995), two types of soils are considered vulnerable to expansion. These are known as shrinking and swelling or "expansive soils." Another way of describing expansive soils is the change of volume of a soil with a change of moisture content. All of the soils listed in the expansive class are also considered erodible soils. Okaloosa County may be susceptible to expansive soils in some localized areas. There have been no previous occurrences recorded of expansive soils in the County. The following table lists soils having moderate to high shrink swell potential in Okaloosa County. Only those soils with an associated risk of "High" are listed:

Table 5.06.01.10.02.1: Shrink/ swell potential of soils in Okaloosa County

Soil Type	ME Soils*	HE Soils**	Total Acreage	% Total Land Area
#35-Angie (2 to 5 percent slopes)		X	1,073.26	.16
#49-Angie (5 to 12 percent slopes)		X	10,280.79	1.61
#20-Udorthents (nearly level)	X		655.31	.11
Total	**.11**	**1.77**	**12,009.36**	**1.88**

* Moderate Erodible Soils **Highly Erodible Soils

Note: Expansive soils and erodible soils are classified as the same.
Source: Soil Survey of Okaloosa County, Florida; June 1995.

Expansive soils can lessen the strength of building foundations, which could result in structural collapse or instability. In addition, these soils have limitations for use as local roads and streets because of lack of strength to support roadways and traffic. There is a possibility of shrink/swell potential or soil expansion based on the existence of moderately erodible soils and highly erodible soils in Okaloosa County. Although the specific amount of these soils in the county is known, the future probability of this occurring in the City of Niceville is minimal because this issue is addressed during the time of construction and there are no previous records of occurrence.

Section 5.06.01.10.03 Dam Safety

There are no permitted dams located in the City of Niceville. Therefore, the City of Niceville is not susceptible to flooding due to dam failure. However, if there are any permitted in the future, the LMS committee will update the plan to reflect those changes.

Section 5.06.01.10.04 Earthquake

According to the U.S. Geological Survey Earthquake Probability maps, the City of Niceville has between a 0.005 and 0.010% chance of experiencing a 5.0 magnitude earthquake within 100 years. This is considered a very minimal risk. Also, since there is no history of earthquakes in Okaloosa County or the City of Niceville, no further analysis or risk assessment will be conducted

for this plan. The future probability of an earthquake occurring in the City of Niceville is less than 1 in 100 years.

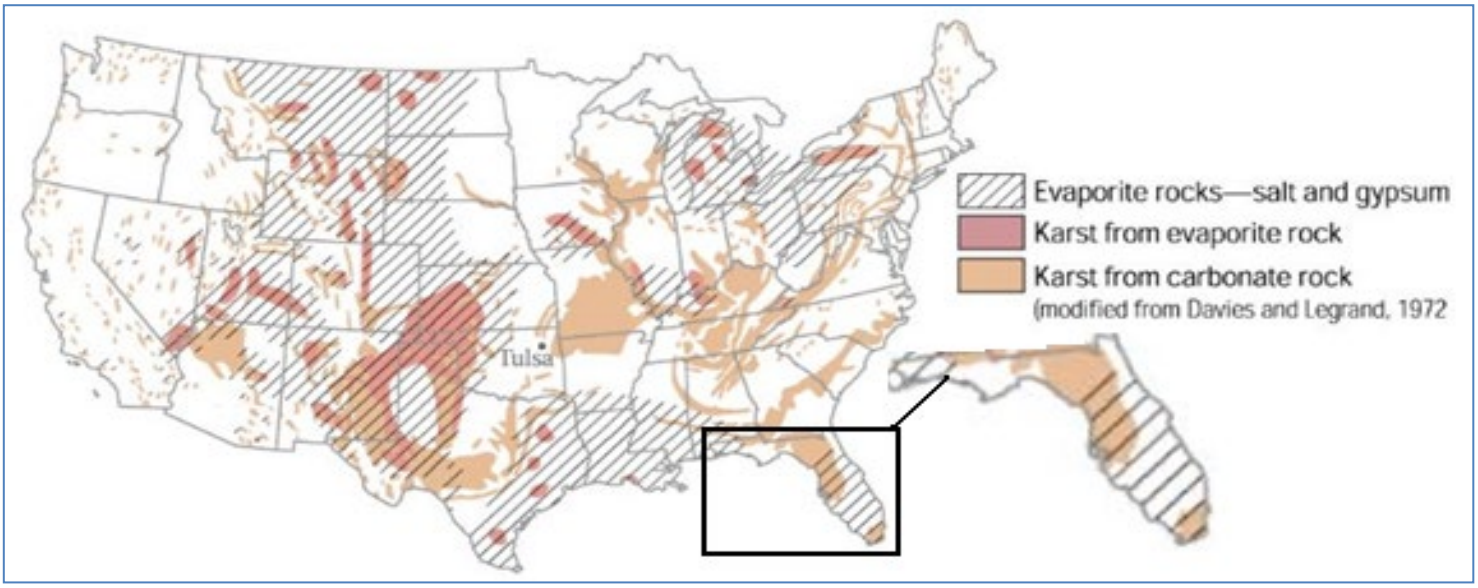
Section 5.06.01.10.05 Avalanche

The City of Niceville does not have topography or snowfall amounts that would create conditions for an avalanche. Since there is no history of this hazard in the county, no further analysis or risk assessment will be conducted for this plan. The future probability of an avalanche occurring in the City of Niceville is less than 1 in 100 years.

Section 5.06.01.10.06 Land Subsidence

According to the U.S. Geological Survey, "land subsidence occurs when large amounts of ground water have been withdrawn from certain types of rocks, such as fine-grained sediments. The rock compacts because the water is partly responsible for holding the ground up. When the water is withdrawn, the rocks fall in on itself. Land subsidence is most often caused by human activities, mainly from the removal of subsurface water" (U.S. Geological Survey, 2010). The City of Niceville has a minimal amount of the most common rock types that are connected to land subsidence (See Figure 5.06.01.10.06.1). Since there is no history of this hazard in the City of Niceville, no further analysis or risk assessment will be conducted for this plan. The future probability of land subsidence occurring in the City of Niceville is less than 1 in 100 years.

Figure 5.06.01.10.06.1: Rock types connected to collapse (subsurface cavities/sinkholes) in the U.S.



Source: U.S. Geological Survey

Section 5.06.01.10.07 Landslide

According to U.S. Geological Survey Map of Relative Incidence and Susceptibility Map, the City of Niceville has a very low landslide incidence with less than 1.5% area susceptible to a landslide (USGS, 2010). Landslides are therefore considered to be a minimal risk and no further analysis or risk assessment will be conducted for this plan. The future probability of a landslide occurring in the City of Niceville is less than 1 in 100 years.

Section 5.06.01.10.08 Volcano

There are no geological features in or near Okaloosa County, the City of Niceville, or the Southeast related to volcanism. Since there is no history of this hazard in the City of Niceville, no further analysis or risk assessment will be conducted for this plan. The future probability of a volcanic eruption occurring in the City of Niceville is less than 1 in 100 years.

Section 5.06.01.10.09 Tsunami

According to the U.S. Geological Survey, Okaloosa County is not located in an area that has historically been subjected to tsunamis, even though it is a coastal county. Since there is no history of this hazard in the county, including the City of Niceville, minimum analysis and risk assessment will be conducted for this plan. The Local Mitigation Strategy Committee will monitor any developments in the ability to predict, monitor and issue warnings. There is no record of a tsunami occurring in Okaloosa County, therefore the future probability for the City of Niceville has been determined to be less than 1 in 100 years.

Section 5.06.01.10.10 Sea Level Rise

As defined by multiple agencies, the term “sea level rise” refers to an increase in the ocean’s surface height relative to the land in a particular location. Thermal expansion of the Earth’s oceans and melting polar ice melting are commonly identified as the two primary causes of sea level rise, though land subsidence is also cited as a factor While sea level rise most directly impacts coastal regions, its impacts may be felt far beyond the shoreline as impacted areas react to changing conditions and must expand substantial amounts of funds in mitigation activities that may include construction of water control structures, relocating or re-routing roads and other infrastructure, and relocation of impacted populations.

In 2023, Okaloosa County applied for and received a grant through the Resilient Florida Program to develop a Vulnerability Assessment and implementing Adaptation Plan that pursuant to and in compliance with section 380.093, Florida Statutes and awarded a contract to Jacobs Engineering Group to develop said Vulnerability Assessment (VA) and implementing Adaptation Plan (AP). The VA and implementing AP developed by Jacobs Engineering Group is incorporated herein by reference for purposes of establishing vulnerability to sea level rise and various flooding scenarios for the entirety of Okaloosa County **and all municipalities** (except for the City of Destin which has undertaken its own analysis). As the County-wide Vulnerability Analysis applies to conditions within the City of Niceville, please see Section 4.01.11.09 of this Local Mitigation Strategy and Appendix E for more information.

Section 5.06.01.11 Summary

The risk assessment section of this LMS document highlighted the hazards that the City of Niceville is exposed to. This provides the foundation for the subsequent section covering how vulnerable the city is to these identified hazards. Numerous facilities, infrastructure, and neighborhoods in the City of Niceville need to be assessed for their vulnerability to disasters.

Section 5.06.02 Vulnerabilities

Section 5.06.02.01 Introduction

The intent of this section is to provide a vulnerability assessment for the potential damage and estimated loss to building structures in the City of Niceville.

This section includes a brief summary description of the City of Niceville, as well as its vulnerability to the identified hazards and the impact of each hazard. It also describes the vulnerability in terms of the types and numbers of repetitive loss properties within the City of Niceville. Additionally, the section describes vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the City of Niceville.

The main intent of this section is to provide an estimate of potential dollar losses to vulnerable structures and a description of the methodology used to complete the estimate. Lastly, this section describes vulnerability in terms of providing a general description of land uses and development trends within the City of Niceville so that mitigation options can be considered in future land use decisions.

Section 5.06.02.02 Methodology

The Okaloosa County Staff used the same methods, of quantifying the estimated dollar losses to the vulnerable structures potentially impacted by each hazard, for the City of Niceville as the overall County. Therefore, please refer to Okaloosa County's Overall Vulnerabilities, Section 4.02.02, for more information.

Section 5.06.02.03 Summary Description of the City of Niceville

The City of Niceville is an incorporated city located in the southern portion of Okaloosa County. As of a 2020 Census estimate it was home to 16,119 residents. Within its jurisdiction, there are .56 mile that border Choctawhatchee Bay, 2.6 miles that border Rocky Bayou, and 7.96 miles of shoreline that border Boggy Bayou. Most of the development in the City of Niceville is clustered around Choctawhatchee Bay and along U.S. Highway 20, or John Simms Parkway. Nearly all commercial development borders both sides of U.S. Highway 20 while most of the existing residential development is located on Highway 285 North, Highway 85-N, and within subdivisions along Choctawhatchee Bay in the south end of the city. Most recently, the City of Niceville has several residential subdivisions under construction near Highway 285 N. According to the building official for the City of Niceville, he anticipates a steady growth in the coming years as military families move to the area. Several commercial establishments have applied for permits within the city and residential subdivisions are expected to increase.

The City participates in the NFIP and enforces its floodplain management regulations pursuant to adopted local ordinances. The City adopted its NFIP-compliant regulations through Ordinance 17-08-01, adopted August 8, 2017, with the most recent update occurring through Ordinance 21-01-01, adopted January 12, 2021. Pursuant to this ordinance, the Flood Insurance Rate Maps (FIRM) and associated Flood Insurance Study, along with all subsequent amendments and revisions, have been formally adopted by reference and serve as the minimum basis for establishing flood hazard areas

within the City.

Administration and enforcement of floodplain management regulations, including Special Flood Hazard Areas (SFHAs), are carried out through the City's Community Development Department.

The City maintains a coordinated administrative structure whereby the Floodplain Manager oversees day-to-day program implementation while a full-time Certified Building Official (CBO) conducts plan review, permitting oversight, and inspections. This structure provides an internal system of checks and balances to ensure consistent interpretation and enforcement of floodplain management requirements.

Responsibility for maintaining compliance with NFIP requirements rests with the Floodplain Manager, with support from Community Development Department staff. The Floodplain Manager ensures that all applicable federal, state, and local floodplain management standards are properly implemented and enforced.

The City administers Substantial Damage Substantial Improvement requirements through coordinated review by the Floodplain Manager and the Certified Building Official. Project valuations are submitted during the permitting process and evaluated by the Floodplain Manager in accordance with the NFIP 50-percent rule. Where necessary, the CBO is authorized to require certified appraisals to substantiate structure values in determining whether an activity constitutes substantial improvement.

Following major storm events, substantial damage assessments are conducted by Community Development Department staff in coordination with Code Compliance Officers, utilizing FEMA-established methodologies and standards.

The City participates in the NFIP Community Rating System (CRS) and currently maintains a Class 6 rating, reflecting implementation of floodplain management practices that exceed minimum NFIP standards. The City maintains a mapped inventory of open space properties, which is reviewed and updated on at least an annual basis. These efforts are consistent with CRS requirements and contribute to the preservation and monitoring of flood-prone lands.

Emergency management activities are coordinated through the City's Emergency Management Program in conjunction with the County's Division of Emergency Management. The City's Floodplain Manager serves as a member of the City's Emergency Management team and the LMS Committee and maintains regular coordination with municipal emergency management personnel and County staff. This organizational structure ensures ongoing interagency coordination between emergency management and floodplain management functions, particularly during hazard events and throughout post-disaster response and recovery operations.

The City of Niceville maintains the internal capacity to support grant application and management activities. The City employs a dedicated Grants Manager responsible for identifying funding opportunities, coordinating grant applications, and administering awarded grants in compliance with applicable requirements. As such, the City is capable of independently managing grant-funded projects and does not require assistance from the County for grant administration.

The City will incorporate the findings and recommendations of the LMS into our respective planning mechanisms through integration with comprehensive plans, capital improvement programs, land development regulations, and emergency management plans. LMS-identified hazards, vulnerabilities, and mitigation actions are considered during project prioritization, budgeting, and policy development to ensure consistency with long-term resilience objectives. Additionally, the city will utilize the LMS to support grant applications, inform development review processes, and guide post-disaster recovery and redevelopment decisions. This coordinated approach ensures that hazard mitigation principles are systematically embedded into local planning and decision-making processes.

Section 5.06.02.04 Vulnerable Populations

Hazards do not affect the entire population the same. Therefore, special attention needs to be given to the more vulnerable populations. Please refer back to the overall County's Vulnerability

for further explanation on these vulnerable populations. The table below displays the City of Niceville's vulnerable populations.

Table 5.06.02.04.1: Estimated Vulnerable Populations in the City of Niceville, 2024

Population	2023 Census Percent Population	2024 Estimate
Elderly	16.86%	2,705
Language Isolation	6.02%	966
Disabled	13.50%	2,166
Single Parent	9.59%	1,540
Poverty	8.70%	1,396
Minority	22%	3,529

Source: 2023 American Community Survey (ACS) 5-year estimate, U.S. Census Population Division

Section 5.06.02.05 Repetitive Loss Properties

The Federal emergency Management Agency defines repetitive loss and severe repetitive loss properties as follows (44 CFR Part 77 § 77.2):

Repetitive loss structure means a structure covered under an NFIP flood insurance policy that:

(1) Has incurred flood-related damage on 2 occasions, in which the cost of repair, on average, equaled or exceeded 25% of the value of the structure at the time of each such flood event;

and

(2) At the time of the second incidence of flood related damage, the contract for flood insurance contains increased cost of compliance coverage.

Severe repetitive loss structure means a structure that is covered under an NFIP flood insurance policy and has incurred flood-related damage:

(1) For which 4 or more separate claims payments have been made under flood insurance coverage under subchapter B of this chapter, with the amount of each claim (including building and contents payments) exceeding $5,000, and with the cumulative amount of such claims payments exceeding $20,000; or

(2) For which at least 2 separate flood insurance claims payments (building payments only) have been made, with cumulative amount of such claims exceeding the value of the insured structure.

In Niceville, hurricanes, tropical storms, storm surge, flooding, and thunderstorms are responsible for repetitive loss properties. These properties are more vulnerable to certain hazards than other structures in the city because they have already experienced significant flood damage. Please see Section 4.02.05 and Table 4.02.05.1 for this LMS' discussion of Repetitive Loss and Severe Repetitive Loss properties throughout the County, including within the City of Niceville.

Section 5.06.02.06 Hurricane and Tropical Storm

The City of Niceville is vulnerable to the damaging effects of tropical storms and hurricanes as it is located on the Choctawhatchee Bay, near the southern coast of the county. The City of Niceville would experience destruction in terms of wind damage, heavy rains, and storm surge during a tropical storm or hurricane. All structures within the City of Niceville's jurisdiction are susceptible to damage in the form of flooding due to heavy rains and strong storm surge. High winds can damage structures by removing roofs and siding, and create flying debris out of sources which are not anchored. The most vulnerable homes are those located on bay front lots. The following tables depict the hurricane evacuation zones and the vulnerable structures located within each zone.

Table 5.06.02.06.1: Evacuation Zones and the Vulnerable Residential Structures within Evacuation Zones

Total:	SFR-Townhouse	Single-Family	Mobile Home	Multi-Family
Zone A	25	40	0	1
Just Value	$ 5,053,414	$ 23,026,976	$0	$ 1,974,238
Zone B	19	120	2	5
Just Value	$ 4,400,474	$ 66,339,605	$ 643,429	$ 3,743,501
Zone C	71	473	2	5
Just Value	$ 12,761,392	$ 212,820,106	$ 643,429	$ 3,159,401
Zone D	64	853	43	6
Just Value	$ 18,759,202	$ 306,815,031	$ 2,168,684	3,203,437
Zone E	65	431	76	22
Just Value	$ 18,668,236	$ 120,188,386	$ 3,779,403	$ 4,783,579

Note Evacuation Zones correspond with Hurricane Categories (Ex. Evacuation Zone 1 = Category 1 Hurricane) Source: Source: Okaloosa County GIS Department & Okaloosa County Property Appraiser, 2025 (City of Niceville Staff generated table from overlaying the surge levels and property appraiser data)

Table 5.06.02.06.2: Vulnerable Structures by Evacuation Zone

Total:	Commercial	Government/ Institutional
Zone A	5	0
Just Value	$ 8,686,053	$0
Zone B	15	0
Just Value	$ 10,606,912	$0
Zone C	38	1
Just Value	$ 38,910,000	$ 170,938
Zone D	35	1
Just Value	$ 35,764,331	$170,938
Zone E	57	0
Just Value	$ 45,384,873	$0

Note Evacuation Zones correspond with Hurricane Categories (Ex. Evacuation Zone 1 = Category 1 Hurricane) Source: Source: Okaloosa County GIS Department & Okaloosa County Property Appraiser, 2025 (City of Niceville Staff generated table from overlaying the surge levels and property appraiser data)

Section 5.06.02.07 Storm Surge

The City of Niceville is vulnerable to storm surge and the structures along the Choctawhatchee Bay are the most susceptible to damage from this hazard. The strongest storm surge level during a Category 5 hurricane would be 16.4 feet above the mean high-water line along the areas boarding the Choctawhatchee Bay. This would severely flood numerous homes, infrastructure, and commercial structures in this area. The following tables depict the vulnerable structures to storm surge levels, which correspond with the category of hurricane.

Table 5.06.02.07.1: Vulnerable Residential Structures to Storm Surge within the Evacuation Zones

Total:	SFR-Townhouse	Single-Family	Mobile Home	Multi-Family
Surge Level 1	72	245	2	3
Just Value	$20,598,818	$163,778,172	$643,429	$1,478,135
Surge Level 2	69	261	2	5
Just Value	$20,026,898	$173,105,357	$643,429	$4,063,759
Surge Level 3	101	476	2	9
Just Value	$25,508,867	$241,608,002	$643,429	$4,736,394
Surge Level 4	116	623	23	11
Just Value	$28,565,960	$239,882,600	$1,710,234	$5,641,834
Surge Level 5	93	525	44	8
Just Value	$24,294,465	$194,576,339	$2,696,006	$3,449,367

Source: Okaloosa County GIS Department & Okaloosa County Property Appraiser, 2025 (City of Niceville Staff generated table from overlaying the surge levels and property appraiser data)

Table 5.06.02.07.2: Other Vulnerable Structures to Storm Surge

Total:	Commercial	Government/ Institutional
Surge Level 1	15	0
Just Value	$16,110,347	$0
Surge Level 2	18	0
Just Value	$18,177,907	$0
Surge Level 3	30	1
Just Value	$21,424,731	$170,938
Surge Level 4	34	1
Just Value	$39,259,014	$170,938
Surge Level 5	34	1
Just Value	$32,478,962	$170,938

Source: Okaloosa County GIS Department & Okaloosa County Property Appraiser, 2025 (City of Niceville Staff generated table from overlaying the surge levels and property appraiser data)

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Just Value	$24,294,465	$194,576,339	$2,696,006	$3,449,367

Source: Okaloosa County GIS Department & Okaloosa County Property Appraiser, 2025 (City of Niceville Staff generated table from overlaying the surge levels and property appraiser data)

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Surge Level 4	34	1
Just Value	$39,259,014	$170,938
Surge Level 5	34	1
Just Value	$32,478,962	$170,938

Source: Okaloosa County GIS Department & Okaloosa County Property Appraiser, 2025 (City of Niceville Staff generated table from overlaying the surge levels and property appraiser data)

Section 5.06.02.08 Flooding

Our definition of flooding only considers flooding that is a result of rainfall, which includes tropical rains during a hurricane. The City of Niceville is vulnerable to flooding and susceptible to damage from this hazard. Localized roadway flooding from heavy rains is the most commonly observed type of flooding in the City of Niceville. During a hurricane, tropical storm or severe storm heavy rains might cause some homes to flood particularly in low lying areas or those with poor drainage systems. In the City of Niceville, there are 541 structures located in the AE flood zone, 0 structures in the A flood zone, and 173 structures in the VE flood zone. The cumulative ‘just value’ of all those structures in the AE, A, and VE flood zones is $370,076,122. The following table depicts the vulnerable structures located in the AE and A flood zones in the City of Niceville.

Table 5.06.02.08.1: Structures Located in Flood Zones in the City of Niceville

	AE Flood Zone	Just Value	A Flood Zone	Just Value	VE Flood Zone	Just Value
SFR-Townhouse	57	$11,935,063	0	$0	64	$18,738,911
Single-Family	541	$250,854,174	0	$0	173	$119,221,948
Multi-Family	9	$4,736,394	0	$0	2	$834,539
Commercial	32	$25,560,363	0	$0	7	$5,956,985
Government/Institutional	1	$170,938	0	$0	0	$0

Source: FEMA Flood Maps & Okaloosa County Property Appraiser, 2025 (City of Niceville Staff generated table from overlaying the surge levels and property appraiser data)

Section 5.06.02.09 Land Erosion

The City of Niceville in vulnerable to land erosion in some localized areas, and some structures are susceptible to damage from this hazard. The soil types and topography that leads to land erosion can be found in various parts of the City of Niceville. The areas that are most susceptible to land erosion are those with steep slopes and which have highly erodible soil types. Land erosion in the City of is generally caused by disturbed soils from construction activities and usually isolated to an area less than 1 acre in size.

Section 5.06.02.10 Severe Storms

In the tables below, the estimated cost of damage to residential and non-residential structures in the event of a severe storm is provided. The numbers and estimated value represents the total number of structures in the City of Niceville. Although it is highly unlikely that all structures will be impacted during a singular severe storm event, all structures are equally vulnerable to severe storms and so it was deemed appropriate to list all structures in the City of Niceville.

Table 5.06.02.10.1: Vulnerable Residential Structures to Severe Storms in City of Niceville

Total:	SFR-Townhouse	Single-Family	Mobile Home	Multi-Family	Condominium
	155	2,043	0	38	1
Just Value	$32,550,471	$588,588,053	$0	$15,637,760	$116,000

Source: Okaloosa County Department of Growth Management, 2025

Table 5.06.02.10.2: Other Vulnerable Structures to Severe Storms in City of Niceville

Total:	Commercial	Government/ Institutional
	331	46
Just Value	$153,610,212	$60,225,714

Source: Okaloosa County Department of Growth Management, 2025

Since severe storms includes tornadoes and waterspouts, thunderstorms and lightning, and winter storms, the values listed in the tables above apply to all those hazards.

Section 5.06.02.10.01 Tornado and Waterspout

The City of Niceville is vulnerable to tornadoes and waterspouts, and all structures within its jurisdiction are susceptible to the impacts of this hazard due to their unpredictable nature.

The areas within the City of Niceville that are most vulnerable to tornado damage are those with a high density or large population because the damage rate increases as a function of population density. The types of structures most vulnerable to tornado damage within the City of Niceville are poorly constructed housing, apartment complexes, and condominiums because of their size and densities. According to the Mapping for Emergency Management, Parallel Hazard Information System (MEMPHIS) study in 2005, nearly all of Okaloosa County, including the City of Niceville, has a medium risk, 1 in 250 per year, of a tornado event occurring.

Because waterspouts occur over water, the areas in the City of Niceville most susceptible damage from waterspouts are those located on the Choctawhatchee Bay. Waterspouts tend to not last very long, but their high winds can result in damage from flying debris. The properties bordered by the water bodies are the most vulnerable to damage. There are 37 structures along the City of Niceville's coastline. The cumulative 'just value' of those structures is $23,029,663. The surrounding areas to the coastline are susceptible to damage from flying debris as well, but the specific impacts on those areas are unavailable.

Section 5.06.02.10.02 Thunderstorms and Lightning

The City of Niceville is vulnerable to thunderstorms and lightning, and all structures within its jurisdictions are susceptible to the damaging effects of wind, hail, and lightning associated with severe thunderstorms. Thunderstorm damage can include traffic accidents on wet roads, flash-flooding, lightning damage to electronics and structures, lightning strikes on people, and wind and hail damage to structures. According to the Mapping for Emergency Management, Parallel Hazard Information System (MEMPHIS) study in 2005, all of Okaloosa County, including the City of Niceville, has the threat of a thunderstorm or lightning event occurring, in terms of causing economic damage or loss of over $50, of 1 in 50 per year.

Section 5.06.02.10.03 Winter Storms

The City of Niceville is vulnerable to winter storms, and all structures within its jurisdiction are susceptible to the effects of freezing temperatures. The City of Niceville is vulnerable to snow, freezing rain, icing and glazing events but because these events are so rare, the City of Niceville is unlikely to suffer serious damage from this hazard. The specific impacts of winter storms in the City of Niceville are unavailable because there have been no studies conducted regarding these hazards' impacts in the County. Only broad general impacts of this hazard can be given, which provide an indication of what impacts are expected with winter storms. The homes in the City of Niceville that are most vulnerable to winter storms are those with unprotected or under-protected water pipes and homes in which plumbing and insulation is inadequate. Unmitigated older structures and manufactured housing are also very vulnerable.

Section 5.06.02.11 Heat Wave and Drought

The City of Niceville is vulnerable to heat waves and drought. The specific impacts of heat waves and drought in the City of Niceville are unavailable because there have been no studies conducted regarding these hazards' impacts in the County. In addition, the nature of these hazards tends to only affect the populations without adequate cooling systems in their homes, low income, elderly, children, and outside workers. Only broad general impacts of these hazards can be given, which provide an indication of what impacts are expected with heat wave and drought. Everyone living within the county is susceptible to heat exhaustion. All households are susceptible to power outages due to increased electricity demand during periods of extreme heat. Electrical system failures due to demand would only enhance problems for the entire population, especially for the vulnerable populations. All water bodies and municipal water supplies are susceptible to declining water levels and water shortages due to drought.

Section 5.06.02.12 Wildfire

Although the City of Niceville is susceptible to wildfire, as previously mentioned in the City's Hazard Assessment, it appears that the future risk of wildfire is minimal. The areas and populations that are most vulnerable to the danger and destruction of wildfire are the ones with inadequate infrastructure, inaccessibility to critical facilities or firefighting resource locations, and located in the wildland-urban interface. The following table depicts the structures with 'medium (levels 4-6)' to 'high (levels 7-9)' wildfire level of concern. Levels 0-3 were determined to be of such minimal to low vulnerability to wildfire they were not included in this assessment.

Table 5.06.02.12.1: Medium to High Wildfire Level of Concern for Structures

Total:	Single-Family	Multi-Family	Commercial	Government/ Institutional
Level 4	9	2	4	1
Just Value	$3,651,536	$2,396,129	$3,095,964	$801,265
Level 5	31	1	8	4
Just Value	$12,764,004	$2,008,421	$5,323,704	$7,645,565
Level 6	4	0	3	3
Just Value	$2,250,005	$0	$2,297,376	$2,262,670
Level 7	0	0	2	1
Just Value	$0	$0	$1,041,962	$8,211,176

Source: Florida Division of Forestry and Okaloosa County Property Appraiser, 2025 (Okaloosa County Staff generated table from overlaying the wildfire level of concern and property appraiser data)

Section 5.06.02.13 Beach Erosion

The areas of the City of Niceville that are vulnerable to the effects of beach erosion are the properties that border Choctawhatchee Bay. As previously mentioned, within its jurisdiction, there are 11.95 miles of coastline along Choctawhatchee Bay. The populations that reside, work, run businesses, or own property in these parcels are the most affected by beach erosion. Beach erosion undermines the integrity of infrastructure, beachfront homes and businesses, and other structures by washing away the sediments that support the structural foundation sometimes resulting in complete destruction. There are 37 structures along the City of Niceville's coastline. The cumulative 'just value' of those structures is $23,029,663 (See Table 5.06.02.13.1, below).

Table 5.06.02.13.1: Total Structures Susceptible to Beach Erosion

	Single-Family
Total	37
Just Value	$23,029,663

Source: Okaloosa County Department of Growth Management and Okaloosa County Property Appraiser 2025
Note: Table was generated from Property Appraiser data based on the structures that were determined to be located along the coastal areas in Okaloosa County.

Section 5.05.02.14 Sea Level Rise

The 2025 Okaloosa County Vulnerability Assessment (2025 Jacobs Engineering, Appendix E) identifies in detail those areas and assets throughout Okaloosa County including the City of Niceville, that are vulnerable to sea level rise. Those areas of the city that are closest to Boggy Bayou, Rocky Bayou, and Choctawhatchee Bay are the most vulnerable. Fortunately, none of Niceville's water tanks or sewer lift stations are identified as vulnerable, though several local roads as well as State Road 397 located near the shoreline are subject to flooding (see Figure 8-9 and Table 8-5 of the Vulnerability Assessment, Appendix E).

Section 5.06.02.15 Other Hazards

As previously stated in the Risk Assessment, the following hazards, sinkholes, expansive soils, dam safety, earthquake, avalanche, land subsidence, volcano, and tsunami have been determined to be a minimal risk to the City of Niceville. Therefore, the City's vulnerability to these hazards has not been assessed. If any of the hazards become a greater risk in the City of Niceville, then the LMS Committee will update this section to reflect those changes.

Section 5.06.02.15 Summary

The vulnerability assessment section of this LMS document highlighted how vulnerable the City of Niceville is to the identified hazards from the Risk Assessment. It discussed the vulnerable populations, repetitive loss properties, and structure and infrastructure damages associated with these hazards.

Section 5.06.03 Critical Facilities

The following is a list of all critical facilities found inside the City of Niceville's city limits. It is to be noted that some critical facilities belong to and are maintained by other jurisdictions.

Section 5.06.03.01 Fire Stations

Site Name	Address	X-COORD	Y-COORD
NICEVILLE FD	216 N PARTIN DR, NICEVILLE, FL 32578	1346837.92	559868.916

Section 5.06.03.02 Law Enforcement

Site Name	Address	X-COORD	Y-COORD
NICEVILLE PD	212 PARTIN DR N, NICEVILLE, FL 32578	1346677.048	559792.039

Section 5.06.03.03 Government Centers

Site Name	Address	X-COORD	Y-COORD
NICEVILLE CITY HALL	208 PARTIN DR N, NICEVILLE, FL 32578	1346467.551	559786.946

Section 5.06.03.04 Hospitals

Site Name	Address	X-COORD	Y-COORD
TWIN CITIES HOSPITAL	2190 HWY 85 N, NICEVILLE, FL 32578	1340206.728	563216.674

Section 5.06.03.05 Adult Congregate Living Facilities

Site Name	Address	X-COORD	Y-COORD
PARTIN PLACE SENIOR LIVING	2300 N PARTIN DRIVE, NICEVILLE, FL 32578	1,350,907.325	561,917.683
TWIN CITIES PAVILLION	1054 JOHN C SIMS PKWY E, NICEVILLE, FL 32578	1348187.312	557143.566

Section 5.06.03.06 Public Works Facilities

Site Name	Address	X-COORD	Y-COORD
NICEVILLE PUBLIC WORKS	920 SOUTH CEDAR AVE, NICEVILLE, FL 32578	1345719.842	554995.082
NOV SEWER BOARD	507 HWY 85 N, NICEVILLE, FL 32578	1341045.196	562376.717

City of Niceville

Section 5.06.03.07 Mobile Home Parks and RV Campgrounds

Site Name	Address	X-COORD	Y-COORD
HOMESTEAD TRAILER PARK	304 REEVES ST LOT B5, NICEVILLE, FL 32578	1349972.294	555165.485
JENKINS TRAILER PARK	638 CRESTVIEW AVE, NICEVILLE, FL 32578	1347911.995	560956.515
L&M TRAILER PARK	205 REEVES ST LOT 10, NICEVILLE, FL 32578	1350692.543	555230.136
LYNNS TRAILER PARK	615 BULLOCK BLVD, NICEVILLE, FL 32578	1348745.874	554212.937
BAYSHORE VILLAS	EVERGLADE DRIVE, NICEVILLE, FL 32578	1,348,945.353	550,192.480

(All such sites are considered to be in a hurricane evacuation area due to their poor wind resistance. Damage Assessment Teams should attempt to visit these areas since damage is likely to be high in a major hurricane)

Section 5.06.04 Mitigation Actions

Section 5.06.04.01 Hurricane and Tropical Storm

1. Ensure the public is informed of pending conditions. *Status: ongoing; Okaloosa County Public Safety and City of Niceville Public Information Officer (PIO), Public Works, Police and Fire Departments*
2. Enforce Florida Building Codes for new structures. *Status: ongoing; Florida Building Codes, City of Niceville Building Official, Code Enforcement Public Works, Police and Fire Departments.*
3. Ensure adequate equipment exists to remove debris, clear roads, perform search and rescue functions, and otherwise respond and recover from hurricane impacts. *Status: ongoing; City of Niceville Public Works, Police and Fire Departments.*
4. Ensure communications are wind and electrical-failure resistant to allow for 24/7 communications during the first 72 hours flowing a disaster. *Status: ongoing; City of Niceville PIO, Public Works, Police and Fire Departments, City of Niceville Information Systems, Okaloosa County Public Safety and Private entities*
5. Promote public awareness of hurricane and tropical storm hazards. *Status: ongoing; Okaloosa County Public Safety and City of Niceville PIO, Public Works, Police and Fire Departments*
6. Ensure roads are designed and engineered for the amount of wind, surge, flooding and debris that can be expected from a hurricane or tropical storm event. *Status: ongoing: City of Niceville Public Works*
7. Ensure communications systems are capable to communicate during and following hurricanes/tropical storms. *Status: ongoing; Okaloosa County Public Safety, City of Niceville Innovation and Technology Department Systems, State of Florida, FEMA, City of Niceville Public Works, Police and Fire Departments and Private entities*
8. Ensure internet systems are redundant to ensure continued availability of disaster management software. *Status: ongoing; City of Niceville Innovation and Technology Department Systems, State of Florida, FEMA and Private entities*
9. Support activities that educate the public about the dangers of hurricanes/tropical storms. *Status: ongoing; Okaloosa County Public Safety and City of Niceville PIO, Public Works, Police and Fire Departments*

Section 5.06.04.02 Storm Surge

1. Promote public awareness of storm surge. *Status: ongoing; City of Niceville Public Works, Police and Fire Departments and Okaloosa County Public Safety*
2. Ensure the public is informed of pending conditions. *Status: ongoing; City of Niceville Public Works, Police and Fire Departments and Okaloosa County Public Safety*
3. Ensure that maps accurately reflect the amount of storm surge, wave and flood action that can occur during hurricanes and tropical storms. *Status: ongoing; City of Niceville, PIO and GIS and Okaloosa County GIS*
4. Ensure roads are designed and engineered for the amount of storm surge that can be expected. *Status: ongoing; City of Niceville Public Works*

5. Support activities that educate the public about the dangers of storm surge. *Status: ongoing; Okaloosa County Public Safety and City of Niceville PIO, Public Works, Police and Fire Departments*

Section 5.06.04.03 Flooding

1. Ensure all future buildings are constructed to the Florida Building Code. *Status: ongoing; Florida Building Codes, Building Official; for NFIP Compliance, Floodplain Administrator*
2. Ensure all future buildings are built with a minimum finished floor height of 1' above the established Base Flood Elevation on the Flood Insurance Rate Maps for those buildings located within the AE Flood Zones. *Status: ongoing; Flood Damage Prevention Ordinance, Building Official; for NFIP Compliance, Floodplain Administrator*
3. Ensure all future buildings built within the V Flood Zones meet the minimum 1' freeboard requirement. *Status: ongoing; Flood Damage Prevention Ordinance, Building Official; for NFIP Compliance, Floodplain Administrator*
4. Ensure all future buildings are built with a minimum finished floor height of 3' above the highest adjacent grade for those buildings located within the un-numbered A Flood Zones. *Status: ongoing; City of Niceville Flood Damage Prevention Ordinance, and Building Official; for NFIP Compliance, Floodplain Administrator*
5. Ensure roads are designed and engineered for the amount of flooding that can be expected. *Status: ongoing; City of Niceville Public Works; for NFIP Compliance*
6. Ensure that all public buildings that serve first response and critical emergency/public needs, including recording/data collection and communication centers/infrastructure, are located outside of flood zones or flood prone areas. *Status: ongoing; FEMA, CRS, and Flood Damage Prevention Ordinance; for NFIP Compliance*
7. Ensure communications systems are capable to communicate during and following flood events. Status: *ongoing; City of Niceville Public Works, Police, Fire and Innovation and Technology Department Systems*; *for NFIP Compliance*
8. Maintain status as a NFIP and CRS community by enforcing both the NFIP requirements and additional criteria that exceeds the NFIP for CRS compliance as a class 6 community. *Status: ongoing; Building Official, Floodplain Administrator and FEMA*
9. Support activities that educate the public about the dangers of flooding. *Status: ongoing; City of Niceville, PIO, Floodplain Administrator, CRS Flood mail out and Okaloosa County Public Safety; for NFIP Compliance*
10. Ensure the public is informed of pending conditions. *Status: ongoing; City of Niceville Public Works, PIO, Police, Fire and Innovation and Technology Department Systems and Okaloosa County Public Safety; for NFIP Compliance*
11. Reference and align LMS mitigation projects with the Watershed Master Plan to address future flood risks and climate resilience.

Section 5.06.04.04 Land Erosion

1. Support efforts that protect natural plant systems, human plantings, special tilling methods and technologies, and other forms of vegetative erosion control. *Status: ongoing; City of Niceville Land Development Code*

2. Require proposed temporary and permanent erosion and sediment control plans are submitted with each application for construction approval*. Status: ongoing; City of Niceville Land Development Code, Public Works, Building Official, State of Florida Department of Environmental Protection, and Northwest Florida Water Management District*
3. Require no clearing, grading, excavating, filling, or other disturbance of the natural terrain shall occur until erosion and sedimentation control measures have been approved by City of Niceville and installed and be maintained throughout the length of construction activity. *Status: ongoing; City of Niceville Land Development Code, Public Works, Code Enforcement and Building Official*
4. Sediment shall be retained on site. *Status: ongoing; Land Development Code, Public Works and State of Florida*
5. Wetlands and other waterbodies shall not be used as sediment traps during construction. *Status: ongoing; City of Niceville Land Development Code, Public Works and state of Florida*
6. Require land which has been cleared for construction and has not commenced shall be protected from erosion by appropriate techniques designed to re-vegetate the area. *Status: ongoing; City of Niceville Land Development Code, Public Works, and Building Official*
7. Support efforts that allow public and private sector entities to gain control of problem erosion locations, gullies and rills that reduce unnatural sedimentation accumulation and cutting into natural hillsides and land, and to control coastal erosion where seawalls are necessary. *Status: ongoing; City of Niceville Land Development Code, Natural Resources Conservation Service, State of Florida Department of Environmental Protection, and ACE*
8. Support efforts that help to eliminate or reduce coastal erosion due to boat/ship wake issues, while weighing the interests of the boating public*. Status: ongoing; United States Coast Guard*

Section 5.06.04.05 Severe Storms

1. Ensure the public is informed of pending conditions. *Status: ongoing; City of Niceville, PIO, Public Works, Police and Fire Departments and Okaloosa County Public Safety*
2. Ensure communications systems are capable to communicate during and following severe storms. *Status: ongoing; City of Niceville, PIO, Public Works, Innovation and Technology Department Systems, Police and Fire Departments, Okaloosa County Public Safety, State of Florida, FEMA, and Private entities*
3. Ensure internet systems are redundant to ensure continued availability of disaster management software throughout the City of Niceville. *Status: ongoing; City of Niceville Innovation and Technology Department Systems, Police and Fire Departments, Okaloosa County Public Safety, State of Florida, FEMA and Private entities*
4. Support activities that educate the public about the dangers of severe storms. *Status: ongoing; City of Niceville, PIO, Public Works, Police and Fire Departments and Okaloosa County Public Safety*

Section 5.06.04.05.01 Tornado and Waterspout

1. Ensure communications systems are capable to communicate during and following tornados and waterspouts. *Status: ongoing; City of Niceville, PIO, Public Works, City of Niceville Innovation and Technology Department Systems, Police and Fire Departments, Okaloosa County Public Safety, State of Florida, FEMA and Private entities*
2. Support activities that educate the public about the dangers of tornados and waterspouts. *Status: ongoing; City of Niceville, PIO, Public Works, Police and Fire Departments and Okaloosa County Public Safety*
3. Support activities to reduce the risk of loss of electronic equipment and structures due to tornados and waterspouts. *Status: ongoing: Innovation and Technology Department Systems and Building Official*
4. Ensure the public is informed of pending conditions. *Status: ongoing; City of Niceville PIO, Public Works, Police and Fire Departments and Okaloosa County Public Safety*
5. Ensure internet systems are redundant to ensure continued availability of disaster management software throughout the county. *Status: ongoing; City of Niceville Innovation and Technology Department Systems, Police and Fire Departments, Okaloosa County Public Safety, State of Florida, FEMA, and Private entities*

Section 5.06.04.05.02 Thunderstorms and Lightning

1. Ensure communications systems are capable to communicate during and following thunderstorms and lightning. *Status: ongoing; City of Niceville, PIO, Public Works, Innovation and Technology Department Systems, Police and Fire Departments, Okaloosa County Public Safety, State of Florida, FEMA, and Private entities*
2. Support activities that educate the public about the dangers of thunderstorms and lightning. *Status: ongoing; City of Niceville, PIO, Public Works, Police and Fire Departments and Okaloosa County Public Safety*
3. Support activities to reduce the risk of loss of electronic equipment and structures due to lightning strike and electrical surge. *Status: ongoing; Innovation and Technology Department Systems and Private entities*
4. Ensure the public is informed of pending conditions. *Status: ongoing; City of Niceville, PIO, Public Works, Police and Fire Departments and Okaloosa County Public Safety*
5. Ensure internet systems are redundant to ensure continued availability of disaster management software throughout the county. *Status: ongoing; City of Niceville Innovation and Technology Department Systems, Okaloosa County Public Safety, State of Florida, FEMA, and Private entities*

Section 5.06.04.05.03 Winter Storms

1. Ensure communications systems are capable to communicate during and following winter storms. *Status: ongoing; City of Niceville, PIO, Public Works, Innovation and Technology Department Systems, Police and Fire Departments, Okaloosa County Public Safety, State of Florida, FEMA and Private entities.*

2. Support activities that educate the public about the dangers of winter storms. *Status: ongoing; City of Niceville, PIO, Public Works, Police and Fire Departments and Okaloosa County Public Safety*
3. Reduce or eliminate the vulnerability to freezing or provide secondary heating or electrical systems for public facilities. *Status Ongoing; City of Niceville Public Works*
4. Ensure the public is informed of pending conditions. *Status: ongoing; City of Niceville, PIO, Public Works, Police and Fire Departments, and Okaloosa County Public Safety*

Section 5.06.04.06 Heat Wave and Drought

1. Ensure communications systems are capable to communicate during and following heat waves and droughts. *Status: ongoing; City of Niceville PIO, Public Works, City of Niceville Innovation and Technology Department Systems, Police and Fire Departments, Okaloosa County Public Safety, State of Florida, FEMA and Private entities*
2. Support activities that educate the public about the dangers of heat waves and droughts. *Status: ongoing; City of Niceville, PIO, Public Works, Police and Fire Departments and Okaloosa County Public Safety*
3. Ensure the public is informed of pending conditions. *Status: ongoing; City of Niceville, PIO Public Works, Police and Fire Departments, and Okaloosa County Public Safety*

Section 5.06.04.07 Wildfire

1. Ensure communications systems are capable to communicate during and following wildfire events. *Status: ongoing; City of Niceville PIO, Public Works, Innovation and Technology Department, Systems, Okaloosa County Public Safety, state of Florida, FEMA, and Private entities*
2. Ensure the public is informed of pending conditions. *Status: ongoing; City of Niceville PIO, Public Works, Police and Fire Departments and Okaloosa County Public Safety*
3. Support activities that educate the public about the dangers of wildfire. *Status: ongoing; City of Niceville PIO, Police and Fire Departments Okaloosa County Public Safety and State of Florida Department of Agriculture, Division of Forestry*
4. Require new subdivisions plats and new commercial structures to be designed and built to National Fire Codes. *Status: ongoing; Building Official, Public Safety*

Section 5.06.04.08 Beach Erosion

1. Beach management actions that address eroding shoreline include these options: (1) hard stabilization, such as seawalls and revetments; (2) soft stabilization, such as beach restoration; (3) retreat, such as abandonment of shoreline development or relocation of threatened buildings; and (4) no action. The long-term beach behavior and its causes usually dictate the appropriate options. *Status: ongoing; City of Niceville PIO, Public Works*

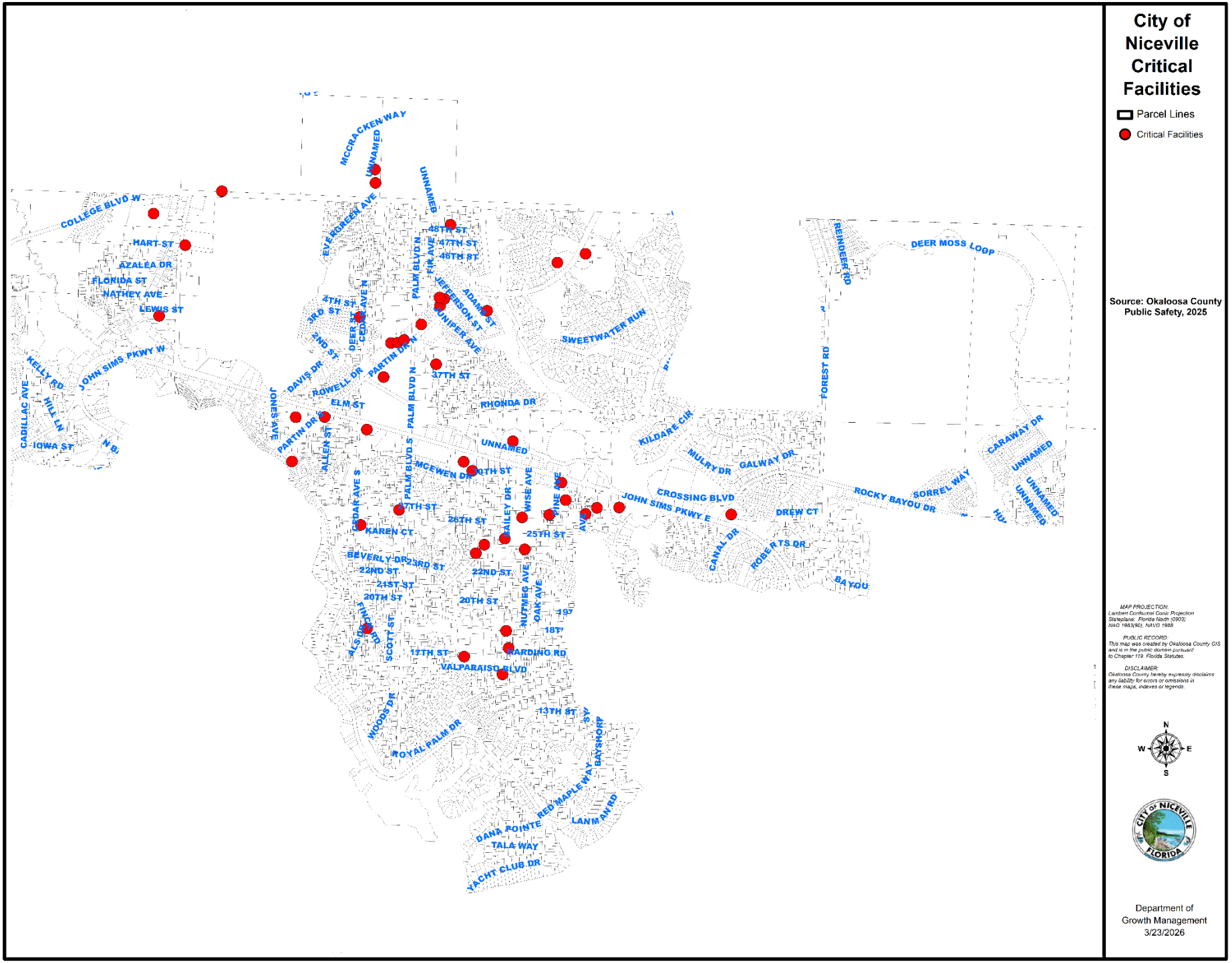
Section 5.06.04.09 Sea Level Rise

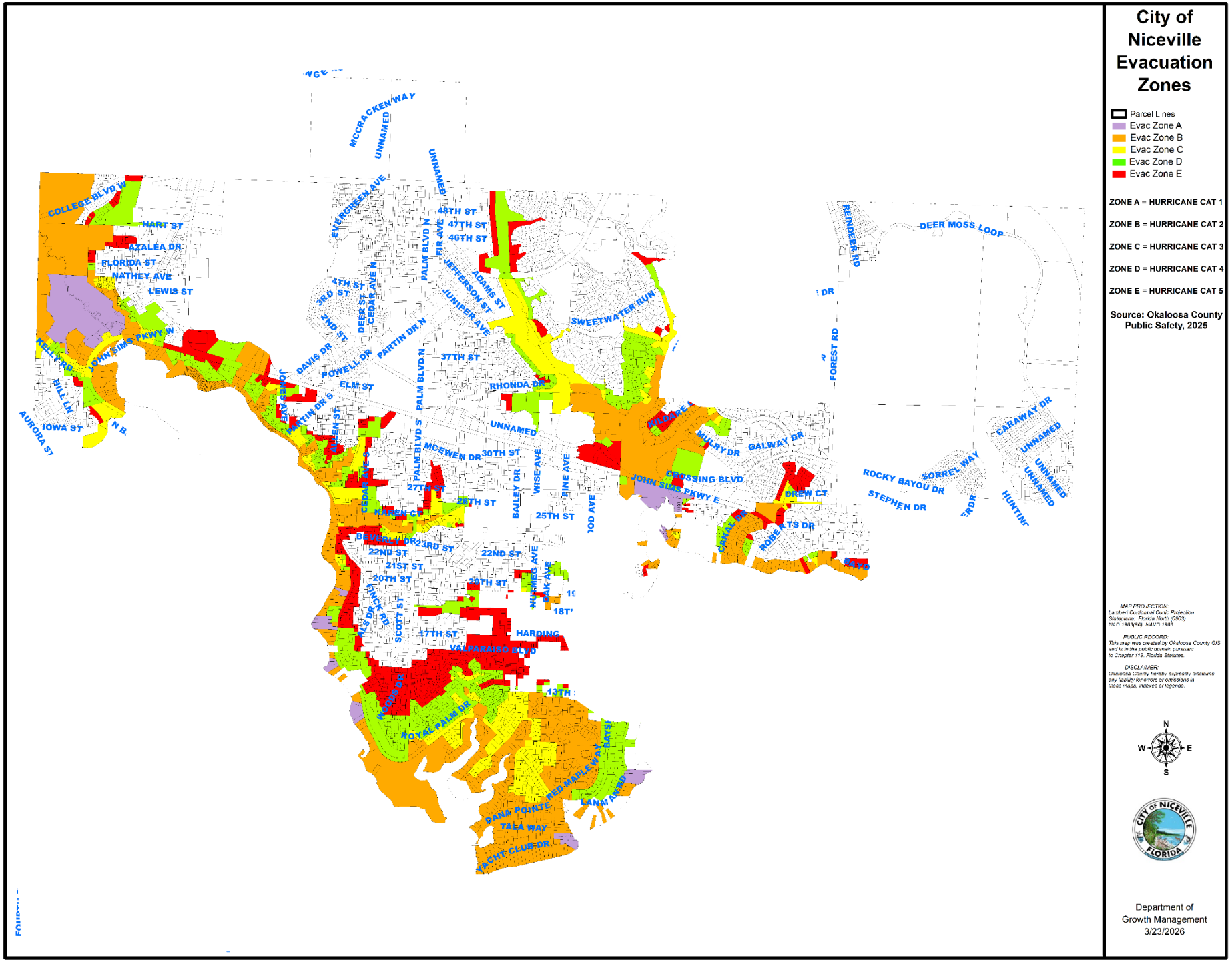
The mitigation actions contained in Section 5.06.04.03 Flooding will address the needs for mitigation actions for Sea Level Rise, as well.

Section 5.06.05 Maps

Attached to this page are maps of the City of Niceville. They include:

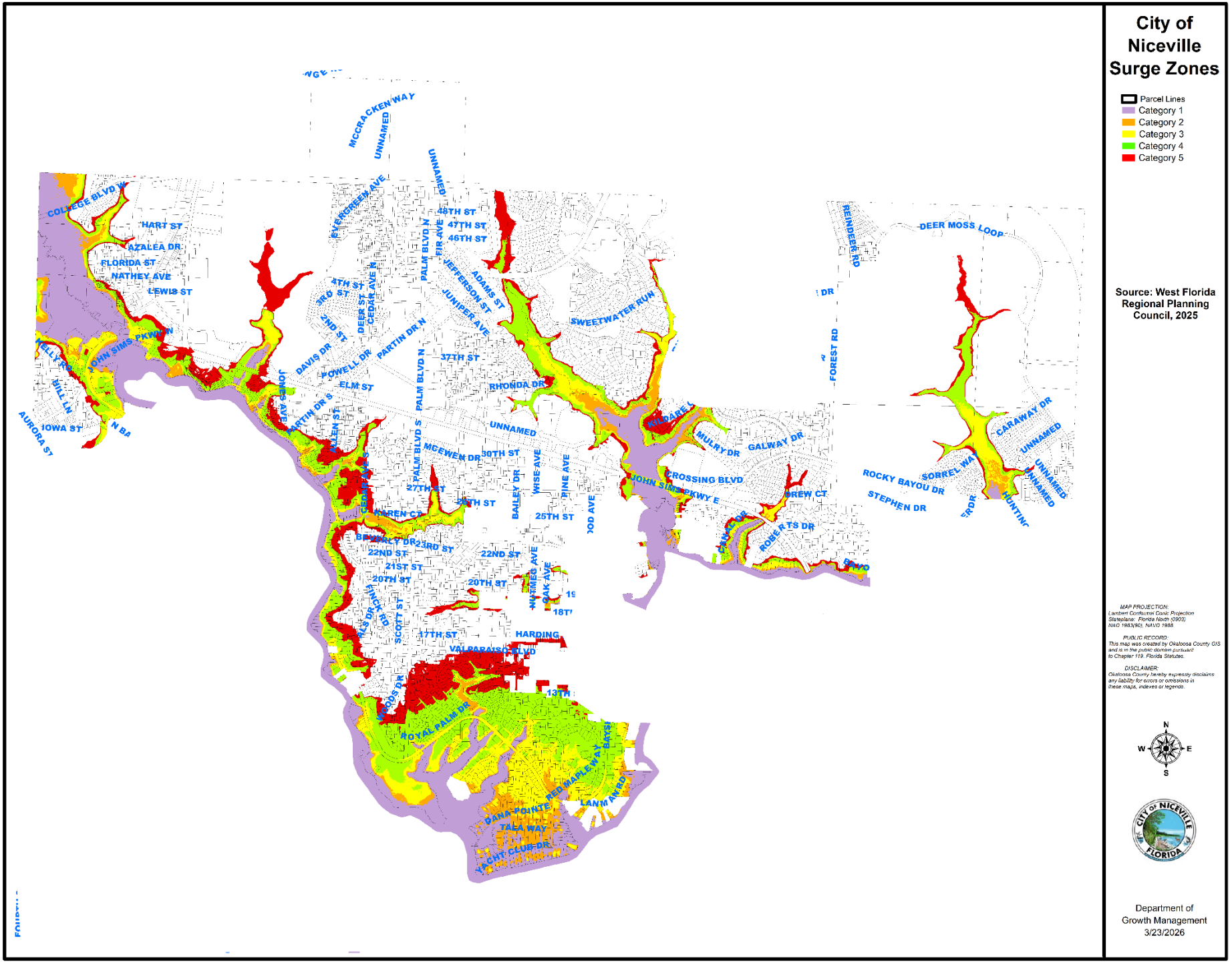
1. Critical Facilities…….. 5.06-38
2. Evacuation Zones…….. 5.06-39
3. Flood Zones…… 5.06-40
4. Repetitive Loss Properties…… 5.06-41
5. Surge Zones…… 5.06-42
6. Wildfire Level of Concern…….. 5.06-43


City of Niceville Critical Facilities
Parcel Lines
Critical Facilities
Source: Okaloosa County Public Safety, 2025
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
NAD 1983(90), NAVD 1988
PUBLIC RECORD:
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REINDEER RD
DEER MOSS LOOP


City of Niceville Evacuation Zones
Parcel Lines
Evac Zone A
Evac Zone B
Evac Zone C
Evac Zone D
Evac Zone E
ZONE A = HURRICANE CAT 1
ZONE B = HURRICANE CAT 2
ZONE C = HURRICANE CAT 3
ZONE D = HURRICANE CAT 4
ZONE E = HURRICANE CAT 5
Source: Okaloosa County Public Safety, 2025
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STEPHEN DR
CARAWAY DR
UNNAMED
HUNTING


City of Niceville Flood Zones
Parcel Lines
X 500 Year Flood Plain
A 100 Year Flood Plain
AE 100 Year Flood Plain
VE 100 Year Flood Plain
Source: FEMA Map Service Center, March 9 2021
AE 9
VE 11
AE 8
AE 10
AE 7
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CITY OF NICEVILLE FLORIDA
Department of Growth Management
3/23/2026
MAP PROJECTION:
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City of Niceville Repetitive Loss Properties
Parcel Lines
X 500 Year Flood Plain
A 100 Year Flood Plain
AE 100 Year Flood Plain
VE 100 Year Flood Plain
Base Flood Elevation in a Floodway
Repetitive Loss Properties
Source: FEMA Map Service Center, March 9 2021
AE 9
VE 11
AE 8
AE 10
AE 7
X
A
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Department of Growth Management
08/18/2010


City of Niceville Surge Zones
Parcel Lines
Category 1
Category 2
Category 3
Category 4
Category 5
Source: West Florida Regional Planning Council, 2025
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City of Niceville Wildfire Level of Concern
Parcel Lines
Level of Concern
0
1
2
3
4
5
6
7
8
9
Source: Florida Division of Forestry, 2025
MAP PROJECTION:
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STEPHEN DR
HUNTING

Section 5.06.06 Post Disaster Redevelopment Plan

Attached to this page is the post disaster redevelopment plan adopted by the City of Niceville in December of 1992. This plan is still in effect.

ORDINANCE NO. 92-25

AN ORDINANCE ADOPTING THE POST DISASTER REDEVELOPMENT PLAN FOR THE CITY OF NICEVILLE, FLORIDA; REPEALING CONFLICTING ORDINANCES; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City of Niceville is vulnerable to a variety of natural hazards which result or may result in emergencies causing substantial injury or harm to the population or substantial damage to or loss of property; and

WHEREAS, Chapter 252, Florida Statutes, provides the City Council the authority to declare a state of local emergency and take actions necessary to ensure the safety and well being of its residents, visitors, and property during emergencies caused by these hazards; and

WHEREAS, the City of Niceville has prepared a Comprehensive Plan in compliance with Chapter 163 of the Florida Statutes and 9J-5, of the Florida Administrative Codes; and

WHEREAS, the City of Niceville has adopted its Comprehensive Plan as Ordinance Number 90-10 and became effective on July 18, 1990; and

WHEREAS, Comprehensive Plan Objective 11.A.8 as adopted, requires the City to develop and adopt a Post Disaster Redevelopment Plan.

NOW THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF NICEVILLE, FLORIDA:

ARTICLE 1. INTENT

Following a damaging hurricane, or other natural disaster, and enactment of a building moratoria, it is the intent of the City to allow rebuilding and reconstruction in an orderly manner. The City will control the issuance of building permits to manage the location, timing, and sequence of reconstruction and repair. It is further the intent of the Post Disaster Redevelopment Plan that the City establish prior to the hurricane, or other natural disaster, a special post disaster redevelopment task force which will oversee the recovery and reconstruction process and serve as advisory body to the City Council. A main responsibility of this body will be to advise the Council on the policies of the plan which are structured as to mitigate future hurricane, or other natural disaster damages through the management of reconstruction. To further the intent of this plan, the City will make every effort to develop its capacity to identify and orchestrate various post-disaster

redevelopment resources, while at the same time ensuring maximum local control over the redevelopment process.

ARTICLE 2. THE PLAN

The Post Disaster Redevelopment Plan is attached hereto and is a part of this Ordinance.

ARTICLE 3. CONFLICT

All ordinances or parts of ordinances in conflict with this ordinance are hereby repealed.

ARTICLE 4. EFFECTIVE DATE

This ordinance shall become effective immediately upon its adoption according to law.

ADOPTED in Special session this 10th day of December, 1992.

Randall Wise
MAYOR

ATTEST:

George H. Durand
CITY CLERK

POST DISASTER REDEVELOPMENT PLAN

CITY OF NICEVILLE, FLORIDA

INTENT: To provide for the health, safety and welfare of the City of Niceville through sound pre and post-disaster redevelopment policies which promote the reduction in loss of life and property.

AUTHORITY: The Post Disaster Redevelopment Plan for the City of Niceville, Florida, is adopted by the City Council of Niceville as Ordinance No. 92-25 in accordance with Objective 11.A.8 of the Comprehensive Plan.

GOAL 1 Reestablish the economic and social viability of the City of Niceville in a timely and orderly fashion.

Objective 1.1 Create a post disaster redevelopment task force to guide pre-disaster and post-disaster implementation of the Post Disaster Redevelopment Plan (PDRP).

Policy 1.1.1 The Post Disaster Redevelopment Task Force is hereby created by this ordinance. The emergency command center for the task force will be the City of Niceville Public Safety Building, or as designated by the City Manager.

Policy 1.1.2 The task force shall include the following members, or as designated by the City Manager:

City Manager
Chief of Police
Fire Chief
Director of Public Works
Building Inspector
City Clerk
Emergency Management Director

Objective 1.2 Conduct a post-disaster assessment and survey utilizing the survey instrument approved by the City of Niceville in accordance with the Okaloosa County Peacetime Emergency Plan.

Policy 1.2.1 The City Manager or his designee shall conduct a generalized preliminary post-disaster damage assessment and provide information to the Okaloosa County Emergency Management Director within 24 hours.

Policy 1.2.2 The survey instrument will be used to provide a uniform procedure for establishing the following terms: destroyed, major damage, and minor damage.

These terms will be used throughout the Post Disaster Redevelopment Plan as criteria in various policies.

Destroyed is when the cost of repair, replacement, or relocation of a structure exceeds 50% of its pre-disaster replacement value.

Major damage is when the cost of repair, replacement, or relocation of a structure is between 25% - 50% of its pre-disaster replacement value.

Minor damage is when the cost of repair, replacement, or relocation of a structure is less than 25% of its pre-disaster replacement value.

Policy 1.2.3 The City Manager or his designee shall evaluate immediate revenue sources needed for emergency repairs.

Policy 1.2.4 The City Manager or his designee shall apply for state or federal disaster relief grant and loan programs.

Policy 1.2.5 The City Manager or his designee shall be the liaison with the federal mitigation officer who will review public and private requests for assistance to apprise him/her of the City of Niceville's policies of redevelopment.

Policy 1.2.6 The City Manager or his designee shall participate in the preparation/modification of the Section 409 Hazard Mitigation Plan.

Objective 1.3 Establish necessary personnel and procedures for planning that accommodate the emergency nature of redevelopment.

Policy 1.3.1 Structures experiencing total destruction shall be visibly labeled condemned by the Building Inspector.

Policy 1.3.2 The City will evaluate the long-term needs for capital facilities planning immediately following a hurricane, or other natural disaster.

Policy 1.3.3 As soon as possible, if necessary, an amendment to the Capital Improvements Element of the Comprehensive Plan will be transmitted to the

Department of Community Affairs for a determination of consistency.

Policy 1.3.4 City Staff will initiate the coordination with state and federal staff to obtain assistance in relocation of public facilities or repairing them in place.

Policy 1.3.5 The Post Disaster Redevelopment Task Force may identify and designate areas that can be used for residential relocation housing outside of the Hurricane Vulnerability Zone (HVZ).

Objective 1.4 Establish a schedule that allows an orderly procession of reviewing private and public redevelopment proposals after a hurricane, or other natural disaster.

Policy 1.4.1 Effective immediately upon the declaration of a County wide disaster area by the County or the Governor of Florida, a moratorium on all previously approved development orders, building permits and review procedures in progress will be instituted. Moratoriums will be lifted according to the following policy priorities:

* 5 days after the state of emergency has been lifted, public facilities subject to major damage and which create a public threat to the health, safety, and welfare shall be able to apply for building permits for repair. Public or private structures destroyed that pose an immediate threat to residents if they collapse, should be immediately assessed for insurance purposes and destroyed. The review of the permits is subject to the policies listed under Goals 2 and 3 below. Private facilities which require minor repairs, may apply for repair permits.

* 30 days after the state of emergency has been lifted, private or public facilities which were destroyed (damage in excess of 50% of the replacement value) may apply for building permits. The review of the permits is subject to the policies listed under Goals 2 and 3.

* 45 days after the state of emergency has been lifted, previously approved development orders and review procedures will revert to their pre-disaster status.

Policy 1.4.2 The Post Disaster Redevelopment Task Force may recommend the extension or reduction of the

duration of the above time frames as deemed necessary to the City Council.

GOAL 2 Reduce the loss of life and property in any future hurricane, or other natural disaster.

Objective 2.1 Permitting and certification of structures will be required to ensure adherence with redevelopment policies limiting the potential for future loss of property.

Policy 2.1.1 Except for facilities requiring access to the waterfront and those needed to maintain or improve hurricane, or other natural disaster evacuation times, all public facilities destroyed in the V-zone shall be relocated.

Policy 2.1.2 Replace bulkheads and seawalls with nonstructural forms of shoreline stabilization, except where such replacement would endanger human health, safety or welfare.

Policy 2.1.3 Coordinate with private utilities to floodproof replacement of utilities.

Objective 2.2 Establish a procedure to review proposals for redevelopment of private structures and policies to guide redevelopment decisions.

Policy 2.2.1 The procedure to guide the timing of redevelopment is set forth in Goal 1. The review of redevelopment permits for structures destroyed shall be guided by the following redevelopment priorities:

* Reduce the pre-disaster density of destroyed residential development in the Coastal High Hazard Area (CHHA) through relocation assistance.

* Encourage the relocation of all nonresidential structures destroyed in the CHHA to outside of the CHHA through relocation assistance.

* Nonresidential structures destroyed in the CHHA and rebuilt in the CHHA, shall be designed and constructed consistent with the adopted Comprehensive Plan and Future Land Use Map and current building codes and prohibited, via property restrictions, from purchasing flood and wind insurance underwritten by the federal government.

* Structures destroyed outside of the CHHA but within the HVZ and rebuilt, shall be designed and constructed consistent with the adopted Comprehensive Plan and Future Land Use Map and current building codes.

* All structures experiencing major damage, if redeveloped within the HVZ, will be required to be inspected prior to the issuance of a Certificate of Occupancy to ensure conformance with building code regulations.

* Coordinate the redevelopment of shoreline areas with the Florida Department of Natural Resources.

* Certificates of Occupancy and permitting of redevelopment to pre-disaster square footages of private structures which were destroyed, shall be conditioned upon the immediate provision of services to that structure necessary for health and safety.

Policy 2.2.2 The review of redevelopment permits for structures experiencing major damage, or proposing more than 50% of value in major additions or changes to the pre-disaster existing structure, shall be guided by the following redevelopment priorities:

* Where feasible, reduce the pre-disaster density of residential development which experienced major damage.

* Encourage the relocation of structures experiencing major damage in the CHHA to outside of the CHHA.

* Structures experiencing major damage in the CHHA and rebuilt in the CHHA, shall be designed and constructed consistent with the adopted Comprehensive Plan and Future Land Use Map and current building codes and prohibited from purchasing flood and wind insurance underwritten by the federal government.

* Structures experiencing major damage and rebuilt, outside of the CHHA but within the HVZ, shall be designed and constructed consistent with the adopted Comprehensive Plan and Future Land Use Map and current building codes.

* All structures experiencing major damage, if redeveloped within the HVZ, will be required to

be inspected prior to issuance of Certificate of Occupancy to ensure conformance with building code regulations.

* Nonconforming uses (according to the adopted Comprehensive Plan and Future Land Use Map, zoning code or building codes) damaged outside of the CHHA but within the HVZ, shall be designed and constructed consistent with the adopted Comprehensive Plan and Future Land Use Map and current building codes.

* Certificates of Occupancy and permitting of redevelopment to pre-disaster square footages of private structures which experienced major damage, shall be conditioned upon the immediate provision of services to that structure necessary for health and safety.

* Coordinate the redevelopment of shoreline areas with the Florida Department of Natural Resources.

Policy 2.2.3 The review of redevelopment permits for structures experiencing minor damage shall be guided by the following redevelopment priorities:

* Structures experiencing minor damage in the HVZ, including the CHHA, shall be allowed to rebuild to pre-disaster square footages consistent with the existing land use plan map and current building regulations.

* Certificates of Occupancy and permitting of redevelopment to pre-disaster square footages of private structures which experienced minor damage, shall be conditioned upon the immediate provision of services to that structure necessary for health and safety.

Policy 2.2.4 All private redevelopment which was destroyed or suffered major damage shall be guided by the following redevelopment priorities:

* Develop new street patterns in hardest hit areas to accommodate the clustering of structures away from the CHHA and attempt to remove structural/physical patterns which increase the susceptibility of development to hurricane, or other natural disaster hazards.

* Residential redevelopment densities shall not exceed preexisting development without the provision of enhanced evacuation methods, in

order to maintain or reduce future evacuation time.

* In the HVZ, redevelopment floor area ratios for commercial and office development shall not exceed those established in the adopted Comprehensive Plan and Future Land Use Map, in order to reduce potential future property damage.

* Prohibit the rebuilding and relocation of mobile homes and manufactured housing in the CHHA.

* Discourage mobile homes and manufactured housing within the HVZ unless they are proven to be able to withstand sustained winds of 130 m.p.h., and in compliance with local, county, and state building requirements.

* Where lots are destroyed and replaced by tidal waters, those parcels will be condemned by the Building Inspector.

* The replacement/repair of private beach or beach stabilization structures shall be the responsibility of the property owner.

* Repairs to structures receiving major or minor damage which were established on the National Register of Historic Places, the State Inventory of Historic Places, or the State of Florida Master File, and who's restoration would cause the structure to lose its designation, will not be required to redevelop in such a way as to lose that designation if approved by the Building Inspector.

GOAL 3 Provide public facilities and services which guarantee to the greatest extent possible the health, safety, and welfare of the citizens of the City of Niceville and which do not require future expenditure for public infrastructure in the CHHA.

Objective 3.1 Based upon the inventory of damage and the definitions provided, the review of permits for relocation/repair shall be guided by the following policies:

Policy 3.1.2 Repair in place facilities which are essential to the immediate health, safety, or welfare of citizens, or work to provide the impaired service to residents through alternative means.

Policy 3.1.3 Public facilities destroyed or suffering major damage in the CHHA shall be relocated out of the CHHA consistent with the adopted Comprehensive Plan and Future Land Use Map and rebuilt to current local, state, and federal construction standards.

Policy 3.1.4 Public facilities which must function during a hurricane, or other natural disaster, such as hospitals, blood banks, police and fire stations, electrical power-generating substations and plants, communication facilities and emergency command center shall be relocated from the CHHA if they were destroyed or suffered major damage, regardless of the adopted Comprehensive Plan and Future Land Use Map designation.

Policy 3.1.5 Public facilities which experienced minor damage in the CHHA shall be rebuilt in place to current local, state, and federal construction standards.

Policy 3.1.6 Public facilities destroyed or suffering major damage outside of the CHHA but within the HVZ shall be rebuilt in place or relocated consistent with the adopted Comprehensive Plan and Future Land Use Map and current local, state, and federal construction standards.

12.3 Reporting Procedures

Damage reports will be issued to the EOC by radio. Damage assessment boards will be continually updated as verbal reports are received. Written reports will be submitted at the end of each day. The reports will be compiled by the Special Projects Coordinator.

Local agencies will also use the Red Cross Damage Assessment Forms. Local agencies will submit reports to their respective Director of Emergency Management. These reports will be forwarded to Okaloosa County EOC.

Seperate reports (using the standard form) will be compiled for public property. This will provide information for filing public disaster assistance requests for public property.

In incidents where a decloration has not been declared by the Governor, damage assessment informatin will be compiled and reported as previously discussed.

American Red Cross

DAMAGE ASSESSMENT WORKSHEET
DISASTER SERVICES

STREET NAME	CITY	DATE

STREET NO.	DAMAGE* 0	1	2	3	NAME OF FAMILY (If known)	COMMENTS
TOTAL THIS PAGE ▶					SURVEYOR'S SIGNATURE	

*KEY: 0=None 1=Minor (Habitable) 2=Major Damage (Needs Extensive Repairs) 3=Destroyed (Cannot Be Repaired

INSTRUCTIONS: Use one line for each dwelling or other structure.
1. Use one line for each dwelling or other structure.
2. Damage: Place an "X" in the box for the appropriate degree of damage. Enter "SB" for small business and "P" for public building.
3. Comments: Give a description of the building (e.g., two story single family dwelling, mobile home). Also give an explanation of the damage (e.g., building off foundation, 4 feet of water on first floor).
4. Contact your supervisor twice daily.

FIGURE 12-1

FORM A

PUBLIC PROPERTY PRELIMINARY DAMAGE ASSESSMENT ESTIMATE			DATE
PART I - APPLICANT INFORMATION			
COUNTY	NAME OF APPLICANT	NAME OF LOCAL CONTACT	PHONE NO.

PART II - SITE INFORMATION

KEY FOR DAMAGE CATEGORY (Use appropriate letters in the "category" blocks below.)

a. DEBRIS CLEARANCE
b. PROTECTIVE MEASURES
c. ROADS SYSTEM
d. WATER CONTROL FACILITIES
e. BUILDINGS AND EQUIPMENT
f. PUBLIC UTILITY SYSTEMS
g. OTHER

SITE NO.	CATE-GORY	LOCATION (Use map location, address, etc.)

DESCRIPTION OF DAMAGE

IMPACT:	% Complete	Cost Estimate

SITE NO.	CATE-GORY	LOCATION (Use map location, address, etc.)

DESCRIPTION OF DAMAGE

IMPACT:	% Complete	Cost Estimate

SITE NO.	CATE-GORY	LOCATION (Use map location, address, etc.)

DESCRIPTION OF DAMAGE

IMPACT:	% Complete	Cost Estimate

SITE NO.	CATE-GORY	LOCATION (Use map location, address, etc.)

DESCRIPTION OF DAMAGE

IMPACT:	% Complete	Cost Estimate

NAME OF INSPECTOR	AGENCY	PHONE NO. OFFICE	HOME

FIGURE 12-2

FORM B

PUBLIC PROPERTY PRELIMINARY DAMAGE ASSESSMENT SUMMARY			DATE:
PART I - APPLICANT INFORMATION			
COUNTY	NAME OF APPLICANT	NAME OF LOCAL CONTACT	PHONE NO.
POPULATION	TOTAL BUDGET	DEPARTMENT BUDGET YTD EXPEND.	DATE FY BEGINS

PART II - COST ESTIMATE-SUMMARY (COMPLETE SITE ESTIMATE BEFORE SUMMARIZING BELOW)

CATE-GORY	NO. OF SITES	TYPES OF DAMAGE	COST ESTIMATE	POTENTIAL LOCAL FUNDS FOR RECOVERY	
				FUND/ACCOUNT	AVAILABLE BALANCE
			TOTAL		TOTAL

PART III - DISASTER IMPACTS (USE SEPARATE SHEETS IF NECESSARY)

GENERAL IMPACT

1. Identify and describe damages which constitute a health and/or safety hazard to the general public.

2. Population adversely affected directly or indirectly by the loss of public facilities or damages.

3. What economic activities are affected by the loss of public facility or damages?

B. RESPONSE CAPABILITY: Can the applicant respond and recover from the damages quickly and without degradation of public services? Describe.

C. IMPACT ON PUBLIC SERVICES IF DECLARATION IS NOT MADE: e.g., Deferral of permanent repairs, impact on ongoing services and capital improvements, etc. Describe.

NAME OF INSPECTOR	AGENCY	PHONE NO.

FIGURE 12-3

Section 5.07

City of Valparaiso

City of Valparaiso

Section 5.07.01 Risk Assessments

Section 5.07.01.01 Introduction

The intent of this section is to provide information regarding the hazards threatening the City of Valparaiso. It is an incorporated city located in south Okaloosa County and is home to about 5,176 people according to the 2020 Census estimate. In this section, hazard information relevant to the City of Valparaiso is compiled and an overview of the analyses is provided.

The City of Valparaiso was incorporated in 1921 in the southern part of Okaloosa County. As an incorporated city, Valparaiso has all the powers and authority granted to municipal governments found in Chapter 166 of the Florida Statutes as well as Article VIII of Section 2 of the Florida Costitution to exercise any governmental, corporate, or proprietary power for municipal purposes, provided they are not expressly prohibited by law. These powers allow Valparaiso to govern itself, deliver services, enact and enforce ordinances, and set policy.

The City of Valparaiso enforces the Florida Building Code as required by Chapter 553 of the Florida Statutes and participates in the National Flood Insurance Program pursuant to the National Flood Insurance Act of 1968 (42 U.S.C. §§4001 et seq.). The City has adopted a comprehensive plan as provided in Chapter 163, Florida Statutes, and has adopted by ordinance implementing land development regulations including provisions for zoning and floodplain management. Valparaiso has all the financial resources granted by the Florida Constitution and Florida Statutes which are available to support the mitigation strategies discussed in this section.

The hazards that will be analyzed in this section are natural events and the analysis concentrates on the anthropogenic affects on those events as well as the effects of those events on mankind. However, this analysis is not an assessment of technological and/or societal hazards and, therefore, these types of events are not covered under this plan or in the analysis provided in this section.

Primary attention is given to hazards considered reasonably possible to occur in the City of Valparaiso. These hazards include:

- Hurricane and Tropical Storm
- Storm Surge
- Flooding
- Land Erosion
- Severe Storms
    - Tornado and Waterspout
    - Thunderstorms and Lightning
    - Winter Storms
- Heat Wave and Drought
    - Heat Wave
    - Drought
- Wildfire

- Beach Erosion
- Sea Level Rise

The following hazards have minimal or no risk to the City of Valparaiso: sinkholes, expansive soils, dam safety, earthquakes, avalanches, land subsidence, landslides, volcanoes, and tsunamis. Therefore, these hazards are not analyzed in any depth in the hazard analysis. Further explanation is provided in the "Other Hazards" section.

Hazard Identification

The technical planning process begins with hazard identification. In this process, the City of Valparaiso Staff, along with the staff from the Okaloosa County Growth Management Department, has identified all of the natural hazards that threaten the City of Valparaiso.

Section 5.07.01.02 Hurricane and Tropical Storm

DEFINITIONS:
Please refer back to the Risk Assessment of the overall County for the definitions of this hazard.

HISTORICAL OCCURRENCE:
The City of Valparaiso and Okaloosa County are equally susceptible to hurricanes and tropical storms, as Valparaiso is located on the bay. Due to the large area that hurricanes and tropical storms impact, it is assumed that the City of Valparaiso and the overall County experienced the same storms. Therefore, the historic hurricane record of Okaloosa County is applicable to the City of Valparaiso. Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

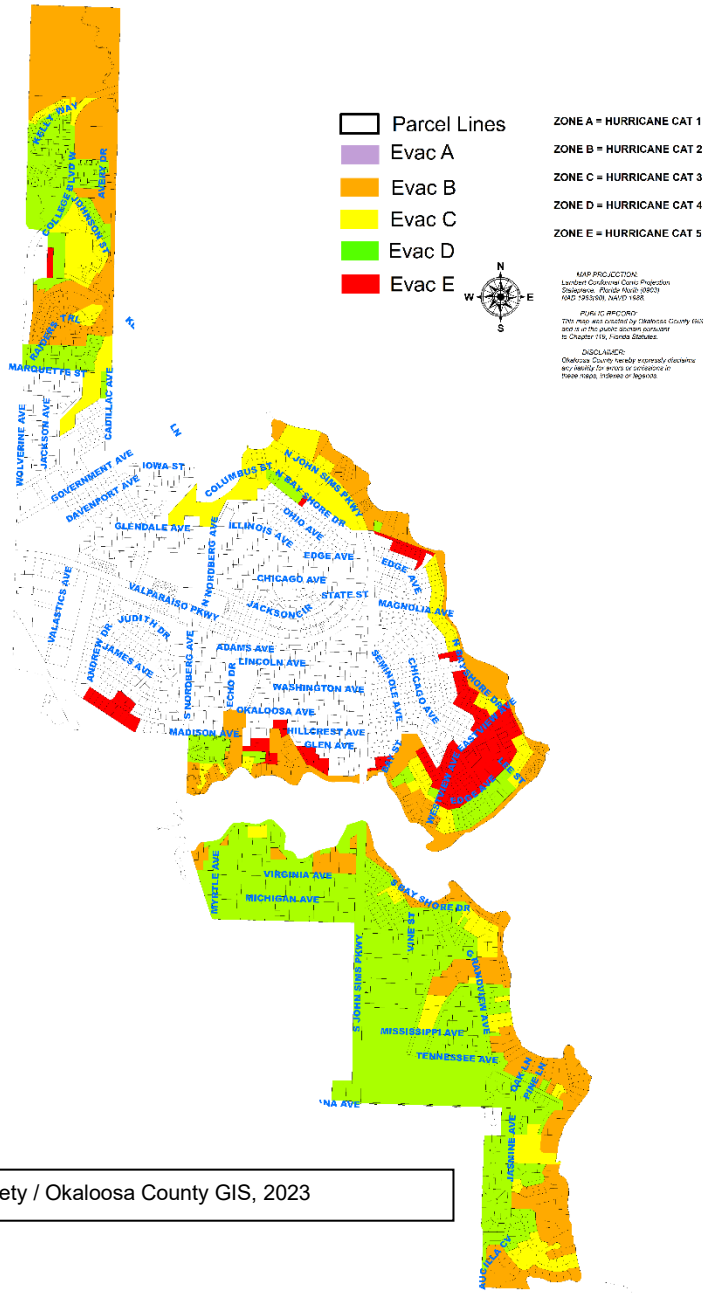
EXTENT:
High winds from hurricanes are a threat to houses in the City of Valparaiso, especially manufactured housing. Category 3 or higher force winds would likely cause substantial damage. Winds in excess of 155 MPH could be experienced in a major Category 5 hurricane in some locations. Traditional stud and brick veneer or siding homes and businesses are vulnerable, as well, especially when hurricane shutters are not used.

In the worst case scenario of a Category 5 hurricane, there will be severe damage to homes and buildings, trees, power poles, and signage in the city. In particular to power pole damage, there would be extensive widespread system destruction anticipated, which can include transmission/substation damage. Most mobile and frame homes will have visible damage due to high winds. The Category 5 winds in excess of 155 MPH will cause significant damage to buildings, with loss of roof sheathing, broken windows, and in some cases wall failure resulting in a structural collapse of some structures. Trees will be snapped and power poles downed. In some cases, this will result in power outages that could last for weeks or months. People and animals would be at an extremely high risk of injury or death as a result of the strong, forceful winds and flying debris.

City of Valparaiso

From the figure below, it is evident that nearly the entire City of Valparaiso will need to evacuate prior to a Category 5 hurricane making landfall (See Figure 5.07.01.02.1, below, for evacuation zones). In addition, the expected storm surge level of up to 16.8 feet associated with a Category 5 hurricane could substantially impact the water front homes located on Choctawhatchee Bay in the City of Valparaiso. Severe flooding will likely occur and cause polluted water, storm sewer overflow, and damage to roadways (NOAA, 2020).

Figure 5.07.01.02.1: Evacuation Zones for the City of Valparaiso



Source: Okaloosa County Public Safety / Okaloosa County GIS, 2023

PROBABILITY:
All of the jurisdictions in Okaloosa County have the same probability of being impacted by a tropical storm or hurricane. According to Colorado State University's United States Landfalling Hurricane Probability Project, Okaloosa County, and thus the City of Valparaiso, has the following future probabilities:

Table 5.07.01.02.1: 50-Year Probabilities of Named Storm, Tropical Storm, and Hurricane Making Landfall in Okaloosa County

1 or More Named Storms Making Landfall	1 or More Hurricanes Making Landfall	1 or More Intense Hurricanes Making Landfall	Tropical Storm-Force (≥ 40 mph) Wind Gusts	Hurricane-Force (≥ 75 mph) Wind Gusts	Intense Hurricane-Force (≥115 mph) Wind Gusts
90.90%	68.60%	40.50%	>99.9%	99.60%	82.30%

Source: The United States Landfalling Hurricane Web Project, 2022

Section 5.07.01.03 Storm Surge

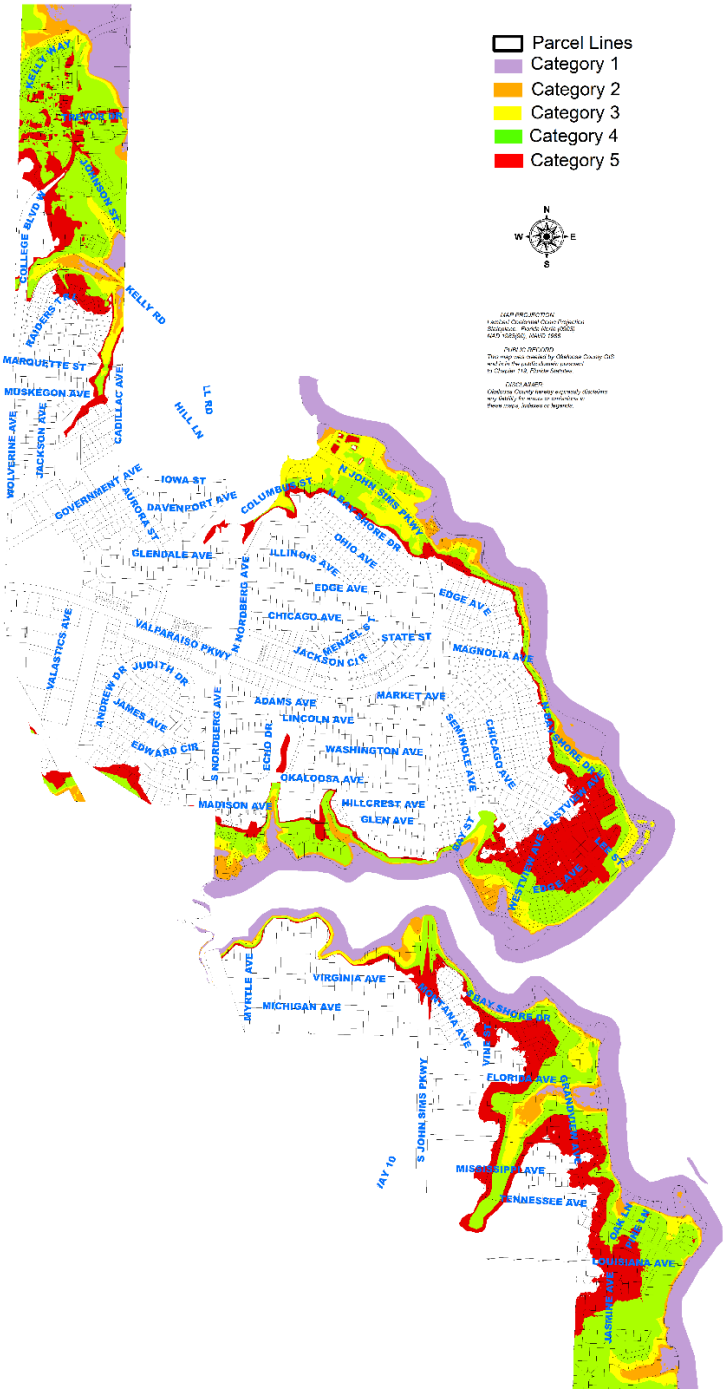
DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definitions of this hazard.

HISTORICAL OCCURRENCE:
The City of Valparaiso is susceptible to storm surge. Although it is assumed that the City of Valparaiso has been impacted by storm surge during a past tropical storm event, no historical record specifically for the city was found. Please refer to the Risk Assessment of the overall county for the historical record of storm surge in Okaloosa County.

EXTENT:
In the worst case scenario, some of the areas in the city will experience storm surge levels up to 16.8 feet above mean sea level during a Category 5 hurricane (See Table 5.07.01.03.1). It is evident from the figure below that most of the southern and entire eastern portions of the city will be affected by the resulting flooding from storm surge. The high storm surge levels will cause significant flooding of residential and commercial structures, power outages, and storm sewer overflow within some portions of the city. The figure below shows the possible storm surge levels with each hurricane category in the City of Valparaiso.

City of Valparaiso

Figure 5.07.01.03.1: The City of Valparaiso's Exposure to Storm Surge



Source: West Florida Regional Planning Council, 2022

PROBABILITY:
Regardless of the storms' level of intensity, the storm surges associated with each storm greatly vary. This fact is recognized in the updated Saffir-Simpson Hurricane Wind Scale where storm surge has been removed due to the difficulties in its prediction. Therefore, a probability of future storm surge occurrence shares the same probability of hurricanes and tropical storms. The potential storm surge levels have been determined from several historic points near the City of Valparaiso (See Table 5.07.01.03.1, below).

Table 5.07.01.03.1: Potential Storm Surge Level for Hurricane Categories
Note: Storm surge levels reflect 2010 hurricane scale update.

HISTORY POINT (Description)	HURRICANE SURGE ELEVATION (in feet)				
	CAT 1	CAT 2	CAT 3	CAT 4	CAT 5
Mouth of Rocky Bayou	3.7	5.6	7.4	13.1	16.1
Choctawhatchee Bay	3.7	5.7	7.4	13.8	16.8

Source: West Florida Regional Planning Council, 2024

Section 5.07.01.04 Flooding

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definitions of this hazard.

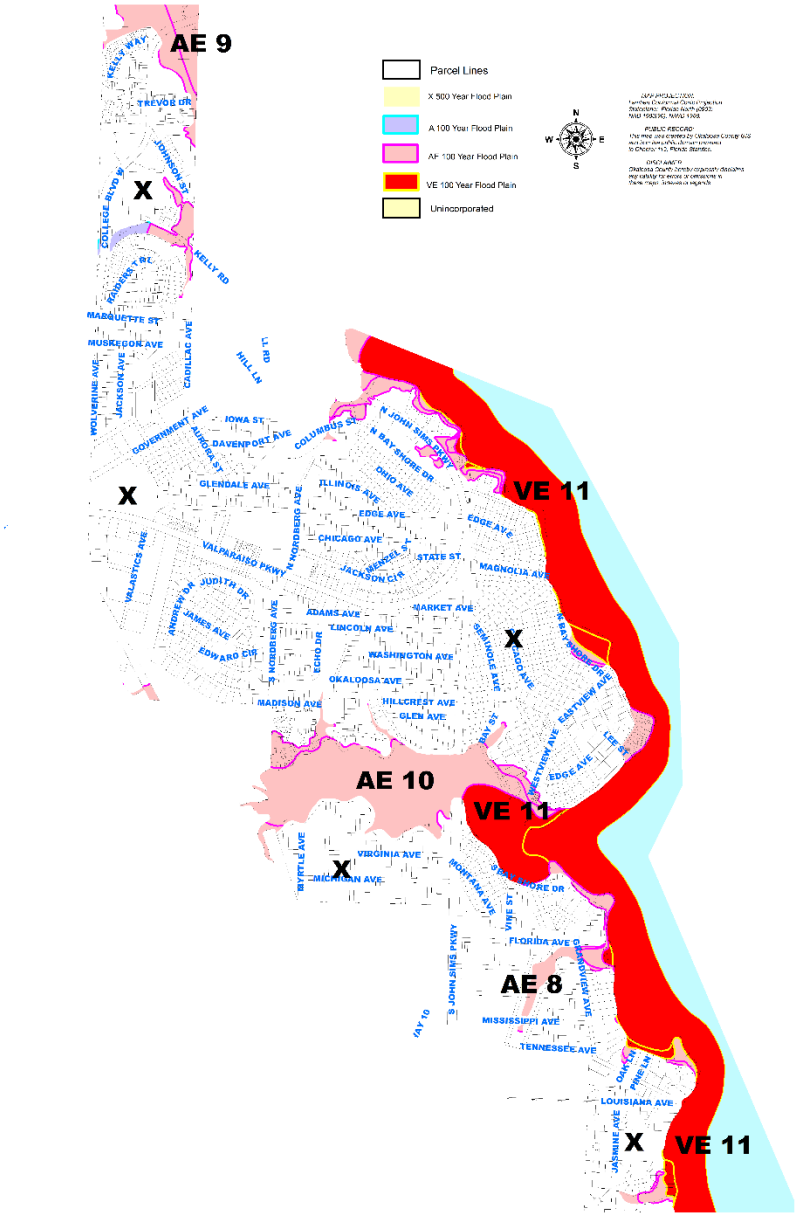
HISTORICAL OCCURRENCE:
A flash flood warning was issued in the City of Valparaiso on May 10, 1995. Heavy rains caused streets to flood but none were closed. The water receded after a few hours. On July 01, 2003 heavy rains from Tropical Storm Bill also resulted in temporary roadway flooding in the City of Valparaiso and other portions of the county. Rainfall totals across the area were reported between 8-10 inches (NCDC, 2010). There have been other reports of flooding and flash flooding from thunderstorms in the southern portion of the county and in the City of Valparaiso, and is a frequent event during the summer months.

No data was available at the municipal level regarding the historical occurrences of severe floods. Therefore, please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard because all of Okaloosa County is equally susceptible to this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
In the worst case scenario of flooding in the City of Valparaiso, road-closures would be the result in the areas affected by the flooding and there might be some flooding of homes and businesses. Properties located in the AE-7, AE-8, and A flood zones will be impacted more severely than the rest of the city, which is located in flood zone X (500 year flood plain). *Note* AE-7 and AE-8 flood zone means that the area is susceptible to flooding at 7 and 8 feet above

sea level, respectively. However, the vast majority of Valparaiso is located in the X flood zone, which is minimally susceptible to flooding. (See Figure 5.07.01.04.1).

Figure 5.07.01.04.1: City of Valparaiso's Flood Zones



Source: FEMA Map Service Center, March 9, 2021

There are approximately 1.14 miles of arterial and collector roads in the City of Valparaiso. Out of this total, 0.91 miles of these roads are located in the NFIP X Zone (500 Year Flood Zone) and .23 miles located in the NFIP Special Flood Hazard Zone. The roadways in the City of Valparaiso, although susceptible to temporary flash flooding, are unlikely to experience severe flooding.

PROBABILITY:
The entire County, as well as the City of Valparaiso, has a future probability of a flash-flood or flood occurring annually. However, due to the localized nature of flash-flooding and flooding, a more exact probability will not be provided. However, given the insignificant amount of reported flooding and lack of low-lying land parcels, this hazard is classified as a minimal threat to the City of Valparaiso.

Section 5.07.01.05 Land Erosion

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
All of Okaloosa County is equally susceptible to land erosion in some localized areas; this includes the City of Valparaiso. Please refer back to the Risk Assessment of the overall County for the historical occurrences of land erosion.

EXTENT:
Sheet erosion, if left unchecked, can damage drainage ditches, fill storm water retention ponds with sediment, and cause erosion into property, including structures. Most erosion of this nature occurs along unpaved roadways in hilly areas. In this instance, the result is the deposition and buildup of soils/sands on the roadways and in the drainage systems.

In the worst case scenario, soil erosion will cause land to be unusable because of the degraded soil quality, structure, stability and texture. Erosion can result in the undermining of structures (bridges, etc), washing out of lanes, roads, and fence rows.

PROBABILITY:
Based on the existence of potentially highly erodible soils and erodible soils there is a possibility of land erosion in the City of Valparaiso. The future probability of soil erosion cannot be given because no occurrence of land erosion has been documented in the City of Valparaiso.

Section 5.07.01.06 Severe Storms

The Severe Storms segment of the LMS Hazards Assessment includes tornado and waterspout, thunderstorms and lightning, winter storms, and heat waves and drought (hurricanes are excluded from this section because they are covered in another section of this chapter).

Section 5.07.01.06.01 Tornado and Waterspout

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
On October 3, 1995 a tornado touched down near the City of Valparaiso blowing down some trees. On August 28, 2005 a weak tornado developed along the bands of Hurricane Katrina which blew down several trees and power lines in the City of Valparaiso. The total damage as a result of these 2 tornadoes was $7,000. Due to the unpredictable paths of tornadoes, and because of the relatively high frequency of tornadoes in Okaloosa County, every jurisdiction in Okaloosa County is susceptible to tornadoes. Please refer to the Risk Assessment of the overall County for the historical occurrences of this hazard, as it is the same for each jurisdiction.

EXTENT:
The damage potential for a tornado increases as a function of population density. As the number of structures and people increase, the potential damage/injury rate increases. Manufactured housing, poorly constructed or substandard housing and apartment complexes are especially susceptible to damage from a tornado.

The worst possible scenario in terms of tornado damage would be if an F-5 tornado hit the City of Valparaiso. It is very unlikely that an F-5 tornado would strike the city, but if one did there would be destruction of homes and businesses that were in the tornado's path. Trees and power lines would be snapped, building debris scattered about, and severe structural damage would be evident on any building left standing.

The most common and active weather threat in the City of Valparaiso for the formation of tornadoes is severe thunderstorms associated with frontal boundaries. Frontal boundaries and summertime afternoon air mass thunderstorms can reach severe limits because of atmospheric uplift. High winds relating to gust fronts and "microbursts" can create high wind speeds up to 100 MPH.

PROBABILITY:
As stated previously, the tornado history of Okaloosa County is equally relevant to the City of Valparaiso. Therefore, the future tornado probability of Okaloosa County is the same for the City of Valparaiso. From 1958-2009 there have been a total of 94 reported tornadoes in Okaloosa County. Based on this data the probability of a future tornado occurrence in the City of Valparaiso is less than 2 tornadoes per year. Also, since there was only 9 reported waterspouts from 1996-2001, the future probability was determined to be less than 2 waterspouts per year.

Section 5.07.01.06.02 Thunderstorms and Lightning

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
On June 6, 1998 a line of severe storms produced wind gusts of 92 MPH causing minor structural damage in the City of Valparaiso and the surrounding area, although there were no reported injuries. On July 13, 2000 power lines were taken down due to strong winds from a thunderstorm. A severe storm on August 20, 2000 produced dime-size hail and wind gusts up to 64 MPH. On June 29, 2008 high winds from thunderstorms blew down trees and power lines in the City of Valparaiso. On April 2, 2009 damaging wind gusts and large hail were reported in the City of Valparaiso. The total damage as a result of these storms was $22,000 (NCDC, 2010).

On May 12, 1995 a man working outside of Eglin near the City of Valparaiso was struck by lightning from an approaching thunderstorm and treated at a local hospital. On August 20, 1998 lightning struck a communications center and knocked it off for air for several hours. On August 9, 2006 a group of recruits were working outside when lightening hit a nearby tree and ran through the root system of a tree. Six rangers were injured, although fortunately, none of them suffered serious injury and were released from a local hospital (NCDC, 2010). Cumulatively, these lightning strikes have resulted in $2,000 worth of damage.

EXTENT:
Thunderstorm damage can include traffic accidents on wet roads, flash-flooding, lightning damage to electronics and structures, lightning strikes on people, and wind and hail damage. Aside from being able to produce tornadoes, thunderstorms can produce damaging high winds. Cold upper level air descending from the top of a thunderstorm to the ground usually causes these winds. In a worst case scenario, if the upper level air speed of descent is rapid, these cold "microbursts" can fan out as they come in contact with the ground at a high rate of speed. This is sometimes referred to as "straight line winds." These winds can cause significant property damage, injuries, and deaths similar to a F0 to F2 tornado or Category 1 or 2 hurricanes.

PROBABILITY:
As evident from the historical account of thunderstorms and lightening listed above, severe thunderstorms occur relatively frequently in the City of Valparaiso. The most severe storms occurred during the summer months. All jurisdictions within Okaloosa County have the same probability of being impacted by severe storms and lightning, this probability is based on data from the overall County. The City of Valparaiso has a future probability of experiencing less than 5 severe thunderstorms per year. The City of Valparaiso is also likely to experience 4 to 16 flashes per square kilometer per year.

Section 5.07.01.06.03 Winter Storms

DEFINITION:
Please refer to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
From 2005-2009, the City of Valparaiso had 76 days with below freezing temperatures. Listed below are the average monthly winter temperatures from 2005-2009.

Table 5.07.01.06.03.1: Monthly Mean Temperature Minimums in degrees Fahrenheit, 2005-2009

	Nov	Dec	Jan	Feb	Mar
Valparaiso, FL	47.8°	44.3°	43.6°	42.8°	49.8°

Source: Weather Underground, 2025

Although the averages above reflect mild winter temperatures, the City of Valparaiso certainly receives freezing temperatures during the winter months, mostly in January.

Snow in the City of Valparaiso is considered a very rare event and will generally melt off very quickly. However, on Jan. 21, 2025, Winter Storm Enzo blanketed nearby Hurlburt Filed with a historical snowfall totaling six inches of accumulation. The snowfall lasted from noon until approximately 9:00 p.m. that day (https://www.hurlburt.af.mil/News/Article-Display/Article/4077311/historical-winter-storm-enzo-hits-hurlburt-field/). The impacts of Winter Storm Enzo are addressed in several sections of this LMS.

EXTENT:
The worst case scenario in terms of winter storms in the City of Valparaiso would be if freezing or below freezing temperatures lasted for a week or more, and if the storm responsible for such freezing temperatures knocked down power lines resulting in power loss, and the inability of residents to heat their homes. A freeze's greatest risk is generally unprotected or under-protected water pipes in homes, businesses and infrastructure. Outdoor irrigation systems and plumbing in homes where insulation is inadequate in walls or in off-grade homes where plumbing is exposed are most vulnerable. Unmitigated older structures and manufactured housing are probably the most vulnerable structures.

An icing, glaze, or sleet incident in the City of Valparaiso would likely result in traffic problems and safety concerns throughout the community and its roadways. With no means of salting roadways or removing ice, emergency response would be severely slowed in iced areas. Electrical service would likely be interrupted or totally absent in many areas due to power line glazing and tree branch falls. Mitigation efforts would more likely focus on sheltering and ability to receive outside mutual aid assistance, rather than on equipment and ice buildup prevention due to the infrequency and inconsistency of such events.

PROBABILITY:
Based on the best available data of total below freezing days, the future probability of freezing temperature days in the City of Valparaiso is estimated to be 76 days over a 5-year time period. Because a snow event in the City of Valparaiso is so rare, a single snow "event" over five or ten years is probably the average.

Section 5.07.01.07 Heat Wave and Drought

Heat Wave

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of heat waves.

HISTORICAL OCCURRENCE:
From 2005-2009, the City of Valparaiso had only 1 day where the temperature reached 100°F (Weather Underground, 2010). Table 5.07.01.07.1, below, depicts the average monthly temperature highs for the summer months from 2005-2009.

Table 5.07.01.07.1: Monthly Mean Temperature Highs in degrees Fahrenheit, 2005-2009

	May	June	July	Aug
Valparaiso, FL	82.2°	88.6°	88.8°	88.8°

Source: Weather Underground, 2025

Although the temperatures in the table above reflect relatively mild summer temperatures, there are many days during the summer months when temperatures and high humidity combine to make temperatures feel much hotter than they are recorded as. The temperatures in the City of Valparaiso and Okaloosa County can reach dangerously high levels, although it may appear otherwise from the data presented above.

EXTENT:
The worst case scenario in terms of a heat wave would be if excessive heat and humidity lasted for a week or more. Dangerous conditions are present when both heat and high humidity combine to make outside temperatures feel in the 103-124° F range. External danger warnings are issued when high temperatures and humidity combine to make outside temperatures feel in the 126-137° F range. Heat disorders may develop in people who work outside for long periods of time, such as construction workers. To combat the dangerous effects of excessive heat residents should dress appropriately, stay indoors, refrain from strenuous work during the hottest part of the day and stay hydrated.

The general threat to the community is to individuals without adequate cooling systems in their homes, with emphasis on low income and the elderly. Electrical system failures due to demand would only enhance problems for all of these industries and populations (NOAA Watch: Heat Wave).

PROBABILITY:
Based on the data above, it is predicted that the future probability of a heat wave occurring in the City of Valparaiso is on average one time during a 5-year period.

Drought

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of drought and the categories of drought according the U.S. Drought Monitor.

HISTORICAL OCCURRENCE:
Okaloosa County and the City of Valparaiso are equally susceptible to droughts as they tend to affect a large geographic area. Therefore the drought record of Okaloosa County is applicable to the City of Valparaiso. Please refer back to the Risk Assessment of the overall county for the historical occurrences of drought.

EXTENT:
The worst case scenario in terms of drought would be if an exceptional drought (D4) lasted for months or years in Okaloosa County and the City of Valparaiso. Bay swamps and bodies of water would see a drastic decline in natural water levels and water shortages in reservoirs and wells would create water emergencies. Precipitation levels would be -2.0 inches or less. Also, the risk of wildfire increases as drought deepens (U.S. Drought Monitor, 2010).

PROBABILITY:
The abnormally dry drought intensity is the condition of dryness before and after a period of actual drought. From 2010-2020, a total of 41 out of 120 months were abnormally dry. Based on this data, the City of Valparaiso has a future probability of experiencing less than 5 abnormally dry months every year. Also, from 2000-2009, there were a total of 51 out of 120 months where moderate, severe, extreme, or exceptional drought occurred in Okaloosa County. These drought intensities are the varying severity of actual droughts. The future probability of a moderate to severe drought occurring in the City of Valparaiso is on average 5 months per year.

Section 5.07.01.08 Wildfire

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

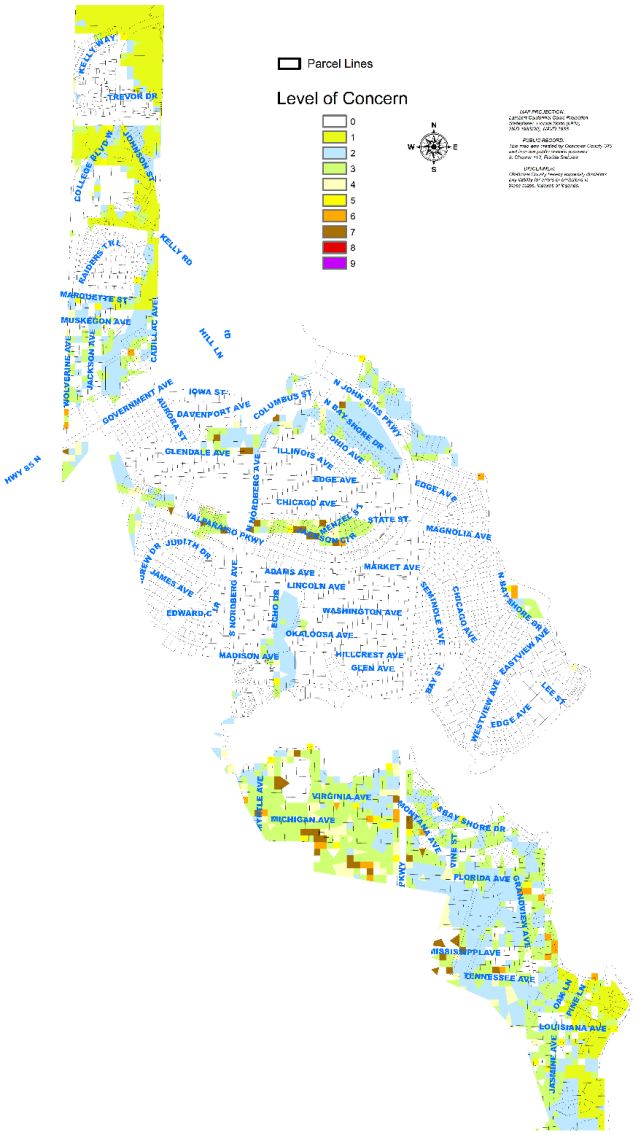
HISTORICAL OCCURRENCE:
The City of Valparaiso is susceptible to wildfire. The majority of the incorporated area is urban or residential. The City's municipal boundaries are surrounded by forests, which are highly prone to wildfire. The wildfire record of Okaloosa County is relevant to the City of Valparaiso. Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into specific areas of the county

EXTENT:
Based on the Wildland Fire Risk Assessment of Okaloosa County, the worst case scenario would be if the areas with the greatest Level of Concern (LOC) experienced a massive wildfire. These areas have a greater likelihood of danger and destruction due to their inadequate infrastructure, inaccessibility to critical facilities or firefighting resource locations, and connectivity to the wildland-

urban interface. *Note* According to the Florida Department of Forestry, wildland urban interface is defined as “the zone where structures and other human development meets/intermingles with

undeveloped wildland fuels and other natural features.” Fires could come into subdivisions and neighborhoods in urban and suburban areas, which could be a potentially catastrophic situation. Smoke and ash from dangerous wildfires could decrease visibility on highways and local roads.

Figure 5.07.01.08.1: Wildfire Levels of Concern for the City of Valparaiso



Source: Florida Division of Forestry, 2025

PROBABILITY:
The Wildland Fire Risk Assessment System of the Florida Division of Forestry displays the wildfire levels of concern for the City of Valparaiso. According to the map, most of the incorporated city is classified as non- or minimally burnable (2010). The figure below displays the relatively low levels of concern that wildfire has for most of the city. Although the City of Valparaiso is susceptible to wildfire, it appears that the future probability of occurrence is relatively low.

Section 5.07.01.09 Beach Erosion

DEFINTION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
Beach erosion is a naturally occurring, cyclical process in which sand particles are removed and/or replaced by wind, waves, or tides. Intensive wave action or strong storm surge during a tropical storm or hurricane can accelerate the rate of beach erosion. Beach erosion is a coastal and bay issue; therefore all jurisdictions located in those areas are susceptible to beach erosion. Because tropical storms and hurricanes can cause beach erosion in various coastal locations throughout the county, the historical occurrences of beach erosion is relevant to all costal and bay areas of the county. Please refer to the Risk Assessment of the overall County for the historical occurrences of beach erosion.

EXTENT:
The worst case scenario in terms of beach erosion would be if a major storm with significantly strong winds and storm surge washed-out the coastal areas. The damage will be much worse for portions of the coastline already critically eroded. Beach erosion will undermine the integrity of infrastructure, beachfront homes and businesses, and other structures by washing away the sediments that support the structural foundation sometimes resulting in complete destruction.

PROBABILITY:
Based on the historical data of the overall County, it appears that beach erosion will most certainly occur in the future. The frequency and extent of the erosion are highly dependent on the frequency and intensity of tropical storms and hurricanes. The natural process of beach erosion is different among coastal locations in the County due to variations in beach stability. This means there are different degrees of natural erosion rates and potential damage from storms or unusual wave action. Therefore, a numerical value will not be given for the estimated future amount of beach erosion for the City of Valparaiso. It must also be noted that beach erosion is a natural part of a coastal system, and can be expected to occur at various locations and at different rates over time.

Section 5.07.01.10 Sea Level Rise

As defined by multiple agencies, the term “sea level rise” refers to an increase in the ocean’s surface height relative to the land in a particular location. Thermal expansion of the Earth’s oceans and melting polar ice are commonly identified as the two primary causes of sea level rise, though land subsidence is also cited as a factor While sea level rise most directly impacts coastal

regions, its impacts may be felt far beyond the shoreline as impacted areas react to changing conditions and must expand substantial amounts of funds in mitigation activities that may include construction of water control structures, relocating or re-routing roads and other infrastructure, and relocation of impacted populations.

In 2023, Okaloosa County applied for and received a grant through the Resilient Florida Program to develop a Vulnerability Assessment and implementing Adaptation Plan (see Appendix E) and, pursuant to and in compliance with section 380.093, Florida Statutes, awarded a contract to Jacobs Engineering Group to develop said Vulnerability Assessment (VA) and implementing Adaptation Plan (AP). The VA and implementing AP developed by Jacobs Engineering Group is incorporated herein by reference for purposes of establishing vulnerability to sea level rise and various flooding scenarios for the entirety of Okaloosa County and all municipalities (except for the City of Destin which has undertaken its own analysis). As the County-wide Vulnerability Analysis applies to conditions within the City of Valparaiso, please see Section 4.01.11.09 of this Local Mitigation Strategy for more information.

Section 5.07.01.11 Other Hazards

The hazards listed below have been analyzed and determined that the impact would be minimal or non-existent in the City of Valparaiso.

Section 5.07.01.11.01 Sinkholes

The map and description prepared by the United States Geologic Survey (USGS) in its "Sinkhole, Type, Development and Distribution in Florida" (1985) indicates that Okaloosa County in its entirety is located in an area where sinkholes seldom, if ever, occur. The Florida Geologic Survey's statewide sinkhole database indicates no sinkholes in the County. Since there is no history of this hazard in the County, no further analysis or risk assessment will be conducted for this plan. However, should conditions change and geological features be discovered which contribute to the development of sinkholes, the LMS committee will include any new occurrence information in ongoing updates.

The future probability of a sinkhole occurring in the City of Valparaiso is less than 1% based upon no documented sinkholes in the county and the soil strata is non-conducive to the formation of sinkholes.

Section 5.07.01.11.02 Expansive Soils

According to the *Soil Survey of Okaloosa County Florida* (USDA, June 1995), two types of soils are considered vulnerable to expansion. These are known as shrinking and swelling or "expansive soils." Another way of describing expansive soils is the change of volume of a soil with a change of moisture content. All of the soils listed in the expansive class are also considered erodible soils. Okaloosa County may be susceptible to expansive soils in some localized areas. There have been no previous occurrences recorded of expansive soils in the County. The following table lists soils having moderate to high shrink swell potential in Okaloosa County. Only those soils with an associated risk of "High" are listed:

Table 5.07.01.11.02: Shrink/ swell potential of soils in Okaloosa County.
Note: Expansive soils and erodible soils are classified as the same.

Soil Type	ME Soils*	HE Soils**	Total Acreage	% Total Land Area
#35-Angie (2 to 5 percent slopes)		X	1,073.26	.16
#49-Angie (5 to 12 percent slopes)		X	10,280.79	1.61
#20-Udorthents (nearly level)	X		655.31	.11
Total	**.11**	**1.77**	**12,009.36**	**1.88**

* Moderate Erodible Soils **Highly Erodible Soils

Source: Soil Survey of Okaloosa County, Florida; June 1995.

Expansive soils can lessen the strength of building foundations, which could result in structural collapse or instability. In addition, these soils have limitations for use as local roads and streets because of lack of strength to support roadways and traffic. There is a possibility of shrink/swell potential or soil expansion based on the existence of moderately erodible soils and highly

erodible soils in Okaloosa County. Although the specific amount of these soils in the county is known, the future probability of this occurring in the City of Valparaiso is minimal because this issue is addressed during the time of construction and there are no previous records of occurrence.

Section 5.07.01.11.03 Dam Safety

There are no permitted dams located in the City of Valparaiso. Therefore, the City of Valparaiso is not susceptible to flooding due to dam failure. However, if there are any permitted in the future, the LMS committee will update the plan to reflect those changes.

Section 5.07.01.11.04 Earthquake

According to the U.S. Geological Survey Earthquake Probability maps, the City of Valparaiso has between a 0.005 and 0.010% chance of experiencing a 5.0 magnitude earthquake within 100 years. This is considered a very minimal risk. Also, since there is no history of earthquakes in Okaloosa County or the City of Valparaiso, no further analysis or risk assessment will be conducted for this plan. The future probability of an earthquake occurring in the City of Valparaiso is less than 1 in 100 years.

Section 5.07.01.11.05 Avalanche

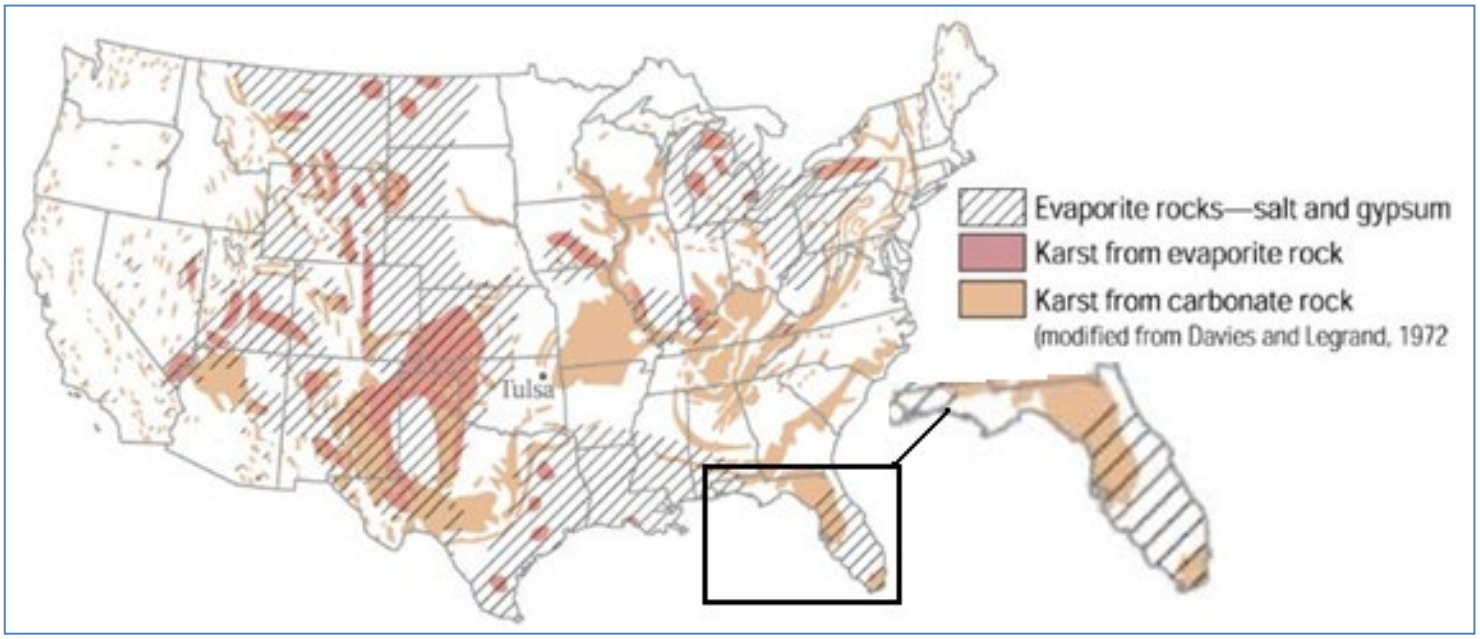
The City of Valparaiso does not have topography or snowfall amounts that would create conditions for an avalanche. Since there is no history of this hazard in the county, no further

analysis or risk assessment will be conducted for this plan. The future probability of an avalanche occurring in the City of Valparaiso has is less than 1 in 100 years.

Section 5.07.01.11.06 Land Subsidence

According to the U.S. Geological Survey, "land subsidence occurs when large amounts of ground water have been withdrawn from certain types of rocks, such as fine-grained sediments. The rock compacts because the water is partly responsible for holding the ground up. When the water is withdrawn, the rock falls in on itself. Land subsidence is most often caused by human activities, mainly from the removal of subsurface water" (USGS, 2010). The City of Valparaiso has a minimal amount of the most common rock types that are connected to land subsidence (See Figure 5.07.01.10.06.1). Since there is no history of this hazard in the City of Valparaiso, no further analysis or risk assessment will be conducted for this plan. The future probability of land subsidence occurring in the City of Valparaiso is less than 1 in 100 years.

Figure 5.07.01.11.06.1: Rock types connected to collapse (subsurface cavities/sinkholes) in the U.S.



Source: U.S. Geological Survey

Section 5.07.01.11.07 Landslide

According to U.S. Geological Survey Map of Relative Incidence and Susceptibility Map, the City of Valparaiso has a very low landslide incidence with less than 1.5% area susceptible to a

landslide (USGS, 2010). Landslides are therefore considered to be a minimal risk and no further analysis or risk assessment will be conducted for this plan. The future probability of a landslide occurring in the City of Valparaiso is less than 1 in 100 years.

Section 5.07.01.11.08 Volcano

There are no geological features in or near Okaloosa County, the City of Valparaiso, or the Southeast related to volcanism. Since there is no history of this hazard in the City of Valparaiso, no further analysis or risk assessment will be conducted for this plan. The future probability of a volcanic eruption occurring in the City of Valparaiso is less than 1 in 100 years.

Section 5.07.01.11.09 Tsunami

According to the U.S. Geological Survey, the City of Valparaiso is not located in an area that has historically been subjected to tsunamis. Since there is no history of this hazard in the City of

Valparaiso, minimum analysis and risk assessment will be conducted. Therefore the future probability has been determined to be less than 1 in 100 years.

Section 5.07.01.12 Summary

The risk assessment section of this LMS document highlighted the hazards that the City of Valparaiso is exposed to. This provides the foundation for the subsequent section covering how vulnerable the City of Valparaiso is to these identified hazards. The facilities, infrastructure, and neighborhoods in the City of Valparaiso need to be assessed for their vulnerability to disasters.

Section 5.07.02 Vulnerabilities

Section 5.07.02.01 Introduction

The intent of this section is to provide a vulnerability assessment of the potential damage and estimated loss to building structures in the City of Valparaiso.

This section includes a brief summary description of the City of Valparaiso, as well as its vulnerability to the identified hazards and the impact of each hazard. It also describes the vulnerability in terms of the types and numbers of repetitive loss properties within the City of Valparaiso. Additionally, the section describes vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the City of Valparaiso.

The main intent of this section is to provide an estimate of potential dollar losses to vulnerable structures and a description of the methodology used to complete the estimate. Lastly, this section describes vulnerability in terms of providing a general description of land uses and development trends within the City of Valparaiso so that mitigation options can be considered in future land use decisions.

Section 5.07.02.02 Methodology

Okaloosa County Staff used the same methods, of quantifying the estimated dollar losses to the vulnerable structures potentially impacted by each hazard, for the City of Valparaiso as the overall County. Therefore, please refer to Okaloosa County's Overall Vulnerabilities, Section 4.02.02, for more information.

Section 5.07.02.03 Summary Description of the City of Valparaiso

The City of Valparaiso is an incorporated city located in the southern portion of Okaloosa County. As of the 2020 Census it was home to 5,176 residents. Within its jurisdiction, there are 6.81 miles of shoreline that border on Boggy Bayou. The City of Valparaiso has largely been built out. The majority of existing development within the city is located south of U.S. Highway 20, also known as John Simms Parkway and along the Choctawhatchee Bay. Any new form of development within the City of Valparaiso will necessarily be redevelopment, and the city has seen some of this as apartment complexes have replaced single family homes. According to Carl Scott, the City Administrator for the City of Valparaiso, there is some capacity for commercial development along John Simms Parkway, but the city does not anticipate rapid growth or major new developments.

The City participates in the NFIP and enforces its floodplain management regulations pursuant to adopted local ordinances. The City adopted its NFIP-compliant regulations through Ordinance 674, adopted October 10, 2016, with the most recent update occurring through Ordinance 709, adopted January 11, 2021. Pursuant to this ordinance, the Flood Insurance Rate Maps (FIRM) and associated Flood Insurance Study, along with all subsequent amendments and revisions, have been formally adopted by reference and serve as the minimum basis for establishing flood hazard areas within the City.

City of Valparaiso

Administration and enforcement of floodplain management regulations, including Special Flood Hazard Areas (SFHAs), are carried out through the City's Building Department. The City maintains a coordinated administrative structure whereby the Floodplain Manager oversees day-to-day program implementation while a full-time Certified Building Official (CBO) conducts plan review, permitting oversight, and inspections. This structure provides an internal system of checks and balances to ensure consistent interpretation and enforcement of floodplain management requirements.

Responsibility for maintaining compliance with NFIP requirements rests with the Floodplain Manager. The Floodplain Manager ensures that all applicable federal, state, and local floodplain management standards are properly implemented and enforced.

The City administers Substantial Damage and Substantial Improvement requirements through coordinated review by the Floodplain Manager and the Certified Building Official. Project valuations are submitted during the permitting process and evaluated by the Floodplain Manager in accordance with the NFIP 50-percent rule. Where necessary, the CBO is authorized to require certified appraisals to substantiate structure values in determining whether an activity constitutes substantial improvement. Following major storm events, substantial damage assessments are conducted by Community Development Department staff in coordination with Code Compliance Officers, utilizing FEMA-established methodologies and standards.

Emergency management activities are coordinated through the City's Emergency Management Program in conjunction with the County's Division of Emergency Management. The City's Floodplain Manager serves as a member of the City's Emergency Management team and the LMS Committee and maintains regular coordination with municipal emergency management personnel and County staff. This organizational structure ensures ongoing interagency coordination between emergency management and floodplain management functions, particularly during hazard events and throughout post-disaster response and recovery operations.

The City of Valparaiso maintains minimal internal capacity to support grant application and management activities. The City would require assistance from the County for grant administration.

The City will incorporate the findings and recommendations of the LMS into our respective planning mechanisms through integration with comprehensive plans, capital improvement programs, land development regulations, and emergency management plans. LMS-identified hazards, vulnerabilities, and mitigation actions are considered during project prioritization, budgeting, and policy development to ensure consistency with long-term resilience objectives. Additionally, the city will utilize the LMS to support grant applications, inform development review processes, and guide post-disaster recovery and redevelopment decisions. This coordinated approach ensures that hazard mitigation principles are systematically embedded into local planning and decision-making processes.

Section 5.07.02.04 Vulnerable Populations

Hazards do not affect the entire population the same. Therefore, special attention needs to be given to the more vulnerable populations. Please refer to the overall County's Vulnerability (Chapter 4) for further explanation on these vulnerable populations. The table below displays the City of Valparaiso's vulnerable populations.

Table 5.07.02.04.1: Estimated Vulnerable Populations in the City of Valparaiso, 2010

Population	2010 Census Percent Population	2014 Estimate
Elderly	15.3%	792
Language Isolation	1.2%	63
Disabled	21.0%	1,089
Single Parent	9.8%	507
Poverty	4.3%	223
Minority	26.5%	1,372

Source: 2020 Census; U.S. Census Population Division

Section 5.07.02.05 Repetitive Loss and Severe Repetitive Loss Properties

The Federal emergency Management Agency defines repetitive loss and severe repetitive loss properties as follows (44 CFR Part 77 § 77.2):

Repetitive loss structure means a structure covered under an NFIP flood insurance policy that:

(1) Has incurred flood-related damage on 2 occasions, in which the cost of repair, on average, equaled or exceeded 25% of the value of the structure at the time of each such flood event; and

(2) At the time of the second incidence of flood related damage, the contract for flood insurance contains increased cost of compliance coverage.

Severe repetitive loss structure means a structure that is covered under an NFIP flood insurance policy and has incurred flood-related damage:

(1) For which 4 or more separate claims payments have been made under flood insurance coverage under subchapter B of this chapter, with the amount of each claim (including building and contents payments) exceeding $5,000, and with the cumulative amount of such claims payments exceeding $20,000; or

(2) For which at least 2 separate flood insurance claims payments (building payments only) have been made, with cumulative amount of such claims exceeding the value of the insured structure.

In Valparaiso, hurricanes, tropical storms, storm surge, flooding, and thunderstorms are responsible for repetitive loss properties. These properties are more vulnerable to certain hazards than other structures in Valparaiso because they have already experienced significant flood damage. Please see Section 4.02.05 and Table 4.02.05.1 for this LMS' discussion of Repetitive Loss and Severe Repetitive Loss properties throughout the County, including within the City of Valparaiso.

Section 5.07.02.06 Hurricane and Tropical Storm

The City of Valparaiso is vulnerable to the damaging effects of tropical storms and hurricanes as it is located on the Choctawhatchee Bay, near the southern coast of the county. The City of Valparaiso would experience destruction in terms of wind damage, heavy rains, and storm surge during a tropical storm or hurricane. All structures within the City of Valparaiso's jurisdiction are susceptible to damage in the form of flooding due to heavy rains and strong storm surge. High winds can damage structures by removing roofs and siding, and create flying debris out of sources which are not anchored. The most vulnerable homes are those located on bay front lots. The following tables depict the hurricane evacuation zones and the vulnerable structures located within each zone.

Table 5.07.02.06.1: Evacuation Zones and the Vulnerable Residential Structures within
Note Evacuation Zones correspond with Hurricane Categories (Ex. Evacuation Zone 1 = Category 1 Hurricane)

Total:	SFR-Townhouse	Single-Family	Mobile Home	Multi-Family
Zone A	0	0	0	0
Just Value	$0	$0	$0	$0
Zone B	12	72	0	0
Just Value	$3,290,590	$25,880,627	$0	$0
Zone C	74	152	0	1
Just Value	$13,426,041	$44,072,825	$0	$1,654,769
Zone D	123	251	1	6
Just Value	$19,558,600	$63,158,018	$158,311	$4,036,598
Zone E	140	1286	4	59
Just Value	$21,553,674	$200,397,175	$369,140	$11,088,910

Source: West Florida Regional Planning Council & Okaloosa County Property Appraiser, 2025 (Okaloosa County Staff generated table from overlaying the evacuation zones and property appraiser data)

Table 5.07.02.06.2: Evacuation Zones and the Vulnerable Structures within
Note Evacuation Zones correspond with Hurricane Categories (Ex. Evacuation Zone 1 = Category 1 Hurricane)

Total:	Commercial	Government/ Institutional	Trailer Park
Zone A	0	0	0
Just Value	$0	$0	$0
Zone B	3	1	0
Just Value	$2,237,619	$7,469	$0
Zone C	4	2	0
Just Value	$2,928,459	$175,963	$0
Zone D	9	2	0
Just Value	$4,364,495	$175,963	$0
Zone E	85	20	1
Just Value	$29,890,786	$270,729,103	$205,302

Source: West Florida Regional Planning Council & Okaloosa County Property Appraiser, 2025 (Okaloosa County Staff generated table from overlaying the evacuation zones and property appraiser data)

Section 5.07.02.07 Storm Surge

The City of Valparaiso is vulnerable to storm surge and the structures along the Choctawhatchee Bay are the most susceptible to damage from this hazard. The strongest storm surge level during a Category 5 hurricane would be 16.8 feet above the mean high water line along the some areas boarding Choctawhatchee Bay. This would severely flood numerous homes, infrastructure, and commercial structures in this area. The following tables depict the vulnerable structures to storm surge levels, which correspond with the category of hurricane.

Table 5.07.02.07.1: Vulnerable Structures to Storm Surge

Total:	SFR-Townhouse	Single-Family	Multi-Family	Commercial	Government/ Institutional
Surge Level 1	29	81	0	4	2
Just Value	$7,196,090	$37,974,193	$0	$2,928,459	$175,963
Surge Level 2	38	87	0	4	4
Just Value	$8,666,098	$39,430,024	$0	$2,928,459	$2,928,459
Surge Level 3	81	220	5	5	3
Just Value	$14,605,103	$63,054,396	$2,840,447	$3,414,275	$338,240
Surge Level 4	81	220	5	9	3
Just Value	$14,605,103	$63,054,396	$2,840,447	$5,279,227	$338,240
Surge Level 5	123	368	5	9	4
Just Value	$20,055,142	$88,448,364	$2,840,447	$5,279,227	$5,382,791

Source: West Florida Regional Planning Council & Okaloosa County Property Appraiser, 2025 (Okaloosa County Staff generated table from overlaying the surge levels and property appraiser data)

Section 5.07.02.08 Flooding

For purposes of this portion of the LMS, the definition of flooding only considers flooding that is a result of rainfall, which includes tropical rains during a hurricane. The City of Valparaiso is vulnerable to flooding and susceptible to damage from this hazard. Localized roadway flooding from heavy rains is the most commonly observed type of flooding in the City of Valparaiso. During a hurricane, tropical storm or severe storm heavy rains might cause some homes to flood particularly in low lying areas or those with poor drainage systems. In the City of Valparaiso, there are 46 structures in the AE flood zone and 15 structures in the A flood zone. The cumulative 'just value' of those structures in the AE and A flood zones is $13,747,503. The following table depicts the vulnerable structures located in the AE and A flood zones in the City of Valparaiso.

Table 5.07.02.08.1: Structures Located in Flood Zones in the City of Valparaiso

	AE Flood Zone	Just Value	A Flood Zone	Just Value
SFR-Townhouse	29	$5,317,131	0	$0
Single-Family	10	$3,372,023	15	$1,468,111
Commercial	5	$3,414,275	0	$0
Government/Institutional	2	$175,963	0	$0

Source: Okaloosa County Department of Growth Management, 2025

Section 5.07.02.09 Land Erosion

The City of Valparaiso is vulnerable to land erosion in some localized areas, and some structures are susceptible to damage from this hazard. The soil types and topography that lead to land erosion can be found in various parts of the City of Valparaiso. The areas that are most susceptible to land erosion are those with steep slopes and which have highly erodible soil types. Land erosion in the City of is generally caused by disturbed soils from construction activities and usually isolated to an area less than 1 acre in size.

Section 5.07.02.10 Severe Storms

In the tables below, the estimated cost of damage to residential and non-residential structures in the event of a severe storm is provided. The numbers and estimated value represent the total number of structures in the City of Valparaiso. Although it is highly unlikely that all structures will be impacted during a singular severe storm event, all structures are equally vulnerable to severe storms and so it was deemed appropriate to list all structures in the City of Valparaiso.

Table 5.07.02.10.1: Residential Structures Vulnerable to Severe Storms in City of Valparaiso

Total:	Condominium	SFR-Townhouse	Single-Family	Multi-Family
	1	30	251	0
Just Value	$4,689,705	$5,317,156	$63,647,156	0

Source: Okaloosa County Department of Growth Management, 2025

Table 5.07.02.10.2: Other Structures Vulnerable to Severe Storms in City of Valparaiso

Total:	Commercial	Government/ Institutional
	14	26
Just Value	$8,693,502	$19,724,704

Source: Okaloosa County Department of Growth Management, 2025

Since severe storms includes tornadoes and waterspouts, thunderstorms and lightning, and winter storms, the values listed in the tables above apply to all those hazards.

Section 5.07.02.10.01 Tornado and Waterspout

The City of Valparaiso is vulnerable to tornadoes and waterspouts, and all structures within its jurisdiction are susceptible to the impacts of this hazard due to their unpredictable nature.

The areas within the City of Valparaiso that are most vulnerable to tornado damage are those with a high density or large population because the damage rate increases as a function of population density. The types of structures most vulnerable to tornado damage within the City of Valparaiso are poorly constructed housing, apartment complexes, and condominiums because of their size and densities. According to the Mapping for Emergency Management, Parallel Hazard Information System (MEMPHIS) study in 2005, nearly all of Okaloosa County, including the City of Valparaiso, has a medium risk, 1 in 250 per year, of a tornado event occurring.

Because waterspouts occur over water, the areas in the City of Valparaiso most susceptible damage from waterspouts are those located on the Choctawhatchee Bay. Waterspouts tend to not last very long, but their high winds can result in damage from flying debris. The properties bordered by the water bodies are the most vulnerable to damage from flying debris. However, the specific impacts on those areas are unavailable due to the lack of relevant studies conducted regarding this hazard.

Section 5.07.02.10.02 Thunderstorms and Lightning

The City of Valparaiso is vulnerable to thunderstorms and lightning, and all structures within its jurisdictions are susceptible to the damaging effects of wind, hail, and lightning associated with severe thunderstorms. Thunderstorm damage can include traffic accidents on wet roads, flash-flooding, lightning damage to electronics and structures, lightning strikes on people, and wind and hail damage to structures. According to the Mapping for Emergency Management, Parallel Hazard Information System (MEMPHIS) study in 2005, all of Okaloosa County, including the City of Valparaiso, has the threat of a thunderstorm or lightning event occurring, in terms of causing economic damage or loss of over $50, of 1 in 50 per year.

Section 5.07.02.10.03 Winter Storms

The City of Valparaiso is vulnerable to winter storms, and all structures within its jurisdiction are susceptible to the effects of freezing temperatures. The City of Valparaiso is vulnerable to snow, freezing rain, icing and glazing events but because these events are so rare, the City of Valparaiso is unlikely to suffer serious damage from this hazard. The specific impacts of winter storms in the City of Valparaiso are unavailable because there have been no studies conducted regarding these hazards' impacts in the County. Only broad general impacts of this hazard can be given, such as occurred in January 2025 during Winer Storm Enzo, which provide an indication of what impacts are expected with winter storms. The homes in the City of Valparaiso that are most vulnerable to winter storms are those with unprotected or under-protected water pipes and homes in which plumbing and insulation is inadequate. Unmitigated older structures and manufactured housing are also very vulnerable.

Section 5.07.02.11 Heat Wave and Drought

The City of Valparaiso is vulnerable to heat waves and drought. The specific impacts of heat waves and drought in the City of Valparaiso are unavailable because there have been no studies conducted regarding these hazards' impacts in the County. In addition, the nature of these

hazards tends to only affect the populations without adequate cooling systems in their homes, low income, elderly, children, and outside workers. Only broad general impacts of these

hazards can be given, which provide an indication of what impacts are expected with heat wave and drought. Everyone living within the City of Valparaiso is susceptible to heat exhaustion. All households 0are susceptible to power outages due to increased electricity demand during periods of extreme heat. Electrical system failures due to demand would only enhance problems for the entire population, especially for the vulnerable populations. All water bodies and municipal water supplies are susceptible to declining water levels and water shortages due to drought.

Section 5.07.02.12 Wildfire

Although the City of Valparaiso is susceptible to wildfire, as previously mentioned in the City's Hazard Assessment, it appears that the future risk of wildfire is minimal. The areas and populations that are most vulnerable to the danger and destruction of wildfire are the ones with inadequate infrastructure, inaccessibility to critical facilities or firefighting resource locations, and located in the wildland-urban interface. The following table depicts the structures with 'medium (levels 4-6)' to 'high (levels 7-9)' wildfire level of concern. Levels 0-3 were determined to be of such minimal to low vulnerability to wildfire they were not included in this assessment.

Table 5.07.02.12.1: Medium to High Wildfire Level of Concern for Structures

Total:	Single-Family	Multi-Family	Commercial	Government/ Institutional
Level 4	12	0	0	2
Just Value	$2,302,599	$0	$0	$5,206,828
Level 5	3	1	2	1
Just Value	$548,406	$1,196,151	$1,205,099	$5,044,551
Level 6	3	0	1	2
Just Value	$686,821	$0	$719,283	$5,052,020
Level 7	1	0	1	2
Just Value	$239,249	$0	$357,917	$5,206,828

Staff generated table from overlaying the wildfire level of concern and property appraiser data)

Section 5.07.02.13 Beach Erosion

The areas of the City of Valparaiso that are vulnerable to the effects of beach erosion are the properties that border the Choctawhatchee Bay. As previously mentioned, within its jurisdiction, there are 9.81 miles of coastline along the Choctawhatchee Bay. The populations that reside, work, run businesses, or own property in these parcels are the most affected by beach erosion. Beach erosion undermines the integrity of infrastructure, beachfront homes and businesses,

and other structures by washing away the sediments that support the structural foundation sometimes resulting in complete destruction. Data on the specific impacts of beach erosion on the City of Valparaiso were unavailable because there have been no studies conducted for this

municipality. However, the LMS Committee will update this section, regarding the impacts that beach erosion has on structures, to reflect those changes.

Section 5.07.14 Sea Level Rise

The 2025 Okaloosa County Vulnerability Assessment (Appendix E) which includes all Valparaiso and all the municipalities except Destin, recognizes that, as a coastal city, Valparaiso is vulnerable the effects of sea level rise. However, no critical facilities were identified as imperiled in either the Vulnerability Assessment or the accompanying Adaptation Plan (Jacobs Engineering, 2025). It should also be noted that the Assessment specifically points out that none of the portions of the critical state roads that serve as evacuation routes that occur in Valparaiso are vulnerable to the 1% annual exceedance probability flood:

> The following are critical state roadways that function as evacuation routes that **are not vulnerable** (emphasis added for this LMS) to the 1% AEP flood: SR-123 (Roger J Clary Highway), SR-145 (Perry Avenue SE), SR-190 (Valparaiso Parkway) within the city limits of Valparaiso and on Eglin AFB property, SR-85 N (Government Avenue) within the city limits of Valparaiso, SR-285 segment north of College Boulevard northeastern to County limits, SR-285 (Partin Drive N), CR-393 (Mary Esther Boulevard and Mary Esther Cutoff NW), and SR-397 (Eglin Parkway NW and W Eglin Boulevard). (Okaloosa county Vulnerability Assessment, Jacobs Engineering page 8-14).

The Vulnerability Assessment does note, however, that Valparaiso's road network, particularly those roads closest to Boggy Bayou, are threatened with increased flooding, and that three waterfront parks, Florida Park, Shipyard Park, and Lincoln Park, are particularly vulnerable to this hazard. The accompanying Adaptation Plan (Appendix E) does not identify any projects within the City.

Section 5.07.02.15 Other Hazards

As previously stated in the Risk Assessment, the following hazards, sinkholes, expansive soils, dam safety, earthquake, avalanche, land subsidence, volcano, and tsunami have been determined to be a minimal risk to the City of Valparaiso. Therefore, the City's vulnerability to these hazards has not been assessed. If any of the hazards become a greater risk in the City of Valparaiso, then the LMS Committee will update this section to reflect those changes.

Section 5.07.02.16 Summary

The vulnerability assessment section of this LMS document highlighted how vulnerable the City of Valparaiso is to the identified hazards from the Risk Assessment. It discussed the vulnerable populations, repetitive loss properties, and structure and infrastructure damages associated with these hazards.

Section 5.07.03 Critical Facilities

The following is a list of all critical facilities found inside the City of Valparaiso's city limits. It is to be noted that some critical facilities belong to and are maintained by other jurisdictions.

Section 5.07.03.01 Fire Stations

Site Name	Address	X-COORD	Y-COORD
VALPARAISO FD	431 VALPARAISO PKWY VALPARAISO FL 32580	30.490118 DEG N	-86.518383 DEG W

Section 5.07.03.02 Law Enforcement

Site Name	Address	X-COORD	Y-COORD
VALPARAISO PD	465 VALPARAISO PKWY VALPARAISO FL 32580	30.509444 DEG N	-86.500583 DEG W

Section 5.07.03.03 Government Centers

Site Name	Address	X-COORD	Y-COORD
VALPARAISO CITY HALL	23 JOHN SIMS PARKWAY VALPARAISO FL 32580	30.51245 DEG N	-86.49436 DEG W

Section 5.07.03.04 Public Works Facilities

Site Name	Address	X-COORD	Y-COORD
VALPARAISO PUBLIC WORKS YARD	600 VALASTICS AVE VALPARAISO FL 32580	30.5057 DEG N	-86.4952 DEG W

Section 5.07.04 Mitigation Actions

Section 5.07.04.01 Hurricane and Tropical Storm

Mitigation of hurricane risks can be accomplished through public awareness and individual preparation, in combination with:

1. Zoning ordinances; *Status: on-going; City Administrator, Planning Commission, Commissioners*
2. Building codes; *Status: on-going; FBC, Building Official, City Administrator, Planning Commission, Commissioners*
3. Adequate warning systems; *Status: on-going; County EMS, Police, Fire, CATV*

The following mitigation actions are the responsibility of Okaloosa County and will be enforced in the City of Valparaiso:

1. Support efforts to shutter critical facilities. *Status: on-going; State, County, Commissioners, Public Works*
2. Ensure the public is informed of pending conditions. *Status: on-going; County EMS, CATV, City Departments*
3. Enforce Florida Building Codes for new structures. *Status: on-going; Building Official, City Administrator*
4. Ensure adequate equipment exists to remove debris, clear roads, perform search and rescue functions, and otherwise respond and recover from hurricane impacts. *Status: on-going; Contractual Services, Commissioners*
5. Ensure communications are wind and electrical-failure resistant to allow for 24/7 communications during the first 72 hours following a disaster. *Status: on-going; CATV, Police, Fire*
6. Ensure adequate and safe public risk shelters are available in all locations in the County to prevent homelessness, including adequate dining facilities and to maintain sanitary conditions. *Status: on-going; County*
7. Promote and support funding that allows for buildings to remain functional before, during and after a hurricane or tropical storm event in order to support the function of Okaloosa County Emergency Management's mandates. *Status: on-going; Commissioners*
8. Support protection of county infrastructure named in the Okaloosa County Comprehensive Emergency Management Plan and its Emergency Support Functions. *Status: on-going; County*
9. Promote public awareness of hurricane and tropical storm hazards. *Status: on-going; County EMS, Police, Fire, CATV*
10. Promote ways that private structure owners and landowners can mitigate using governmental or private sector investment. *Status: on-going; Building Official, City Administrator, City Engineer*

11. Ensure roads are designed and engineered for the amount of wind, surge, flooding and debris that can be expected from a hurricane or tropical storm event. *Status: on-going; City Engineer, FDOT*
12. Ensure communications systems are capable to communicate during and following hurricanes/tropical storms. Also to include the ability to erect temporary repeaters to restore communications. *Status: on-going; County EMS, Police, Fire, CATV*
13. Ensure internet systems are redundant to ensure continued availability of disaster management software throughout the county. *Status: on-going; CATV*
14. Support activities that educate the public about the dangers of hurricanes/tropical storms. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office. *Status: on-going; County EMS, Police, Fire, CATV*

Section 5.07.04.02 Storm Surge

The City of Valparaiso will adopt the mitigation actions for the overall county to address the hazards associated with storm surge:

1. Promote public awareness of storm surge. *Status: on-going; County EMS, Police, Fire, CATV*
2. Ensure the public is informed of pending conditions. *Status: on-going; County EMS, CATV, City Departments*
3. Ensure that maps accurately reflect the amount of storm surge, wave and flood action that can occur during hurricanes and tropical storms. *Status: on-going; FEMA, City Engineer, Flood Plain Manager*
4. Provide opportunities for property owners to elevate existing structures, move them to higher ground, or to have properties purchased by local governments in order to reduce overall community vulnerability to storm surge. *Status: on-going; FEMA, City Engineer, Flood Plain Manager, Commissioners*
5. Promote the continued purchase of lands that are at high risk of storm surge, with proper considerations of private property rights and constitutional requirements for just compensation, as appropriate. *Status: on-going; FEMA, City Engineer, Flood Plain Manager, Commissioners*
6. Ensure roads are designed and engineered for the amount of storm surge that can be expected. *Status: on-going; City Engineer, FDOT*
7. Support activities that educate the public about the dangers of storm surge. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office. *Status: on-going; County EMS, Police, Fire, CATV*

Section 5.07.04.03 Flooding

Mitigation of flood risks can be accomplished through public awareness and individual preparation, in combination with:

1. Zoning ordinances; *Status: on-going; City Administrator, Planning Commission, Commissioners; for NFIP Compliance*
2. Building codes; *Status: on-going; FBC, Building Official, City Administrator, Planning Commission, Commissioners; for NFIP Compliance*
3. Adequate warning systems; *Status: on-going; County EMS, Police, Fire, CATV; for NFIP Compliance*
4. Flood proofing measures; *Status: on-going; FEMA, FBC, Building Official, City Administrator; for NFIP Compliance*
5. Other comprehensive regulatory actions designed specifically for the reduction of flood damage; *Status: on-going; FEMA; for NFIP Compliance*

Effective mitigation strategies are important to reduce the loss of life and property. Public sheltering capabilities along with flood control structures and restoration of services after a flood are also important elements of flood preparedness. The following mitigation actions are the responsibility of Okaloosa County and will be enforced in the City of Valparaiso:

1. Ensure all future buildings are constructed to the Florida Building Code. *Status: on-going; Building Official, City Administrator, City Engineer; for NFIP Compliance*
2. Ensure all future buildings are built with a minimum finished floor height of 1’ above the established Base Flood Elevation on the Flood Insurance Rate Maps for those buildings located within the AE Flood Zones. *Status: on-going; Building Official, City Administrator, City Engineer; for NFIP Compliance*
3. Ensure all future buildings built within the V Flood Zones meet the minimum 1’ freeboard requirement. *Status: on-going; Building Official, City Administrator, City Engineer; for NFIP Compliance*
4. Ensure all future buildings are built with a minimum finished floor height of 5’ above the highest adjacent grade for those buildings located within the un-numbered A Flood Zones. *Status: on-going; Building Official, City Administrator, City Engineer; for NFIP Compliance*
5. Ensure all future buildings are built with a minimum finished floor height of 1’ above the crown of the road, unless a variance is granted by the Public Works department. *Status: on-going; Building Official, City Administrator, City Engineer; for NFIP Compliance*
6. Ensure roads are designed and engineered for the amount of flooding that can be expected. *Status: on-going; Building Official, City Administrator, City Engineer; for NFIP Compliance*

7. Ensure that all flooding sources are documented and that the public are aware of the existence of such mapping services and products for planning purposes. *Status: on-going; Building Official, City Administrator, City Engineer; for NFIP Compliance*
8. Promote the continued purchase of lands that are at high risk of flooding, with proper considerations of private property rights and constitutional requirements for just compensation, as appropriate. *Status: on-going; FEMA, Commissioners; for NFIP Compliance*
9. Provide opportunities for property owners to elevate existing structures, move them to higher ground, or to have properties purchased by local governments in order to reduce overall community vulnerability to flooding. *Status: on-going; Planning Commission, Commissioners; for NFIP Compliance*
10. Ensure that all public buildings that serve first response and critical emergency/public needs, including recording/data collection and communication centers/infrastructure, are located outside of flood zones or flood prone areas. *Status: on-going; Commissioners, City Clerk, Police, Fire, Public Works; for NFIP Compliance*
11. Ensure communications systems are capable to communicate during and following flood events. *Status: on-going; Police, Fire, CATV; for NFIP Compliance*
12. Maintain status as a NFIP and CRS community by enforcing both the NFIP requirements and additional criteria that exceeds the NFIP for CRS compliance as a class 6 community. *Status: on-going; Flood Plain Manager, Commissioners*
13. Support efforts of the Institute of Food and Agricultural Services (IFAS/County Cooperative Extension Service) and the Natural Resources conservation Services (NRCS) as it relates to reduction and mitigation of flood hazards to crops and silvacultural operations. *Status: on-going; County*
14. Support activities that educate the public about the dangers of flooding. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office. *Status: on-going; County EMS, Police, Fire, CATV; for NFIP Compliance*
15. Ensure the public is informed of pending conditions. *Status: on-going; County EMS, Police, Fire, CATV; for NFIP Compliance*

Section 5.07.04.04 Land Erosion

The City of Valparaiso will adopt the mitigation actions for the overall county to address the hazards associated with land erosion:

1. Support efforts that protect natural plant systems, human plantings, special tilling methods and technologies, and other forms of vegetative erosion control. *Status: on-going; City Engineer, Public Works*

2. Require proposed temporary and permanent erosion and sediment control plans are submitted with each application for construction approval. *Status: on-going; City Engineer, Public Works*
3. Require no clearing, grading, excavating, filling, or other disturbance of the natural terrain shall occur until erosion and sedimentation control measures have been approved by Okaloosa County and installed and be maintained throughout the length of construction activity. *Status: on-going; City Engineer, Building Official, Public Works*
4. Sediment shall be retained on site. *Status: on-going; City Engineer, Building Official, Public Works*
5. Wetlands and other water bodies shall not be used as sediment traps during construction. *Status: on-going; City Engineer, Planning Commission, City Administrator, Building Official, PW*
6. Require land which has been cleared for construction and has not commenced shall be protected from erosion be appropriate techniques designed to re-vegetate the area. *Status: on-going; City Engineer, Building Official, Public Works*
7. Support efforts that allow public and private sector entities to gain control of problem erosion locations, gullies and rills that reduce unnatural sedimentation accumulation and cutting into natural hillsides and land, and to control coastal erosion where seawalls are necessary. *Status: on-going; City Engineer, Building Official, Public Works*
8. Support efforts that would allow for construction and infrastructure development to eliminate an existing erosion problem or to eliminate creation of such a problem. *Status: on-going; City Engineer, Building Official, Public Works*
9. Support efforts that help to eliminate or reduce coastal erosion due to boat/ship wake issues, while weighing the interests of the boating public. *Status: on-going; City Engineer, Building Official, Public Works*

Section 5.07.04.05 Severe Storms

Mitigation of severe storms can be accomplished through public awareness and individual preparation, in combination with:

1. Zoning ordinances; *Status: on-going; City Administrator, Planning Commission, Commissioners*
2. Building codes; *Status: on-going; FBC, Building Official, City Administrator, Planning Commission, Commissioners*
3. Adequate warning systems; *Status: on-going; County EMS, Police, Fire, CATV*

Effective mitigation strategies are important to reduce the loss of life and property. Public sheltering capabilities along with flood control, debris removal and restoration of services after a severe thunderstorm are also important elements of thunderstorm preparedness. The following mitigation actions are the responsibility of Okaloosa County and will be enforced in the City of Valparaiso:

1. Ensure the public is informed of pending conditions. *Status: on-going; County EMS, Police, Fire, CATV*
2. Ensure communications systems are capable to communicate during and following severe storms. *Status: on-going; CATV, Police, Fire*
3. Ensure internet systems are redundant to ensure continued availability of disaster management software throughout the county. *Status: on-going; CATV*
4. Support activities that educate the public about the dangers of severe storms. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office. *Status: on-going; County EMS, Police, Fire, CATV*

Section 5.07.04.05.01 Tornado and Waterspout

Mitigation of severe thunderstorm risks can be accomplished through public awareness and individual preparation, in combination with:

1. Zoning ordinances; *Status: on-going; City Administrator, Planning Commission, Commissioners*
2. Building codes; *Status: on-going; FBC, Building Official, City Administrator, Planning Commission, Commissioners*
3. Adequate warning systems; *Status: on-going; County EMS, Police, Fire, CATV*

Effective mitigation strategies are important to reduce the loss of life and property. Public sheltering capabilities along with flood control, debris removal and restoration of services after a severe thunderstorm are also important elements of thunderstorm preparedness. The mitigation actions listed below are the responsibility of Okaloosa County and will be enforced in the City of Valparaiso:

1. Ensure communications systems are capable to communicate during and following tornados and waterspouts. *Status: on-going; County EMS, Police, Fire, CATV*
2. Support activities that educate the public about the dangers of tornados and waterspouts. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office. *Status: on-going; County EMS, Police, Fire, CATV*
3. Support activities to reduce the risk of loss of electronic equipment and structures due to tornados and waterspouts. *Status: on-going; County EMS, Police, Fire, CATV*
4. Ensure the public is informed of pending conditions. *Status: on-going; County EMS, Police, Fire, CATV*
5. Ensure internet systems are redundant to ensure continued availability of disaster management software throughout the county. *Status: on-going; CATV*

Section 5.07.04.05.02 Thunderstorms and Lightning

Severe thunderstorm preparation while at home:

1. Secure any loose, high profile and small objects outside before the storm hits. *Status: on-going; Citizens*
2. Stay inside during the thunderstorm. *Status: on-going; Citizens*
3. Try to protect vehicle from hail damage (such as placing vehicle in the garage) before storm hits. *Status: on-going; Citizens*
4. Unplug sensitive equipment such as computers and other electronic equipment. *Status: on-going; Citizens*
5. Stay off the telephone and electronic equipment (if needed use battery operated TV, radio and phone). *Status: on-going; Citizens*
6. Stay out of bath or shower. *Status: on-going; Citizens*
7. Keep a distance from windows. *Status: on-going; Citizens*
8. Be ready to take shelter in center of building on lowest floor crouched low to the ground. *Status: on-going; Citizens*
9. Listen to battery operated NOAA weather radio for updates. *Status: on-going; Citizens*

The following mitigation actions are the responsibility of Okaloosa County and will be enforced in the City of Valparaiso:

1. Ensure communications systems are capable to communicate during and following thunderstorms and lightning. *Status: on-going; County EMS, Police, Fire, CATV*
2. Support activities that educate the public about the dangers of thunderstorms and lightning. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office. *Status: on-going; County EMS, Police, Fire, CATV*
3. Support activities to reduce the risk of loss of electronic equipment and structures due to lightning strike and electrical surge. *Status: on-going; County EMS, Police, Fire, CATV*
4. Ensure the public is informed of pending conditions. *Status: on-going; County EMS, Police, Fire, CATV*
5. Ensure internet systems are redundant to ensure continued availability of disaster management software throughout the county. *Status: on-going; CATV*

Section 5.07.04.05.03 Winter Storms

The City of Valparaiso will adopt the mitigation actions for the overall county to address the hazards associated with winter storms:

1. Ensure communications systems are capable to communicate during and following winter storms. *Status: on-going; County EMS, Police, Fire, CATV*

2. Support activities that educate the public about the dangers of winter storms. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office. *Status: on-going; County EMS, Police, Fire, CATV*
3. Ensure winter storm shelters are capable of providing heating systems. *Status: on-going; County*
4. Reduce or eliminate the vulnerability to freezing or provide secondary heating or electrical systems for public facilities. *Status: on-going; Police, Fire, CATV, Public Works*
5. Ensure the public is informed of pending conditions. *Status: on-going; Police, Fire, CATV, Public Works*

Section 5.07.04.06 Heat Wave and Drought

Planning and preparedness for drought is primarily the responsibility of the local and county governments. The response to drought will require close coordination with local and county firefighting organizations to ensure that minimum water levels are maintained for fire suppression in the event that drought results in wildfire. Coordination of curtailment activities and public information concerning the drought should also be closely coordinated with other water users in the community. Drought mitigation depends heavily on:

1. Public education; *Status: on-going; City Administrator, Public Works, CATV, Library*
2. Individual preparedness; *Status: on-going; Citizens*
3. Careful monitoring of water supply sources by local governments, especially during times of low rainfall. *Status: on-going; Public Works*

The following mitigation actions will be enforced by Okaloosa County and will be enforced in the City of Valparaiso:

1. Ensure communications systems are capable to communicate during and following heat waves and droughts. *Status: on-going; County EMS, Police, Fire, CATV*
2. Support activities that educate the public about the dangers of heat waves and droughts. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office. *Status: on-going; County EMS, Police, Fire, CATV*
3. Ensure host shelters are capable of providing cooling systems. *Status: on-going; County*
4. Ensure the public is informed of pending conditions. *Status: on-going; CATV, Police, Fire*

Section 5.07.04.07 Wildfire

Wildfires can be mitigated through:

1. Monitoring of drought conditions and rainfall; *Status: on-going*
2. Implementing burn restrictions during times of low rain. *Status: on-going*
3. Structural fires may be prevented or controlled by ensuring that all residential, commercial, and public buildings are equipped with functioning fire detectors. Fire

damage may also be mitigated by ensuring that all fire response equipment is functioning and that adequate, trained personnel are available. *Status: on-going*

4. Structural fires may be prevented or controlled by strict adherence to the Florida Building Code. *Status: on-going*

Regular fire drills should be performed in schools and other areas with special populations, to ensure that evacuation procedures are clearly understood. Likewise, in the case of a hazardous materials release during a fire, it is very important to educate residents about a Shelter in Place policy until it is safe to leave their homes.

The following mitigation actions are the responsibility of Okaloosa County and will be enforced in the City of Valparaiso:

1. Ensure communications systems are capable to communicate during and following wildfire events. *Status: on-going; Public Works, Fire*
2. Ensure the public is informed of pending conditions. *Status: on-going; Fire, Commissioners*
3. Support activities that educate the public about the dangers of wildfire. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office or the local fire department or the Florida Division of Forestry. *Status: on-going; Fire, Building Official*
4. Require new subdivisions plats and new commercial structures to designed and built to National Fire Codes. *Status: on-going; Fire, Building Official*
5. Support activities that newly document or update maps, aerial photography, or other remote sensing imagery that shows degrees of risk for wildfire and utilize such data to focus mitigation activities against wildfire. *Status: on-going; County EMS, Police, Fire, CATV*
6. Support efforts that fire stations and their supporting equipment and personnel are adequate in terms of size, modernization, communications, in order to respond to situations by mitigating situations that are below acceptable standards to fight wildfires throughout the County and to provide mutual aid support in neighboring jurisdictions or counties. *Status: on-going; County EMS, Police, Fire, CATV*
7. Support public and private mitigation efforts to provide fire hydrants to locations at risk along the urban/rural interface where water systems exist to provide such services. *Status: on-going; Police, Fire, CATV, Public Works, City Administrator, Library*
8. Support mitigation efforts that would identify public measures that would help agricultural, forestry and silvacultural prevent or lessen the risk of wildfires. *Status: on-going; City Engineer, Planning Commission, City Administrator, Commissioners*

Section 5.07.04.08 Beach Erosion

The City of Valparaiso will adopt the mitigation actions for the overall county to address the hazards associated with beach erosion:

1. Ensure compliance with the Florida Department of Environmental Protection (FDEP) Coastal Construction Control Line (CCCL) regulations that require location of construction a sufficient distance landward of the beach to permit natural shoreline fluctuations and to preserve dune stability. Construction may occur to the extent that the natural storm buffering and protection capability of the dunes is not diminished. *Status: on-going; City Engineer, City Administrator, Building Official*
2. The County will encourage activities that protect and rebuild coastal dunes. This will be accomplished by continuing, or supporting the continuation of, activities by private and public agencies for dune restoration purposes, installation of sand fences on public and

   private properties, and enforcing restrictions regarding the destruction of sea oats and requiring the planting of sea oats by new development in coastal areas. All activities will be coordinated with the Guiding Principles of the Local Mitigation Strategy. *Status: on-going; County*
3. Cooperate with the U.S. Army Corps of Engineers and the Florida Department of Environmental Protection to re-nourish public beaches using white sand made available by maintenance dredging of Choctawhatchee Bay, Santa Rosa Sound, or other water bodies within or near Okaloosa County. *Status: on-going; City Engineer, City Administrator, Public Works*
4. With respect to acquisition, the County, where feasible, shall protect environmentally sensitive coastal areas unduly threatened by development, through acquisition, establishment of public or private conservation easements, purchase of development rights, or through other available means as deemed appropriate. *Status: on-going; County, Commissioners*
5. The County will encourage existing development and require new development to plant or replant native vegetation where appropriate, including seagrass beds and other types of shoreline, aquatic and upland vegetation. *Status: on-going; Commissioners*
6. Coordinate with the following existing resource protection plans: Choctawhatchee River and Bay S.W.I.M. Plan, Pensacola Bay S.W.I.M. Plan, FDEP Ecosystem Management Plan, West Florida Strategic Regional Policy Plan, Rocky Bayou Aquatic Preserve Management Plan, and the Northwest Florida Resource Management Plan, and the Local Mitigation Strategy. *Status: on-going; County*
7. Shoreline armoring should be discouraged in favor of alternative methods of enhancing shoreline stability that minimize erosion and allow for the growth of emergent shoreline

grasses. *Status: on-going; City Engineer, Planning Commission, Public Works, City Administrator*

8. New structures, other than dune walkovers, and structures needed to accommodate conservation and passive recreation uses, are prohibited within the portion of the Coastal High Hazard Area lying within the FEMA V Zone, unless all Department of Environmental Protection Coastal Construction Control Standards and FEMA Special Hazard Area Minimum Construction Requirements are met. *Status: on-going; FEMA, Building Official, City Engineer*
9. Enforce rigorous development standards consistent with the County's NFIP and the CRS program for flood hazard reduction including: location of buildings landward of the reach of the mean high tide; requirement to elevate structures one (1) foot above base flood elevation as specified on F.E.M.A. maps; anchoring standards to resist flotation, collapse, and lateral movement; prohibiting fill used as structural support in V zones, and; prohibiting alteration of sand dunes which would increase potential flood damage. *Status: on-going; FEMA, Flood Plain Manager, Building Official, City Engineer*
10. Public funds shall be expended in the coastal high hazard area only for development that: complies with land use densities/intensities adopted in the comprehensive plan; produces no adverse affects to the surrounding land uses or the environment without approved mitigation plans, and/or; furthers opening up the waterfront to public access. *Status: on-going; Commissioners*
11. Shoreline development must comply with performance standards that address lot coverage, vegetated buffers, stormwater management, and erosion and sedimentation controls. *Status: on-going; Building Official, City Administrator*

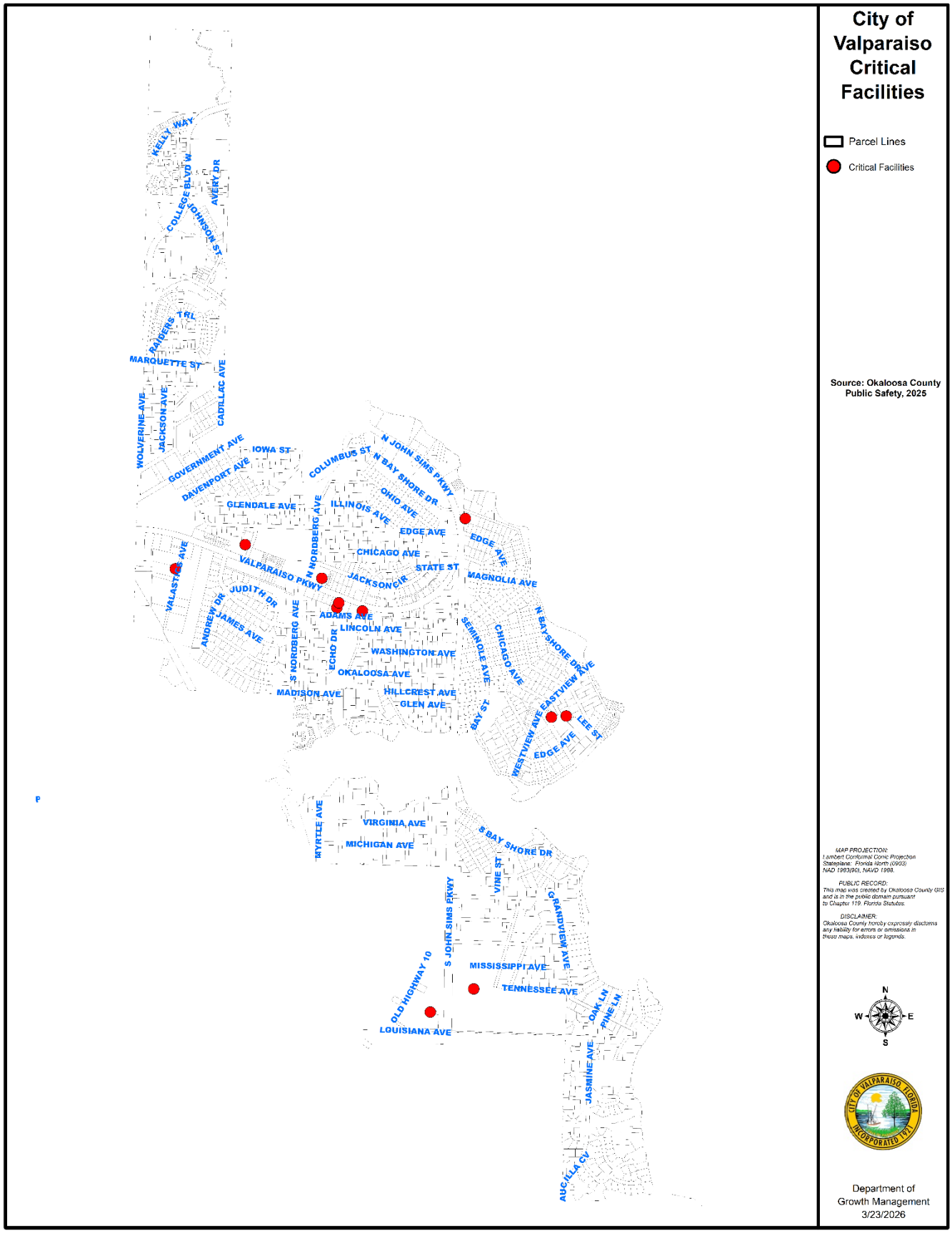
Section 5.07.04.09 Sea Level Rise

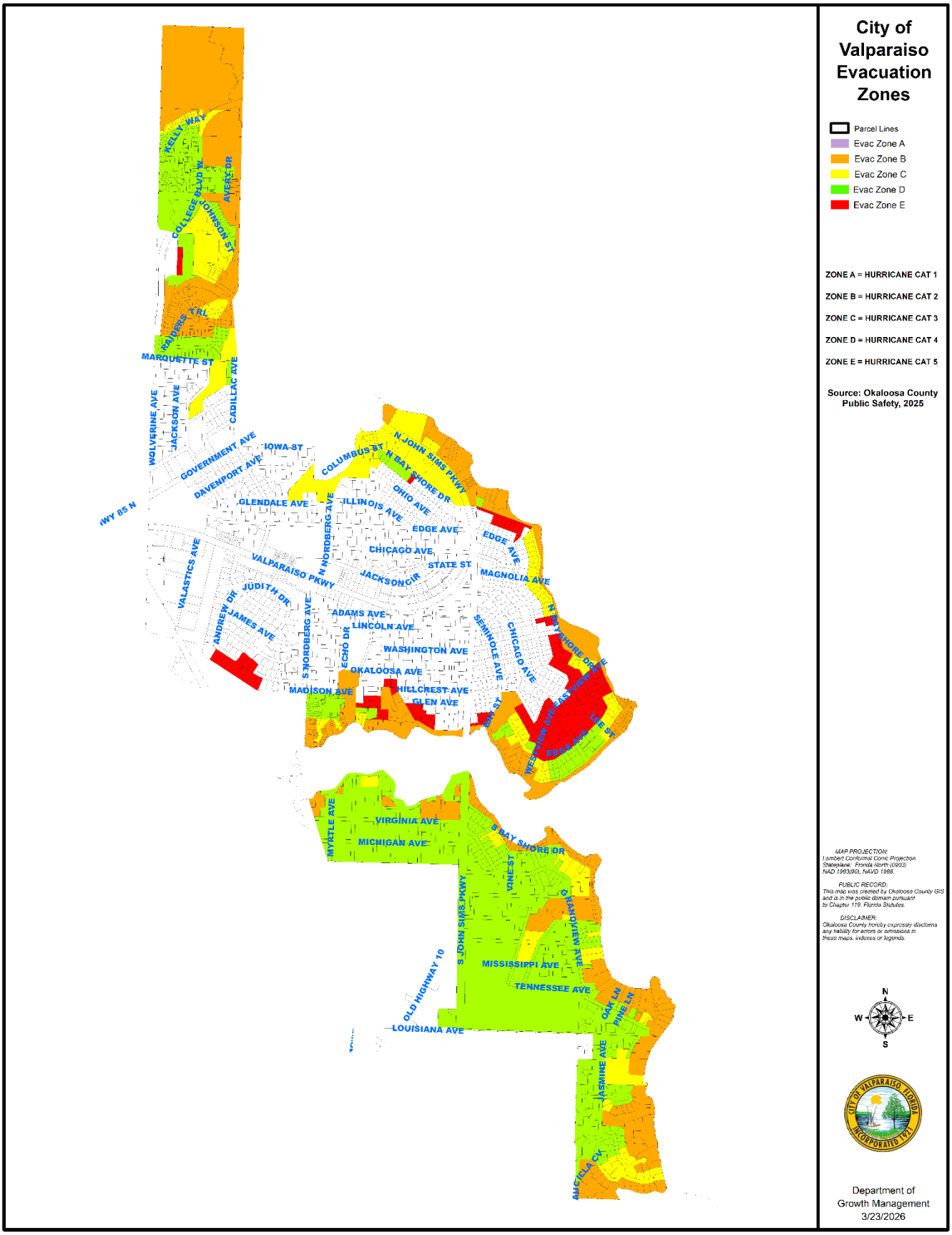
The mitigation actions contained in Section 5.07.04.03 Flooding will address the needs for mitigation actions for Sea Level Rise, as well.

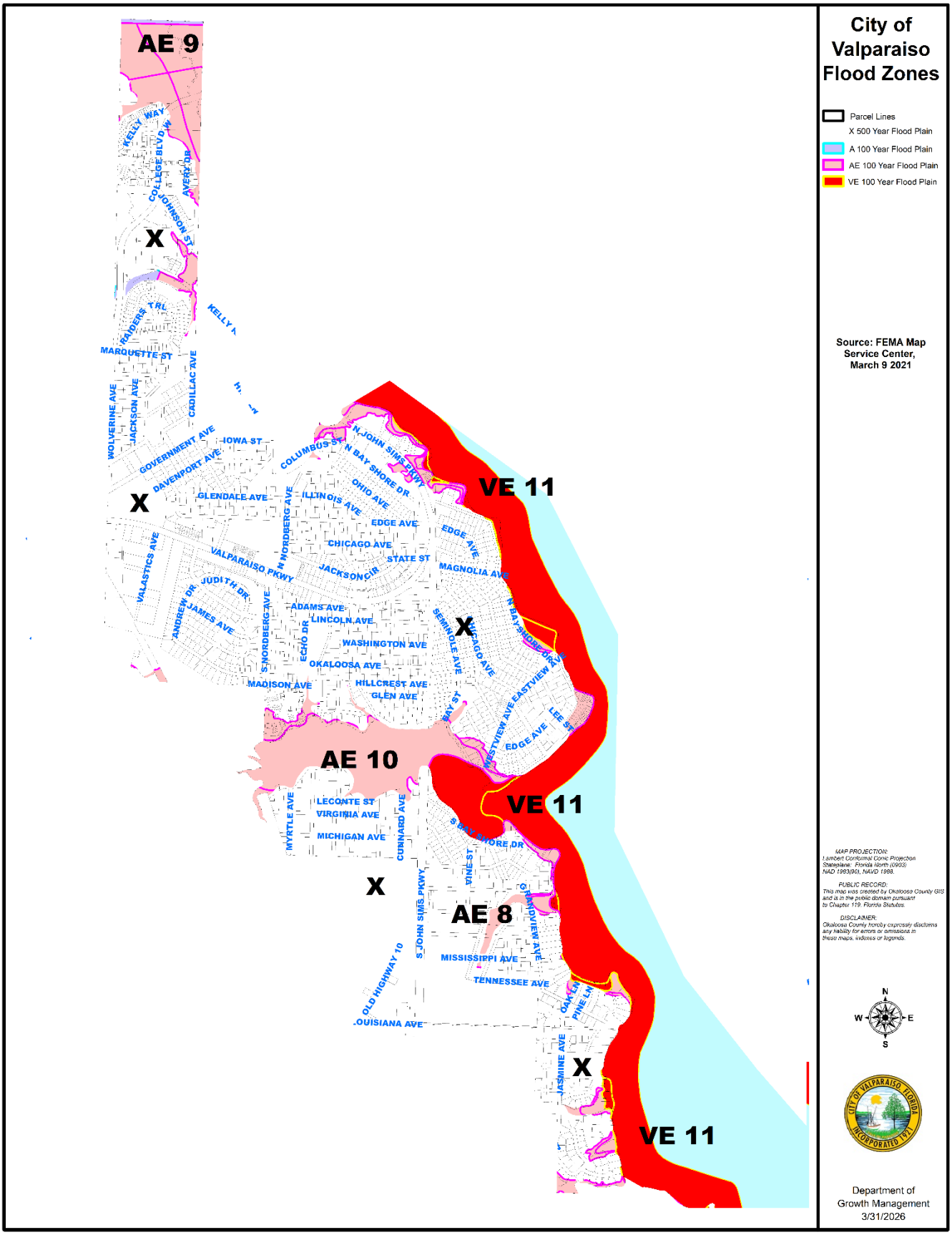
Section 5.07.05 Maps

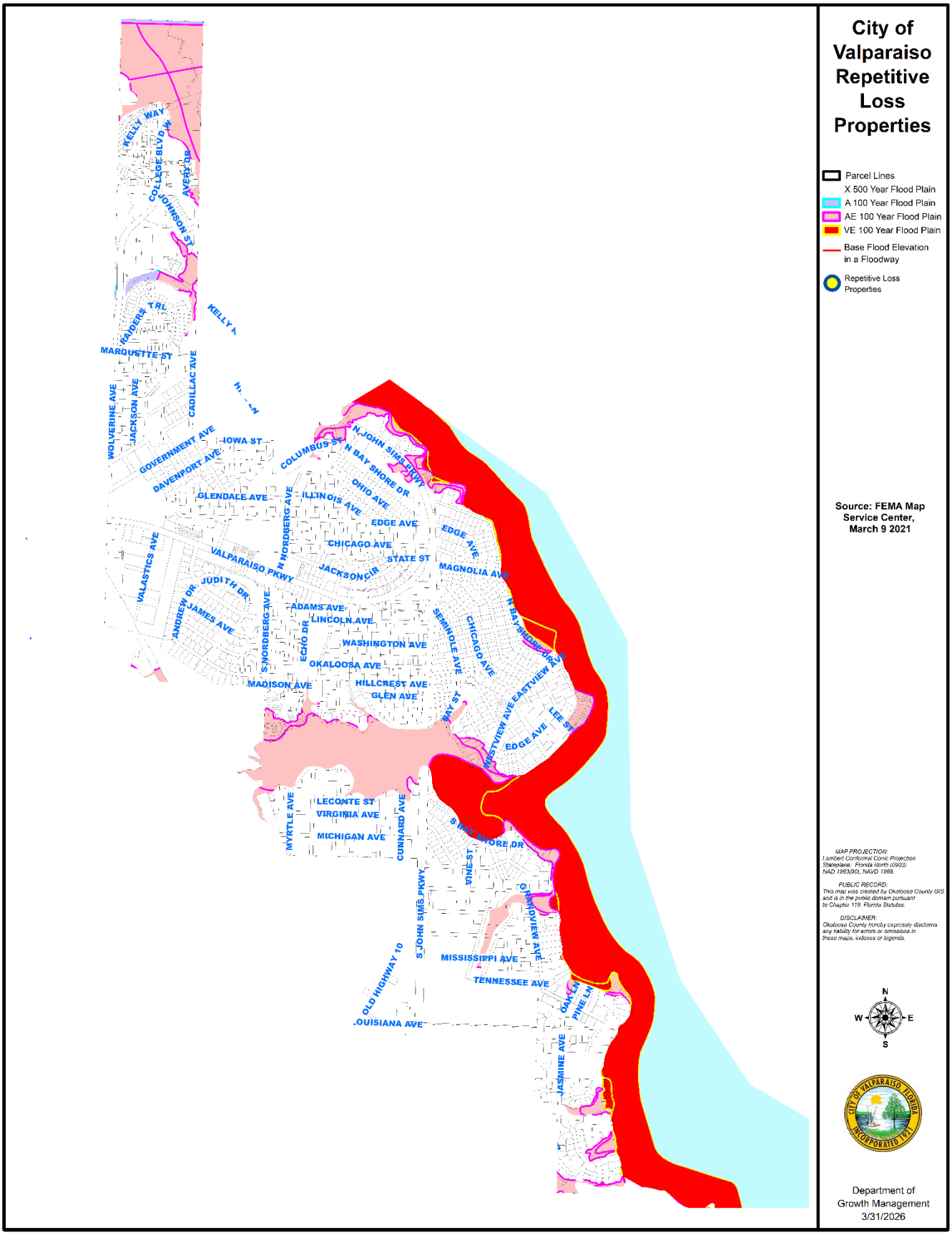
Attached to this page are maps of the City of Valparaiso. They include:

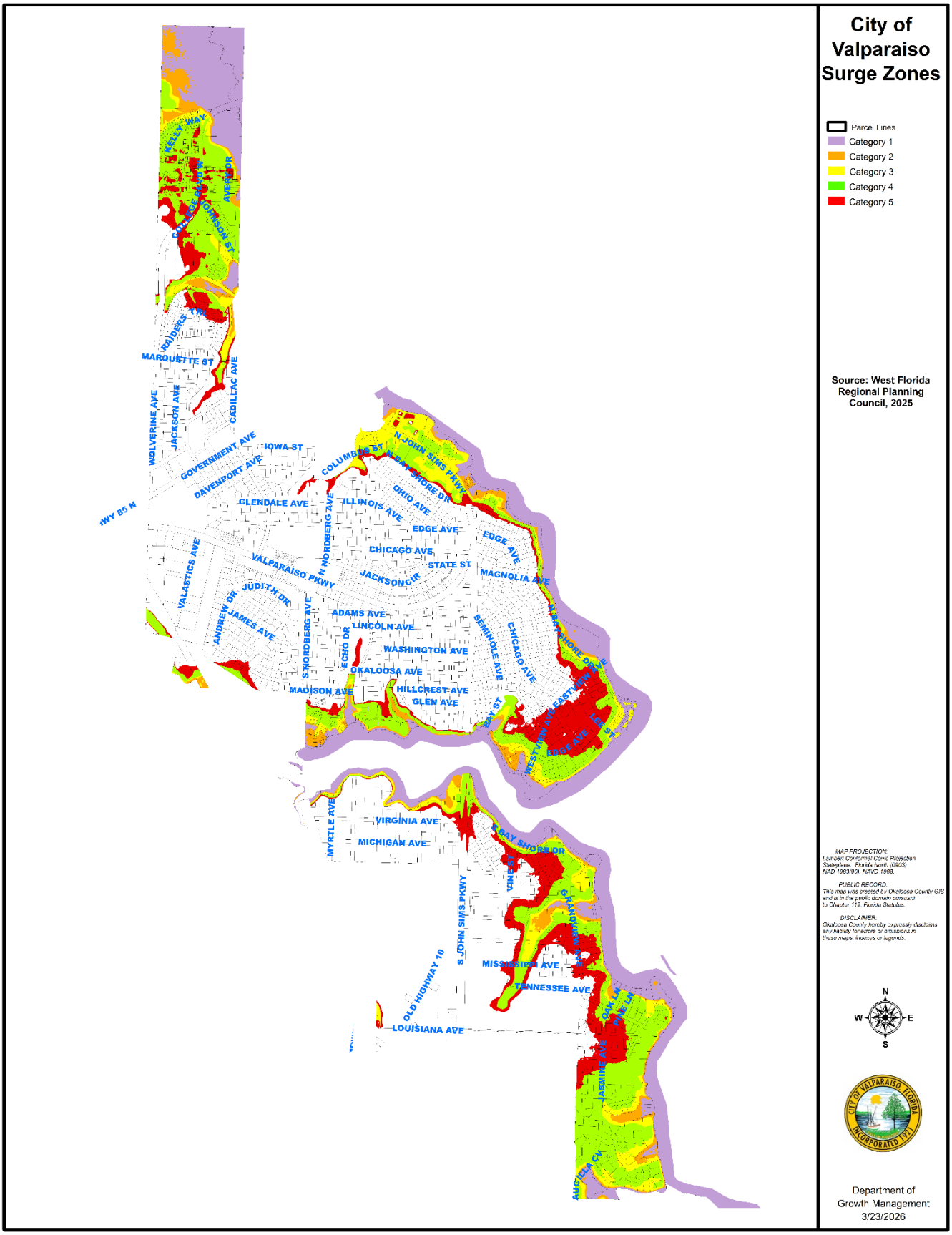
1. Critical Facilities….....5.07-42
2. Evacuation Zones….....5.07-43
3. Flood Zones… 5.07-44
4. Repetitive Loss Properties….....5.07-45
5. Surge Zones….....5.07-46
6. Wildfire Level of Concern… 5.07-47

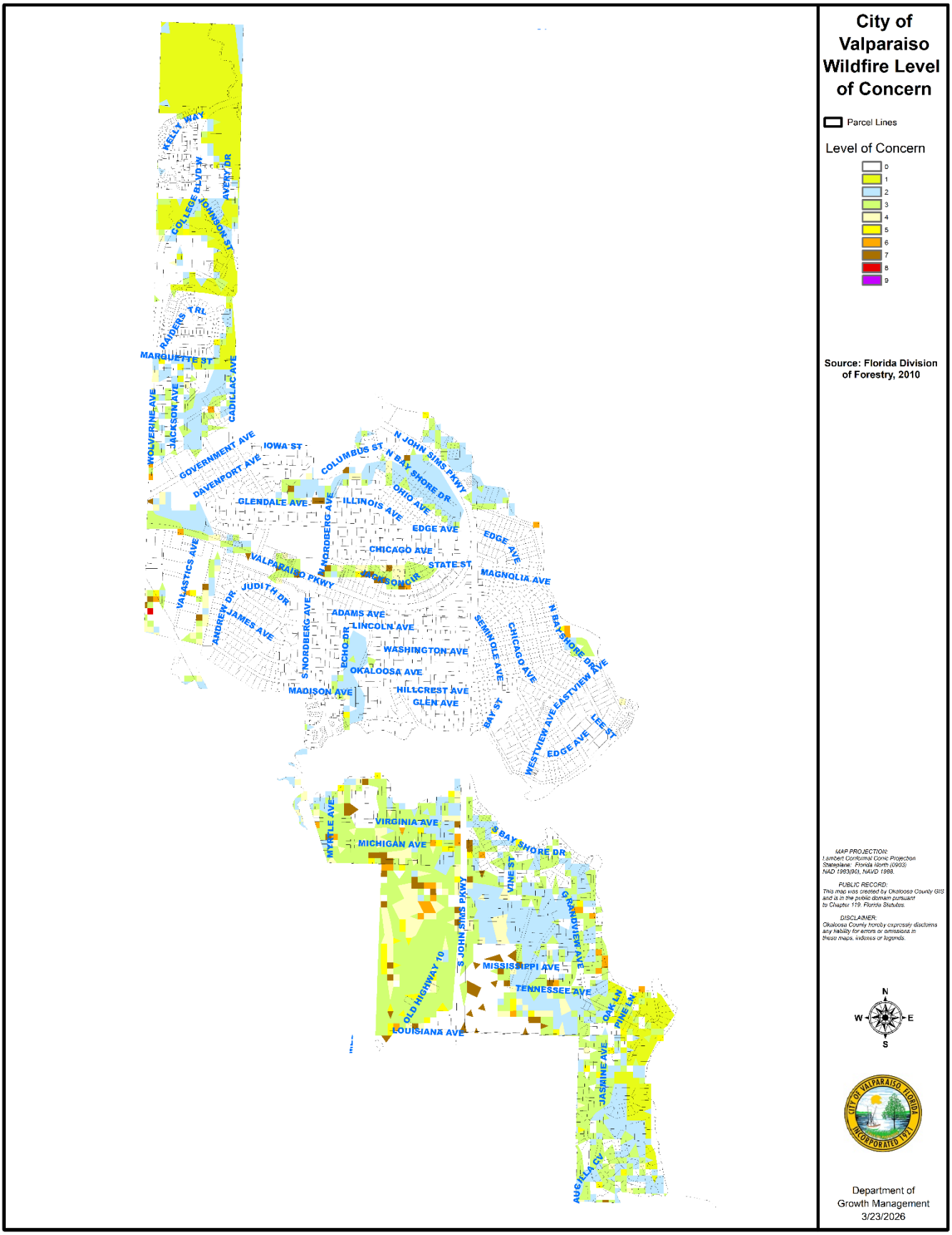

City of Valparaiso Critical Facilities
Parcel Lines
Critical Facilities
Source: Okaloosa County Public Safety, 2025
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
NAD 1983(90), NAVD 1988.
PUBLIC RECORD:
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TENNESSEE AVE
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LOUISIANA AVE
OAK LN
PINE LN
JASMINE AVE
AUCILLA CV


City of Valparaiso Evacuation Zones
Parcel Lines
Evac Zone A
Evac Zone B
Evac Zone C
Evac Zone D
Evac Zone E
ZONE A = HURRICANE CAT 1
ZONE B = HURRICANE CAT 2
ZONE C = HURRICANE CAT 3
ZONE D = HURRICANE CAT 4
ZONE E = HURRICANE CAT 5
Source: Okaloosa County Public Safety, 2025
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City of Valparaiso Flood Zones
Parcel Lines
X 500 Year Flood Plain
A 100 Year Flood Plain
AE 100 Year Flood Plain
VE 100 Year Flood Plain
Source: FEMA Map Service Center, March 9 2021
AE 9
X
VE 11
X
AE 10
VE 11
X
AE 8
X
VE 11
MAP PROJECTION:
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3/31/2026


City of Valparaiso Repetitive Loss Properties
Parcel Lines
X 500 Year Flood Plain
A 100 Year Flood Plain
AE 100 Year Flood Plain
VE 100 Year Flood Plain
Base Flood Elevation in a Floodway
Repetitive Loss Properties
Source: FEMA Map Service Center, March 9 2021
MAP PROJECTION:
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PINE LN
JASMINE AVE


City of Valparaiso Surge Zones
Parcel Lines
Category 1
Category 2
Category 3
Category 4
Category 5
Source: West Florida Regional Planning Council, 2025
MAP PROJECTION:
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JASMINE AVE
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City of Valparaiso Wildfire Level of Concern
Parcel Lines
Level of Concern
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Source: Florida Division of Forestry, 2010
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
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Section 5.07.06 Post Disaster Redevelopment Plan

The City of Valparaiso does not currently have a Post Disaster Redevelopment Plan. Therefore, the city will abide by the Okaloosa County Post Disaster Redevelopment Plan (PDRP) and submit the required data per the PDRP requirements.

Section 5.08

Town of Cinco Bayou

Town of Cinco Bayou

Section 5.08.01 Risk Assessments

Section 5.08.01.01 Introduction

The intent of this section is to provide information regarding the hazards threatening the Town of Cinco Bayou. It is an incorporated town located in the southern portion of Okaloosa County and is home to about 447 residents according to the April 2025 population estimate from the University of Florida's Bureau of Economic and Business Research (BEBR). In this section, information relevant to the Town of Cinco Bayou is compiled and an overview of the analyses is provided.

The Town of Cinco Bayou was incorporated in 1950 in the southern part of Okaloosa County. As an incorporated municipality, Cinco Bayou has all the powers and authority granted to municipal governments found in Chapter 166 of the Florida Statutes as well as Article VIII of Section 2 of the Florida Costitution to exercise any governmental, corporate, or proprietary power for municipal purposes, provided they are not expressly prohibited by law. These powers allow Cinco Bayou to govern itself, deliver services, enact and enforce ordinances, and set policy.

The County enforces the Florida Building Code within the Town of Cinco Bayou by way of an interlocal agreement as provided in Chapter 553 of the Florida Statutes. The Town participates in the National Flood Insurance Program pursuant to the National Flood Insurance Act of 1968 (42 U.S.C. §§4001 et seq.). Cinco Bayou has adopted a comprehensive plan as provided in Chapter 163, Florida Statutes, and has adopted by ordinance implementing land development regulations including provisions for zoning and floodplain management. The Town has all the financial resources granted by the Florida Constitution and Florida Statutes which are available to support the mitigation strategies discussed in this section.

The hazards that will be analyzed in this section are natural events and the analysis concentrates on the anthropogenic effects on those events as well as the effects of those events on mankind. However, this analysis is not an assessment of technological and/or societal hazards and, therefore, these types of events are not covered under this plan or in the analysis provided in this section.

Primary attention is given to hazards considered reasonably possible to occur in the Town of Cinco Bayou. These hazards include:

- Hurricane and Tropical Storm
- Storm Surge
- Flooding
- Severe Storms
    - Tornado and Waterspout
    - Thunderstorms and Lightning
    - Winter Storms
- Heat Wave and Drought
    - Heat Wave
    - Drought

- Beach Erosion
- Storm Surg
- Sea Level Rise

The following hazards have minimal or no risk to the Town of Cinco Bayou: land erosion, sinkholes, expansive soils, dam safety, wildfire, earthquakes, avalanches, land subsidence, landslides, volcanoes, and tsunamis. Therefore, these hazards are not analyzed in any depth in the hazard analysis. Further explanation is provided in the "Other Hazards" section.

Hazard Identification

The technical planning process begins with hazard identification. In this process, the Town of Cinco Bayou staff, along with the staff from the Okaloosa County Growth Management Department, has identified all of the natural hazards that threaten their community.

Section 5.08.01.02 Hurricane and Tropical Storm

DEFINITION:
Please refer to the Risk Assessment of the overall County for the definitions of this hazard.

HISTORICAL OCCURRENCE:
The Town of Cinco Bayou and Okaloosa County are equally susceptible to hurricanes and tropical storms, as the Town of Cinco Bayou is located near the coast on Choctawhatchee Bay. Due to the large area that hurricanes and tropical storms impact, it is assumed that the Town of Cinco Bayou and the overall County experienced the same storms. Therefore, the historic hurricane record of Okaloosa County is applicable to the Town of Cinco Bayou. Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

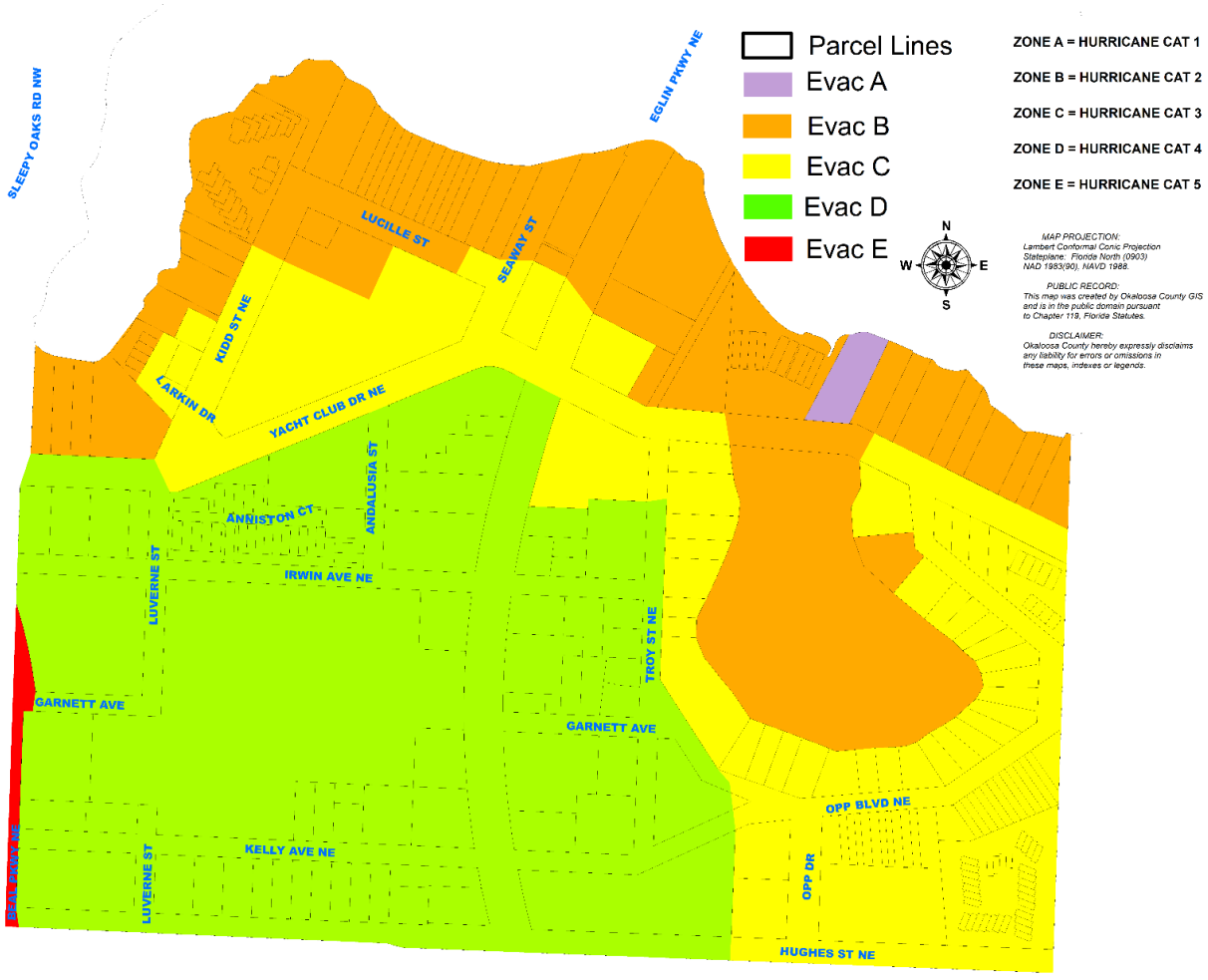
EXTENT:
High winds from hurricanes are a substantial threat to all homes, especially manufactured housing. Category 3 or higher force winds would likely cause substantial damage throughout Cinco Bayou. Winds in excess of 155 MPH could be experienced in a major Category 5 hurricane in some locations. Traditional stud and brick veneer or siding homes and businesses are vulnerable as well, especially when hurricane shutters are not used.

In the worst-case scenario of a Category 5 hurricane, there w be catastrophic damage to homes and buildings, trees, power poles, and signage. In particular to power pole damage, there would be extensive widespread system destruction anticipated, which can include transmission/substation damage. All mobile homes and most frame homes would be completely destroyed due to wind causing structural collapse. The Category 5 winds in excess of 155 MPH would cause significant damage to buildings, with loss of roof sheathing, broken windows, and in some cases wall failure resulting in a structural collapse. The majority of trees would be snapped and power poles downed. In some cases, this could result in power outages that could last for

weeks or months. People and animals would be at an extremely high risk of injury or death as a result of the strong, forceful winds and falling debris.

Evacuation is recommended prior to a Category 5 hurricane making landfall. Some portions of the Town of Cinco Bayou might experience storm surge levels 17.4 feet above mean sea level. This would inundate large sections of the town. (NOAA, 2010). Storm surge will be examined in greater depth in the following section. The figure below displays the Town of Cinco Bayou's evacuation zones, which corresponds to the various hurricane categories.

Figure 5.08.01.02.1: Evacuation Zones for the Town of Cinco Bayou



Source: Okaloosa County Public Safety / Okaloosa County GIS, 2023

PROBABILITY:
According to Colorado State University's United States Landfalling Hurricane Probability Project, Okaloosa County and the Town of Cinco Bayou have the following future hurricane probabilities in a 50-year time period. See Table 5.08.01.02.1, below.

Table 5.08.01.02.1: 50-Year Probabilities of Named Storm, Tropical Storm, and Hurricane Making Landfall in Okaloosa County

1 or More Named Storms Making Landfall	1 or More Hurricanes Making Landfall	1 or More Intense Hurricanes Making Landfall	Tropical Storm-Force (≥ 40 mph) Wind Gusts	Hurricane-Force (≥ 75 mph) Wind Gusts	Intense Hurricane-Force (≥115 mph) Wind Gusts
90.90%	68.60%	40.50%	>99.9%	99.60%	82.30%

Source: Colorado State University's United States Landfalling Hurricane Probability Project (2020 Tropical Cyclone Landfall Probabilities)

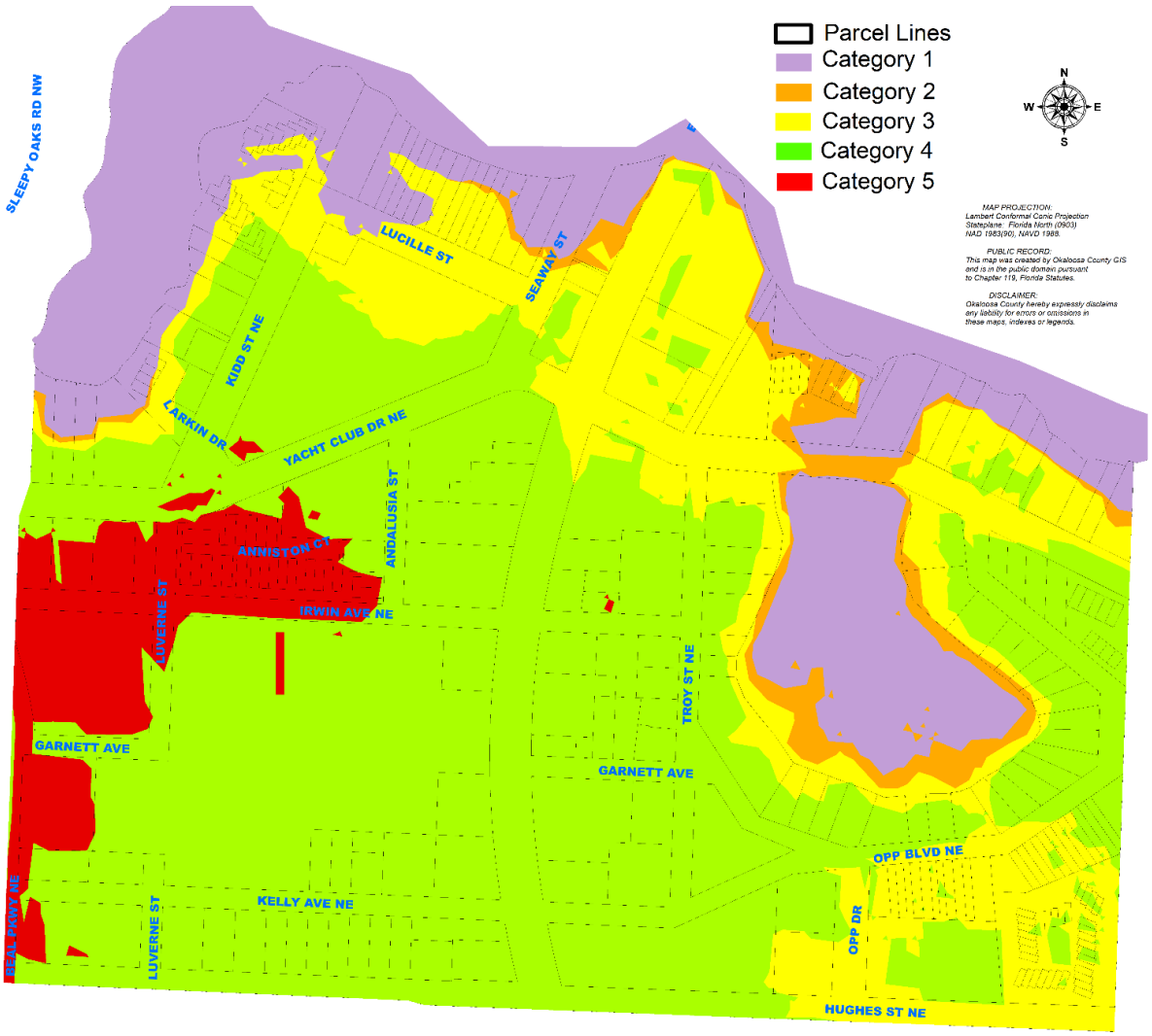
Section 5.08.01.03 Storm Surge

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
Since Okaloosa County's bay and coastal areas are equally susceptible to storm surge, and because the Town of Cinco Bayou is located on the bay, the County's historic storm surge data is relevant to the Town of Cinco Bayou. Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
In the worst-case scenario, the Town of Cinco Bayou may experience storm surge levels up to 17.4 feet above mean sea level during a Category 5 hurricane (See Table 5.08.01.03.1). The high storm surge levels will cause significant flooding of residential and commercial structures, power outages, and storm sewer overflow. The figure below displays the extent of the storm surge levels associated with each of the hurricane categories.

Figure 5.08.01.03.1: The Town of Cinco Bayou's Exposure to Storm Surge



Source: West Florida Regional Planning Council, 2022

PROBABILITY:
Regardless of the storms' level of intensity, the storm surges associated with each storm greatly vary. This fact is recognized in the updated Saffir-Simpson Hurricane Wind Scale where storm surge has been removed due to the difficulties in its prediction. Therefore, a probability of future storm surge occurrence shares the same probability of hurricanes and tropical storms. The potential storm surge levels have been determined from a historical point near the Town of Cinco Bayou (See Table 5.08.01.03.1, below).

Table 5.08.01.03.1: Potential Storm Surge Level for Hurricane Categories

HISTORY POINT (Description)	HURRICANE SURGE ELEVATION (in feet)				
	CAT 1	CAT 2	CAT 3	CAT 4	CAT 5
Cinco Bayou	4.2	6.4	8.8	14.4	17.4

Note: Storm surge levels reflect update for 2024 hurricane season.
Source: West Florida Regional Planning Council, 2025

Section 5.08.01.04 Flooding

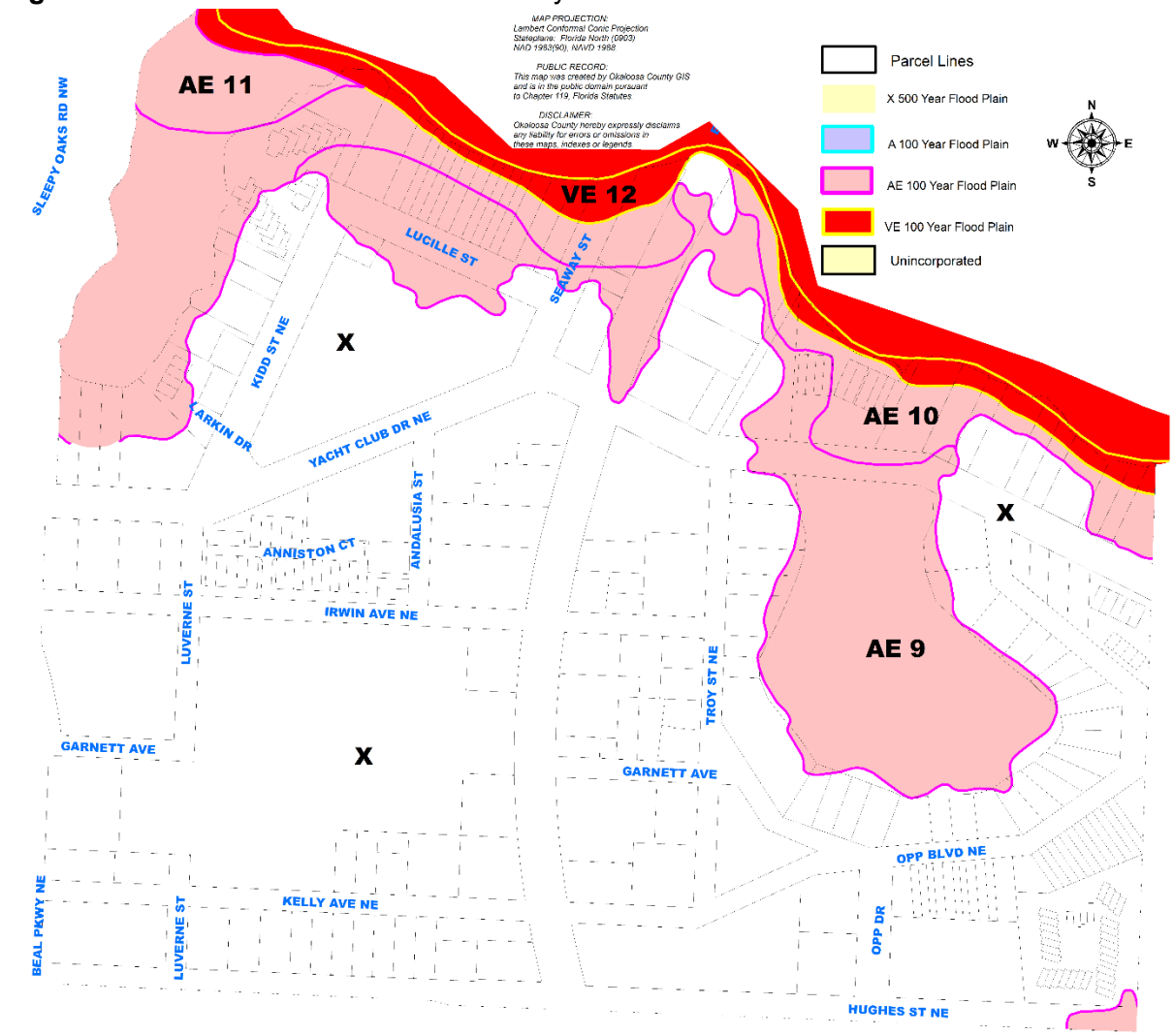
DEFINITION:
Please refer to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
There was no data available at the municipal level regarding the historical occurrences of severe floods or flash-floods. Therefore, please refer to the Risk Assessment of the overall County for the historical occurrences of this hazard because all of Okaloosa County is equally susceptible to this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
The worst-case scenario in terms of flooding in the Town of Cinco Bayou would be if widespread flooding resulted in property damage and losses, power outages, storm sewer overflow, and road-closures. Properties located in the AE-9 flood zone will be impacted more severely than the rest of the city, which is located in flood zone X (500 year flood plain). *Note* AE-9 flood zone means that the area is susceptible to flooding at 9 feet above sea level (See Figure 3).

Flooding can severely impact the road network in the Town of Cinco Bayou. There are approximately 0.98 miles of arterial and collector roads in the Town of Cinco Bayou, of which 0.28 miles are located in the NFIP X 0.2PCT Zone and 0.19 miles located in the NFIP Special Flood Hazard Zone. These roads are especially susceptible to flooding during moderate to heavy rain events. The *2025 Okaloosa County Vulnerability Assessment* identifies 4 roadways – State Road 85 (Eglin Parkway), a small portion of Beal Parkway, the portion of Hughes Avenue inside the town limits, and Yacht Club Drive NE – as being vulnerable to flooding.

Figure 5.08.01.04.1: The Town of Cinco Bayou's Flood Zones



Source: FEMA Map Service Center, March 9, 2021

Temporary localized flooding can also severely impact roadways during moderate to heavy rain events, which could result in road-closures. It is particularly difficult to prepare transportation systems for "trailing" storm systems that tend to saturate land as well as overload drainage and retention systems. Arterial roads and roads constructed prior to uniform standards and regulations are some of the roadways typically impacted by isolated heavy rain events. Culverts and small bridges can sometimes be undermined, causing people to be stranded and isolated until the repairs can be made. Some major roadways used for evacuation are subject to flooding.

PROBABILITY:
The entire County, as well as the Town of Cinco Bayou, has a future probability of a flash-flood or flood occurring annually. However, due to the localized nature of flash-flooding and flooding, a more exact probability cannot be provided.

Section 5.08.01.05 Severe Storms

The Severe Storms segment of the *LMS Hazards Assessment* includes tornado and waterspout, thunderstorms and lightning, winter storms, and heat waves and drought (hurricanes are excluded from this section because they are covered in another section of this chapter).

Section 5.08.01.05.01 Tornado and Waterspout

DEFINITION:
Please refer to the Risk Assessment of the overall County for the definitions of these hazards.

HISTORICAL OCCURRENCE:
According to the National Climatic Data Center, the Town of Cinco Bayou has not experienced a tornado or waterspout over the past 50 years. However, given that it is a smaller municipality, the occurrences may just not have been recorded. The historic tornado record of Okaloosa County is relevant to the Town of Cinco Bayou because of the unpredictable pattern of tornadoes. The entire County, including the Town of Cinco Bayou, is vulnerable to tornado damage. Also, the County's waterspout historic record is applicable to the Town of Cinco Bayou because it is located on the bay, which is one of the areas susceptible to waterspouts. Please refer back to the Risk Assessment of the overall County for the historical occurrences of these hazards. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
Because of the unpredictable patterns of tornadoes, and because the entire state, including Okaloosa County, has a relatively high frequency of occurrence, the Town of Cinco Bayou is vulnerable to tornado damage. The damage potential for a tornado increases as a function of population density. As the number of structures and people increase, the potential damage/injury rate increases. Poorly constructed or substandard housing or apartment complexes are especially susceptible to damage from a tornado. Substandard housing is exceptionally susceptible because of the lack of resistance to high winds.

The worst case scenario in terms of tornado damage would be an F-5 tornado occurrence within the Town of Cinco Bayou. It is very unlikely that an F-5 tornado would strike the town but if one did, complete destruction of homes and businesses would be the result. Trees and power lines would be snapped, building debris scattered about, and severe structural damage would be evident on any building left standing.

The most common and active weather threat in the Town of Cinco Bayou for the formation of tornadoes is severe thunderstorms associated with frontal boundaries. Frontal boundaries and summertime afternoon air mass thunderstorms can reach severe limits because of atmospheric

uplift. High winds relating to gust fronts and "microbursts" can create high wind speeds up to 100 MPH. Buildings and highway traffic are vulnerable to these storms.

PROBABILITY:
From 1975-2025 there have been a total of 75 reported tornadoes in Okaloosa County. Based on this data, the probability of a future tornado occurrence in the Town of Cinco Bayou has been determined to be less than 2 per year. Also, since there were only 10 reported waterspouts from 1975-2025, the future probability of waterspout in the Town of Cinco Bayou was determined to be less than 2 waterspouts per year.

Section 5.08.01.05.02 Thunderstorms and Lightning

DEFINITION:
Please refer to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
In 2005, a boat that was anchored in the bayou was struck by lightning, caught fire, and was completely destroyed. There were no known injuries or fatalities; however, $360,000 in property damage was reported. (NCDC, 2026). According to the National Climatic Data Center, there were no other occurrences of thunderstorm winds or lightning in the Town of Cinco Bayou in the last 50 years. Given that it is a smaller municipality, other occurrences may just not have been recorded.

All jurisdictions in Okaloosa County, including the Town of Cinco Bayou, are equally susceptible to thunderstorms and lightning. Therefore, the historic record of thunderstorms and lightning in Okaloosa County will be applicable to the Town of Cinco Bayou. Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
Thunderstorm damage can include traffic accidents on wet roads, flash-flooding, lightning damage to electronics and structures, lightning strikes on people, and wind and hail damage. Aside from being able to produce tornadoes, thunderstorms can produce damaging high winds. Cold upper level air descending from the top of a thunderstorm to the ground usually causes these winds. In a worst-case scenario, if the upper level air speed of descent is rapid, these cold "microbursts" can fan out as they come in contact with the ground at a high rate of speed. This is sometimes referred to as "straight line winds." These winds can cause significant property damage, injuries, and deaths similar to an F0 to F2 tornado or Category 1 or 2 hurricanes.

PROBABILITY:
Based on historical data (See Risk Assessment of overall County of this hazard's historical occurrences), the Town of Cinco Bayou has a future probability of experiencing less than 5 severe thunderstorms per year. Also based on historical data (See Risk Assessment of overall County for this hazard's historical occurrences), the Town of Cinco Bayou is likely to experience 4 to 16 flashes of lightning per square kilometer per year.

Section 5.08.01.05.03 Winter Storms

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
Table 5.08.01.05.03.1, below, depicts the historical winter monthly mean temperature minimums for the Town of Cinco Bayou for the years 2024-2025.

Table 5.08.01.05.03.1: Monthly Mean Temperature Minimums in degrees Fahrenheit, 2024-25

	Nov	Dec	Jan	Feb	Mar
Cinco Bayou, FL	54.5°	49.5°	47.1°	51.4°	56.3°

Source: Weather Atlas, 2025 (Jan-March values), NOAA 2024 estimates based on 1991-2020 long term data (Nov and Dec values)

Historical temperature data specific to the Town of Cinco Bayou are not readily available. The closest municipality with a daily temperature record is Niceville, Florida. Please refer to the Risk Assessment of the overall County for the historical occurrences of winter weather because all of Okaloosa County is equally susceptible to this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
The worst-case scenario in terms of winter storms in the Town of Cinco Bayou would be if freezing or below freezing temperatures lasted for a week or more, and if the storm responsible for such freezing temperatures knocked down power lines resulting in power loss, and the inability of residents to heat their homes. A freeze's greatest risk is generally unprotected or under-protected water pipes in homes, businesses and infrastructure. Outdoor irrigation systems and plumbing in homes where insulation is inadequate in walls or in off-grade homes where plumbing is exposed are most vulnerable. Unmitigated, older structures are probably the most vulnerable.

An icing, glaze, or sleet incident in the Town of Cinco Bayou would likely result in severe traffic problems and safety concerns throughout the community and its roadways. With no means of salting roadways or removing ice, emergency response would be severely slowed in iced areas. Electrical service would likely be interrupted or totally absent in many areas due to power line glazing and tree branch falls. Mitigation efforts would more likely focus on sheltering and ability to receive outside mutual aid assistance, rather than on equipment and ice buildup prevention due to the infrequency and inconsistency of such events. The impacts of Winter Storm Enzo, which struck Northwest Florida in January 2025, illustrate the types of impacts that may be associated with a severe winter storm.

PROBABILITY:

Based on the data of total 'below freezing' days, the future probability of freezing temperature days in the Town of Cinco Bayou is estimated to be 55 days in a 5-year timeframe. Because a snow event in the Town of Cinco Bayou is so rare, a single snow "event" over 5 or 10 years is probably the average.

Section 5.08.01.06 Heat Wave and Drought

Heat Wave

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of heat waves.

HISTORICAL OCCURRENCE:
Table 5.08.01.06.1, below, shows the monthly mean temperature maximums in the summer months in the Town of Cinco Bayou for the year 2025.

Table 5.08.01.06.1: Monthly Mean Temperature Maximums in degrees Fahrenheit, 2025

	May	Jun	Jul	Aug
Cinco Bayou, FL	81.9°	87.1°	88.7°	89.1°

Source: Weather Atlas, 2025

Due to the subtropical climate of Florida, the entire state has historically been vulnerable to extreme heat events. Because of the proximity of large bodies of water, Florida typically experiences fewer days when the temperature reaches 100 degrees Fahrenheit or greater than many other states. However, the proximity to large bodies of water also increases the humidity, which decreases the body's ability to dissipate the heat. Every jurisdiction in Okaloosa County is equally susceptible to heat waves as they tend to impact a relatively large geographic area. (FDEM State Hazard Mitigation Plan 2023).

Daily temperature data specific to the Town of Cinco Bayou are difficult to locate. Heatwave data is difficult to find since these events are broadly defined. According to the National Climatic Data Center, Cinco Bayou experienced an average of 17-22 days per year of extreme heat risk from 1986-2023.The closest jurisdiction to the town with a daily temperature record is the City of Niceville. Assuming with reasonable certainty that the number of heat wave days experienced in the City of Niceville was similar to that of the Town of Cinco Bayou, it is predicted that it experienced three heat waves from 2005-2009.(Weather Underground, Inc., 2010).

EXTENT:
The worst-case scenario in terms of a heat wave would be if excessive heat and humidity lasted for a week or more. Dangerous conditions are present when both heat and high humidity combine to make outside temperatures feel in the 103-124° F. range. External danger warnings are issued when high temperatures and humidity combine to make outside temperatures feel in the 126-137°

F. range. Heat disorders may develop in people who work outside for long periods of time, such as construction workers. To combat the dangerous effects of excessive heat residents should dress appropriately, stay indoors, refrain from strenuous work during the hottest part of the day and stay hydrated. The general threat to the community is to individuals without adequate cooling systems in their homes, with emphasis on low income and the elderly. Electrical system failures due to demand would only enhance problems for all of these industries and populations. (NOAA Watch: Heat Wave).

PROBABILITY:
Based on the above data it is predicted that the future probability of a heat wave occurring in the Town of Cinco Bayou is on average three times during a 5-year period.

Drought

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of drought and the categories of drought according the U.S. Drought Monitor.

HISTORICAL OCCURRENCE:
Droughts occur at a regular frequency and are cyclical in Okaloosa County. Due to the large area that droughts impact, it is assumed that the Town of Cinco Bayou had a similar number of drought occurrences. Please refer back to the Risk Assessment of the overall County for the historical occurrences of drought because all of Okaloosa County is equally susceptible to this hazard.

EXTENT:
The worst-case scenario in terms of drought would be if an exceptional drought (D4) lasted for months or years (See the Risk Assessment of the overall County for drought category descriptions). An exceptional drought would cause shortages of water in reservoirs, streams, and wells. Bay swamps and bodies of water would see a drastic decline in natural water levels, plant life losses would be widespread, and water shortages in reservoirs and wells would create local water emergencies. Precipitation levels would be -2.0 inches or less (U.S. Drought Monitor, 2010).

PROBABILITY:
The abnormally dry drought intensity is the condition of dryness before and after a period of actual drought. From 2000-2009, a total of 49 out of 120 months were abnormally dry. Based on this data, the Town of Cinco Bayou has a future probability of experiencing on average less than 5 abnormally dry months every year. Also, from 2000-2009, there were a total of 51 out of 120 months where moderate, severe, extreme, or exceptional drought occurred in Okaloosa County. These drought intensities are the varying severity of actual droughts. The Town of Cinco Bayou's future probability of a moderate to severe drought occurring is on average 5 months per year.

Section 5.08.01.07 Beach Erosion

DEFINTION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
Beach erosion is a naturally occurring, cyclical process in which sand particles are removed and/or replaced by wind, waves, or tides. Intensive wave action or strong storm surge during a tropical storm or hurricane can accelerate the rate of beach erosion. Beach erosion is a coastal and bay issue; therefore, all jurisdictions located in those areas are susceptible to beach erosion. Because tropical storms and hurricanes can cause beach erosion in various coastal locations throughout the county, the historical occurrences of beach erosion is relevant to all costal and bay areas of the county. Please refer to the Risk Assessment of the overall County for the historical occurrences of beach erosion.

EXTENT:
The worst-case scenario in terms of beach erosion would be if a major storm with significantly strong winds and storm surge washed-out the coastal areas. The damage will be much worse for portions of the coastline already critically eroded. Beach erosion will undermine the integrity of infrastructure, beachfront homes and businesses, and other structures by washing away the sediments that support the structural foundation sometimes resulting in complete destruction.

PROBABILITY:
Based on the historical data of the overall County, it appears that beach erosion will most certainly occur in the future in the Town of Cinco Bayou. The frequency and extent of the erosion are highly dependent on the frequency and intensity of tropical storms and hurricanes. The natural process of beach erosion is different among coastal locations in the County due to variations in beach stability. This means there are different degrees of natural erosion rates and potential damage from storms or unusual wave action. Therefore, a numerical value will not be given for the estimated future amount of beach erosion. It must also be noted that beach erosion is a natural part of a coastal system, and can be expected to occur at various locations and at different rates over time.

Section 5.08.01.08 Sea Level Rise

As defined by multiple agencies, the term “sea level rise” refers to an increase in the ocean’s surface height relative to the land in a particular location. Thermal expansion of the Earth's oceans and melting polar ice are widely recognized as the two main drivers of sea level rise, with land subsidence also contributing. While sea level rise most directly affects coastal areas, its impacts can extend far inland as communities respond to changing conditions. As a result, the County and its municipalities should be actively allocating substantial financial resources for mitigation efforts, including constructing water control structures, relocating or rerouting roads and other infrastructure, and moving populations away from affected areas. In addition, it is essential to seek and secure funding from various sources—such as state and federal grants, public-private partnerships, and other external financial assistance—to support these mitigation initiatives and ensure their long-term sustainability.

In 2023, Okaloosa County applied for, and received, a grant through the Resilient Florida Program to develop a *Vulnerability Assessment* and implementing *Adaptation Plan* pursuant to, and in compliance with, section 380.093, Florida Statutes, awarded a contract to Jacobs Engineering Group to develop said *Vulnerability Assessment (VA)* and implementing *Adaptation Plan*

(AP). The *VA* and implementing *AP*, developed by Jacobs Engineering Group. is incorporated herein by reference and attached as Appendix E for the purposes of establishing vulnerability to sea level rise and various flooding scenarios for the entirety of Okaloosa County **and all municipalities** (except for the City of Destin, which has undertaken its own analysis). As the Countywide *Vulnerability Analysis* applies to conditions within the Town of Cinco Bayou, please see Section 4.01.11.09 of this Local Mitigation Strategy for more information.

Section 5.08.01.09 Other Hazards

The hazards listed below have been analyzed and determined that the impact would be minimal or non-existent in Town of Cinco Bayou.

Section 5.08.01.09.01 Land Erosion

Land erosion, often referred to as soil erosion, is defined as the loss and reduction of the soil layer caused by climatic and physical forces, such as heavy rainfall. This process can be significantly intensified by human activities. All of Okaloosa County is susceptible to land erosion in some localized areas. Therefore, some localized portions of the Town of Cinco Bayou may be susceptible to land erosion. However, the Town of Cinco Bayou's topographic location is non-conducive to land erosion. Therefore, even though land erosion is possible, the future risk of this hazard in the Town of Cinco Bayou is minimal because there have been no previous occurrences recorded.

Section 5.08.01.09.02 Sinkholes

The map and description prepared by the United States Geologic Survey (USGS) in its "Sinkhole, Type, Development and Distribution in Florida" (1985) indicates that Okaloosa County in its entirety is located in an area where sinkholes seldom, if ever, occur. The Florida Geologic Survey's statewide sinkhole database indicates no sinkholes in the County. Since there is no history of this hazard in the County, no further analysis or risk assessment will be conducted for this plan. However, should conditions change and geological features be discovered which contribute to the development of sinkholes, the LMS committee will include any new occurrence information in ongoing updates. The future probability of a sinkhole occurring in Town of Cinco Bayou is less than 1% based upon no documented sinkholes in the county and the soil strata is non-conducive to the formation of sinkholes.

Section 5.08.01.09.03 Expansive Soils

According to the *Soil Survey of Okaloosa County Florida* (USDA, June 1995), two types of soils are considered vulnerable to expansion. These are known as shrinking and swelling or "expansive soils." Another way of describing expansive soils is the change of volume of a soil with a change of moisture content. All of the soils listed in the expansive class are also considered erodible soils. Okaloosa County may be susceptible to expansive soils in some localized areas. There have been no previous occurrences recorded of expansive soils in the County. The following table lists soils having moderate to high shrink swell potential in Okaloosa County. Only those soils with an associated risk of "High" are listed:

Table 5.08.01.09.03.1: Shrink/swell potential of soils in Okaloosa County.

Soil Type	ME Soils*	HE Soils**	Total Acreage	% Total Land Area
#35-Angie (2 to 5 percent slopes)		X	1,073.26	.16
#49-Angie (5 to 12 percent slopes)		X	10,280.79	1.61
#20-Udorthents (nearly level)	X		655.31	.11
Total	**.11**	**1.77**	**12,009.36**	**1.88**

* Moderate Erodible Soils **Highly Erodible Soils

Note: Expansive soils and erodible soils are classified as the same.
Source: Soil Survey of Okaloosa County, Florida; June 1995.

Expansive soils can lessen the strength of building foundations, which could result in structural collapse or instability. In addition, these soils have limitations for use as local roads and streets because of lack of strength to support roadways and traffic. There is a possibility of shrink/swell potential or soil expansion based on the existence of moderately erodible soils and highly erodible soils in Okaloosa County. Although the specific amount of these soils in the county is known, the future probability of this occurring in the Town of Cinco Bayou is minimal because this issue is addressed during the time of construction and there are no previous records of occurrence.

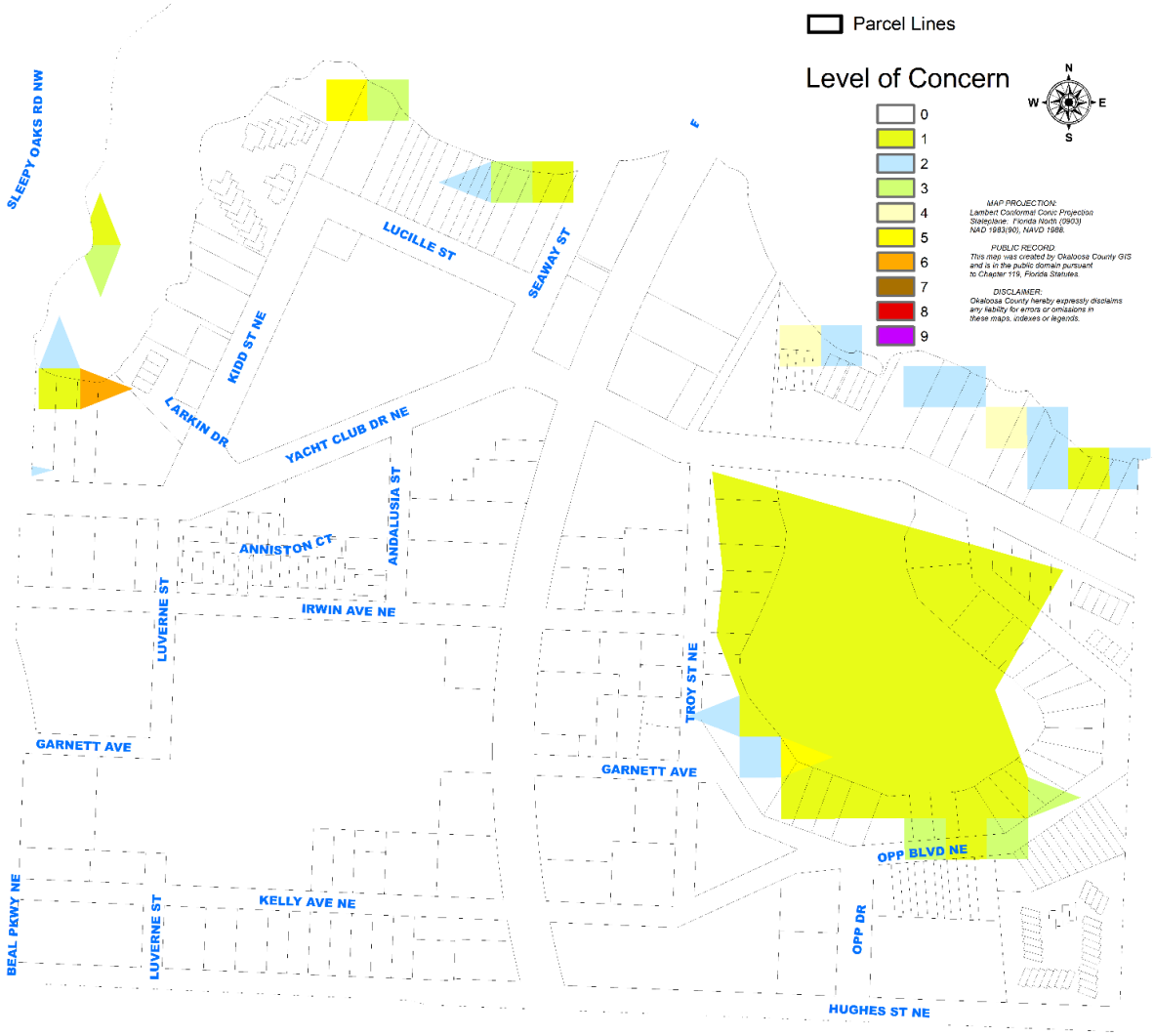
Section 5.08.01.09.04 Dam Safety

There are no permitted dams located in the Town of Cinco Bayou. Therefore, the Town of Cinco Bayou is not susceptible to flooding due to dam failure. However, if there are any permitted in the future, the LMS committee will update the plan to reflect those changes.

Section 5.08.01.09.05 Wildfire

All of Okaloosa County, including the Town of Cinco Bayou, is susceptible to wildfire. The majority of the Town's incorporated area is urban or residential and is surrounded by the larger jurisdiction of the City of Fort Walton Beach. The Wildland Fire Risk Assessment System of the Florida Division of Forestry displays the wildfire levels of concern for the Town of Cinco Bayou. According to the map, most of the incorporated town is classified as non- or minimally burnable (2010). Figure 5.08.01.08.05.1, below, displays the relatively low levels of concern that wildfire has for the town. Therefore, while the Town of Cinco Bayou is susceptible to wildfire, it appears that the future probability of occurrence is minimal.

Figure 5.08.01.09.05.1: Wildfire Risk Assessment for the Town of Cinco Bayou



Source: Florida Division of Forestry, 2025

Section 5.08.01.09.06 Earthquake

According to the U.S. Geological Survey Earthquake Probability maps, Okaloosa County and the Town of Cinco Bayou have between a 0.005 and 0.010% chance of experiencing a 5.0 magnitude earthquake within 100 years. This is considered a very minimal risk. Also, since there is no history of earthquakes in the county, no further analysis or risk assessment will be conducted for this plan. The future probability of an earthquake occurring in the Town of Cinco Bayou has been determined to be less than 1 in 100 years.

Section 5.08.01.09.07 Avalanche

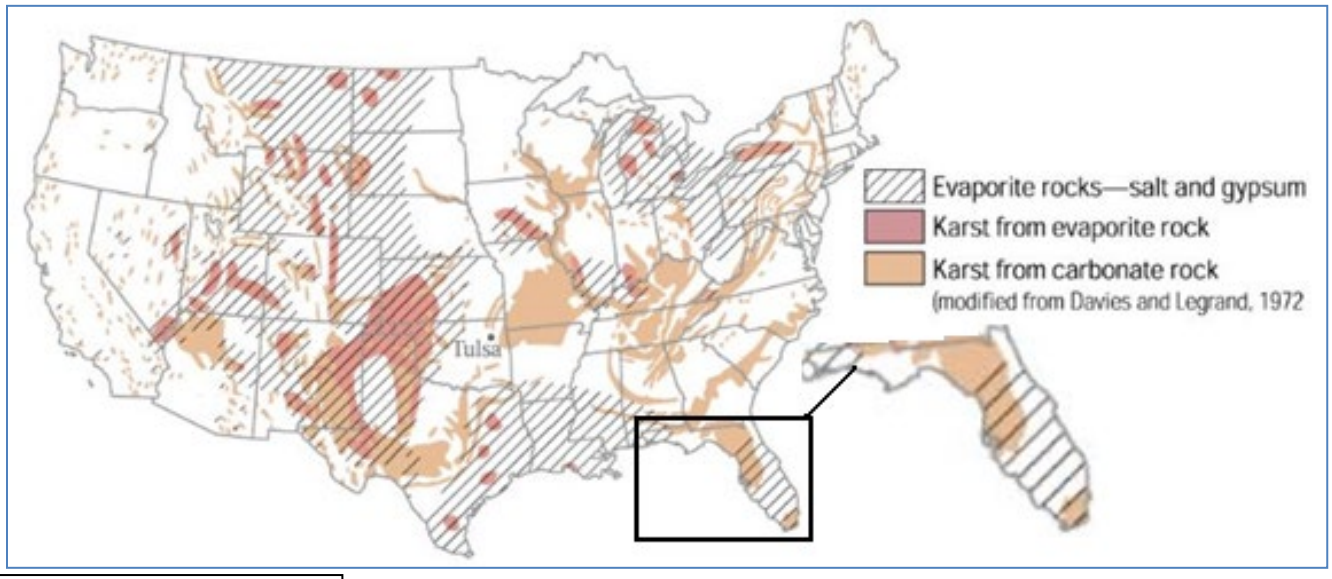
The Town of Cinco Bayou does not have topography or snowfall amounts that would create conditions for an avalanche. Since there is no history of this hazard in the county, no further analysis or risk assessment will be conducted for this plan. The future probability of an avalanche occurring in the Town of Cinco Bayou has been determined to be less than 1 in 100 years.

Section 5.08.01.09.08 Land Subsidence

According to the U.S. Geological Survey, "land subsidence occurs when large amounts of ground water have been withdrawn from certain types of rocks, such as fine-grained sediments.

The rock compacts because the water is partly responsible for holding the ground up. When the water is withdrawn, the rock falls in on itself. Land subsidence is most often caused by human activities, mainly from the removal of subsurface water (U.S. Geological Survey). Okaloosa County and the Town of Cinco Bayou have a minimal amount of the most common rock types that are connected to land subsidence (See Figure 5.08.01.08.08.1). Since there is no history of this hazard in the county, no further analysis or risk assessment will be conducted for this plan. The future probability of land subsidence occurring in the Town of Cinco Bayou has been determined to be less than 1 in 100 years.

Figure 5.08.01.09.08.1: Rock types connected to collapse (subsurface cavities/sinkholes) in the U.S.



Source: U.S. Geological Survey

Section 5.08.01.09.09 Landslide

According to U.S. Geological Survey Map of Relative Incidence and Susceptibility Map, Okaloosa County has a very low landslide incidence with less than 1.5% area susceptible to a landslide (USGS, 2010). Landslides are therefore considered to be a minimal risk to the county, including the Town of Cinco Bayou, therefore no further analysis or risk assessment will be conducted for this plan. The future probability of a landslide occurring in the Town of Cinco Bayou has been determined to be less than 1 in 100 years.

Section 5.08.01.09.10 Volcano

There are no geological features in or near Okaloosa County or the Town of Cinco Bayou related to volcanism. Since there is no history of this hazard in the county, no further analysis or risk assessment will be conducted for this plan. The future probability of a volcanic eruption occurring in the Town of Cinco Bayou has been determined to be less than 1 in 100 years.

Section 5.08.01.09.11 Tsunami

According to the U.S. Geological Survey, Okaloosa County and the Town of Cinco Bayou are not located in an area that has historically been subjected to tsunamis, even though it is a coastal county. Since there is no history of this hazard in the county, minimum analysis and risk assessment will be conducted for this plan. The Local Mitigation Strategy Committee will monitor any developments in the ability to predict, monitor and issue warnings. There is no record of a tsunami occurring in the Town of Cinco Bayou; therefore, the future probability has been determined to be less than 1 in 100 years.

Section 5.08.01.10 Summary

The risk assessment section of this Local Mitigation Strategy document highlighted the hazards that the Town of Cinco Bayou is exposed to. This provides the foundation for the subsequent section covering how vulnerable the town is to these identified hazards. Numerous facilities, infrastructure, and neighborhoods in the Town of Cinco Bayou need to be assessed for their vulnerability to disasters.

Section 5.08.02 Vulnerabilities

Section 5.08.02.01 Introduction

The intent of this section is to provide a vulnerability assessment of the potential damage and estimated loss to building structures in the Town of Cinco Bayou.

This section includes a brief summary description of the Town of Cinco Bayou, as well as its vulnerability to the identified hazards and the impact of each hazard. It also describes the vulnerability in terms of the types and numbers of repetitive loss properties within the Town of Cinco Bayou. Additionally, the section describes vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the Town of Cinco Bayou.

The main intent of this section is to provide an estimate of potential dollar losses to vulnerable structures and a description of the methodology used to complete the estimate. Lastly, this section describes vulnerability in terms of providing a general description of land uses and development trends within the Town of Cinco Bayou so that mitigation options can be considered in future land use decisions.

Section 5.08.02.02 Methodology

The Okaloosa County Staff used the same methods, of quantifying the estimated dollar losses to the vulnerable structures potentially impacted by each hazard, for the Town of Cinco Bayou as the overall County. Therefore, please refer to Okaloosa County's Overall Vulnerabilities, Section 4.02.02, for more information.

Section 5.08.02.03 Summary Description of the Town of Cinco Bayou

The Town of Cinco Bayou is an incorporated city located in the southern portion of Okaloosa County. According to the April 2025 population estimate from the University of Florida's Bureau of Business and Economic Research, the Town of Cinco Bayou has 447 residents. This population size makes it the smallest municipality in Okaloosa County. The Town of Cinco Bayou is surrounded by the City of Fort Walton Beach. Within its jurisdiction, there are 0.71 miles of shoreline that border Cinco Bayou.

The Town participates in the NFIP and enforces its floodplain management regulations pursuant to adopted local ordinances. The Town adopted its NFIP-compliant regulations through Ordinance 234, adopted March 9, 2017. Pursuant to this ordinance, the Flood Insurance Rate Maps (FIRM) and associated Flood Insurance Study, along with all subsequent amendments and revisions, have been formally adopted by reference and serve as the minimum basis for establishing flood hazard areas within the Town.

Administration and enforcement of floodplain management regulations, including Special Flood Hazard Areas (SFHAs), are carried out by the Town's Floodplain Manager. The Town maintains a coordinated administrative structure whereby the Floodplain Manager oversees day-to-day

program implementation while the Town's Technical Review Board conducts plan review and provides permitting oversight. As previously stated in Section 5.08.01, Okaloosa County provides all building permitting and inspections through an inter-local agreement through which the Florida Building Code is enforced. This structure provides an internal system of checks and balances to ensure consistent interpretation and enforcement of floodplain management requirements.

Responsibility for maintaining compliance with NFIP requirements rests with the Floodplain Manager, with support from the Town's Engineering Firm. The Floodplain Manager ensures that all applicable federal, state, and local floodplain management standards are properly implemented and enforced.

The Town administers Substantial Damage and Substantial Improvement requirements through coordinated review by the Floodplain Manager and the Town's Engineering Firm. Project valuations are submitted during the permitting process and evaluated by the Floodplain Manager in accordance with the NFIP 50-percent rule. Where necessary, the Town Manager is authorized to require certified appraisals to substantiate structure values in determining whether an activity constitutes substantial improvement. Following major storm events, substantial damage assessments are conducted by Town Staff who answers to the Floodplain Manager in coordination with the Town's Engineering Firm, utilizing FEMA-established methodologies and standards.

The Town currently does not participate in the NFIP Community Rating System (CRS). However, the Town does maintain a mapped inventory of open space properties, which is reviewed and updated on at least an annual basis. The requirements of the CRS were deemed to extensive to make it feasible for a community of the Town's size to benefit from participation.

Emergency management activities are coordinated through the Town Manager and Deputy Clerk who act as the Emergency Management team members in conjunction with the County's Division of Emergency Management. The Town's Floodplain Manager serves as a member of the Town's Emergency Management team and the LMS Committee and maintains regular coordination with municipal emergency management personnel and County staff. This organizational structure ensures ongoing interagency coordination between emergency management and floodplain management functions, particularly during hazard events and throughout post-disaster response and recovery operations.

The Town of Cinco Bayou requires its contracted Engineering Firm to support grant application and management activities. The Town's Engineering Firm acts as Grants Manager responsible for identifying funding opportunities, coordinating grant applications, and administering awarded grants in compliance with applicable requirements. This coordination helps the Town with managing grant-funded projects and does not require assistance from the County for grant administration.

The Town has contracted SEH Engineering Inc. for its planning activities and is currently coordinating with them to incorporate the findings and recommendations of the LMS into our respective planning activities through integration with comprehensive plans, capital improvement programs, land development regulations, and emergency management plans. LMS-identified hazards, vulnerabilities, and mitigation actions are considered during project prioritization,

budgeting, and policy development to ensure consistency with long-term resilience objectives. Additionally, the Town will utilize the LMS to support grant applications, inform development review processes, and guide post-disaster recovery and redevelopment decisions. This coordinated approach ensures that hazard mitigation principles are systematically embedded into local planning and decision-making processes.

The Town of Cinco Bayou is virtually built out. Most of the recent development within the Town of Cinco Bayou has been in the form of redevelopment and renovation of commercial establishments. The Town was awarded two $600,000 Florida Small Cities CDBG grants to fund Phases I and II of its Eglin Parkway Streetscape Project, with Phase I completed in March 2011 and Phase II completed in May 2013, resulting in full corridor streetscape improvements between Hughes Street and Yacht Club Drive.

The future development trend within the Town of Cinco Bayou will necessarily be revitalization of both commercial and residential buildings, and the upgrading of public infrastructure. There is a current FDOT project underway (construction phase) on SR-85 (Eglin Parkway) to resurface all existing travel lanes, auxiliary lanes, median crossovers, and paved shoulders, including the Garniers Bayou and Cinco Bayou bridges. Minor drainage improvements are included as well.

The Town has also initiated its Glenwood Park Stormwater Improvements Project. The project comes in the wake of stormwater runoff from Uptown Station and heavy rain pouring into the park's wetlands. The project entails: the restoration of the park's eroded stream channel and vegetated floodplain; and a baffle box to remove sediment, trash and pollutants from stormwater. The box will be placed on a stormwater pipe that discharges into the stream. The majority of stormwater collected in Cinco Bayou is conveyed and treated in Glenwood Park stream. The stream directly discharges to Cinco Bayou causing water quality issues within the watershed. The current condition of the stream does not allow for the proper flow and discharge of the stormwater. By restoring the stream to its natural state, the source and non-source pollution that is discharged from Glenwood Park to the Bayou will be drastically reduced. Subsequent phases of the project's scope include restoration of Glenwood Park's upland habitat and additional stormwater infrastructure improvements upstream of the park. The project is funded by state legislative appropriations and local matching funds, including federal American Rescue Plan Act (ARPA) dollars. The Town is currently searching for additional grant funding or may possibly have to phase the project to meet financial constraints due to project size.

Section 5.08.02.04 Vulnerable Populations

Hazards do not affect the entire population the same. Therefore, special attention needs to be given to the more vulnerable populations. Please refer back to the overall County's Vulnerability Assessment for further explanation of these vulnerable populations. The table below displays the Town of Cinco Bayou's vulnerable populations.

Table 5.08.02.04.1: Estimated Vulnerable Populations in the Town of Cinco Bayou, 2024

Population	2024 Estimate	2024 Estimated %
Elderly (65 years and older)	111	18.2%
Language Isolation	57	9.6%
Disabled	116	20.2%
Single Parent	18	7.3%
Poverty	73	12.0%
Minority	114	18.7%

Source: U.S. Census 2024 American Community Survey 5-year Estimates

Section 5.08.02.05 Repetitive Loss and Severe Repetitive Loss Properties

The Federal emergency Management Agency defines repetitive loss and severe repetitive loss properties as follows (44 CFR Part 77 § 77.2):

Repetitive loss structure means a structure covered under an NFIP flood insurance policy that:

(1) Has incurred flood-related damage on 2 occasions, in which the cost of repair, on average, equaled or exceeded 25% of the value of the structure at the time of each such flood event; and

(2) At the time of the second incidence of flood related damage, the contract for flood insurance contains increased cost of compliance coverage.

Severe repetitive loss structure means a structure that is covered under an NFIP flood insurance policy and has incurred flood-related damage:

(1) For which 4 or more separate claims payments have been made under flood insurance coverage under subchapter B of this chapter, with the amount of each claim (including building and contents payments) exceeding $5,000, and with the cumulative amount of such claims payments exceeding $20,000; or

(2) For which at least 2 separate flood insurance claims payments (building payments only) have been made, with cumulative amount of such claims exceeding the value of the insured structure.

Hurricanes, tropical storms, storm surge, flooding, and thunderstorms are responsible for repetitive loss properties in Okaloosa County. Historically, these properties are more vulnerable to certain hazards than other structures in the County because they have already experienced significant flood damage. As of 2025 the Town of Cinco Bayou does not have any current repetitive or severe-repetitive loss properties; however, Okaloosa County Staff will update this if this changes in the future.

Section 5.08.02.06 Hurricane and Tropical Storm

The Town of Cinco Bayou is vulnerable to the damaging effects of tropical storms and hurricanes as it is located on the Choctawhatchee Bay, near the southern coast of Okaloosa County. The Town of Cinco Bayou would experience destruction in terms of wind damage, heavy rains, and storm surge during a tropical storm or hurricane. All structures within the Town of Cinco Bayou's jurisdiction are susceptible to damage in the form of flooding due to heavy rains and strong storm surge. High winds can damage structures by removing roofs and siding, and create flying debris out of sources which are not anchored. The most vulnerable homes are those located on bay front lots. The following tables depict the hurricane evacuation zones and the vulnerable structures located within each zone.

Table 5.08.02.06.1: Evacuation Zones and the Vulnerable Residential Structures within:

Total:	Condominium	SFR-Townhouse	Single-Family	Multi-Family
Zone A	0	0	2	0
Just Value	$0	$0	$1,513,668	$0
Zone B	25	41	19	3
Just Value	$7,168,890	$17,701,416	$14,439,001	$2,004,402
Zone C	1	67	27	4
Just Value	$58,700	$11,848,853	$8,157,487	$176,245
Zone D	0	44	12	59
Just Value	$0	$4,720,596	$,1673,830	$1,899,454
Zone E	0	0	0	0
Just Value	$0	$0	$0	$0

Note Evacuation Zones correspond with Hurricane Categories (Ex. Evacuation Zone 1 = Category 1 Hurricane)
Source: Emerald Coast Regional Council & Okaloosa County Property Appraiser, 2025 (Okaloosa County Staff generated table from overlaying the evacuation zones and property appraiser data)

Table 5.08.02.06.2: Evacuation Zones and the Vulnerable Structures within

Total:	Commercial	Government/ Institutional
Zone A	0	0
Just Value	$0	$0
Zone B	1	3
Just Value	$1,315,088	$1,361,591
Zone C	9	1
Just Value	$6,282,280	$77,948
Zone D	37	2

Just Value	$11,815,577	$843,672
Zone E	0	0
Just Value	$0	$0

Note Evacuation Zones correspond with Hurricane Categories (Ex. Evacuation Zone 1 = Category 1 Hurricane)
Source: Emerald Coast Regional Council & Okaloosa County Property Appraiser, 2025 (Okaloosa County Staff generated table from overlaying the evacuation zones and property appraiser data)

Section 5.08.02.07 Storm Surge

The Town of Cinco Bayou is vulnerable to storm surge and the structures along the Choctawhatchee Bay are the most susceptible to damage from this hazard. The strongest storm surge level during a Category 5 hurricane would be 17.4 feet above the mean high water line along some areas boarding Choctawhatchee Bay. This would severely flood numerous homes, infrastructure, and commercial structures in this area. The following tables depict the vulnerable structures to storm surge levels, which correspond with the category of hurricane.

Table 5.08.02.07.1: Vulnerable Residential Structures to Storm Surge

Total:	Condominium	SFR-Townhouse	Single-Family	Multi-Family
Surge Level 1	25	31	14	0
Just Value	$7,168,890	$13,895,620	$9,713,412	$0
Surge Level 2	75	22	16	3
Just Value	$21,506,670	$10,322,338	$9,686,091	$872,303
Surge Level 3	25	99	37	5
Just Value	$7,168,890	$28,465,504	$15,898,142	$2,350,129
Surge Level 4	50	69	49	15
Just Value	$14,337,780	$13,537,186	$17,901,639	$7,698,532
Surge Level 5	0	22	4	2
Just Value	$0	$47,20,596	$619,082	$984,176

Source: Emerald Coast Regional Council & Okaloosa County Property Appraiser, 2025 (Okaloosa County Staff generated table from overlaying the surge levels and property appraiser data)

Table 5.08.02.07.2: Other Vulnerable Structures to Storm Surge

Total:	Commercial	Government/ Institutional
Surge Level 1	1	3
Just Value	$1,640,197	$1,361,591
Surge Level 2	2	12
Just Value	$1,805,014	$1,502,253
Surge Level 3	11	4
Just Value	$10,808,365	$2,000,409
Surge Level 4	45	3
Just Value	$30,303,878	$800,721
Surge Level 5	12	0
Just Value	$28,275,393	$0

Source: Emerald Coast Regional Council & Okaloosa County Property Appraiser, 2025 (Okaloosa County Staff generated table from overlaying the surge levels and property appraiser data)

Section 5.08.02.08 Flooding

The definition of flooding for this portion of the *Local Mitigation Strategy* only considers flooding, which is a result of rainfall, and includes tropical rains during a hurricane. The Town of Cinco Bayou is vulnerable to flooding and susceptible to damage from this hazard. Localized roadway flooding from heavy rains is the most commonly observed type of flooding in the Town of Cinco Bayou. This flooding is identified in the *2025 Vulnerability Assessment* (Jacobs 2025) and *Adaptation Plan* (Jacobs 2025), as well. During a hurricane, tropical storm or severe storm heavy rain might cause some homes to flood particularly in low lying areas or those with poor drainage systems. In the Town of Cinco Bayou, there are 44 structures located in the AE flood zone. The cumulative 'just value' of those structures is $22,100,717. The following table depicts the vulnerable structures located in the AE flood zone in the Town of Cinco Bayou.

Table 5.08.02.08.1: Structures Located in Flood Zones in the Town of Cinco Bayou

	Total in Flood Zone AE	Just Value
Single Family	42	$19,821,702
Commercial	1	$1,640,197
Government/Institutional	1	$638,818

Source: Okaloosa County Department of Growth Management, 2025

Section 5.08.02.09 Severe Storms

In the tables below, the estimated cost of damage to residential and non-residential structures in the event of a severe storm is provided. The numbers and estimated value represent the total number of structures in the Town of Cinco Bayou. Although it is highly unlikely that all structures will be impacted during a singular severe storm event, all structures are equally vulnerable to severe storms and so it was deemed appropriate to list all structures in the Town of Cinco Bayou.

Table 5.08.02.09.1: Vulnerable Residential Structures to Severe Storms in Town of Cinco Bayou

Total:	Condominium	SFR-Townhouse	Single-Family	Multi-Family
	25	260	53	11
Just Value	$7,168,890	$34,270,865	$19,544,729	$4,881,309

Source: Okaloosa County Department of Growth Management, 2025

Table 5.08.02.09.2: Other Vulnerable Structures to Severe Storms in Town of Cinco Bayou

Total:	Commercial	Government/ Institutional
	46	6
Just Value	$33,266,506	$4,493,520

Source: Okaloosa County Department of Growth Management, 2025

Since severe storms includes tornadoes and waterspouts, thunderstorms and lightning, and winter storms, the values listed in the tables above apply to all those hazards.

Section 5.08.02.09.01 Tornado and Waterspout

The Town of Cinco Bayou is vulnerable to tornadoes and waterspouts, and all structures within its jurisdiction are susceptible to the impacts of this hazard due to their unpredictable nature. The areas within the Town of Cinco Bayou that are most vulnerable to tornado damage are those with a high density or large population because the damage rate increases as a function of population density. The types of structures most vulnerable to tornado damage within the Town of Cinco Bayou are poorly constructed housing, apartment complexes, and condominiums because of their size and densities.

According to FEMA's National Risk Index and NOAA's Storm Prediction Center climatological data, Okaloosa County, including the Town of Cinco Bayou, is subject to a moderate level of

tornado risk relative to other counties in Florida, with tornadoes occurring infrequently but consistently as part of the region's overall severe weather profile.

Because waterspouts occur over water, the areas in the Town of Cinco Bayou most susceptible to damage from waterspouts are those located on the Choctawhatchee Bay. Waterspouts tend to not last very long, but their high winds can result in damage from flying debris. The properties bordered by the water bodies are the most vulnerable to damage. There are 15 structures along the Town of Cinco Bayou's coastline. The cumulative 'just value' of those structures is $19,275,111. The surrounding areas to the coastline are susceptible to damage from flying debris as well, but the specific impacts on those areas are unavailable due to the unavailability of relevant studies.

Section 5.08.02.09.02 Thunderstorms and Lightning

The Town of Cinco Bayou is vulnerable to thunderstorms and lightning, and all structures within its jurisdictions are susceptible to the damaging effects of wind, hail, and lightning associated with severe thunderstorms. Thunderstorm damage can include traffic accidents on wet roads, flash-flooding, lightning damage to electronics and structures, lightning strikes on people, and wind and hail damage to structures. According to FEMA's National Risk Index and NOAA climatological data, Okaloosa County, including the Town of Cinco Bayou, experiences frequent thunderstorm and lightning activity, which represents a recurring natural hazard with the potential to cause localized property damage, service disruptions, and economic loss as part of the region's overall severe weather profile.

Section 5.08.02.09.03 Winter Storms

The Town of Cinco Bayou is vulnerable to winter storms, and all structures within its jurisdiction are susceptible to the effects of freezing temperatures including snow, freezing rain, icing and glazing events (as defined by the American Meteorological Society, "glaze" refers to a coating of ice, generally clear and smooth, formed on exposed objects by the freezing of a film of supercooled water deposited by rain, drizzle, fog, or possibly condensed from supercooled water vapor) but because these events are so rare, the Town of Cinco Bayou is unlikely to suffer serious damage from this hazard. The specific impacts of winter storms in the Town of Cinco Bayou are unavailable because there have been no studies conducted regarding these hazards' impacts in the County. Only broad general impacts of this hazard can be given, which provide an indication of what impacts are expected with winter storms. The effects of Winter Storm Enzo, which struck Northwest Florida in January of 2025, provide an illustrative example of the kinds of impacts that could occur in Cinco Bayou. The homes in the Town of Cinco Bayou that are most vulnerable to winter storms are those with unprotected or under-protected water pipes and homes in which plumbing and insulation is inadequate. Unmitigated older structures and manufactured housing are also very vulnerable.

Section 5.08.02.10 Heat Wave and Drought

Town of Cinco Bayou

The Town of Cinco Bayou is vulnerable to heat waves and drought. The specific impacts of heat waves and drought in the Town of Cinco Bayou are unavailable because there have been no

studies conducted regarding these hazards' impacts in the County. In addition, the nature of these hazards tends to only affect the populations without adequate cooling systems in their homes, low income, elderly, children, and outside workers. Only broad general impacts of these hazards can be given, which provide an indication of what impacts are expected with heat wave and drought. Everyone living within the County is susceptible to heat exhaustion. All households are susceptible to power outages due to increased electricity demand during periods of extreme heat. Electrical system failures due to demand would only enhance problems for the entire population, especially for the vulnerable populations. All water bodies and municipal water supplies are susceptible to declining water levels and water shortages due to drought.

Section 5.08.02.11 Beach Erosion

The areas of the Town of Cinco Bayou that are vulnerable to the effects of beach erosion are the properties that border the Choctawhatchee Bay. As previously mentioned, within its jurisdiction, there are 0.71 miles of coastline along the Choctawhatchee Bay. The populations that reside, work, run businesses, or own property in these parcels are the most affected by beach erosion. Beach erosion undermines the integrity of infrastructure, beachfront homes and businesses, and other structures by washing away the sediments that support the structural foundation sometimes resulting in complete destruction. There are 15 structures along the Town of Cinco Bayou's coastline. The cumulative 'just value' of those structures is $ 19,275,111 (See Table 5.08.02.11.1, below).

Table 5.08.02.11.1: Total Structures Susceptible to Beach Erosion

	Condominium	SFR-Townhouse	Single-Family
Total	1	3	9
Just Value	$7,168,890	$ 5,036,425	$7,069,796

Source: Okaloosa County Department of Growth Management and Okaloosa County Property Appraiser 2025
Note: Table was generated from Property Appraiser data based on the structures that were determined to be located along the coastal areas in Okaloosa County.

Section 5.08.02.12 Sea Level Rise

Despite its coastal location on its namesake Cinco Bayou, neither the 2025 Vulnerability Assessment nor its companion Adaptation Plan identify any specific critical issues within this community's boundaries. Further, none of the projects identified in the Adaptation Plan's list of Prioritized Adaptation projects (see Chapter 4 of this LMS) occur within its borders. The nearest priority areas and projects occur within the City of Ft Walton Beach and include stormwater improvements such as the installation of outfalls and hydrodynamic separators (see Table 4.7. Ft Walton Beach Adaptation Projects in the 2025 Adaptation Plan (Jacobs 2025) attached as Appendix E). However, as a coastal community with flood zone areas, the Town of Cinco Bayou

is nonetheless subject to the effects of sea level rise which could worsen generalized roadway flooding and threaten additional structures over time.

Section 5.08.02.13 Other Hazards

As previously stated in the Risk Assessment, hazards including land erosion, sinkholes, expansive soils, dam safety, wildfire, earthquake, avalanche, land subsidence, volcano, and tsunami have been determined to be a minimal risk to the Town of Cinco Bayou. Therefore, the Town's vulnerability to these hazards has not been assessed. If any of the hazards become a greater risk in the Town of Cinco Bayou, then the LMS Committee will update this section to reflect those changes.

Section 5.08.02.14 Summary

The vulnerability assessment section of this LMS document highlighted how vulnerable the Town of Cinco Bayou is to the identified hazards from the Risk Assessment. It discussed the vulnerable populations, repetitive loss properties, and structure and infrastructure damages associated with these hazards.

Section 5.08.03 Critical Facilities

The following is a list of all critical facilities found inside the Town of Cinco Bayou's town limits.

Section 5.08.03.01 Government Centers

Site Name	Address	X-COORD	Y-COORD
CINCO BAYOU TOWN HALL	10 YACHT CLUB DR NE FORT WALTON BEACH FL 32548	1302574.564	523776.7832

Coordinate System: NAD 1983 HARN State Plane Florida North (US Feet)

Section 5.08.04 Mitigation Actions

Section 5.08.04.01 Hurricane and Tropical Storm

1. Support efforts to shutter critical facilities.
2. Ensure the public is informed of pending conditions. (Responsible party: Okaloosa County Public Safety)
3. Enforce Florida Building Codes for new structures. (Florida Building Codes)
4. Ensure communications are wind and electrical-failure resistant to allow for 24/7 communications during the first 72 hours flowing a disaster. (Responsible party: Okaloosa County Public Safety)
5. Ensure adequate and safe public risk shelters are available in all location in the County to prevent homelessness, including adequate dining facilities and to maintain sanitary conditions. (Responsible party: Okaloosa County Public Safety, private businesses)
6. Promote and support funding that allows for buildings to remain functional before, during and after a hurricane or tropical storm event in order to support the function of Okaloosa County Emergency Management's mandates. (Responsible party: Okaloosa County Public Safety)
7. Promote public awareness of hurricane and tropical storm hazards. (Responsible party: Okaloosa County Public Safety)
8. Promote ways that private structure owners and landowners can mitigate using governmental or private sector investment, such as a voluntary wind retrofit program. (Responsible party: Growth Management)
9. Ensure communications systems are capable to communicate during and following hurricanes/tropical storms. Also to include the ability to erect temporary repeaters to restore communications. (Responsible party: Okaloosa County Public Safety)
10. Ensure internet systems are redundant to ensure continued availability of disaster management software throughout the county. (Responsible party: Okaloosa County Public Safety, private businesses)
11. Support activities that educate the public about the dangers of hurricanes/tropical storms. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office. (Responsible party: Okaloosa County Public Safety)

Section 5.08.04.02 Storm Surge

1. Promote public awareness of storm surge. (Responsible party: Okaloosa County Public Safety, Growth Management)
2. Ensure the public is informed of pending conditions. (Responsible party: Okaloosa County Public Safety)
3. Ensure that maps accurately reflect the amount of storm surge, wave and flood action that can occur during hurricanes and tropical storms. (Responsible party: Growth Management)
4. Provide opportunities for property owners to elevate existing structures, move them to higher ground, or to have properties purchased by local governments in order to reduce overall community vulnerability to storm surge. (Responsible party: Growth Management)

5. Support activities that educate the public about the dangers of storm surge. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office. (Responsible party: Okaloosa County Public Safety)
6. Promote and support federal, state, and local funding opportunities related to storm surge mitigation projects, including structural, non-structural, and nature-based solutions in vulnerable areas. (Responsible party: Okaloosa County Public Safety)

Section 5.08.04.03 Flooding

1. Ensure all future buildings are constructed to the Florida Building Code. (Land Development Code) *For NFIP Compliance*
2. Ensure all future buildings are built with a minimum finished floor height of 1' above the established Base Flood Elevation on the Flood Insurance Rate Maps for those buildings located within the AE Flood Zones. (Land Development Code, NFIP) *For NFIP Compliance*
3. Ensure all future buildings built within the V Flood Zones meet the minimum 1' freeboard requirement. (Land Development Code, NFIP) *For NFIP Compliance*
4. Promote the continued purchase of lands that are at high risk of flooding, with proper considerations of private property rights and constitutional requirements for just compensation, as appropriate. (FEMA) *For NFIP Compliance*
5. Provide opportunities for property owners to elevate existing structures, move them to higher ground, or to have properties purchased by local governments in order to reduce overall community vulnerability to flooding. (Land Development Code, FEMA) *For NFIP Compliance*
6. Ensure that all public buildings that serve first response and critical emergency/public needs, including recording/data collection and communication centers/infrastructure, are located outside of flood zones or flood prone areas. (FEMA, Land Development Code) *For NFIP Compliance*
7. Ensure communications systems are capable to communicate during and following flood events. *For NFIP Compliance*
8. Maintain status as a NFIP community by enforcing both the NFIP requirements and additional criteria that exceeds the NFIP. (Land Development Code, FEMA)
9. Ensure the public is informed of pending conditions. (Responsible party: Okaloosa County Public Safety) *For NFIP Compliance*
10. Promote and support federal, state, and local funding opportunities to enhance floodproofing of critical facilities in order to protect essential records and equipment during storm events. (Responsible party: Okaloosa County Public Safety)

Section 5.08.04.04 Severe Storms

1. Ensure the public is informed of pending conditions. (Responsible party: Okaloosa County Public Safety)
2. Ensure communications systems are capable to communicate during and following severe storms. (Responsible party: Okaloosa County Public Safety, private businesses)
3. Ensure internet systems are redundant to ensure continued availability of disaster management software throughout the county. (Responsible party: Okaloosa County Public Safety)
4. Support activities that educate the public about the dangers of severe storms. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office. (Responsible party: Okaloosa County Public Safety)

Section 5.08.04.04.01 Tornado and Waterspout

1. Ensure communications systems are capable to communicate during and following tornados and waterspouts. (Responsible party: Okaloosa County Public Safety, Private Businesses)
2. Support activities that educate the public about the dangers of tornados and waterspouts. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office. (Responsible party: Okaloosa County Public Safety)
3. Ensure the public is informed of pending conditions. (Responsible party: Okaloosa County Public Safety)
4. Ensure internet systems are redundant to ensure continued availability of disaster management software throughout the county. (Responsible party: Okaloosa County Public Safety, private businesses)

Section 5.08.04.04.02 Thunderstorms and Lightning

1. Ensure communications systems are capable to communicate during and following thunderstorms and lightning. (Responsible party: Okaloosa County Public Safety, private businesses)
2. Support activities that educate the public about the dangers of thunderstorms and lightning. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office. (Responsible party: Okaloosa County Public Safety)
3. Ensure the public is informed of pending conditions. (Responsible party: Okaloosa County Public Safety)
4. Ensure internet systems are redundant to ensure continued availability of disaster management software throughout the county. (Responsible party: Okaloosa County Public Safety, private businesses)

Section 5.08.04.04.03 Winter Storms

1. Ensure communications systems are capable to communicate during and following winter storms.
2. Support activities that educate the public about the dangers of winter storms. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office.
3. Reduce or eliminate the vulnerability to freezing or provide secondary heating or electrical systems for public facilities.
4. Ensure the public is informed of pending conditions.

Section 5.08.04.05 Heat Wave and Drought

1. Ensure communications systems are capable to communicate during and following heat waves and droughts.
2. Support activities that educate the public about the dangers of heat waves and droughts. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office.
3. Ensure the public is informed of pending conditions.

Section 5.08.04.06 Beach Erosion

1. Beach management actions that address eroding shoreline include these options: (1) hard stabilization, such as seawalls and revetments; (2) soft stabilization, such as beach restoration; (3) retreat, such as abandonment of shoreline development or relocation of threatened buildings; and (4) no action. The long-term beach behavior and its causes usually dictate the appropriate options.

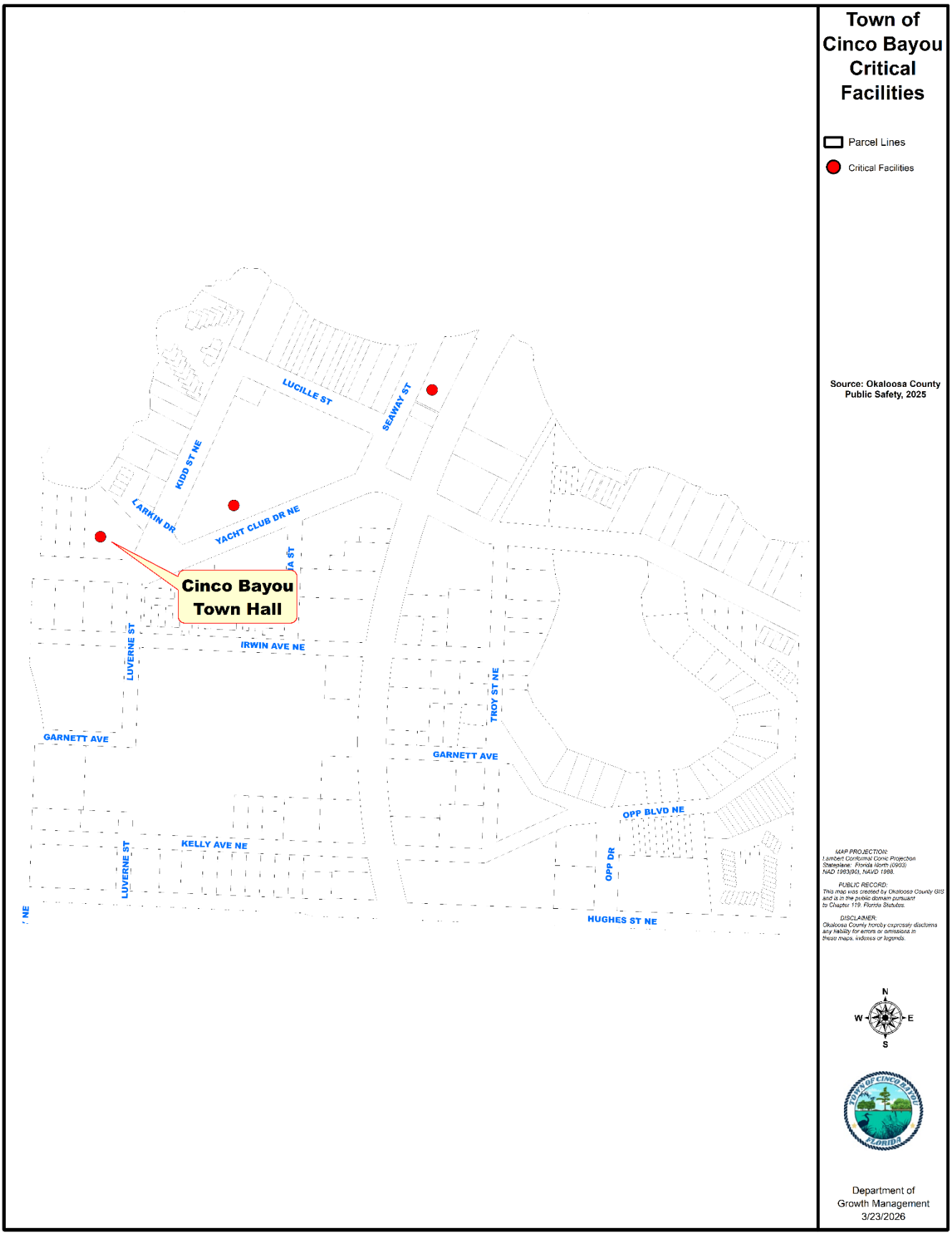
Section 5.08.04.07 Sea Level Rise

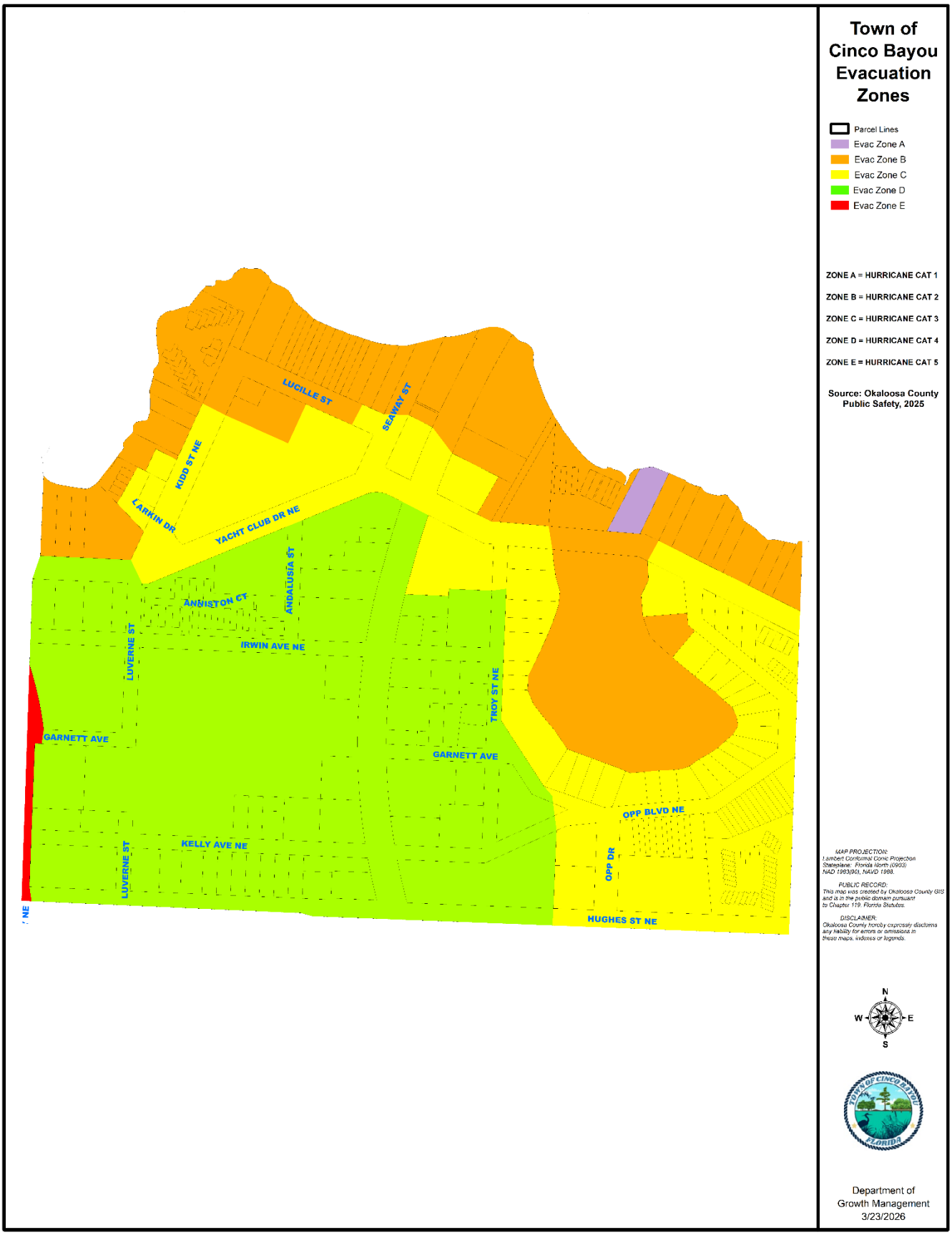
The mitigation actions contained in Section 5.08.04.03 Flooding will address the needs for mitigation actions for Sea Level Rise also.

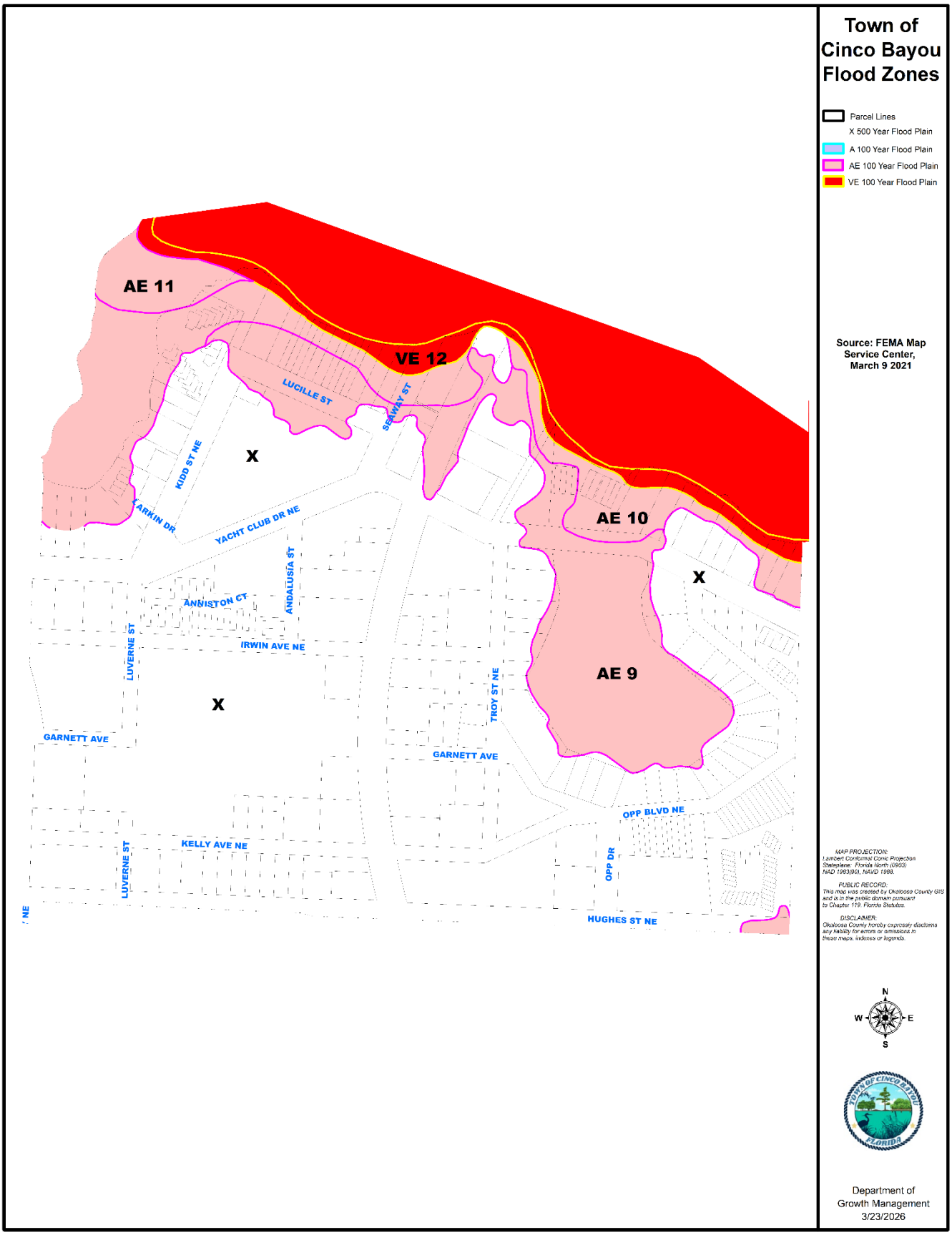
Section 5.08.05 Maps

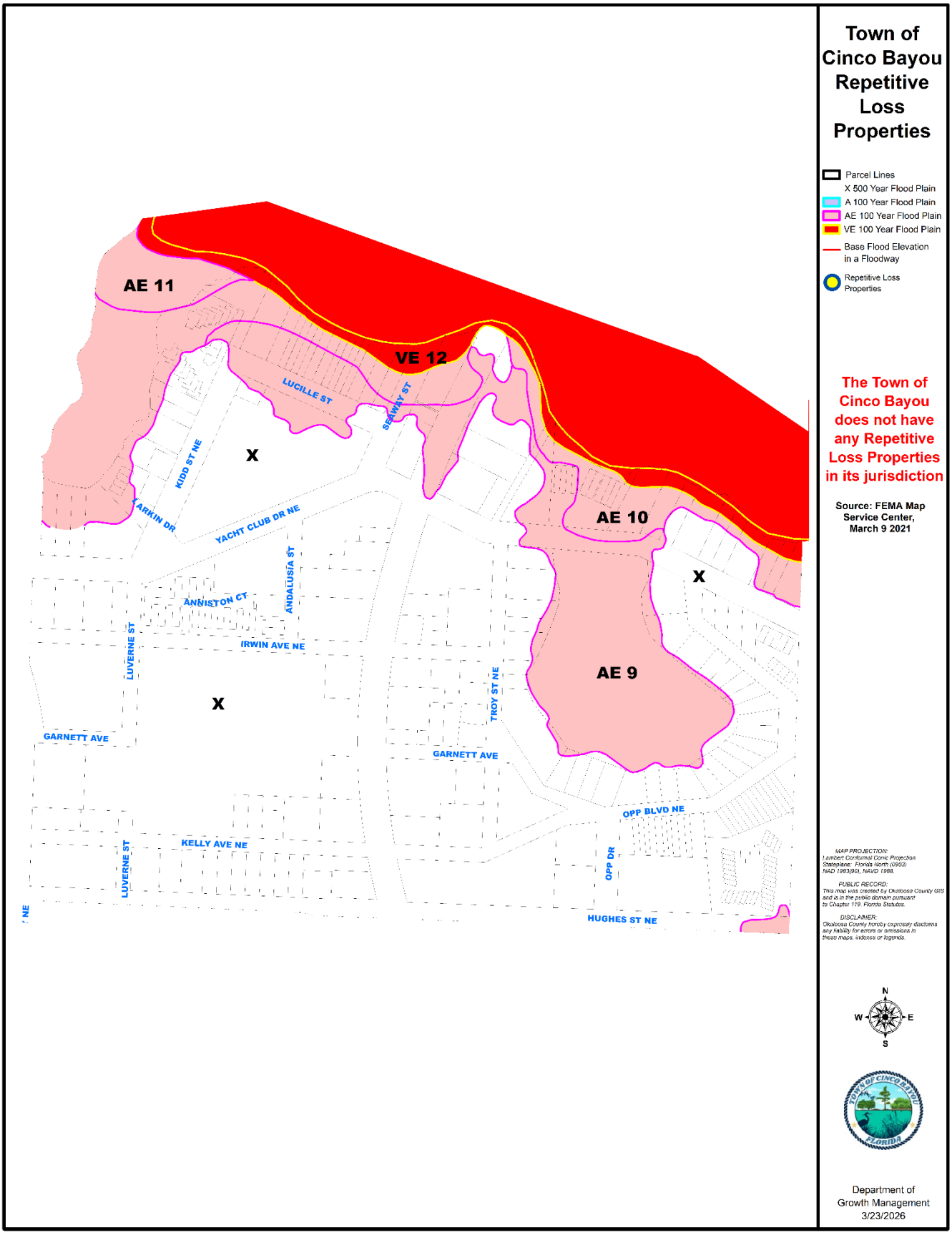
Attached to this page are maps of the Town of Cinco Bayou. They include:

1. Critical Facilities….....5.08-34
2. Evacuation Zones….....5.08-35
3. Flood Zones… 5.08-36
4. Repetitive Loss Properties….....5.08-37
5. Surge Zones….....5.08-38
6. Wildfire Level of Concern… 5.08-39


Town of Cinco Bayou Critical Facilities
Parcel Lines
Critical Facilities
Source: Okaloosa County Public Safety, 2025
Cinco Bayou Town Hall
LUCILLE ST
SEAWAY ST
KIDD ST NE
LARKIN DR
YACHT CLUB DR NE
IRWIN AVE NE
LUVERNE ST
GARNETT AVE
TROY ST NE
OPP BLVD NE
OPP DR
KELLY AVE NE
HUGHES ST NE
MAP PROJECTION:
Lambert Conformal Conic Projection
Statelplane: Florida North (0903)
NAD 1983(90), NAVD 1988.
PUBLIC RECORD:
This map was created by Okaloosa County GIS and is in the public domain pursuant to Chapter 119, Florida Statutes.
DISCLAIMER:
Okaloosa County hereby expressly disclaims any liability for errors or omissions in these maps, indexes or legends.
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Department of Growth Management
3/23/2026


Town of Cinco Bayou Evacuation Zones
Parcel Lines
Evac Zone A
Evac Zone B
Evac Zone C
Evac Zone D
Evac Zone E
ZONE A = HURRICANE CAT 1
ZONE B = HURRICANE CAT 2
ZONE C = HURRICANE CAT 3
ZONE D = HURRICANE CAT 4
ZONE E = HURRICANE CAT 5
Source: Okaloosa County Public Safety, 2025
LUCILLE ST
SEAWAY ST
KIDD ST NE
LARKIN DR
YACHT CLUB DR NE
ANDALUSIA ST
ANNISTON CT
LUVERNE ST
IRWIN AVE NE
TROY ST NE
GARNETT AVE
GARNETT AVE
OPP BLVD NE
OPP DR
KELLY AVE NE
LUVERNE ST
HUGHES ST NE
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
NAD 1983(90), NAVD 1988.
PUBLIC RECORD:
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Town of Cinco Bayou Flood Zones
Parcel Lines
X 500 Year Flood Plain
A 100 Year Flood Plain
AE 100 Year Flood Plain
VE 100 Year Flood Plain
Source: FEMA Map Service Center, March 9 2021
AE 11
VE 12
AE 10
AE 9
X
LUCILLE ST
SEAWAY ST
KIDD ST NE
HARKIN DR
YACHT CLUB DR NE
ANDALUSIA ST
ANNISTON CT
IRWIN AVE NE
LUVERNE ST
GARNETT AVE
TROY ST NE
OPP BLVD NE
OPP DR
KELLY AVE NE
HUGHES ST NE
MAP PROJECTION:
Lambert Conformal Conic Projection
Statelane: Florida North (0903)
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Town of Cinco Bayou Repetitive Loss Properties

- Parcel Lines
- X 500 Year Flood Plain
- A 100 Year Flood Plain
- AE 100 Year Flood Plain
- VE 100 Year Flood Plain
- Base Flood Elevation in a Floodway
- Repetitive Loss Properties

The Town of Cinco Bayou does not have any Repetitive Loss Properties in its jurisdiction

Source: FEMA Map Service Center, March 9 2021

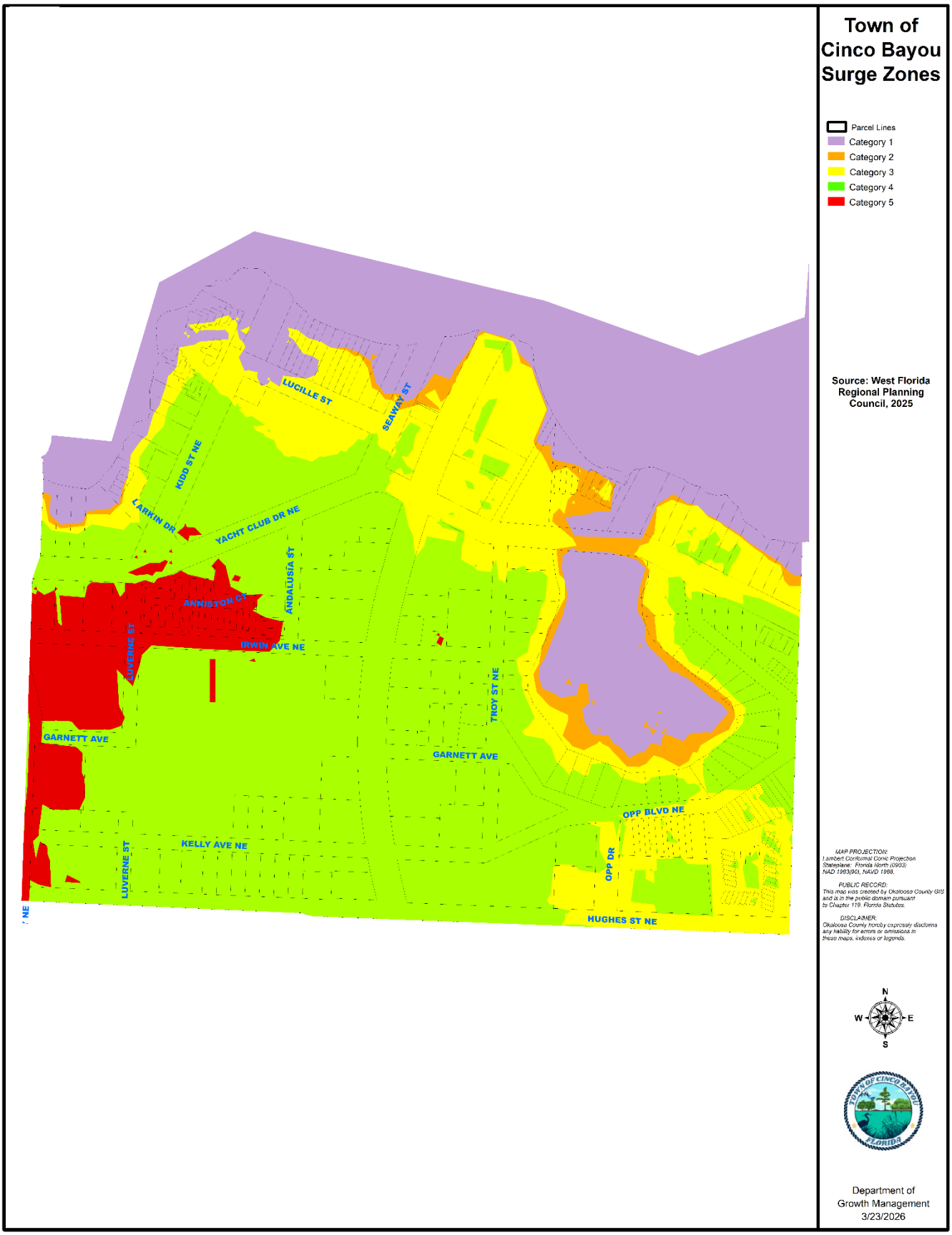
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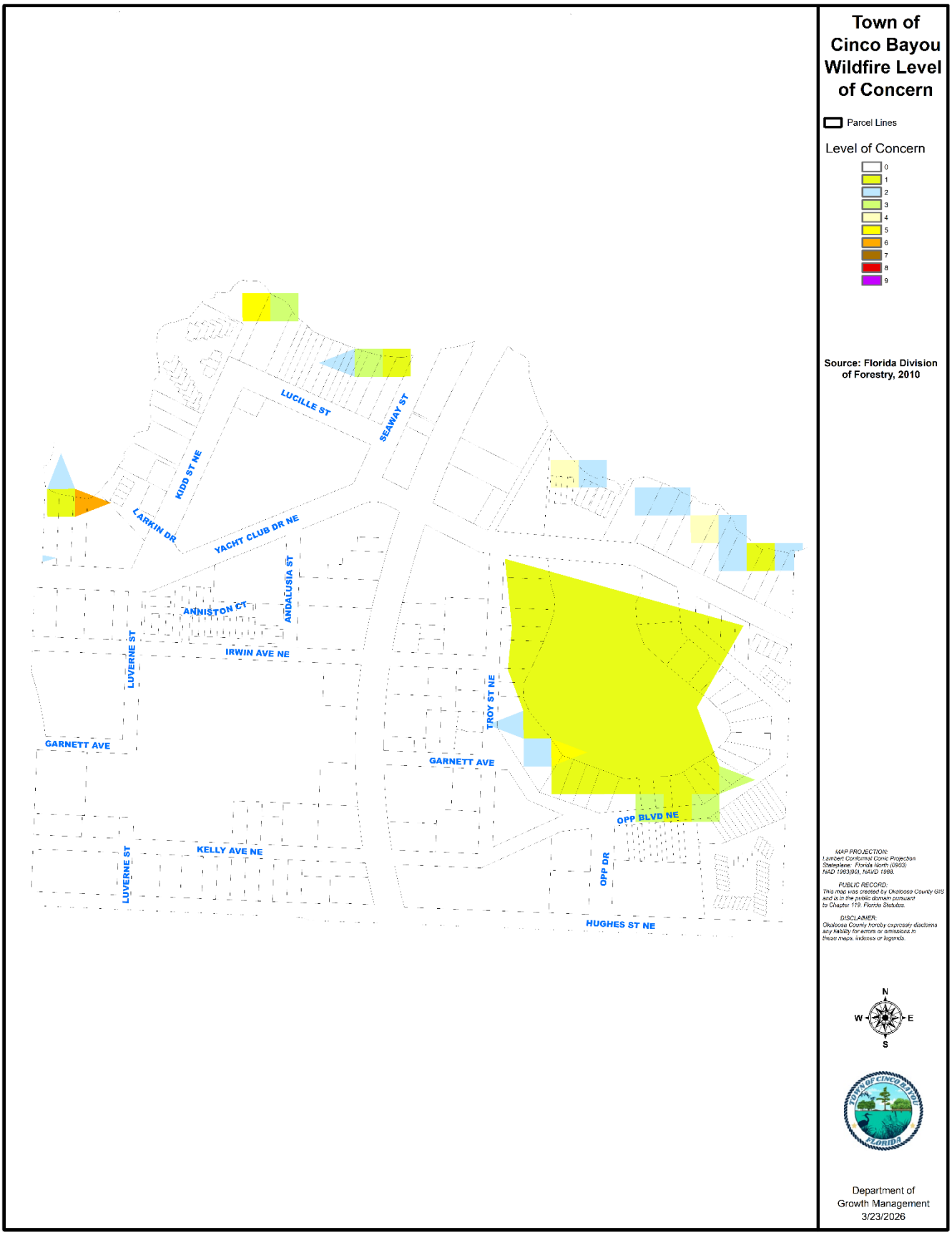
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Town of Cinco Bayou Surge Zones
Parcel Lines
Category 1
Category 2
Category 3
Category 4
Category 5
Source: West Florida Regional Planning Council, 2025
LUCILLE ST
SEAWAY ST
KIDD ST NE
LARKIN DR
YACHT CLUB DR NE
ANDALUSIA ST
ANNISTON CT
LAVERNE ST
IRWIN AVE NE
TROY ST NE
GARNETT AVE
GARNETT AVE
OPP BLVD NE
OPP DR
KELLY AVE NE
LUVERNE ST
HUGHES ST NE
MAP PROJECTION:
Lambert Conformal Conic Projection
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Town of Cinco Bayou Wildfire Level of Concern
Parcel Lines
Level of Concern
0
1
2
3
4
5
6
7
8
9
Source: Florida Division of Forestry, 2010
LUCILLE ST
SEAWAY ST
KIDD ST NE
LARKIN DR
YACHT CLUB DR NE
ANDALUSIA ST
ANNISTON CT
IRWIN AVE NE
LUVERNE ST
GARNETT AVE
TROY ST NE
GARNETT AVE
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Section 5.08.06 Post Disaster Redevelopment Plan

The Town of Cinco Bayou does not currently have a Post Disaster Redevelopment Plan. Therefore, the Town will abide by the Okaloosa County Post Disaster Redevelopment Plan (PDRP) and submit the required data per the PDRP requirements.

Section 5.09

Town of Shalimar



Town of Shalimar

Section 5.09.01 Risk Assessments

Section 5.09.01.01 Introduction

The intent of this section is to provide information regarding the hazards threatening the Town of Shalimar. It is an incorporated town located in the southern portion of Okaloosa County. As of a 2026 Census estimate it was home to 765 residents. In this section, information relevant to the Town of Shalimar is compiled and an overview of the analyses is provided.

The Town of Shalimar was originally incorporated in 1947, and a new charter was adopted in 1961. As an incorporated municipality, Shalimar has all the powers and authority granted to municipal governments found in Chapter 166 of the Florida Statutes as well as Article VIII of Section 2 of the Florida Costitution to exercise any governmental, corporate, or proprietary power for municipal purposes, provided they are not expressly prohibited by law. These powers allow Shalimar to govern itself, deliver services, enact and enforce ordinances, and set policy.

The County enforces the Florida Building within the Town of Shalimar by way of an interlocal agreement as provided by Chapter 553 of the Florida Statutes. Shalimar participates in the National Flood Insurance Program pursuant to the National Flood Insurance Act of 1968 (42 U.S.C. §§4001 et seq.). The Town has adopted a comprehensive plan as provided in Chapter 163, Florida Statutes, and has adopted by ordinance implementing land development regulations including provisions for zoning and floodplain management. Shalimar has all the financial resources granted by the Florida Constitution and Florida Statutes which are available to support the mitigation strategies discussed in this section.

The hazards that will be analyzed in this section are natural events and the analysis concentrates on the anthropogenic effects on those events as well as the effects of those events on mankind. However, this analysis is not an assessment of technological and/or societal hazards and, therefore, these types of events are not covered under this plan or in the analysis provided in this section.

Primary attention is given to hazards considered reasonably possible to occur in the Town of Shalimar. These hazards include:

- Hurricane and Tropical Storm
- Storm Surge
- Flooding
- Severe Storms
    - Tornado and Waterspout
    - Thunderstorms and Lightning
    - Winter Storms
- Heat Wave and Drought
    - Heat Wave
    - Drought
- Beach Erosion

- Sea Level Rise

The following hazards have minimal or no risk to the Town of Shalimar: land erosion, sinkholes, expansive soils, dam safety, wildfire, earthquakes, avalanches, land subsidence, landslides, volcanoes, and tsunamis. Therefore, these hazards are not analyzed in any depth in the hazard analysis. Further explanation is provided in the "Other Hazards" section.

Hazard Identification

The technical planning process begins with hazard identification. In this process, the Town of Shalimar Staff, along with the staff from the Okaloosa County Growth Management Department, has identified all of the natural hazards that threaten the community.

Section 5.09.01.02 Hurricane and Tropical Storm

DEFINITIONS:
Please refer to the Risk Assessment of the overall County for the definitions of this hazard.

HISTORICAL OCCURRENCE:
The Town of Shalimar and Okaloosa County are equally susceptible to hurricanes and tropical storms, as the town is located near the coast on Choctawhatchee Bay. Due to the large area that hurricanes and tropical storms impact, it is assumed that the Town of Shalimar and the overall County experienced the same storms. Therefore, the historic hurricane record of Okaloosa County is applicable to the Town of Shalimar. Please refer to the Risk Assessment of the overall County for the historical occurrences of this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

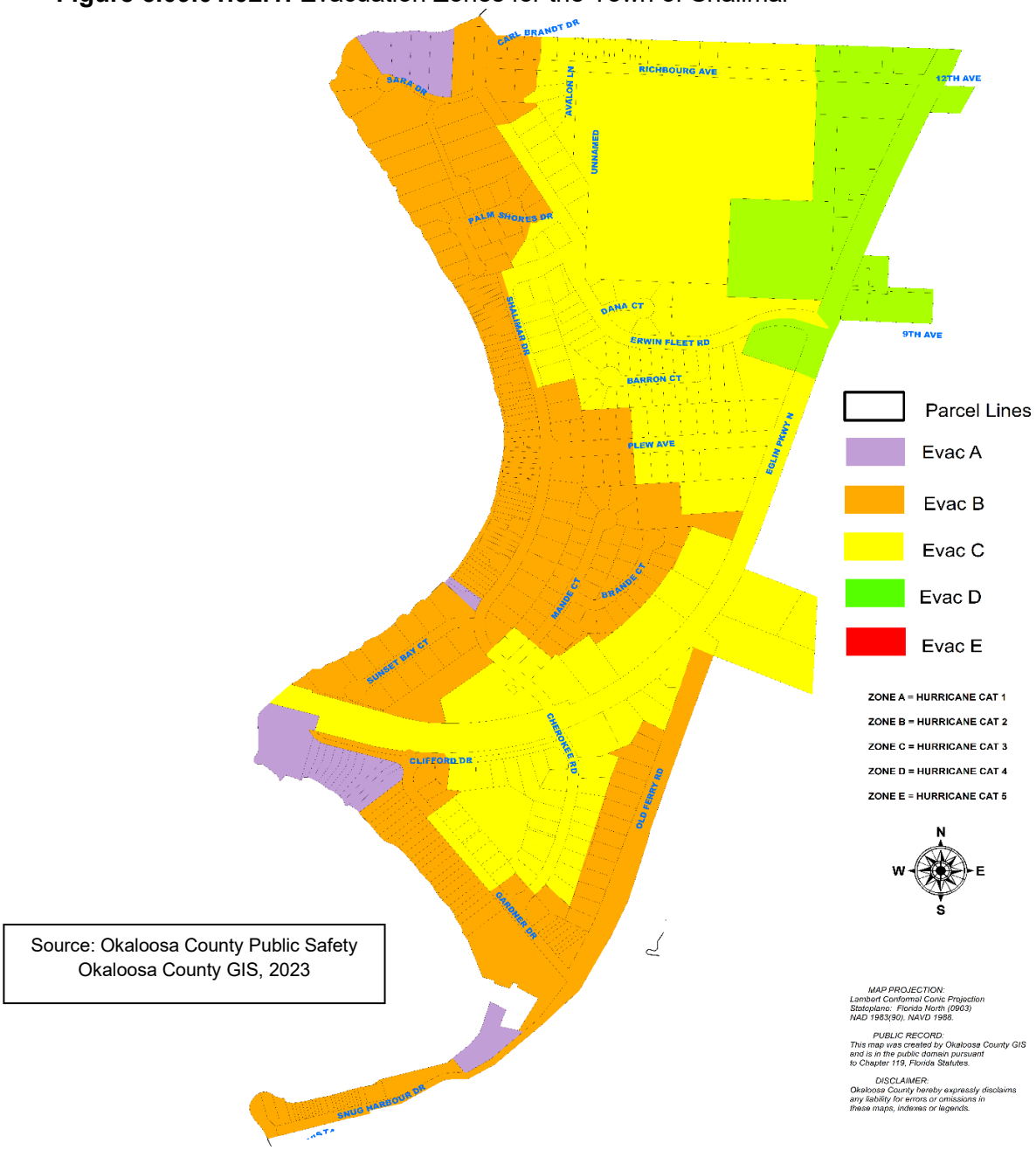
EXTENT:
High winds from hurricanes are a substantial threat to all homes. Category 3 or higher force winds would likely cause substantial damage throughout the Town of Shalimar. Winds in excess of 155 MPH could be experienced in a major Category 5 hurricane in some locations. Traditional stud and brick veneer or siding homes and businesses are vulnerable, as well, especially when hurricane shutters are not used. Relatively few businesses and homes have hurricane shutters, although shelters and some critical facilities are shuttered.

In the worst-case scenario of a Category 5 hurricane, there will be catastrophic damage to homes and buildings, trees, power poles, and signage. In particular to power pole damage, there would be extensive widespread system destruction anticipated, which can include transmission/substation damage. Most frame homes will be completely destroyed due to wind causing structural collapse. Category 5 winds in excess of 155 MPH will cause significant damage to all buildings, with loss of roof sheathing, broken windows, and in some cases wall failure resulting in a structural collapse. The majority of trees will be snapped and power poles downed. In some cases, this will result in power outages that could last for weeks or months. People and animals would be at an extremely high risk of injury or death as a result of the strong, forceful winds causing flying or falling debris.

Town of Shalimar

From the figure below, it is evident that the entire Town of Shalimar will need to evacuate prior to a Category 5 hurricane making landfall (See Figure 5.09.01.02.1, below, for evacuation zones). In addition, the expected storm surge level of up to 17.7 feet associated with a Category 5 hurricane will substantially impact the Town of Shalimar. Also, severe flooding will occur and likely cause polluted water, storm sewer overflow, and damage to roadways. Storm surge will be examined in greater depth in the following section. (NOAA, 2010).

Figure 5.09.01.02.1: Evacuation Zones for the Town of Shalimar



Source: Okaloosa County Public Safety
Okaloosa County GIS, 2023

PROBABILITY:
According to Colorado State University's United States Landfalling Hurricane Probability Project, Okaloosa County, and thus the Town of Shalimar, have the following future probabilities over a 50-year time period:

Table 5.09.01.02.1: 50-Year Probabilities of Named Storm, Tropical Storm, and Hurricane Making Landfall in Okaloosa County

1 or More Named Storms Making Landfall	1 or More Hurricanes Making Landfall	1 or More Intense Hurricanes Making Landfall	Tropical Storm-Force (≥ 40 mph) Wind Gusts	Hurricane-Force (≥ 75 mph) Wind Gusts	Intense Hurricane-Force (≥115 mph) Wind Gusts
90.90%	68.60%	40.50%	>99.9%	99.60%	82.30%

Source: The United States Landfalling Hurricane Web Project, 2024

Section 5.09.01.03 Storm Surge

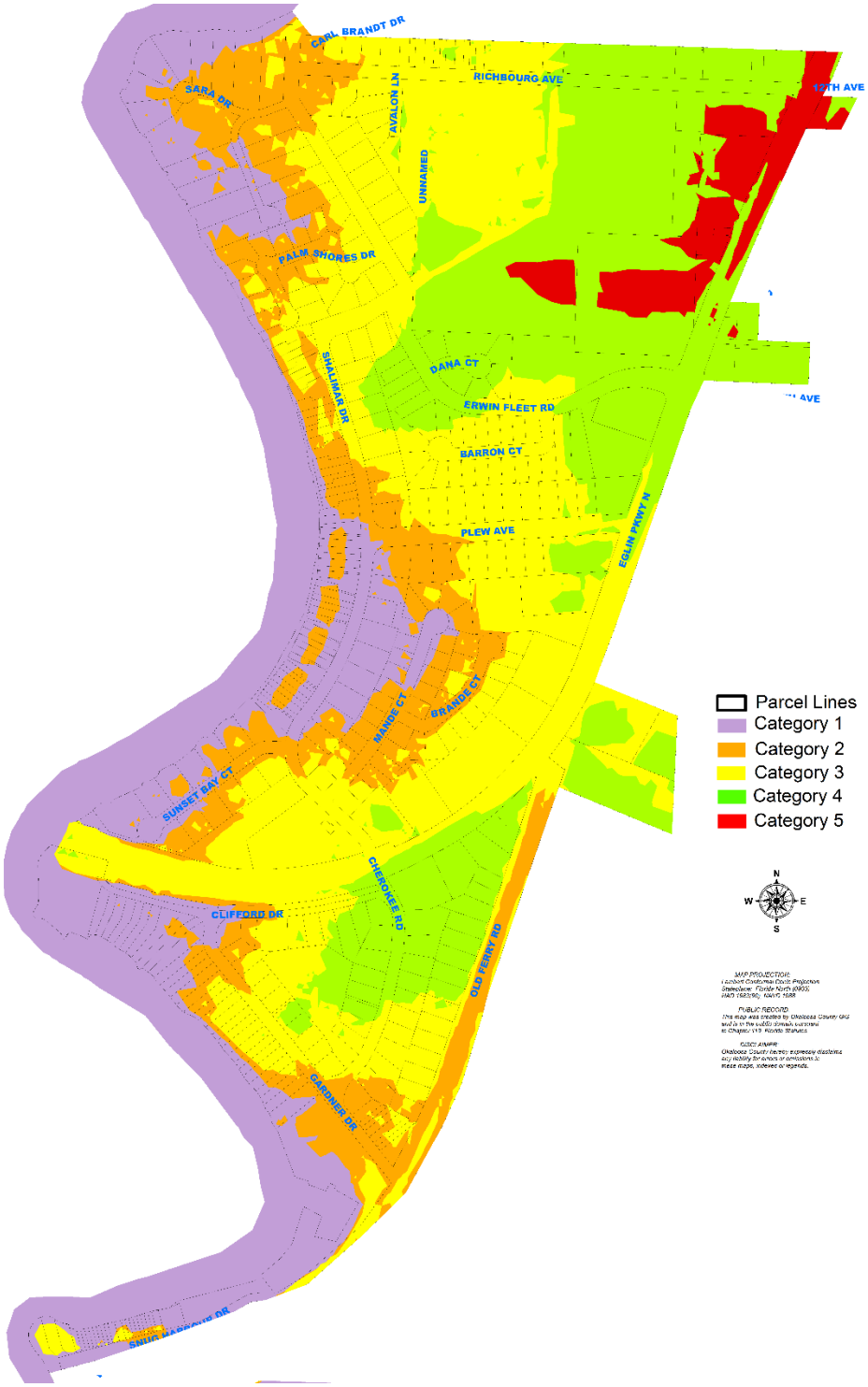
DEFINITION:
Please refer to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
Since Okaloosa County's bay and coastal areas are equally susceptible to storm surge, and because the Town of Shalimar is located on the bay, the County's historic storm surge data is relevant to the Town of Shalimar. Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
In the worst-case scenario, some of these areas of the Town of Shalimar will experience storm surge levels up to 17.7 feet above mean sea level during a Category 5 hurricane (See Table 5.09.01.03.1). It is evident from the figure below that the entire Town of Shalimar will be affected by the resulting flooding from the storm surge. The high storm surge levels will cause significant flooding of residential and commercial structures, power outages, and storm sewer overflow. The figure below shows the possible storm surge levels with each hurricane category in the Town of Shalimar.

Town of Shalimar

Figure 5.09.01.03.1: The Town of Shalimar's Exposure to Storm Surge



Source: West Florida Regional Planning Council, 2022

PROBABILITY:
Regardless of the storms' level of intensity, the storm surges associated with each storm greatly vary. This fact is recognized in the updated Saffir-Simpson Hurricane Wind Scale where storm surge has been removed due to the difficulties in its prediction. Therefore, a probability of future storm surge occurrence shares the same probability of hurricanes and tropical storms. The potential storm surge levels have been determined from a historical point near the Town of Shalimar (See Table 5.09.01.03.1, below).

Table 5.09.01.03.1: Potential Storm Surge Level for Hurricane Categories

HISTORY POINT (Description)	HURRICANE SURGE ELEVATION (in feet)				
	CAT 1	CAT 2	CAT 3	CAT 4	CAT 5
Garnier Bayou (near EOC)	4.1	6.5	8.7	14.4	17.7

Note: Storm surge levels reflect 2025 hurricane scale update.
Source: West Florida Regional Planning Council, 2025

Section 5.09.01.04 Flooding

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

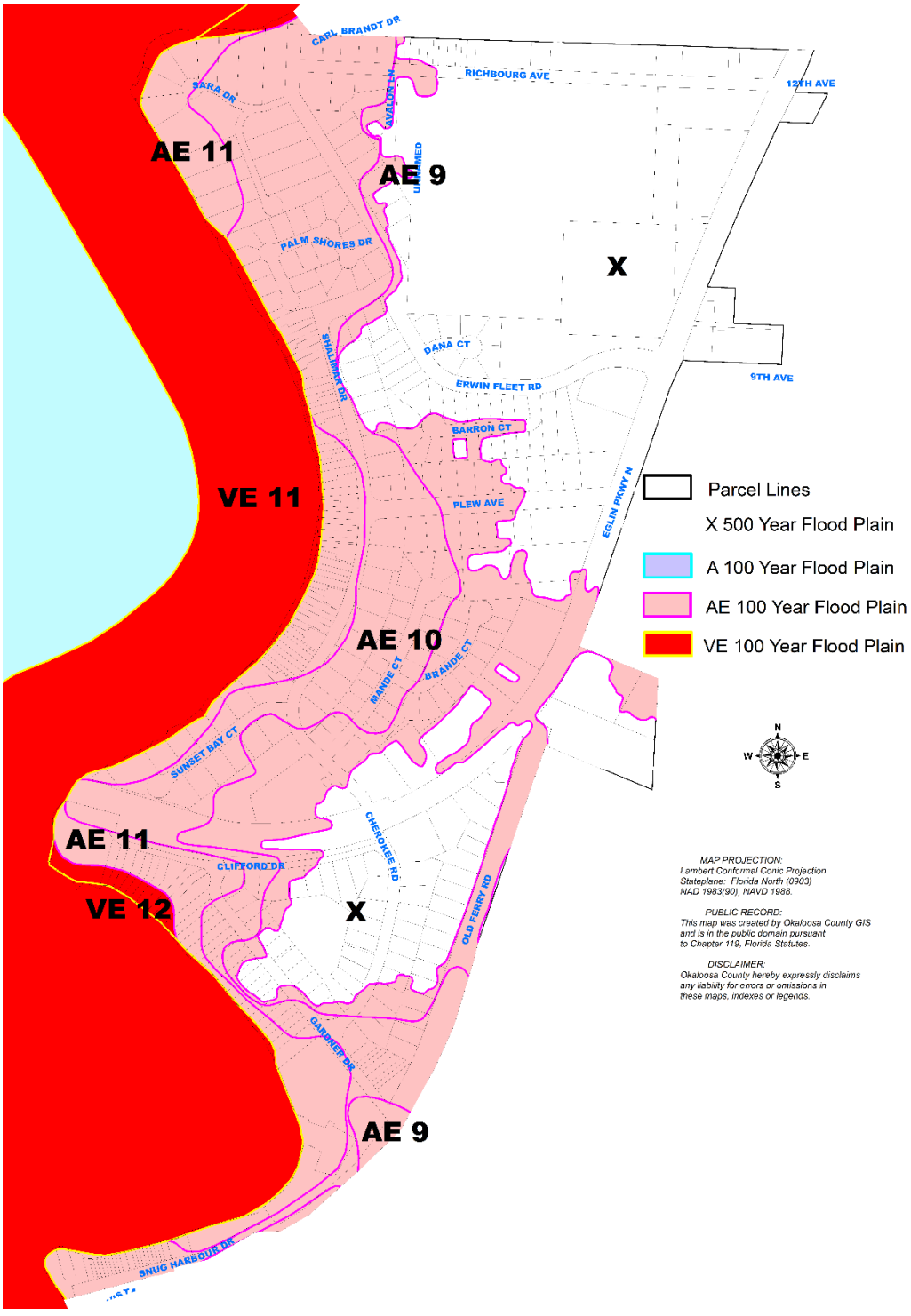
HISTORICAL OCCURRENCE:
There was no data available at the municipal level regarding the historical occurrences of severe floods or flash-floods. Therefore, please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard because all of Okaloosa County is equally susceptible to this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
The worst-case scenario in terms of flooding in the Town of Shalimar would be if widespread flooding resulted in property damage and losses, power outages, storm sewer overflow, and road-closures. Properties located in the AE-10, AE-11, A, and VE flood zones will be impacted more severely than the rest of the city, which is located in flood zone X (500 year flood plain). *Note* AE-10 and AE-11 flood zone means that the area is susceptible to flooding at 8 or 9 feet above sea level, respectively. (See Figure 5.09.01.04.1, below).

Flooding can severely impact the road network in the Town of Shalimar. There are approximately .98 miles of arterial and collector roads in the Town of Shalimar. Out of this total, .98 miles of these roads are located in the NFIP X Zone (500 Year Flood Zone) and 0 miles located in the NFIP Special Flood Hazard Zone. These roads are especially susceptible to flooding during moderate to heavy rain events.

Town of Shalimar

Figure 5.09.01.04.1: The Town of Shalimar's Flood Zones



Source: FEMA Map Service Center, March 9, 2021

Temporary localized flooding can also severely impact roadways during moderate to heavy rain events, which could result in road-closures. It is particularly difficult to prepare transportation systems for "trailing" storm systems that tend to saturate land as well as overload drainage and retention systems. Arterial roads and roads constructed prior to uniform standards and regulations are some of the roadways typically impacted by isolated heavy rain events. Culverts can sometimes be undermined, causing people to be stranded and isolated until the repairs can be made. Some major roadways used for evacuation are subject to flooding.

PROBABILITY:
The entire County, as well as the Town of Shalimar, has a future probability of a flash-flood or flood occurring annually. However, due to the localized nature of flash-flooding and flooding, a more exact probability will not be provided.

Section 5.09.01.05 Severe Storms

The Severe Storms segment of the LMS Hazards Assessment includes tornado and waterspout, thunderstorms and lightning, winter storms, and heat waves and drought (hurricanes are excluded from this section because they are covered in another section of this chapter).

Section 5.09.01.05.01 Tornado and Waterspout

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definitions of these hazards.

HISTORICAL OCCURRENCE:
According the U.S. Storms Database, there has only been one reported waterspout near the Town of Shalimar in 2008. There were no known injuries, fatalities, or property damages reported. In 1998 a tornado touched down along the bay in the Town of Shalimar, which resulted in no known injuries or fatalities; however, $300,000 in property damage was reported. In 2002, a weak tornado moved off the bay, and damaged a home and blew down trees and power lines near the Town of Shalimar. There were no known injuries or fatalities but resulted in $25,000 in property damage. Also, in 2008, Hurricane Gustav produced a waterspout that moved on-shore near the Town of Shalimar. There were no known injuries, fatalities, or property damages reported (NCDC, 2010).

The historic tornado record of Okaloosa County is relevant to the Town of Shalimar because of the unpredictable pattern of tornadoes. The entire County, including the Town of Shalimar, is vulnerable to tornado damage. Also, the County's waterspout historic record is applicable to the Town of Shalimar because it is located on Choctawhatchee Bay, which is one of the areas susceptible to waterspouts. Please refer back to the Risk Assessment of the overall County for the historical occurrences of these hazards. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
Because of the unpredictable patterns of tornadoes, and because Okaloosa County has a relatively high frequency of occurrence, the entire County, including the Town of Shalimar, is vulnerable to tornado damage. The damage potential for a tornado increases as a function of population density. As the number of structures and people increase, the potential damage/injury rate increases. Poorly constructed or substandard housing and apartment complexes are especially susceptible to damage from a tornado. Substandard housing is exceptionally susceptible because of their lack of resistance to high winds, and apartment complexes because of their size and densities.

The worst possible scenario in terms of tornado damage would be if an F-5 tornado hit the Town of Shalimar. It is very unlikely that an F-5 tornado would strike Okaloosa County or the Town of Shalimar, but if one did there would be complete destruction of homes and businesses that were in the tornado's path. Trees and power lines would be snapped, building debris scattered about, and severe structural damage would be evident on any building left standing.

The most common and active weather threat in the Town of Shalimar for the formation of tornadoes is severe thunderstorms associated with frontal boundaries. Frontal boundaries and summertime afternoon air mass thunderstorms can reach severe limits because of atmospheric uplift. High winds relating to gust fronts and "microbursts" can create high wind speeds up to 100 MPH. Buildings and highway traffic are vulnerable to these storms.

PROBABILITY:
From 1958-2009 there have been a total of 94 reported tornadoes in Okaloosa County. Based on this data the probability of a future tornado occurrence in the Town of Shalimar has been determined to be less than 2 per year. Also, since there was only 9 reported waterspouts from 1996-2001, the future probability was determined to be less than 2 waterspouts per year.

Section 5.09.01.05.02 Thunderstorms and Lightning

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
In 2007, a home was struck by lightning, resulting in a fire that destroyed the home. There were no known injuries or fatalities; however, $60,000 in property damage was reported (NCDC, 2010). The Town of Shalimar is just as equally susceptible to thunderstorms and lightning as Okaloosa County. Therefore, the historic record of thunderstorms and lightning in Okaloosa County will be applicable to the Town of Shalimar. Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
Thunderstorm damage can include traffic accidents on wet roads, flash-flooding, lightning damage to electronics and structures, lightning strikes on people, and wind and hail damage. Aside from being able to produce tornadoes, thunderstorms can produce damaging high winds.

Cold upper level air descending from the top of a thunderstorm to the ground usually causes these winds. In a worst-case scenario, if the upper level air speed of descent is rapid, these cold "microbursts" can fan out as they come in contact with the ground at a high rate of speed. This is sometimes referred to as "straight line winds." These winds can cause significant property damage, injuries, and deaths similar to a F0 to F2 tornado or Category 1 or 2 hurricanes.

PROBABILITY:
Based on historical data (See Risk Assessment of overall County of this hazard's historical occurrences), the Town of Shalimar has a future probability of experiencing less than 5 severe thunderstorms per year. Also based on historical data (See Risk Assessment of overall County for this hazard's historical occurrences), the Town of Shalimar is likely to experience 4 to 16 flashes of lightning per square kilometer per year.

Section 5.09.01.05.03 Winter Storms

DEFINITION:
Please refer to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
Daily temperature data specific to the Town of Shalimar are not readily available. All of the jurisdictions, including the Town of Shalimar, are susceptible to winter storms. Therefore, please refer to Chapter 4 which provides the Risk Assessment of the overall County for the historical occurrences of winter weather because all of Okaloosa County is equally susceptible to this hazard. Chapter 4 includes a discussion of Winter Storm Enzo that impacted Northwest Florida in January of 2025. It should be noted that the data pertains to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
The worst-case scenario in terms of winter storms in the Town of Shalimar would be if freezing or below freezing temperatures lasted for a week or more, and if the storm responsible for such freezing temperatures knocked down power lines resulting in power loss, and the inability of residents to heat their homes. A freeze's greatest risk is generally unprotected or under-protected water pipes in homes, businesses and infrastructure. Outdoor irrigation systems and plumbing in homes where insulation is inadequate in walls or in off-grade homes where plumbing is exposed are most vulnerable. Unmitigated older structures are probably the most vulnerable structures.

An icing, glaze (as defined by the American Meteorological Society, "glaze" is ice, generally clear and smooth, formed on exposed objects by the freezing of a film of supercooled water deposited by rain, drizzle, fog, or possibly condensed from supercooled water vapor), or sleet incident in the Town of Shalimar would likely result in severe traffic problems and safety concerns throughout the community and its roadways. With no means of salting roadways or removing ice, emergency response would be severely slowed in iced areas. Electrical service would likely be interrupted or totally absent in many areas due to power lines glazing and tree branch falls. Mitigation efforts would more likely focus on sheltering and ability to receive outside mutual aid assistance, rather than on equipment and ice buildup prevention due to the infrequency and inconsistency of such events.

PROBABILITY:
Based on the data of total below freezing days, the future probability of freezing temperature days in the Town of Shalimar is estimated to be 55 days in a 5-year time frame. Because a snow event in the Town of Shalimar is so rare, a single snow "event" over five or ten years is probably the average.

Section 5.09.01.06 Heat Wave and Drought

Heat Wave

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of heat waves.

HISTORICAL OCCURRENCE:
Every jurisdiction in Okaloosa County is equally susceptible to heat waves as they tend to impact a relatively large geographic area. Daily temperature data specific to the Town of Shalimar are difficult to locate. The closest jurisdiction to the Town of Shalimar with a daily temperature record is the City of Niceville. Assuming with reasonable certainty that the number of heat wave days experienced in the City of Niceville was similar to that of the Town of Shalimar, it is predicted that the Town of Shalimar experienced three heat waves from 2005-2009 with high temperatures ranging from 91°F-102°F, and average humidity ranging from 58-84 (Weather Underground, Inc., 2010).

On July 1, 2000 an excessive heat advisory was issued for coastal Okaloosa County, which included the Town of Shalimar. Temperatures over 100°F were recorded. On August 8, 2007 another excessive heat advisory was issued for coastal Okaloosa County due to a combination of high temperatures and high humidity. The heat index was recorded between 110°F and 115°F and a number of local churches provided air conditioned shelter from the excessive heat. At such a high heat index, prolonged exposure may result in heat disorders.

EXTENT:
The worst-case scenario in terms of a heat wave would be if excessive heat and humidity lasted for a week or more. Dangerous conditions are present when both heat and high humidity combine to make outside temperatures feel in the 103-124° F range. External danger warnings are issued when high temperatures and humidity combine to make outside temperatures feel in the 126-137° F range. Heat disorders may develop in people who work outside for long periods of time, such as construction workers. To combat the dangerous effects of excessive heat residents should dress appropriately, stay indoors, refrain from strenuous work during the hottest part of the day and stay hydrated.

Electrical system failures due to demand is a true possibility during excessive heat conditions. The general threat to the community is individuals without adequate cooling systems in their homes, with emphasis on low income and the elderly. Electrical system failures due to demand would only enhance problems for all of these industries and populations. (NOAA Watch: Heat Wave).

PROBABILITY:
Based on the City of Niceville heat wave data, it is predicted that the future probability of a heat wave occurring in the Town of Shalimar is on average three times during a 5-year period.

Drought

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of drought and the categories of drought according the U.S. Drought Monitor.

HISTORICAL OCCURRENCE:
Droughts occur at a regular frequency and are cyclical in Okaloosa County. Due to the large area that droughts impact, it is assumed that the Town of Shalimar had a similar number of drought occurrences. Please refer back to the Risk Assessment of the overall County for the historical occurrences of drought because all of Okaloosa County is equally susceptible to this hazard.

EXTENT:
The worst-case scenario in terms of drought would be if an exceptional drought (D4) lasted for months or years (See the Risk Assessment of the overall County for drought category descriptions). An exceptional drought would cause shortages of water in reservoirs, streams, and wells. Bay swamps and bodies of water would see a drastic decline in natural water levels and water shortages in reservoirs and wells would create water emergencies. Precipitation levels would be -2.0 inches or less. Also, the risk of wildfire increases as drought deepens. (U.S. Drought Monitor, 2010).

Droughts can impact the Town of Shalimar in a number of ways. For example, declining water levels and altered hydro-periods in bay swamps can disrupt breeding cycles of fish and amphibians which can affect other species which prey on, or which are preyed upon, such fish and amphibians. Increased demand created by drought conditions on public water supply systems that serve the public has caused some generators and pumps to fail at critical moments, creating low or no pressure for critical facilities such as fire hydrants and medical centers.

PROBABILITY:
The abnormally dry drought intensity is the condition of dryness before and after a period of actual drought. From 2000-2009, a total of 49 out of 120 months were abnormally dry. Based on this data, the Town of Shalimar has a future probability of experiencing less than 5 abnormally dry months every year. Also, from 2000-2009, there were a total of 51 out of 120 months where moderate, severe, extreme, or exceptional drought occurred in Okaloosa County. These drought intensities are the varying severity of actual droughts. The future probability of a moderate to severe drought occurring in the Town of Shalimar is on average 5 months per year.

Section 5.09.01.07 Beach Erosion

DEFINTION:
Please refer to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
Beach erosion is a naturally occurring, cyclical process in which sand particles are removed and/or replaced by wind, waves, or tides. Intensive wave action or strong storm surge during a tropical storm or hurricane can accelerate the rate of beach erosion. Beach erosion is a coastal and bay issue; therefore, all jurisdictions located in those areas, including the Town of Shalimar, are susceptible to beach erosion. Because tropical storms and hurricanes can cause beach erosion in various coastal locations throughout the county, the historical occurrences of beach erosion is relevant to all costal and bay areas of the county. Please refer to the Risk Assessment of the overall County for the historical occurrences of beach erosion.

EXTENT:
The worst-case scenario in terms of beach erosion would be if a major storm with significantly strong winds and storm surge washed-out the coastal areas. The damage will be much worse for portions of the coastline already critically eroded. Beach erosion will undermine the integrity of infrastructure, beachfront homes and businesses, and other structures by washing away the sediments that support the structural foundation sometimes resulting in complete destruction.

PROBABILITY:
Based on the historical data of the overall County, it appears that beach erosion will most certainly occur in the future in the Town of Shalimar. The frequency and extent of the erosion are highly dependent on the frequency and intensity of tropical storms and hurricanes. The natural process of beach erosion is different among coastal locations in the County due to variations in beach stability. This means there are different degrees of natural erosion rates and potential damage from storms or unusual wave action. Therefore, a numerical value will not be given for the estimated future amount of beach erosion. It must also be noted that beach erosion is a natural part of a coastal system, and can be expected to occur at various locations and at different rates over time.

Section 5.09.01.08 Other Hazards

The hazards listed below have been analyzed and determined that the impact would be minimal or non-existent in the Town of Shalimar.

Section 5.09.01.08.01 Land Erosion

Land erosion, also known as soil erosion, is “the removal and thinning of the soil layer due to climatic and physical processes, such as high rainfall,” which can be greatly accelerated by human activities (Encyclopedia.com, 2010). All of Okaloosa County is susceptible to land erosion in some localized areas. Therefore, some localized portions of the Town of Shalimar may be susceptible to land erosion. However, the Town of Shalimar’s topographic location is non-conducive to land erosion. Therefore, even though land erosion is possible, the future risk of this

hazard in the Town of Shalimar is minimal because there have been no previous occurrences recorded.

Section 5.09.01.08.02 Sinkholes

The map and description prepared by the United States Geologic Survey (USGS) in its "Sinkhole, Type, Development and Distribution in Florida" (1985) indicates that Okaloosa County in its entirety is located in an area where sinkholes seldom, if ever, occur. The Florida Geologic Survey's statewide sinkhole database indicates no sinkholes in the County. Since there is no history of this hazard in the County, no further analysis or risk assessment will be conducted for this plan. However, should conditions change and geological features be discovered which contribute to the development of sinkholes, the LMS committee will include any new occurrence information in ongoing updates.

The future probability of a sinkhole occurring in Town of Shalimar is less than 1% based upon no documented sinkholes in the county and the soil strata is non-conducive to the formation of sinkholes.

Section 5.09.01.08.03 Expansive Soils

According to the *Soil Survey of Okaloosa County Florida* (USDA, June 1995), two types of soils are considered vulnerable to expansion. These are known as shrinking and swelling or "expansive soils." Another way of describing expansive soils is the change of volume of a soil with a change of moisture content. All of the soils listed in the expansive class are also considered erodible soils. Okaloosa County may be susceptible to expansive soils in some localized areas. There have been no previous occurrences recorded of expansive soils in the County. The following table lists soils having moderate to high shrink swell potential in Okaloosa County. Only those soils with an associated risk of "High" are listed:

Table 5.09.01.08.03.1: Shrink/ swell potential of soils in Okaloosa County.

Soil Type	ME Soils*	HE Soils**	Total Acreage	% Total Land Area
#35-Angie (2 to 5 percent slopes)		X	1,073.26	.16
#49-Angie (5 to 12 percent slopes)		X	10,280.79	1.61
#20-Udorthents (nearly level)	X		655.31	.11
Total	**.11**	**1.77**	**12,009.36**	**1.88**

* Moderate Erodible Soils **Highly Erodible Soils

Note: Expansive soils and erodible soils are classified as the same.
Source: Soil Survey of Okaloosa County, Florida; June 1995.

Expansive soils can lessen the strength of building foundations, which could result in structural collapse or instability. In addition, these soils have limitations for use as local roads and streets because of lack of strength to support roadways and traffic. There is a possibility of shrink/swell

potential or soil expansion based on the existence of moderately erodible soils and highly erodible soils in Okaloosa County. Although the specific amount of these soils in the county is known, the future probability of this occurring in the Town of Shalimar is minimal because this issue is addressed during the time of construction and there are no previous records of occurrence.

Section 5.09.01.08.04 Dam Safety

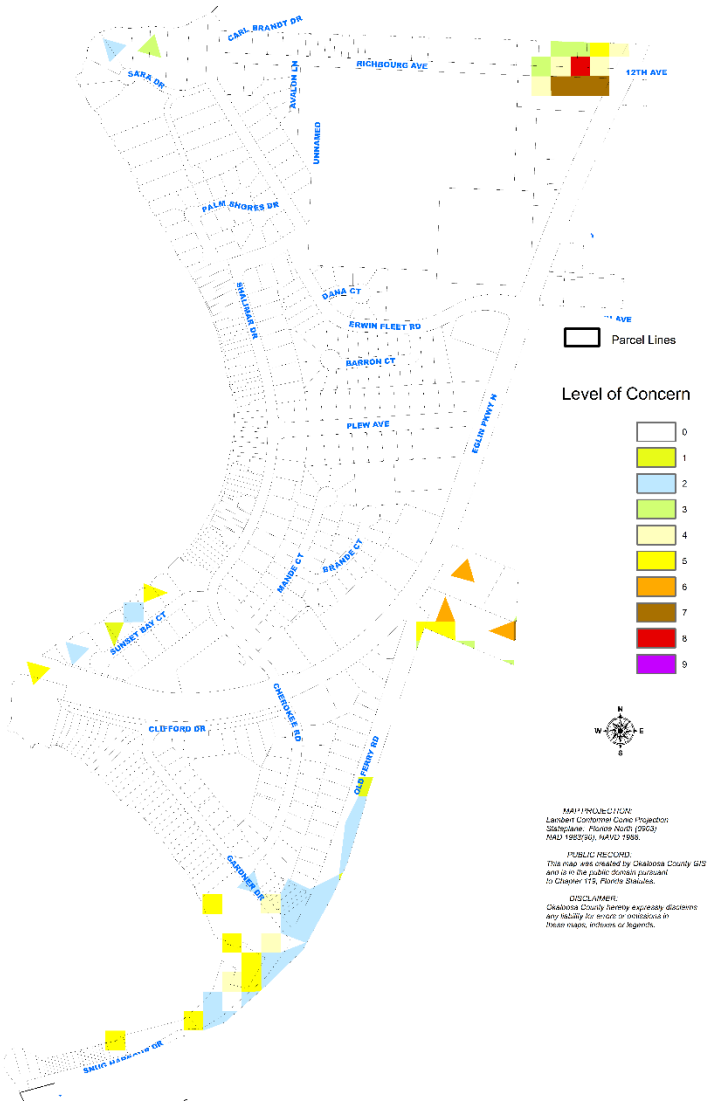
There are no permitted dams located in the Town of Shalimar. Therefore, the Town of Shalimar is not susceptible to flooding due to dam failure. However, if there are any permitted in the future, the LMS committee will update the plan to reflect those changes.

Section 5.09.01.08.05 Wildfire

All of Okaloosa County, including the Town of Shalimar, is susceptible to wildfire. The majority of the Town's incorporated area is urban or residential and is surrounded by the larger jurisdictions. The Wildland Fire Risk Assessment System of the Florida Division of Forestry displays the wildfire levels of concern for the Town of Shalimar. According to the map, most of the incorporated town is classified as non- or minimally burnable (2010). The figure below displays the relatively low levels of concern that wildfire has for the town. Therefore, while the Town of Shalimar is susceptible to wildfire, it appears that the future probability of occurrence is minimal.

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Figure 5.09.01.08.05.1: Wildfire Levels of Concern for the Town of Shalimar



Source: Florida Division of Forestry, 2025

Section 5.09.01.08.06 Earthquake

According to the U.S. Geological Survey Earthquake Probability maps, the Town of Shalimar has between a 0.005 and 0.010% chance of experiencing a 5.0 magnitude earthquake within 100 years. This is considered a very minimal risk. Also, since there is no history of earthquakes in Okaloosa County or the Town of Shalimar, no further analysis or risk assessment will be conducted for this plan. The future probability of an earthquake occurring in the town of Shalimar is less than 1 in 100 years.

Section 5.09.01.08.07 Avalanche

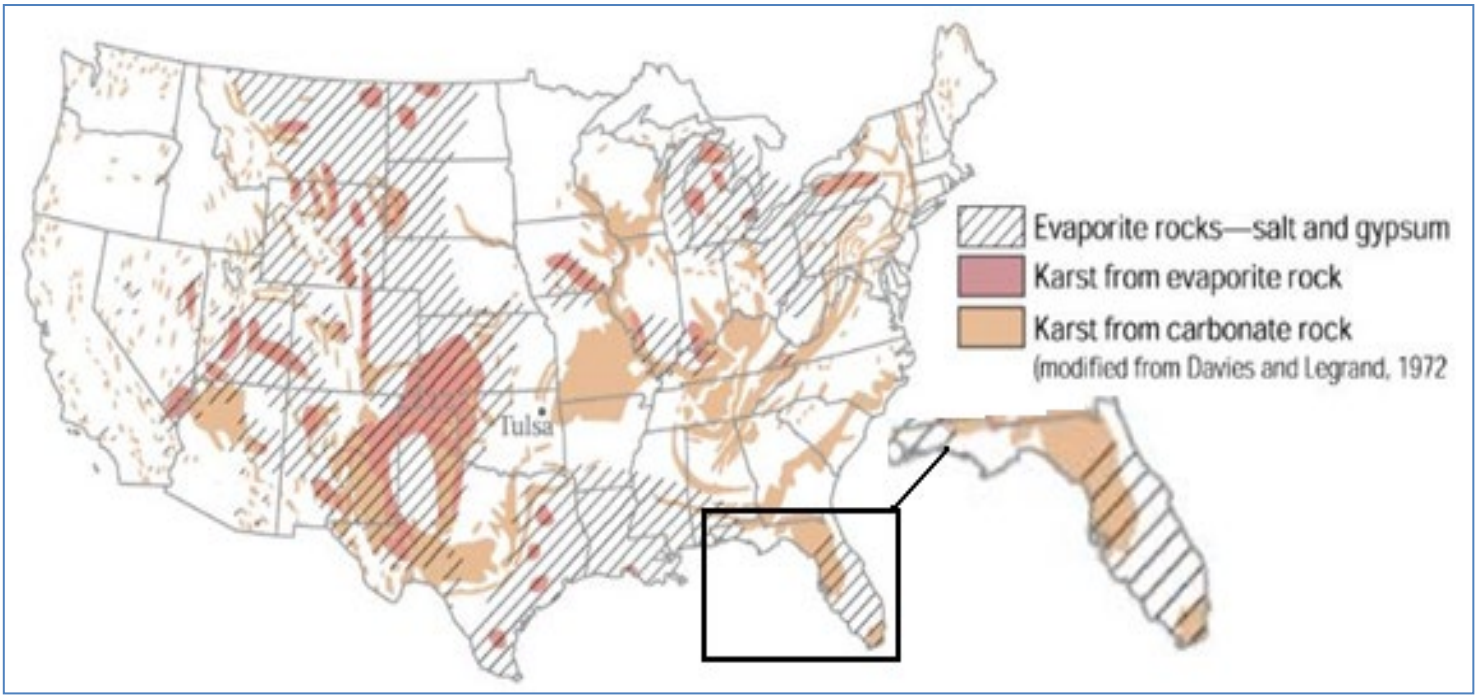
The Town of Shalimar does not have topography or snowfall amounts that would create conditions for an avalanche. Since there is no history of this hazard in the county, no further analysis or risk assessment will be conducted for this plan. The future probability of an avalanche occurring in the Town of Shalimar is less than 1 in 100 years.

Section 5.09.01.08.08 Land Subsidence

According to the U.S. Geological Survey, “land subsidence occurs when large amounts of ground water have been withdrawn from certain types of rocks, such as fine-grained sediments. The rock compacts because the water is partly responsible for holding the ground up. When the water is withdrawn, the rocks fall in on itself. Land subsidence is most often caused by human activities, mainly from the removal of subsurface water” (U.S. Geological Survey, 2010). The Town of Shalimar has a minimal amount of the most common rock types that are connected to land subsidence (See Figure 5.09.01.08.08.1). Since there is no history of this hazard in the Town of Shalimar, no further analysis or risk assessment will be conducted for this plan. The future probability of land subsidence occurring in the Town of Shalimar is less than 1 in 100 years.

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Figure 5.09.01.08.08.1: Rock types connected to collapse (subsurface cavities/sinkholes) in the U.S.



Source: U.S. Geological Survey

Section 5.09.01.08.09 Landslide

According to U.S. Geological Survey Map of Relative Incidence and Susceptibility Map, the Town of Shalimar has a very low landslide incidence with less than 1.5% area susceptible to a landslide (USGS, 2010). Landslides are therefore considered to be a minimal risk and no further analysis or risk assessment will be conducted for this plan. The future probability of a landslide occurring in the Town of Shalimar is less than 1 in 100 years.

Section 5.09.01.08.10 Volcano

There are no geological features in or near Okaloosa County, the Town of Shalimar, or the Southeast related to volcanism. Since there is no history of this hazard in the Town of Shalimar, no further analysis or risk assessment will be conducted for this plan. The future probability of a volcanic eruption occurring in the Town of Shalimar is less than 1 in 100 years.

Section 5.09.01.08.11 Tsunami

According to the U.S. Geological Survey, Okaloosa County is not located in an area that has historically been subjected to tsunamis, even though it is a coastal county. Since there is no history of this hazard in the county, including the Town of Shalimar, minimum analysis and risk assessment will be conducted for this plan. The Local Mitigation Strategy Committee will monitor any developments in the ability to predict, monitor and issue warnings. There is no record of a tsunami occurring in Okaloosa County, therefore the Town of Shalimar's future probability of occurrence has been determined to be less than 1 in 100 years.

Section 5.09.01.08.12 Sea Level Rise

As defined by multiple agencies, the term "sea level rise" refers to an increase in the ocean's surface height relative to the land in a particular location. Thermal expansion of the Earth's oceans and melting polar ice melting are commonly identified as the two primary causes of sea level rise, though land subsidence is also cited as a factor While sea level rise most directly impacts coastal regions, its impacts may be felt far beyond the shoreline as impacted areas react to changing conditions and must expand substantial amounts of funds in mitigation activities that may include construction of water control structures, relocating or re-routing roads and other infrastructure, and relocation of impacted populations.

In 2023, Okaloosa County applied for and received a grant through the Resilient Florida Program to develop a Vulnerability Assessment and implementing Adaptation Plan (see Appendix E) and, pursuant to and in compliance with section 380.093, Florida Statutes, awarded a contract to Jacobs Engineering Group to develop said Vulnerability Assessment (VA) and implementing Adaptation Plan (AP). The VA and implementing AP developed by Jacobs Engineering Group is incorporated herein by reference for purposes of establishing vulnerability to sea level rise and various flooding scenarios for the entirety of Okaloosa County **and all municipalities** (except for the City of Destin which has undertaken its own analysis). As the County-wide Vulnerability Analysis applies to conditions within the Town of Shalimar, please see Section 4.01.11.09 of this Local Mitigation Strategy for more information.

The mitigation actions contained in Section 5.09.04.03 Flooding will address the needs for mitigation actions for Sea Level Rise also.

Section 5.09.01.09 Summary

The risk assessment section of this LMS document highlighted the hazards that the Town of Shalimar is exposed to. This provides the foundation for the subsequent section covering how vulnerable the town is to these identified hazards. Numerous facilities, infrastructure, and neighborhoods in the Town of Shalimar need to be assessed for their vulnerability to disasters.

Section 5.09.02 Vulnerabilities

Section 5.09.02.01 Introduction

The intent of this section is to provide a vulnerability assessment for the potential damage and estimated loss to building structures in the Town of Shalimar.

This section includes a brief summary description of the Town of Shalimar, as well as its vulnerability to the identified hazards and the impact of each hazard. It also describes the vulnerability in terms of the types and numbers of repetitive loss properties within the Town of Shalimar. Additionally, the section describes vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the Town of Shalimar.

The main intent of this section is to provide an estimate of potential dollar losses to vulnerable structures and a description of the methodology used to complete the estimate. Lastly, this section describes vulnerability in terms of providing a general description of land uses and development trends within the Town of Shalimar so that mitigation options can be considered in future land use decisions.

Section 5.09.02.02 Methodology

The Okaloosa County Staff used the same methods, of quantifying the estimated dollar losses to the vulnerable structures potentially impacted by each hazard, for the Town of Shalimar as the overall County. Therefore, please refer to Okaloosa County's Overall Vulnerabilities, Section 4.02.02, for more information.

Section 5.09.02.03 Summary Description of the Town of Shalimar

The Town of Shalimar is an incorporated city located in the southern portion of Okaloosa County. According to the University of Florida's Bureau of Economic and Business Research, as of April 1, 2025, Shalimar had a population of 733 residents which makes it one of the smallest municipalities in Okaloosa County by population. Within its jurisdiction, there are 1.69 miles of shoreline that border Garnier Bayou. The Town of Shalimar is largely built out with the majority of the existing residential development clustered around Garnier Bayou. According to Tom Burns, the Town Manager for Shalimar, there are only a few residential lots open for construction as all other land has been developed. The development within the town will therefore necessarily be focused on redevelopment, such as new businesses moving into vacant restaurants and commercial office buildings.

The Town participates in the National Flood Insurance Program (NFIP) and enforces its floodplain management regulations pursuant to adopted local ordinances. The Town joined the NFIP program on July 3, 1985 and the Community Rating System (CRS) program on October 1, 1995. The most recent regulation updating floodplain compliance, occurred through Ordinance 2021-03, adopted February 9, 2021.

Town of Shalimar

Pursuant to this ordinance, the Flood Insurance Rate Maps (FIRM) and associated Flood Insurance Study, along with all subsequent amendments and revisions, have been formally adopted by reference and serve as the minimum basis for establishing flood hazard areas within the Town.

Administration and enforcement of floodplain management regulations, including Special Flood Hazard Areas (SFHAs), are carried out through the Town's Administrative Department. The Town Administrator coordinates plan review, permitting oversight, and inspections with the Okaloosa County Department of Growth Management. As stated in Section 5.09.01, the County enforces the Florida Building within the Town of Shalimar by way of an interlocal agreement as provided by Chapter 553 of the Florida Statutes.

Responsibility for maintaining compliance with NFIP requirements rests with the Town Administrator, with support from Okaloosa County staff. The Administrator ensures that all applicable federal, state, and local floodplain management standards are properly implemented and enforced.

The Substantial Damage and Substantial Improvement requirements are managed through coordinated review by the Administrator and an appointed Technical Review Committee. Following major storm events, substantial damage assessments are conducted by the Town Commission in coordination with the Town Administrator and Town Engineering firm. FEMA-established methodologies and standards are employed.

As previously noted, the Town participates in the NFIP Community Rating System (CRS) and currently maintains a Class 8 rating, reflecting implementation of floodplain management practices that exceed minimum NFIP standards. The Town maintains a mapped inventory of open space properties, which is reviewed and updated on at least an annual basis. These efforts are consistent with CRS requirements and contribute to the preservation and monitoring of flood-prone lands.

Emergency management activities are coordinated through the Town Administrator and Chief of Police in conjunction with the County's Division of Emergency Management. The Administrator is a member of the LMS Committee and maintains regular coordination with other emergency management personnel and County staff. Ongoing interagency coordination occurs between emergency personnel and Town staff during hazard events and throughout post-disaster response and recovery operations.

The Town of Shalimar is capable of independently managing grant-funded projects and does not require assistance from the County for grant administration.

The Town incorporates the findings and recommendations of the LMS into our respective planning mechanisms through integration with comprehensive plans, capital improvement programs, land development regulations, and emergency management plans. LMS-identified hazards, vulnerabilities, and mitigation actions are considered during project prioritization, budgeting, and policy development to ensure consistency with long-term resilience objectives. Additionally, the Town may utilize the LMS to support grant applications, inform development review processes,

and guide post-disaster recovery and redevelopment decisions. This coordinated approach ensures that hazard mitigation principles are systematically embedded into local planning and decision-making processes.

Section 5.09.02.04 Vulnerable Populations

Hazards do not affect the entire population the same. Therefore, special attention needs to be given to the more vulnerable populations. Please refer back to the overall County's Vulnerability for further explanation on these vulnerable populations. The table below displays the Town of Shalimar's vulnerable populations.

Table 5.09.02.04.1: Estimated Vulnerable Populations in the Town of Shalimar, 2010

Population	2010 Census Percent Population	2014 Estimate
Elderly	9.8%	56
Language Isolation	.4%	4
Disabled	22.6%	148
Single Parent	9.6%	15
Poverty	2.3%	16
Minority	3.5%	25

Source: 2020 Census; U.S. Census Population Division

Section 5.09.02.05 Repetitive Loss and Severe Repetitive Loss Properties

The Federal emergency Management Agency defines repetitive loss and severe repetitive loss properties as follows (44 CFR Part 77 § 77.2):

> Repetitive loss structure means a structure covered under an NFIP flood insurance policy that:
>
> (1) Has incurred flood-related damage on 2 occasions, in which the cost of repair, on average, equaled or exceeded 25% of the value of the structure at the time of each such flood event; and
>
> (2) At the time of the second incidence of flood related damage, the contract for flood insurance contains increased cost of compliance coverage.

Severe repetitive loss structure means a structure that is covered under an NFIP flood insurance policy and has incurred flood-related damage:

> (1) For which 4 or more separate claims payments have been made under flood insurance coverage under subchapter B of this chapter, with the amount of each claim (including building and contents payments) exceeding $5,000, and with the cumulative amount of such claims payments exceeding $20,000; or
>
> (2) For which at least 2 separate flood insurance claims payments (building payments only) have been made, with cumulative amount of such claims exceeding the value of the insured structure.

In Shalimar, hurricanes, tropical storms, storm surge, flooding, and thunderstorms are responsible for repetitive loss properties. These properties are more vulnerable to certain hazards than other structures in the Town because they have already experienced significant flood damage. Please see Section 4.02.05 and Table 4.02.05.1 for this LMS' discussion of Repetitive Loss and Severe Repetitive Loss properties throughout the County, including within the Town of Shalimar.

Section 5.09.02.06 Hurricane and Tropical Storm

The Town of Shalimar is vulnerable to the damaging effects of tropical storms and hurricanes as it is located on Choctawhatchee Bay, near the southern coast of the county. The Town of Shalimar would experience destruction in terms of wind damage, heavy rains, and storm surge during a tropical storm or hurricane. All structures within the Town of Shalimar's jurisdiction are susceptible to damage in the form of flooding due to heavy rains and strong storm surge. High winds can damage structures by removing roofs and siding, and create flying debris out of sources which are not anchored. The most vulnerable homes are those located on bay front lots. The following table depicts the hurricane evacuation zones and the vulnerable structures located within each zone.

Table 5.09.02.06.1: Evacuation Zones and the Vulnerable Structures

Total:	SFR-Townhouse	Single-Family	Commercial	Government/ Institutional
Zone A	14	7	1	0
Just Value	$3,518,045	$5,416,126	$1,515,633	$0
Zone B	51	51	1	0
Just Value	$25,167,061	$25,167,061	$1,515,633	$0
Zone C	87	75	32	4

Just Value	$20,465,918	$28,588,109	$23,457,204	$6,206,205
Zone D	116	215	35	6
Just Value	$25,627,123	$57,270,526	$29,511,158	$11,909,460
Zone E	116	215	40	7
Just Value	$25,627,123	$57,270,526	$30,865,367	$14,592,353

Note Evacuation Zones correspond with Hurricane Categories (Ex. Evacuation Zone 1 = Category 1 Hurricane)
Source: West Florida Regional Planning Council & Okaloosa County Property Appraiser, 2025 (Okaloosa County Staff generated table from overlaying the evacuation zones and property appraiser data)

Section 5.09.02.07 Storm Surge

The Town of Shalimar is vulnerable to storm surge with the structures along Choctawhatchee Bay being the most susceptible to damage from this hazard. The strongest storm surge level during a Category 5 hurricane would be 17.7 feet above the mean high water line along the some areas boarding Choctawhatchee Bay. This would severely flood numerous homes, infrastructure, and commercial structures in this area. The following table depicts the vulnerable structures to storm surge levels, which correspond with the category of hurricane.

Table 5.09.02.07.1: Vulnerable Structures to Storm Surge

Total:	SFR-Townhouse	Single-Family	Commercial	Government/ Institutional
Surge Level 1	79	28	1	0
Just Value	$19,510,193	$21,198,250	$1,515,633	$0
Surge Level 2	91	44	1	0
Just Value	$22,434,819	$24,701,218	$1,515,633	$0
Surge Level 3	116	215	26	3
Just Value	$25,627,123	$57,270,526	$20,091,848	$4,962,582
Surge Level 4	116	215	21	4
Just Value	$25,627,123	$57,270,526	$12,523,683	$6,206,205
Surge Level 5	116	215	40	7
Just Value	$25,627,123	$57,270,526	$30,865,367	$13,383,847

Source: West Florida Regional Planning Council & Okaloosa County Property Appraiser, 2025 (Okaloosa County Staff generated table from overlaying the surge levels and property appraiser data)

Section 5.09.02.08 Flooding

This section of the LMS considers flooding within the Town of Shalimar that is a result of rainfall, which includes rain that occurs during a hurricane or tropical storm. Shalimar is vulnerable to flooding and susceptible to damage from this hazard. Localized roadway flooding from heavy rains is the most commonly observed type of flooding in the Town of Shalimar. During a hurricane, tropical storm, or severe storm heavy rains might cause some homes to flood particularly in low lying areas or those with poor drainage systems. In the Town of Shalimar, there are 71 structures in the AE flood zone and 2 structures in the VE flood zone. The cumulative 'just value' of those structures in the AE and VE flood zones is $28,785,941. The following table depicts the vulnerable structures located in the AE and VE flood zones in the Town of Shalimar.

Table 5.09.02.08.1: Structures Located in Flood Zones in the Town of Shalimar

	Total in Flood Zone AE	Just Value	Total in Flood Zone VE	Just Value
SFR-Townhouse	26	$5761203	2	$469,469
Single-Family	41	$18,436,603	0	$0
Commercial	4	$4,118,666	0	$0

Source: Okaloosa County Department of Growth Management, 2025

Section 5.09.02.09 Severe Storms

In the table below, the estimated cost of damage to residential and non-residential structures in the event of a severe storm is provided. The numbers and estimated value represents the total number of structures in the Town of Shalimar. Although it is highly unlikely that all structures will be impacted during a singular severe storm event, all structures are equally vulnerable to severe storms and so it was deemed appropriate to list all structures in the Town of Shalimar.

Table 5.09.02.09.1: Structures Vulnerable to Severe Storms in Town of Shalimar

Total:	SFR-Townhouse	Single-Family	Multi-Family	Commercial	Government/ Institutional
	29	41	10	44	14
Just Value	$6,320,497	$18,436,603	$8,320,408	$34,984,033	$26,767,694

Source: Okaloosa County Department of Growth Management, 2025

Since severe storms includes tornadoes and waterspout, thunderstorms and lightning, and winter storms, the values listed in the tables above apply to all those hazards.

Section 5.09.02.09.01 Tornado and Waterspout

The Town of Shalimar is vulnerable to tornadoes and waterspouts, and all structures within its jurisdiction are susceptible to the impacts of this hazard due to their unpredictable nature.

The areas within the Town of Shalimar that are most vulnerable to tornado damage are those with a high density or large population because the damage rate increases as a function of population density. The types of structures most vulnerable to tornado damage within the Town of Shalimar are poorly constructed housing, apartment complexes, and condominiums because of their size and densities. According to the Mapping for Emergency Management, Parallel Hazard Information System (MEMPHIS) study in 2005, nearly all of Okaloosa County, including the Town of Shalimar, has a medium risk, 1 in 250 per year, of a tornado event occurring.

Because waterspouts occur over water, the areas in the Town of Shalimar most susceptible to damage from waterspouts are those located on the Choctawhatchee Bay. Waterspouts tend to not last very long, but their high winds can result in damage from flying debris. The properties bordered by the water bodies are the most vulnerable to damage. There are 56 structures along the Town of Shalimar's coastline. The cumulative 'just value' of those structures is $17,052,301. The surrounding areas to the coastline are susceptible to damage from flying debris as well, but the specific impacts on those areas are unavailable due to the unavailability of relevant studies.

Section 5.09.02.09.02 Thunderstorms and Lightning

The Town of Shalimar is vulnerable to thunderstorms and lightning, and all structures within its jurisdictions are susceptible to the damaging effects of wind, hail, and lightning associated with severe thunderstorms. Thunderstorm damage can include traffic accidents on wet roads, flash-flooding, lightning damage to electronics and structures, lightning strikes on people, and wind and hail damage to structures. According to the Mapping for Emergency Management, Parallel Hazard Information System (MEMPHIS) study in 2005, all of Okaloosa County, including the Town of Shalimar, has the threat of a thunderstorm or lightning event occurring, in terms of causing economic damage or loss of over $50, of 1 in 50 per year.

Section 5.09.02.09.03 Winter Storms

The Town of Shalimar is vulnerable to winter storms, and all structures within its jurisdiction are susceptible to the effects of freezing temperatures. The Town of Shalimar is vulnerable to snow, freezing rain, icing and glazing events but because these events are so rare, the Town of Shalimar is unlikely to suffer serious damage from this hazard. The specific impacts of winter storms in the Town of Shalimar are unavailable because there have been no studies conducted regarding these hazards' impacts in the County. However, the impacts associated with Winter Storm Enzo, which struck Northwest Florida in January 2025, are illustrative of the kinds of impacts that would be observed in Shalimar. The homes in the Town of Shalimar that are most vulnerable to winter storms are those with unprotected or under-protected water pipes and homes in which plumbing

and insulation is inadequate. Unmitigated older structures and manufactured housing are also very vulnerable.

Section 5.09.02.10 Heat Wave and Drought

The Town of Shalimar is vulnerable to heat waves and drought. The specific impacts of heat waves and drought in the Town of Shalimar are unavailable because there have been no studies conducted regarding these hazards' impacts in the County. In addition, the nature of these hazards tends to only affect the populations without adequate cooling systems in their homes, low income, elderly, children, and outside workers. Only broad general impacts of these hazards can be given, which provide an indication of what impacts are expected with heat wave and drought. Everyone living within the Town of Shalimar is susceptible to heat exhaustion. All households are susceptible to power outages due to increased electricity demand during periods of extreme heat. Electrical system failures due to demand would only enhance problems for the entire population, especially for the vulnerable populations. All water bodies and municipal water supplies are susceptible to declining water levels and water shortages due to drought.

Section 5.09.02.11 Beach Erosion

The areas of the Town of Shalimar that are vulnerable to the effects of beach erosion are the properties that border the Choctawhatchee Bay. As previously mentioned, within its jurisdiction, there are 1.69 miles of coastline along the Choctawhatchee Bay. The populations that reside, work, run businesses, or own property in these parcels are the most affected by beach erosion. Beach erosion undermines the integrity of infrastructure, beachfront homes and businesses, and other structures by washing away the sediments that support the structural foundation sometimes resulting in complete destruction. There are 56 structures along the Town of Shalimar's coastline. The cumulative 'just value' of those structures is $17,052,301 (See Table 5.09.02.11.1, below).

Table 5.09.02.11.1: Total Structures Susceptible to Beach Erosion

	SFR-Townhouse	Single-Family	Commercial
Total	51	4	1
Just Value	$13,021,917	$2,514,751	$1,515,633

Source: Okaloosa County Department of Growth Management and Okaloosa County Property Appraiser
Note: Table was generated from Property Appraiser data based on the structures that were determined to be located along the coastal areas in Okaloosa County.

Section 5.09.02.12 Sea Level Rise

The 2025 Okaloosa County Vulnerability Assessment (see Appendix E) identifies at total of 5 waste water lift stations as being vulnerable to sea level rise with one, Lift Station 061 on Shalimar Drive operated by Okaloosa County Water and Sewer, being considered a critical

utility facility (see Table ES-1 and Table 9-2, Appendix E). In addition, several local road segments within the Town's boundary are identified as being vulnerable to flooding (see Table 8-9, Roadway Vulnerability in South County); however, only one, Shalimar Drive, is considered highly vulnerable. Finally, while no County- or municipal-owned communication facilities have been identified as vulnerable, one federal facility, the US Postal Service Office located at 1000 N. Eglin Parkway in Shalimar, has been identified as vulnerable under all the flood scenarios analyzed in the Vulnerability Assessment.

Section 5.09.02.13 Other Hazards

As previously stated in the Risk Assessment, the following hazards, land erosion, sinkholes, expansive soils, dam safety, wildfire, earthquake, avalanche, land subsidence, volcano, and tsunami have been determined to be a minimal risk to the Town of Shalimar. Therefore, the Town's vulnerability to these hazards has not been assessed. If any of the hazards become a greater risk in the Town of Shalimar, then the LMS Committee will update this section to reflect those changes.

Section 5.09.02.14 Summary

The vulnerability assessment section of this LMS document highlighted how vulnerable the Town of Shalimar is to the identified hazards from the Risk Assessment. It discussed the vulnerable populations, repetitive loss properties, and structure and infrastructure damages associated with these hazards.

Section 5.09.03 Critical Facilities

The following is a list of all critical facilities found inside the Town of Shalimar's town limits. It is to be noted that some critical facilities belong to and are maintained by other jurisdictions.

Section 5.09.03.01 Fire Stations

Site Name	Address	X-COORD	Y-COORD
OCEAN CITY/WRIGHT FD #2	1252 N EGLIN PKWY SHALIMAR FL 32579	1313309.358	532163.149

Section 5.06.03.02 Law Enforcement

Site Name	Address	X-COORD	Y-COORD
OKALOOSA CO SHERIFF SOUTH	1250 N EGLIN PKWY STE G155 SHALIMAR FL 32579	1312948.966	531725.732
SHALIMAR PD	6 CHEROKEE RD SHALIMAR FL 32579	1312140.870	529304.980

Section 5.09.03.02 Government Centers

Site Name	Address	X-COORD	Y-COORD
OKALOOSA COUNTY ADMINISTRATIVE BUILDING	1250 N EGLIN PKWY, SHALIMAR FL 32579	1313074.796	531761.307
SHALIMAR TOWN HALL	2 CHEROKEE RD SHALIMAR FL 32579	1312092.921	529316.419

Section 5.09.03.03 Helicopter Landing Zones and Possible Staging Areas

Site Name	Address	X-COORD	Y-COORD
MEIGS MIDDLE SCHOOL	150 RICHBOURG AVE SHALIMAR FL 32579	1312932.391	532379.184

Section 5.09.04 Mitigation Actions

Section 5.09.04.01 Hurricane and Tropical Storm

1. Ensure the public is informed of pending conditions. (Responsible party: Shalimar Police and Okaloosa County)
2. Enforce Florida Building Codes for new structures. (Florida Building Codes)
3. Ensure compliance with Town of Shalimar Hurricane Emergency Management Plan. (Responsible party: Shalimar Police, Maintenance, Administration)
4. Promote and support funding that allows for the Town Hall/Police building to remain functional before, during and after a hurricane or tropical storm event in order to support the function of Shalimar and Okaloosa County Emergency Management.(Responsible party: Shalimar Police and Administration)
5. Promote public awareness of hurricane and tropical storm hazards. (CRS Outreach)
6. Promote ways that private structure owners and landowners can mitigate using governmental or private sector investment. (CRS, Florida Building Codes)
7. Ensure roads are designed and engineered for the amount of wind, surge, flooding and debris that can be expected from a hurricane or tropical storm event. (Responsible party: Public Works)
8. Ensure communications systems are capable to communicate during and following hurricanes/tropical storms. **(**Responsible party: Shalimar Police)

Section 5.09.04.02 Storm Surge

1. Promote public awareness of storm surge. (CRS Outreach, FEMA Flood Outreach)
2. Ensure the public is informed of pending conditions. (Responsible party: Shalimar Police and Okaloosa County)
3. Ensure that maps accurately reflect the amount of storm surge, wave and flood action that can occur during hurricanes and tropical storms. (Okaloosa GIS, FEMA Flood Outreach)
4. Promote evacuation directives received from Okaloosa County. (Responsible party: Shalimar Police)

Section 5.09.04.03 Flooding

1. Ensure all future buildings are constructed to the Florida Building Code. (Land Development Code) *For NFIP Compliance*
2. Ensure all future buildings are built with a minimum finished floor height of 1’ above the established Base Flood Elevation on the Flood Insurance Rate Maps for those buildings located within the AE Flood Zones. (Land Development Code) *For NFIP Compliance*
3. Ensure all future buildings built within the V Flood Zones meet the minimum 1’ freeboard requirement. (Land Development Code) *For NFIP Compliance*
4. Ensure all future buildings are built with a minimum finished floor height of 1’ above the crown of the road, unless a variance is granted by the Public Works Department. (Land Development Code) *For NFIP Compliance*

5. Ensure that all flooding sources are documented and that the public is aware of the existence of such mapping services and products for planning purposes. (CRS Outreach, Okaloosa county GIS) *For NFIP Compliance*
6. Ensure that all public buildings that serve first response and critical emergency/public needs, including recording/data collection and communication centers/infrastructure, are located outside of flood zones or flood prone areas. (FEMA, CRS, Land Development Code) *For NFIP Compliance*
7. Ensure communications systems are capable to communicate during and following flood events. (Responsible party: Shalimar Police, Administration) *For NFIP Compliance*
8. Maintain status as a NFIP and CRS community by enforcing both the NFIP requirements and additional criteria that exceeds the NFIP for CRS compliance as a class 8 community.(Land Development Code, FEMA)
9. Support activities that educate the public about the dangers of flooding. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office. (CRS Outreach) *For NFIP Compliance*
10. Ensure the public is informed of pending conditions. (Responsible party: Shalimar Police, Okaloosa county) *For NFIP Compliance*

Section 5.09.04.04 Severe Storms

1. Ensure the public is informed of pending conditions. (Responsible party: Shalimar Police, Okaloosa County)
2. Ensure communications systems are capable to communicate during and following severe storms. (Responsible party: Shalimar Police)
3. Support activities that educate the public about the dangers of severe storms. (Okaloosa County Outreach)

Section 5.09.04.04.01 Tornado and Waterspout

1. Ensure communications systems are capable to communicate during and following tornados and waterspouts. (Responsible party: Shalimar Police)
2. Support activities that educate the public about the dangers of tornados and waterspouts. (FEMA Outreach, Okaloosa County)
3. Support activities to reduce the risk of losing electronic equipment and structures due to tornados and waterspouts. (Responsible party: Shalimar police, Administration)
4. Ensure the public is informed of pending conditions. (Responsible party: Shalimar Police)
5. Develop Emergency Siren System to inform public of eminent tornado/waterspout or straight-line wind conditions. (Responsible party: Shalimar Police)

Section 5.09.04.04.02 Thunderstorms and Lightning

1. Ensure communications systems are capable to communicate during and following intense thunderstorms. (Responsible party: Shalimar Police)
2. Support activities that educate the public about the dangers of thunderstorms. (FEMA Outreach, Okaloosa County)

3. Support activities to reduce the risk of losing electronic equipment due to lightning. (Responsible party: Shalimar police, Administration)
4. Ensure the public is informed of pending conditions. (Responsible party: Shalimar Police)

Section 5.09.04.04.03 Winter Storms

1. Ensure communications systems are capable to communicate during and following winter storms. (Responsible party: Shalimar Police)
2. Ensure winter storm shelters are capable of providing heating systems. (Responsible party: Okaloosa County)
3. Reduce or eliminate the vulnerability to freezing weather in the Town Hall/Police department. (Responsible party: Shalimar Police, Administration, Maintenance)
4. Ensure the public is informed of pending conditions. (Responsible party: Shalimar Police, Okaloosa County)

Section 5.09.04.05 Heat Wave and Drought

1. Ensure communications systems are capable to communicate during and following heat waves and droughts. (Responsible party: Shalimar Police)
2. Ensure host shelters are capable of providing cooling systems. (Responsible party: Okaloosa County)
3. Ensure the public is informed of pending conditions. Responsible party: (Shalimar Police, Okaloosa County)

Section 5.09.04.06 Beach Erosion

1. Beach management actions that address eroding shoreline include these options: (1) hard stabilization, such as seawalls and revetments; (2) soft stabilization, such as beach restoration; (3) retreat, such as abandonment of shoreline development or relocation of threatened buildings; and (4) no action. The long-term beach behavior and its causes usually dictate the appropriate options.

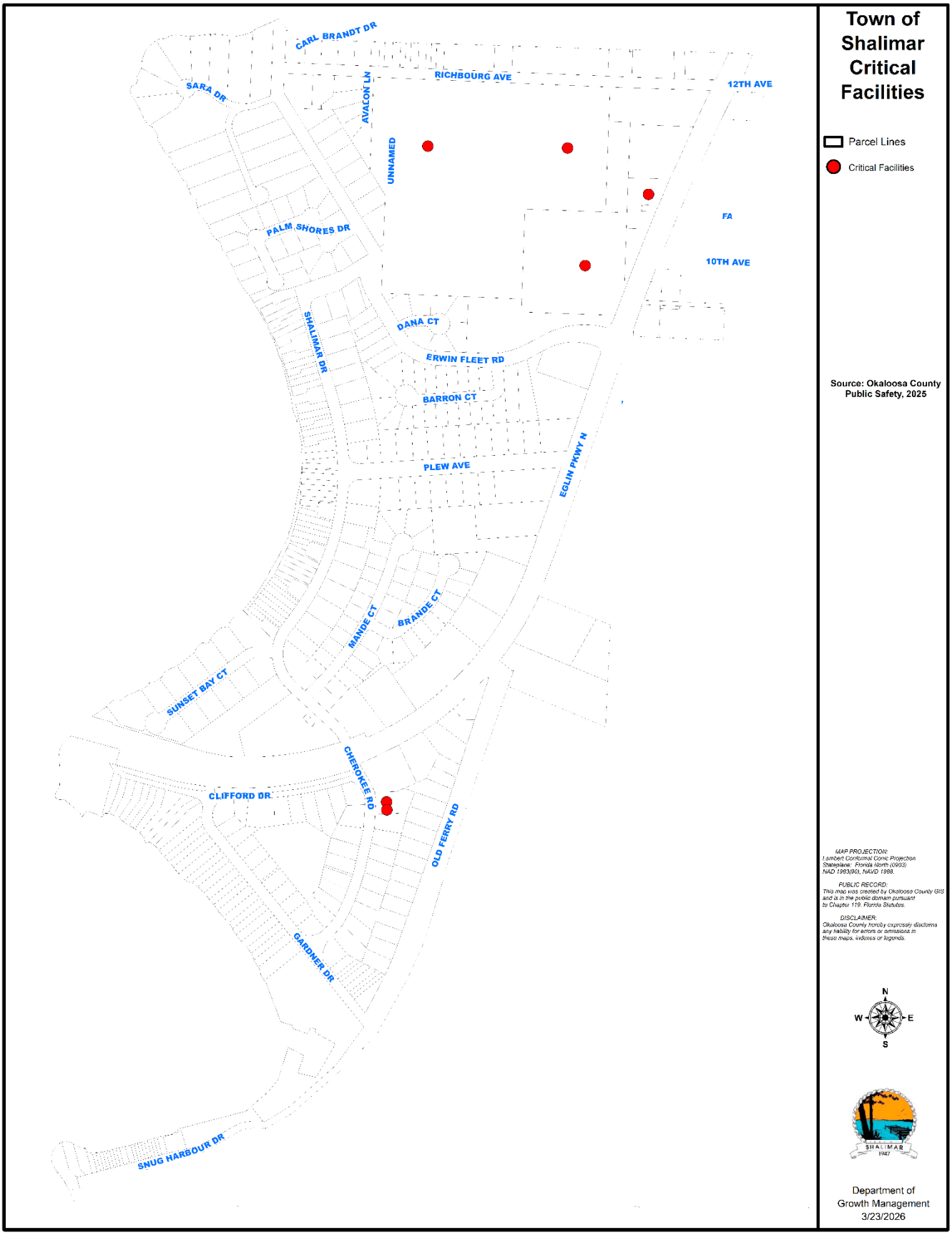
Section 5.09.04.07 Sea Level Rise

The mitigation actions contained in Section 5.09.04.03 Flooding will address the needs for mitigation actions for Sea Level Rise, as well.

Section 5.09.05 Maps

Attached to this page are maps of the Town of Shalimar. They include:

1. Critical Facilities….....5.09-32
2. Evacuation Zones….....5.09-33
3. Flood Zones… 5.09-34
4. Repetitive Loss Properties….....5.09-35
5. Surge Zones….....5.09-36
6. Wildfire Level of Concern… 5.09-37



Town of Shalimar Critical Facilities

Parcel Lines

Critical Facilities

Source: Okaloosa County Public Safety, 2025

MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
NAD 1983(90), NAVD 1988.

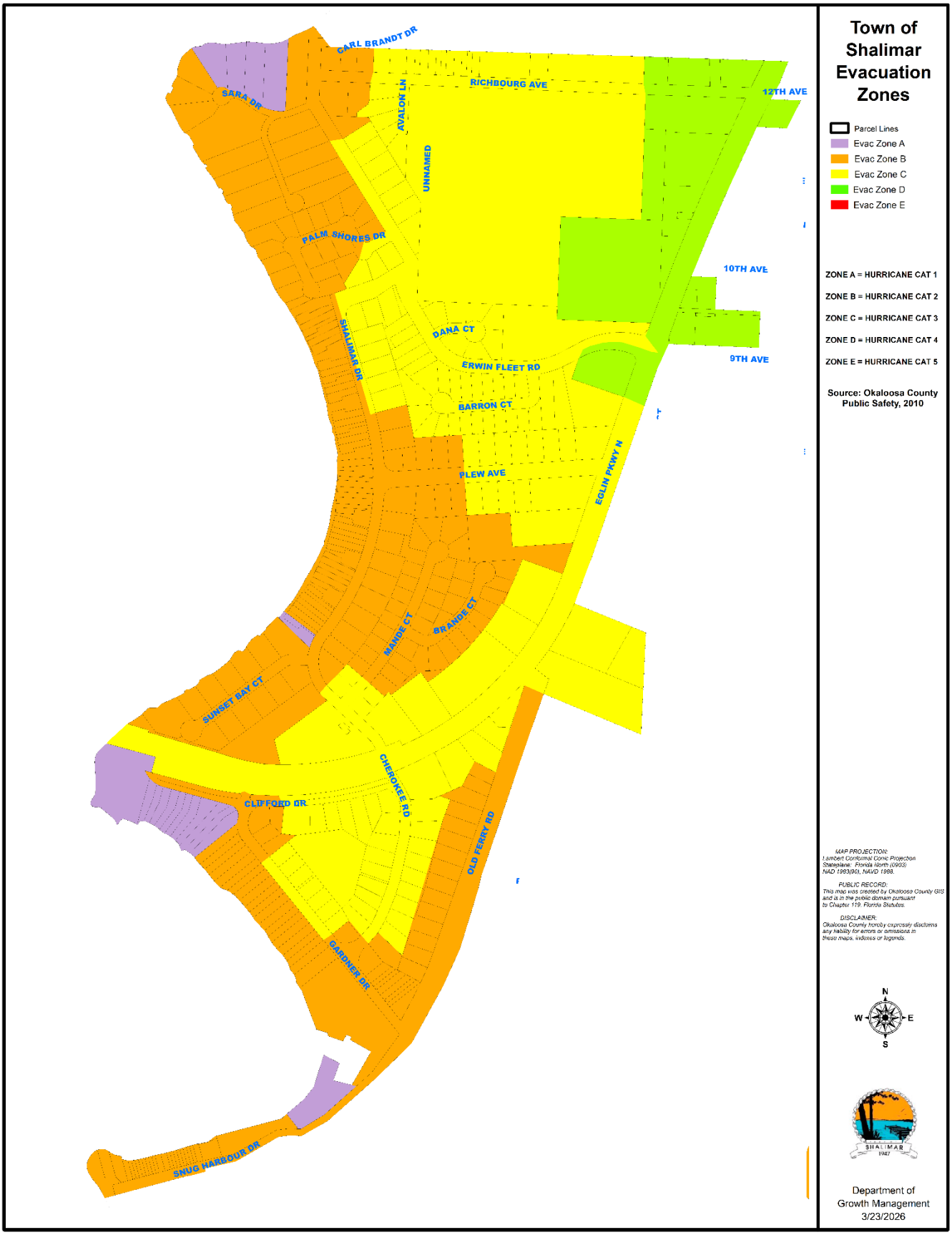
PUBLIC RECORD:
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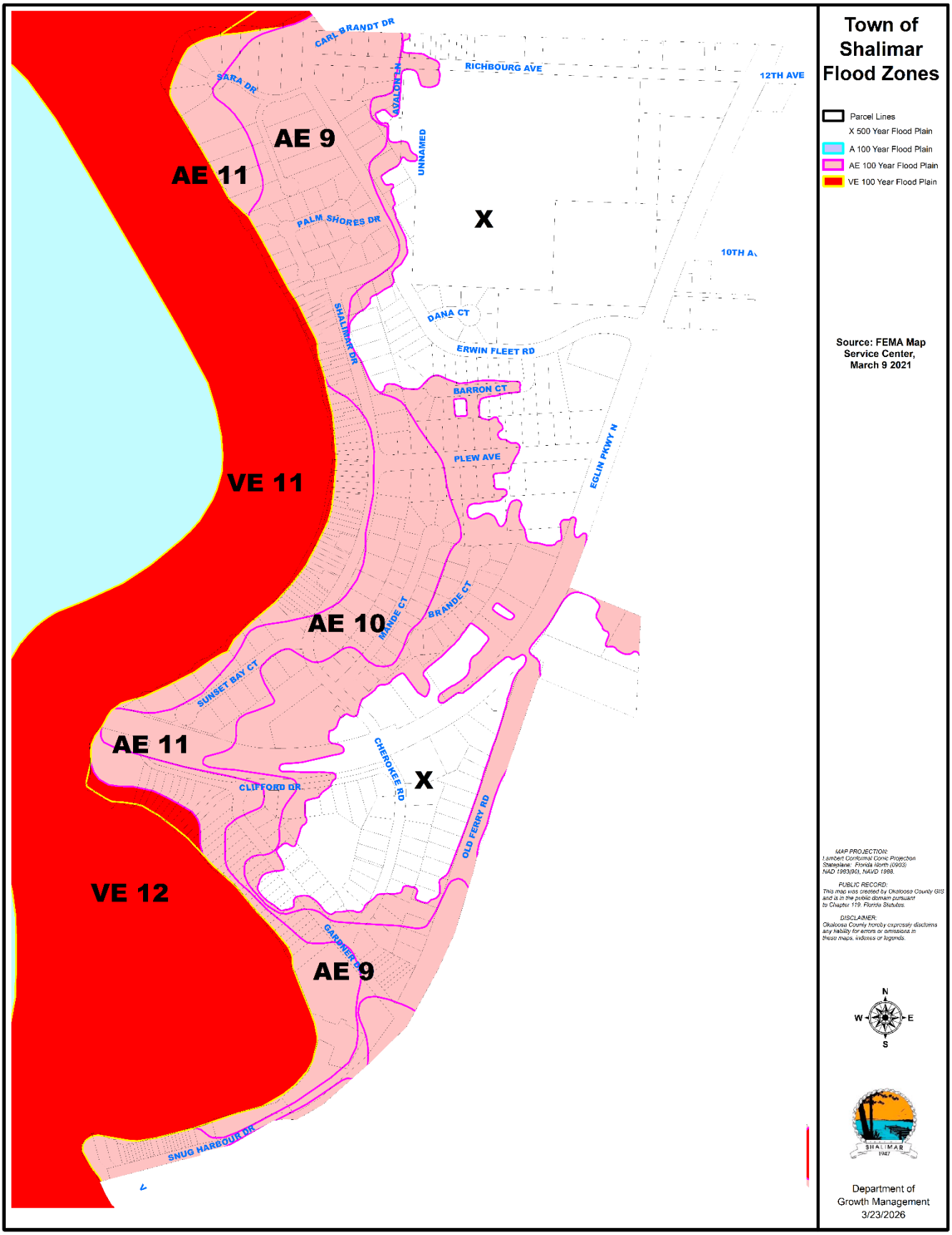
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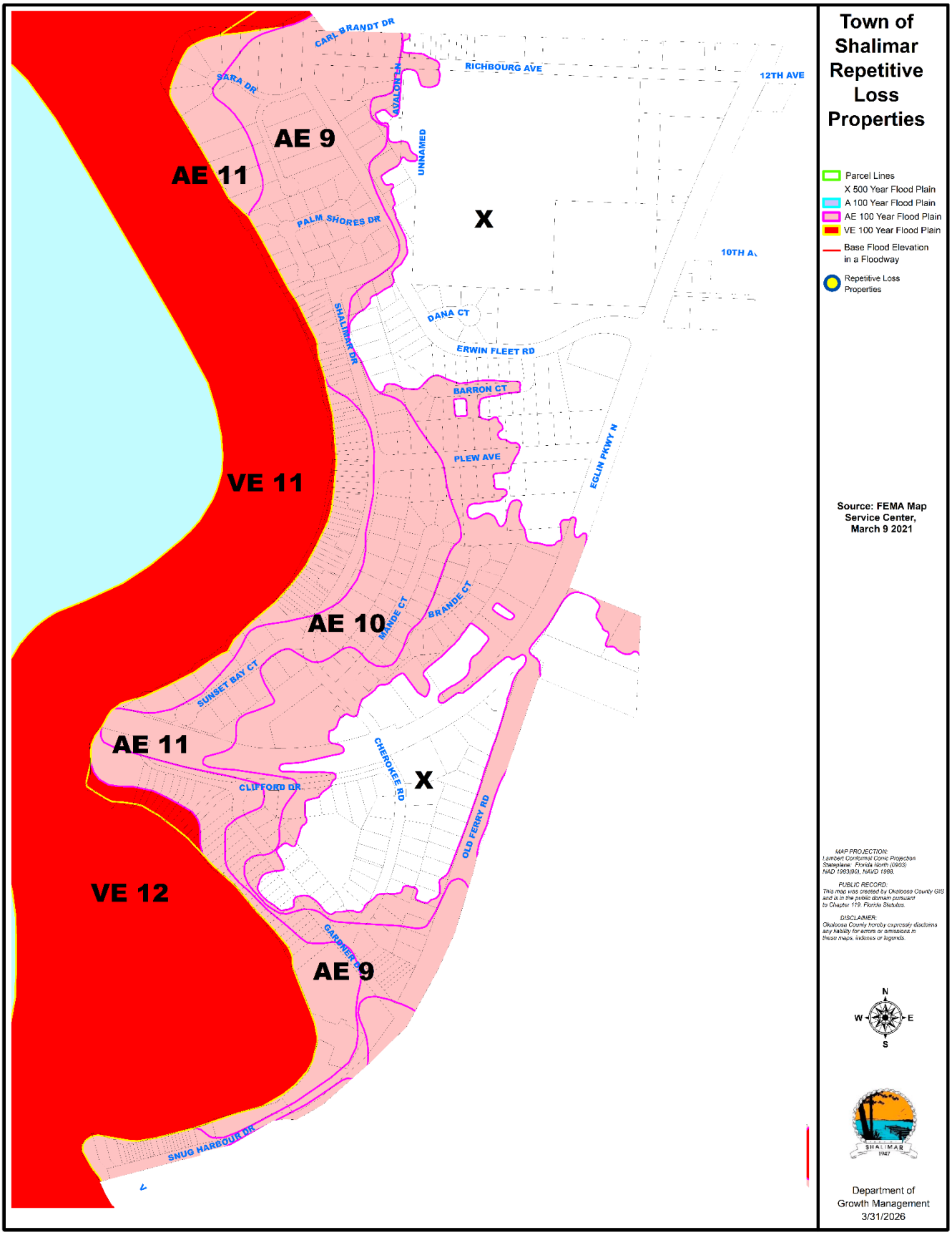
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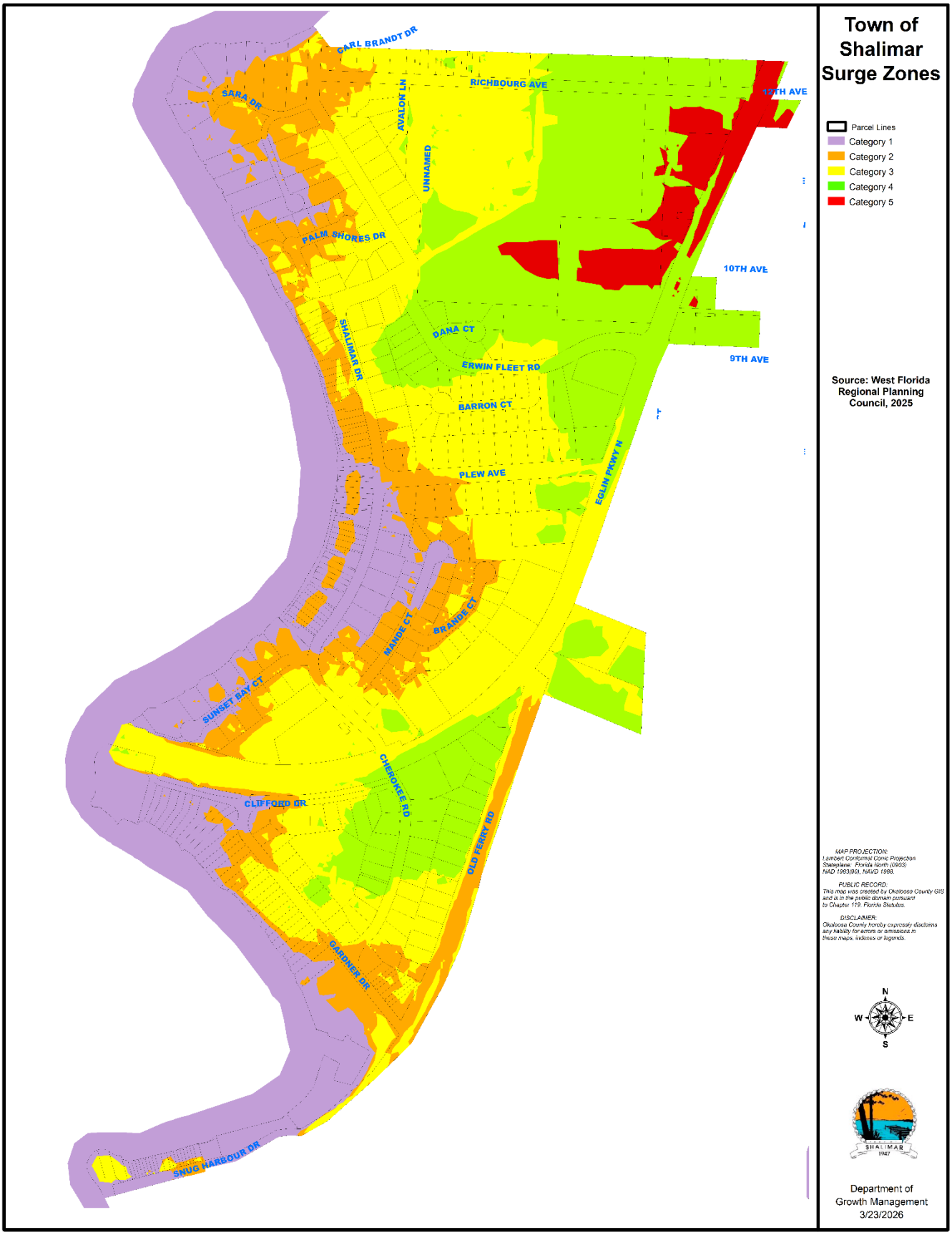
SHALIMAR 1947

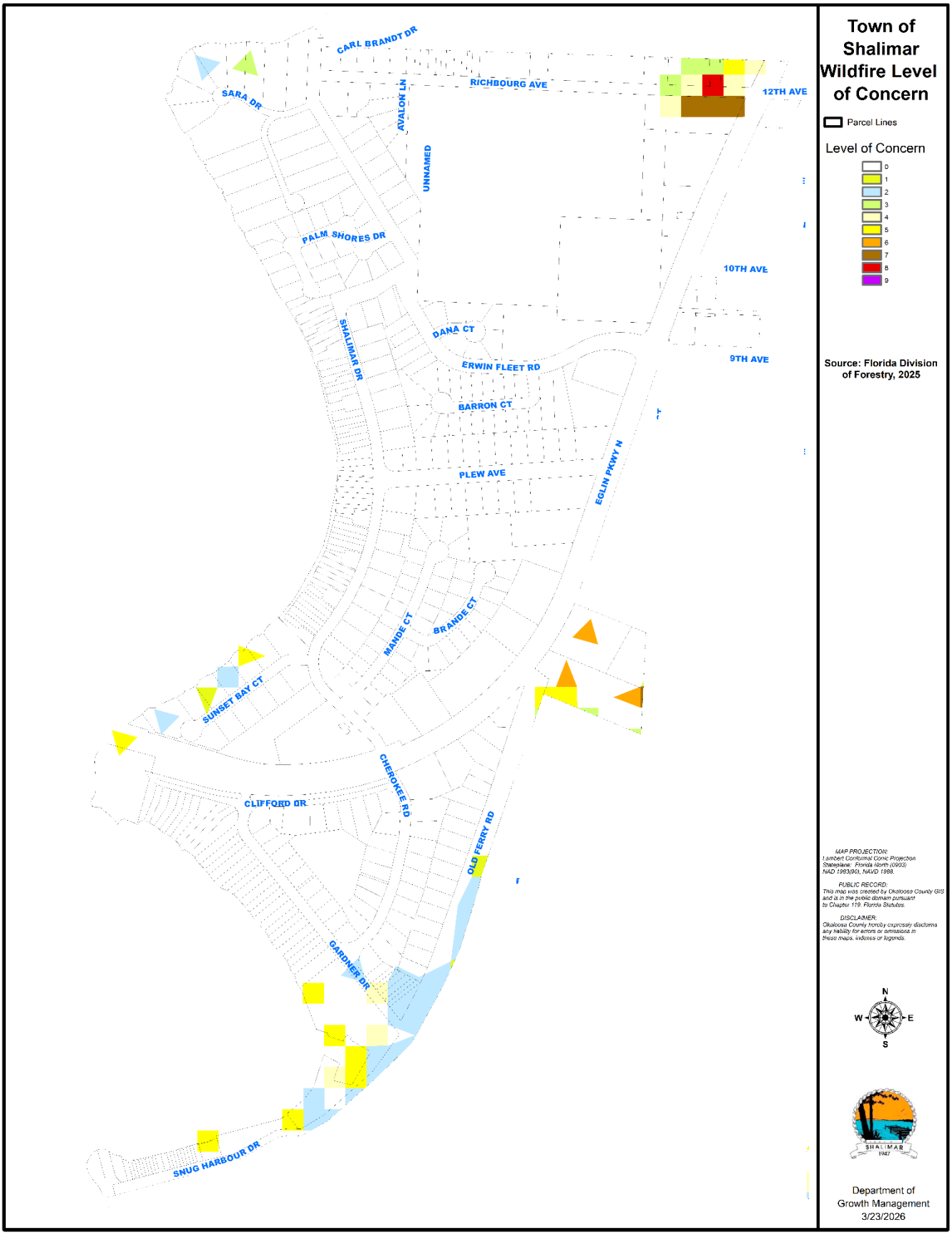
Department of Growth Management
3/23/2026


CARL BRANDT DR
SARA DR
AVALON LN
RICHBOURG AVE
12TH AVE
UNNAMED
PALM SHORES DR
10TH AVE
SHALIMAR DR
DANA CT
ERWIN FLEET RD
9TH AVE
BARRON CT
EGLIN PKWY N
PLEW AVE
MANDE CT
BRANDE CT
SUNSET BAY CT
CHEROKEE RD
CLIFFORD DR
OLD FERRY RD
GARDNER DR
SNUG HARBOUR DR
Town of Shalimar Evacuation Zones
Parcel Lines
Evac Zone A
Evac Zone B
Evac Zone C
Evac Zone D
Evac Zone E
ZONE A = HURRICANE CAT 1
ZONE B = HURRICANE CAT 2
ZONE C = HURRICANE CAT 3
ZONE D = HURRICANE CAT 4
ZONE E = HURRICANE CAT 5
Source: Okaloosa County Public Safety, 2010
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Town of Shalimar Flood Zones
Parcel Lines
X 500 Year Flood Plain
A 100 Year Flood Plain
AE 100 Year Flood Plain
VE 100 Year Flood Plain
Source: FEMA Map Service Center, March 9 2021
MAP PROJECTION:
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Department of Growth Management
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AE 9
AE 11
VE 11
AE 10
AE 11
VE 12
AE 9
X
X
CARL BRANDT DR
SARA DR
RICHBOURG AVE
12TH AVE
UNNAMED
PALM SHORES DR
SHALIMAR DR
DANA CT
ERWIN FLEET RD
BARRON CT
PLEW AVE
EGLIN PKWY N
MANDE CT
BRANDE CT
SUNSET BAY CT
CLIFFORD DR
CHEROKEE RD
OLD FERRY RD
GARDNER DR
SNUG HARBOUR DR


Town of Shalimar Repetitive Loss Properties
Parcel Lines
X 500 Year Flood Plain
A 100 Year Flood Plain
AE 100 Year Flood Plain
VE 100 Year Flood Plain
Base Flood Elevation in a Floodway
Repetitive Loss Properties
Source: FEMA Map Service Center, March 9 2021
MAP PROJECTION:
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Stateplane: Florida North (0903)
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AE 11
AE 9
VE 11
X
AE 10
AE 11
X
VE 12
AE 9
CARL BRANDT DR
SARA DR
RICHBOURG AVE
12TH AVE
UNNAMED
PALM SHORES DR
10TH A
SHALIMAR DR
DANA CT
ERWIN FLEET RD
BARRON CT
PLEW AVE
EGLIN PKWY N
MANDE CT
BRANDE CT
SUNSET BAY CT
CHEROKEE RD
CLIFFORD DR
OLD FERRY RD
GARDNER DR
SNUG HARBOUR DR


Town of Shalimar Surge Zones
Parcel Lines
Category 1
Category 2
Category 3
Category 4
Category 5
Source: West Florida Regional Planning Council, 2025
CARL BRANDT DR
SARA DR
AVALON LN
UNNAMED
RICHBOURG AVE
12TH AVE
PALM SHORES DR
10TH AVE
SHALIMAR DR
DANA CT
ERWIN FLEET RD
9TH AVE
BARRON CT
PLEW AVE
EGLIN PKWY N
BRANDE CT
MANDE CT
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MAP PROJECTION:
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3/23/2026



Town of Shalimar Wildfire Level of Concern

Parcel Lines

Level of Concern

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4
5
6
7
8
9

Source: Florida Division of Forestry, 2025

MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
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Department of Growth Management
3/23/2026

Section 5.09.06 Post Disaster Redevelopment Plan

Attached to this page is the post disaster redevelopment plan adopted by the Town of Shalimar in July of 1992. This plan is still in effect.

Section 5.10

Unincorporated Okaloosa County



Unincorporated Okaloosa County

Section 5.10.01 Risk Assessments

Section 5.10.01.01 Introduction

The intent of this section is to provide information regarding the hazards threatening the unincorporated areas of Okaloosa County. In this section, information relevant to the areas outside of the municipalities is compiled and an overview of the analyses is provided.

Okaloosa County was founded in 1915, being created from portions of Santa Rosa and Walton counties. As a duly constituted government, Okaloosa County has all the powers and authority granted to local governments found in Chapter 125 of the Florida Statutes as well as Article VIII of Section 2 of the Florida Constitution to exercise any governmental, corporate, or proprietary power for municipal purposes, provided they are not expressly prohibited by law. These powers allow Okaloosa County to govern itself, deliver services, enact and enforce ordinances, and set policy. The County has all the financial resources granted by the Florida Constitution and Florida Statutes which are available to support the mitigation strategies discussed in this section. A more complete description of the County's administrative structure and capabilities is provided in Section 5.10.02.

The hazards that will be analyzed in this section are natural events and the analyses concentrate on the anthropogenic influence on those events as well as the effects of those events on mankind. However, this analysis is not an assessment of technological and/or societal hazards and, therefore, these types of events are not covered under this plan or in the analysis provided in this section.

Primary attention is given to hazards (with sub-sections) considered reasonably possible to occur in the County. These hazards include:

- Hurricane and Tropical Storm
- Storm Surge
- Flooding
- Dam Safety
- Land Erosion
- Severe Storms
    - Tornado and Waterspout
    - Thunderstorms and Lightning
    - Winter Storms
- Heat Wave and Drought
    - Heat Wave
    - Drought
- Wildfire
- Beach Erosion
- Sea Level Rise

Unincorporated Okaloosa County

The following hazards have minimal or no risk to the unincorporated areas of Okaloosa County: sinkholes, expansive soils, earthquakes, avalanches, land subsidence, landslides, volcanoes, and tsunamis. Therefore, these hazards are not analyzed in any depth in the hazard analysis. Further explanation is provided in the "Other Hazards" section.

The County will incorporate the findings and recommendations of the LMS into its planning mechanisms through integration with its Comprehensive Plan, capital improvement programs, land development regulations, and emergency management plans. LMS-identified hazards, vulnerabilities, and mitigation actions are considered during project prioritization, budgeting, and policy development to ensure consistency with long-term resilience objectives. Additionally, the city will utilize the LMS to support grant applications, inform development review processes, and guide post-disaster recovery and redevelopment decisions. This coordinated approach ensures that hazard mitigation principles are systematically embedded into local planning and decision-making processes.

Hazard Identification

The technical planning process begins with hazard identification. In this process, Okaloosa County Staff has identified all of the natural hazards that threaten the unincorporated areas of the county.

Section 5.10.01.02 Hurricane and Tropical Storm

DEFINITIONS:
Please refer back to the Risk Assessment of the overall County for the definitions of this hazard.

HISTORICAL OCCURRENCE:
Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard because all of Okaloosa County and its jurisdictions are equally susceptible to this hazard.

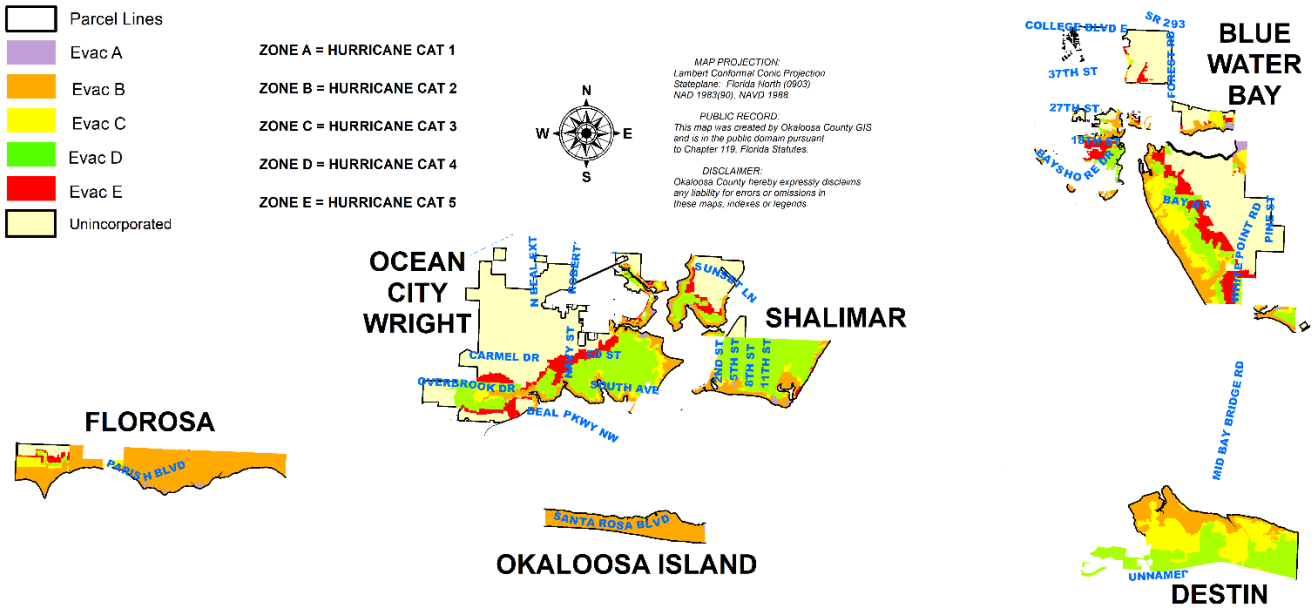
EXTENT:
High winds from hurricanes are a substantial threat to all homes, especially manufactured housing. Category 3 or higher force winds would likely cause substantial damage throughout the unincorporated areas of the County. Winds in excess of 155 MPH could be experienced in a major Category 5 hurricane in some locations. Traditional stud and brick veneer or siding homes and businesses are vulnerable, as well, especially when hurricane shutters are not used. Relatively few businesses and homes have hurricane shutters in the County, although shelters and some critical facilities are shuttered.

In the worst-case scenario of a Category 5 hurricane, there will be catastrophic damage to homes and buildings, trees, power poles, and signage. Category 5 winds of in excess of 155 MPH will cause significant damage to all buildings, with loss of roof sheathing, broken windows, and in some cases wall failure resulting in a structural collapse. It is likely that any mobile home experiencing a Category 5 Hurricane winds would be completely destroyed. The majority of trees

will be snapped in two and power poles downed. In some cases, this will result in power outages that could last for weeks or months. People and animals would be at an extremely high risk of injury or death as a result of the strong, forceful winds causing flying or falling debris.

Hurricane Ivan, a category 3 hurricane, made landfall in Gulf Shores, Alabama and had a storm surge of 10 to 15 feet along the gulf shoreline. Ivan also caused an estimated $14.2 billion in damage to structures and infrastructure in the United States alone. (NOAA: Hurricane History)

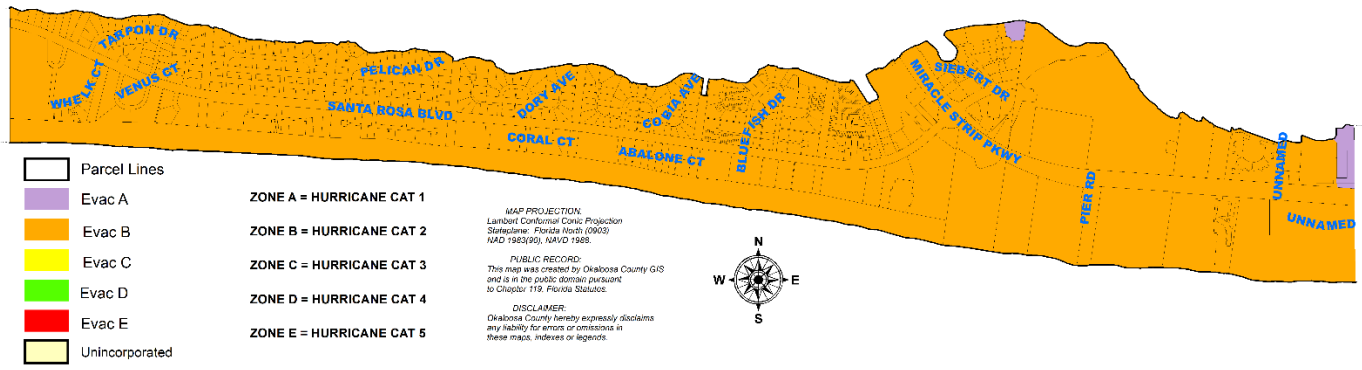
Figure 5.10.01.02.1: Evacuation Zones for the southern unincorporated area of Okaloosa County



Source: Okaloosa County Public Safety / Okaloosa County GIS, 2023

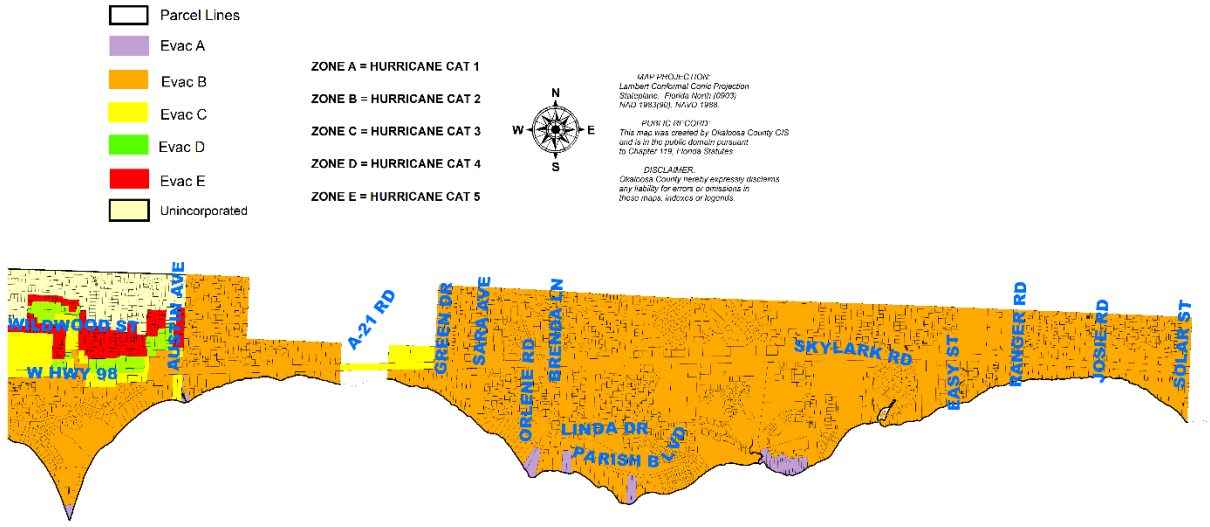
Figure 5.10.01.02.2: Evacuation Zones for the unincorporated area of Okaloosa Island

Unincorporated Okaloosa County



Source: Okaloosa County Public Safety / Okaloosa County GIS, 2023

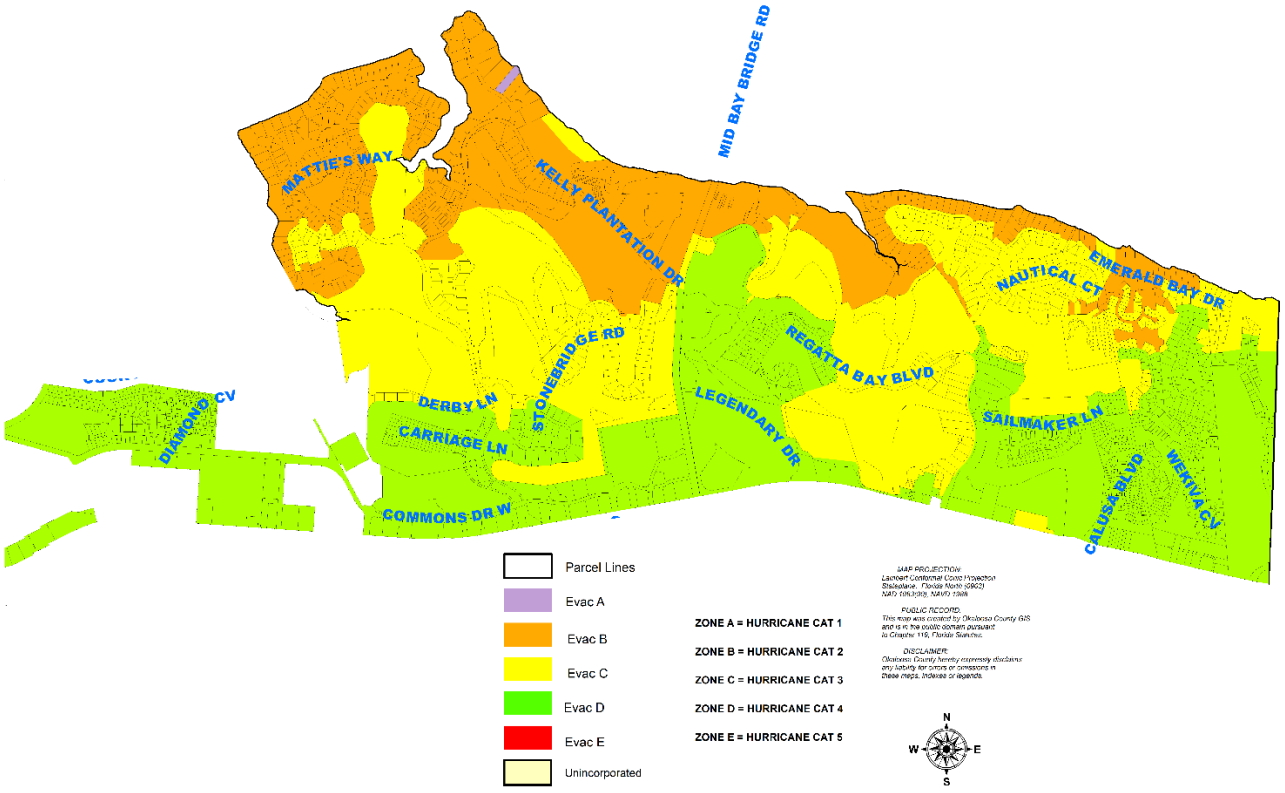
Figure 5.10.01.02.3: Evacuation Zones for the unincorporated area of Florosa



Source: Okaloosa County Public Safety / Okaloosa County GIS, 2023

Unincorporated Okaloosa County

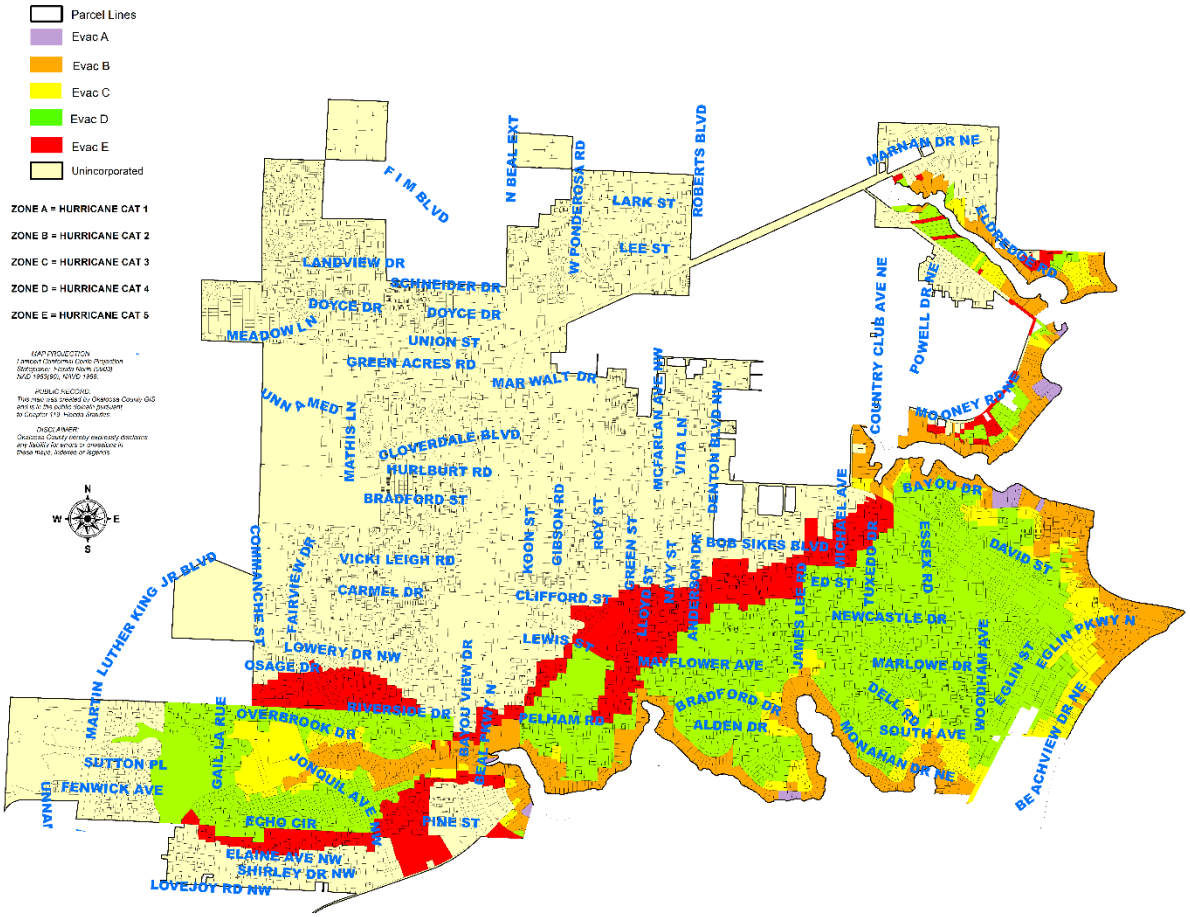
Figure 5.10.01.02.4: Evacuation Zones for the unincorporated area around the City of Destin



Source: Okaloosa County Public Safety / Okaloosa County GIS, 2023

Unincorporated Okaloosa County

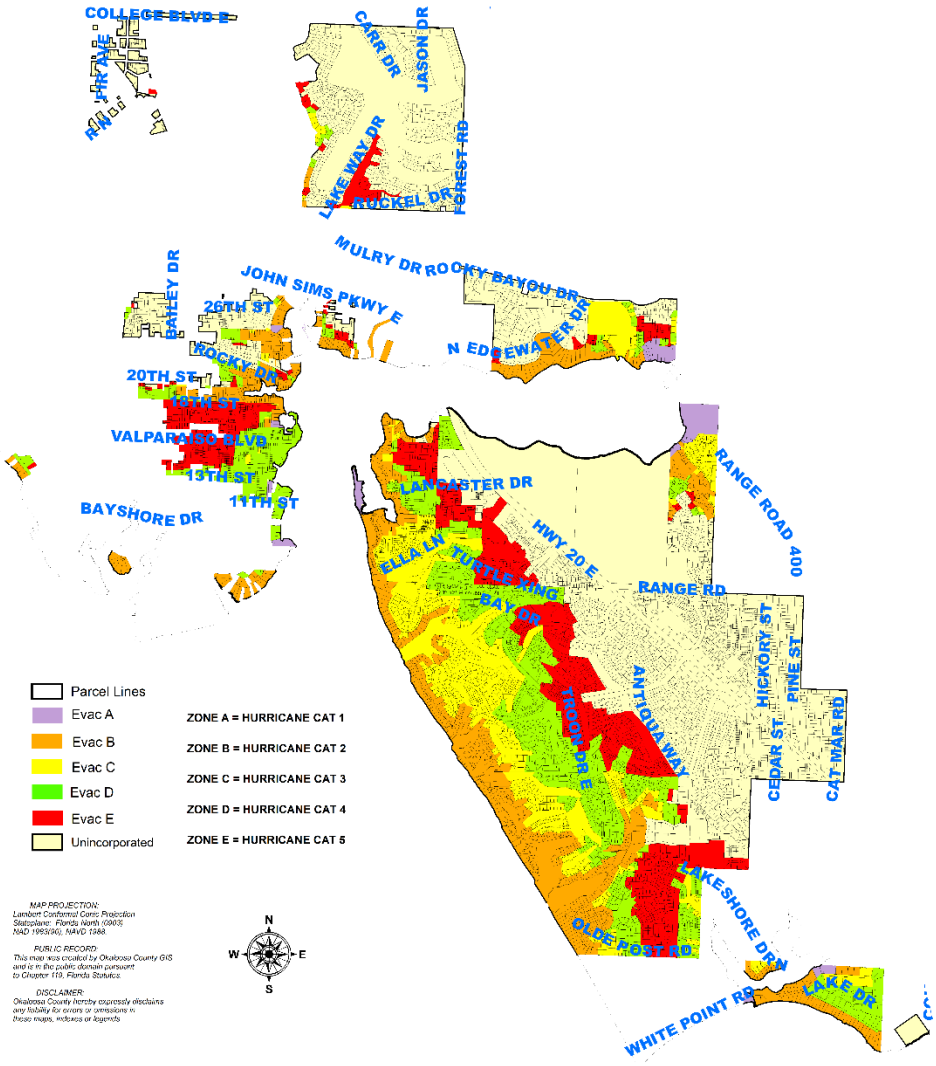
Figure 5.10.01.02.5: Evacuation Zones for the unincorporated area of Ocean City Wright



Source: Okaloosa County Public Safety / Okaloosa County GIS, 2023

Unincorporated Okaloosa County

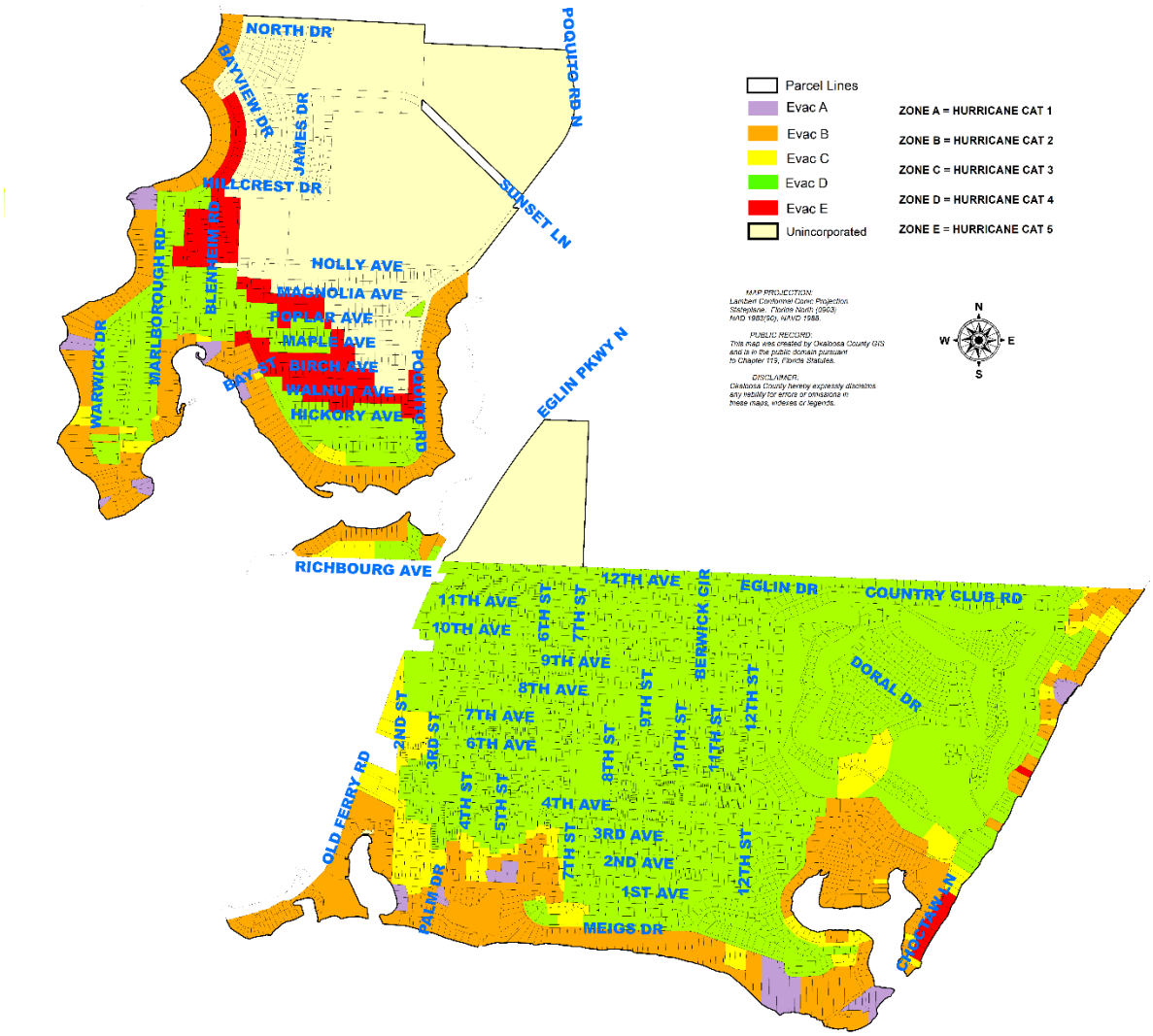
Figure 5.10.01.02.6: Evacuation Zones for the unincorporated area of Bluewater Bay



Source: Okaloosa County Public Safety / Okaloosa County GIS, 2023

Unincorporated Okaloosa County

Figure 5.10.01.02.7: Evacuation Zones for the unincorporated area around the Town of Shalimar



Source: Okaloosa County Public Safety / Okaloosa County GIS, 2023

PROBABILITY:
According to Colorado State University's United States Landfalling Hurricane Probability Project, Okaloosa County has the following future probabilities in a 50-year time period.

Table 5.10.01.02.1: 50-Year Probabilities of Named Storm, Tropical Storm, and Hurricane Making Landfall in Okaloosa County

1 or More Named Storms Making Landfall	1 or More Hurricanes Making Landfall	1 or More Intense Hurricanes Making Landfall	Tropical Storm-Force (≥ 40 mph) Wind Gusts	Hurricane-Force (≥ 75 mph) Wind Gusts	Intense Hurricane-Force (≥115 mph) Wind Gusts
90.90%	68.60%	40.50%	>99.9%	99.60%	82.30%

Source: The United States Landfalling Hurricane Web Project, 2024

Section 5.10.01.03 Storm Surge

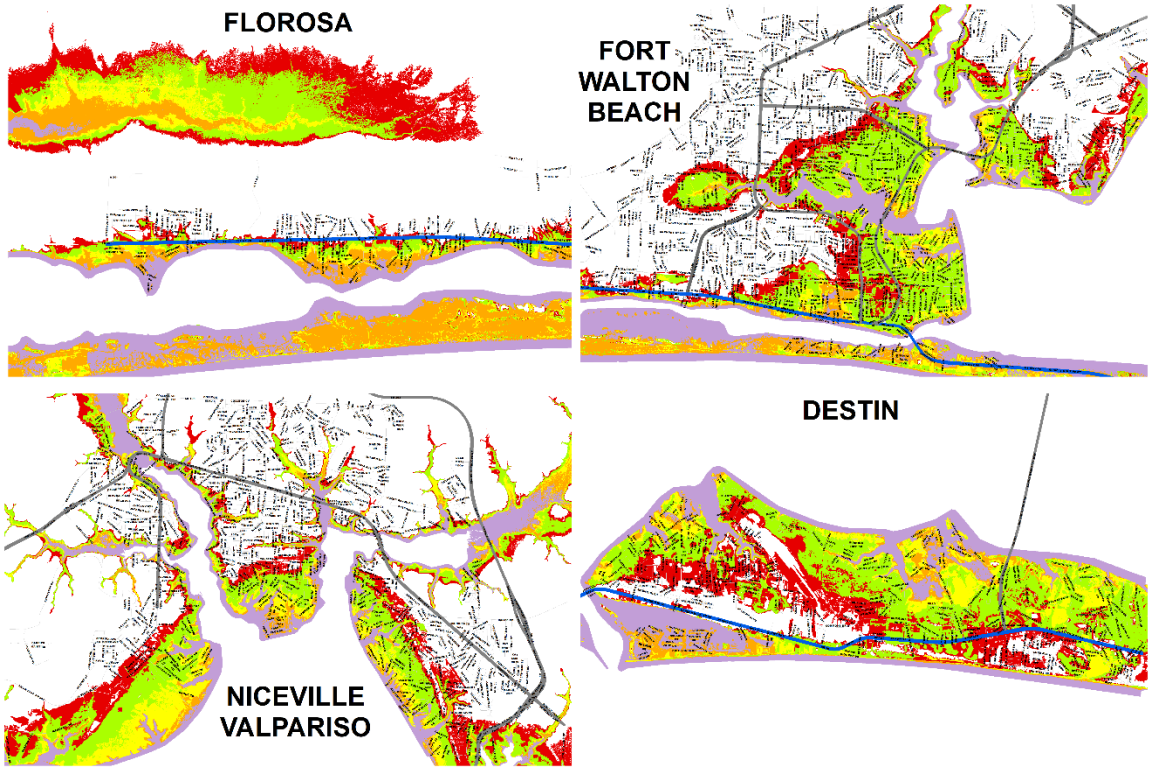
DEFINITION:
Please refer to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
Please refer to the Risk Assessment of the overall County for the historical occurrences of this hazard because the bay and coastal areas of Okaloosa County are equally susceptible to this hazard.

EXTENT:
In the worst-case scenario, some of the coastal areas of unincorporated Okaloosa County may experience storm surge levels up to 21 feet above mean sea level during a Category 5 hurricane (see Table 5.10.01.03.1). The high storm surge levels will cause significant flooding of residential and commercial structures, power outages, and storm sewer overflow. Also, beach erosion will be accelerated along the coastal areas causing significant damage to and/or the collapse of a majority of the homes and buildings, docks, and other structures along the coast. The hazard of beach erosion will be further examined in another section. The figure below displays the extent of the storm surge levels associated with each of the hurricane categories.

Unincorporated Okaloosa County

Figure 5.10.01.03.1: Southern Okaloosa County's Exposure to Storm Surge



Source: Emeral Coast Regional Council, 2023

The largest area of the county susceptible to storm surge are the areas lying adjacent to Choctawhatchee Bay and the Gulf of Mexico. These areas include virtually the entire southern portion of the county, totaling roughly 74,236 people in the unincorporated area. This population estimate was extrapolated from 2020 Census data, which can be seen in Table 5.10.01.04.1 in the Flooding section. The central drainage area for the Choctawhatchee River, located in the southern portion of the county, is a low lying area and therefore very vulnerable to storm surge.

PROBABILITY:
It is evident that, regardless of the storms' level of intensity, the storm surges associated with them greatly vary. This fact is recognized in the updated Saffir-Simpson Hurricane Wind Scale from which storm surge has been removed due to the difficulties in its prediction. Therefore, a probability of future occurrence cannot be determined. However, the *potential* storm surge levels can be determined for the unincorporated coastal area within the county (see Table 5.10.01.03.1, below).

Table 5.10.01.03.1: Potential Storm Surge Level for Hurricane Categories

HISTORY POINT (Description)	HURRICANE SURGE ELEVATION (in feet above mean sea level)				
	CAT 1	CAT 2	CAT 3	CAT 4	CAT 5
Santa Rosa Sound/Florosa	3.6	5.2	10.8	15.4	18
Santa Rosa Sound near Mary Esther	3.3	4.8	9.9	15.3	17.2
Santa Rosa Sound near City Hall	3.6	5.3	8.7	14.5	17.1
Gap Creek	4.4	6.9	9.4	16	18.3
Cinco Bayou	4.2	6.4	8.8	14.4	17.4
Garnier Bayou (near EOC)	4.1	6.5	8.7	14.4	17.7
Choctawhatchee Bay	3.7	5.7	7.4	13.8	16.8
East Pass	4.9	8	11.6	13.5	16.7
Joe's Bayou	3.3	5.2	6.7	12.9	15.8
Indian Bayou	3.1	4.7	6.2	12.2	15
Piney Point	3.2	4.8	6.2	12	14.8
Mouth of Rocky Bayou	3.7	5.6	7.4	13.1	16.1
Upper Rocky Bayou	4.3	6.6	7.9	13.4	16.4
White Point	3.3	5	6.4	12.2	14.9

Source: Emeral Coast Regional Council, 2024

Section 5.10.01.04 Flooding

DEFINITION:
Please refer to the Risk Assessment of the overall County for the definition of this hazard.

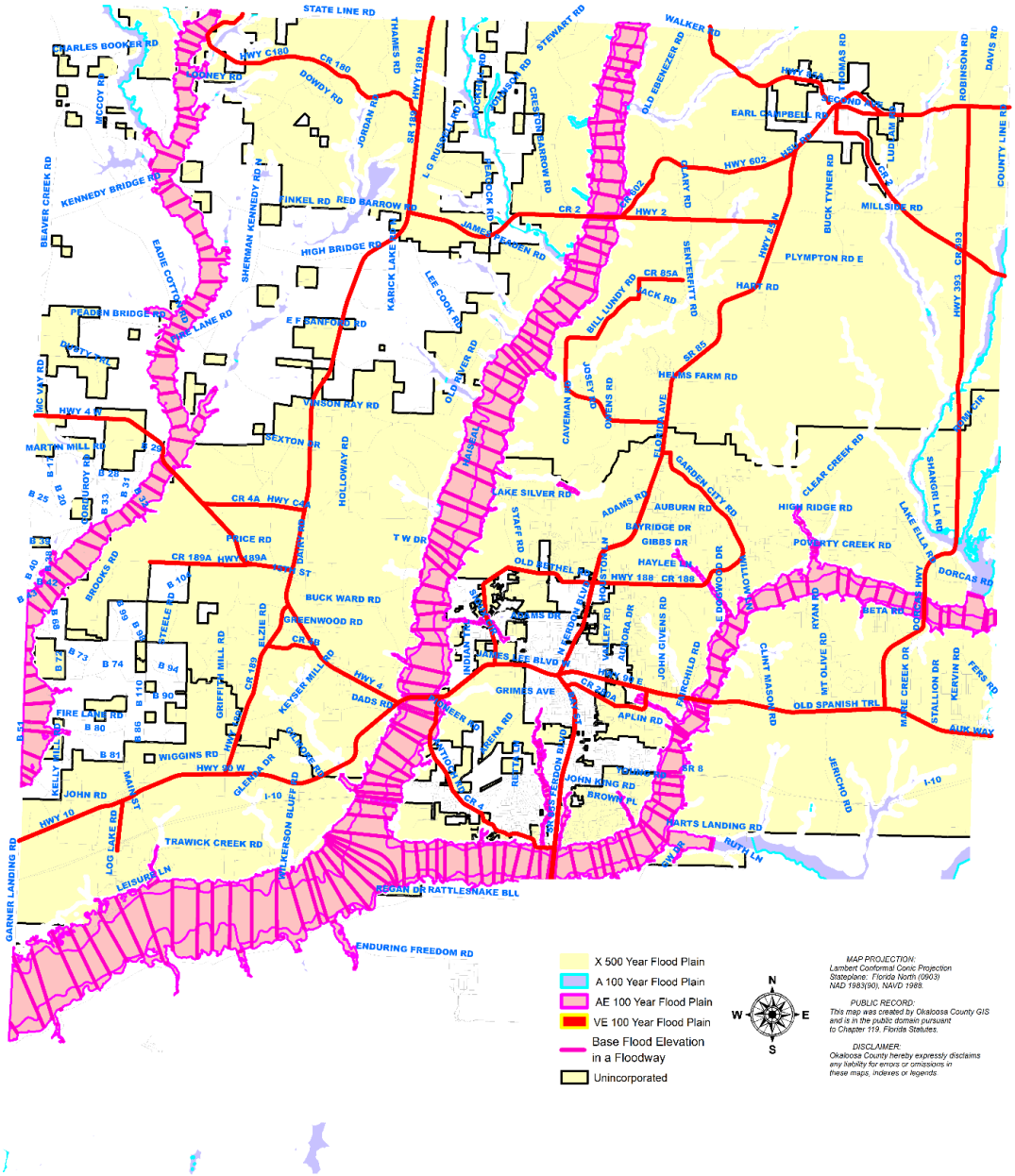
HISTORICAL OCCURRENCE:
Please refer to the Risk Assessment of the overall County for the historical occurrences of this hazard because all of Okaloosa County is equally susceptible to this hazard.

EXTENT:
Flooding can severely impact the unincorporated areas of Okaloosa County's road network. There are approximately 301 miles of arterial and collector roads in Okaloosa County. Out of this total, 275 miles of these roads are located in the NFIP X Zone (500 Year Flood Zone) and 27 miles located in the NFIP Special Flood Hazard Zone. Many of the State and County roads in the unincorporated areas of Okaloosa County may be susceptible to flooding during moderate to heavy rain events.

The worst-case scenario in terms of flooding in the unincorporated areas would be if widespread flooding resulted in property damage and losses, power outages, storm sewer overflow, and road-closures. Properties located in the 1% chance per year (AE and A) and velocity (VE) flood zones will be impacted more severely than the rest of the areas, which are located in flood zone X (500 year flood plain). Also, there is a small area located in the X-.2% flood zone (.2% probability of flooding per year), which has a slightly greater risk of experiencing flooding than in an X flood zone. The following figures depict the flood zones for Okaloosa County's unincorporated area as

provided in the most recent FEMA Flood Insurance Rate Maps (FIRMs) and Flood Insurance Study (FIS) for Okaloosa County, Florida, which became effective on **March 9, 2021**.

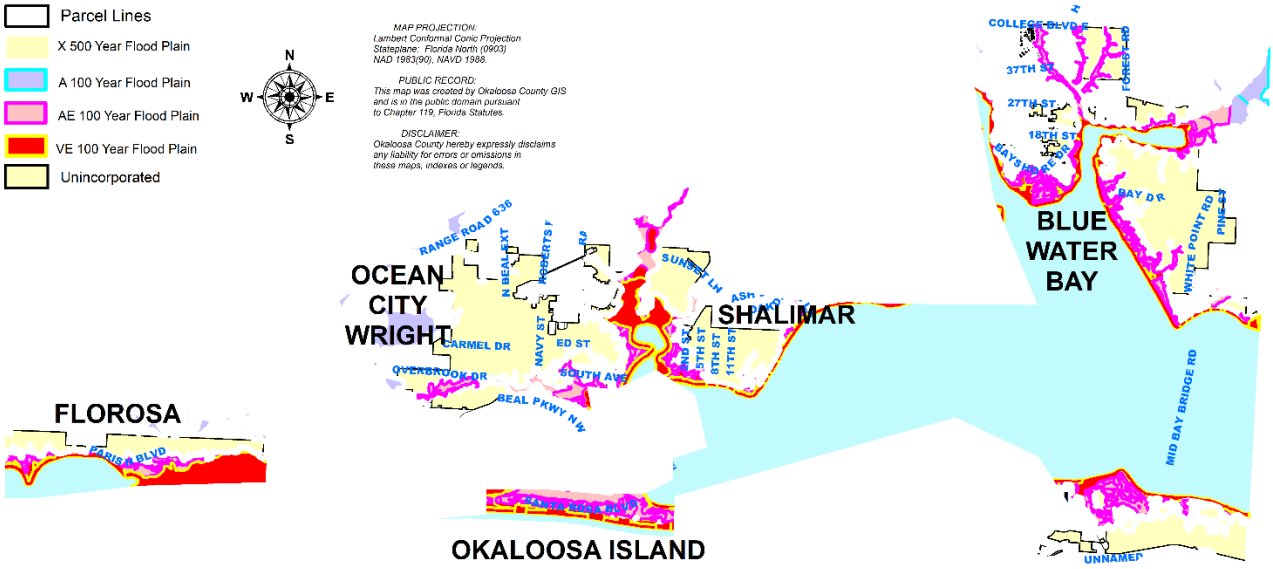
Figure 5.10.01.04.1: Northern Unincorporated Okaloosa County Flood Zones



Source: FEMA Map Service Center, March 9, 2021

Unincorporated Okaloosa County

Figure 5.10.01.04.2: Southern Unincorporated Flood Zones

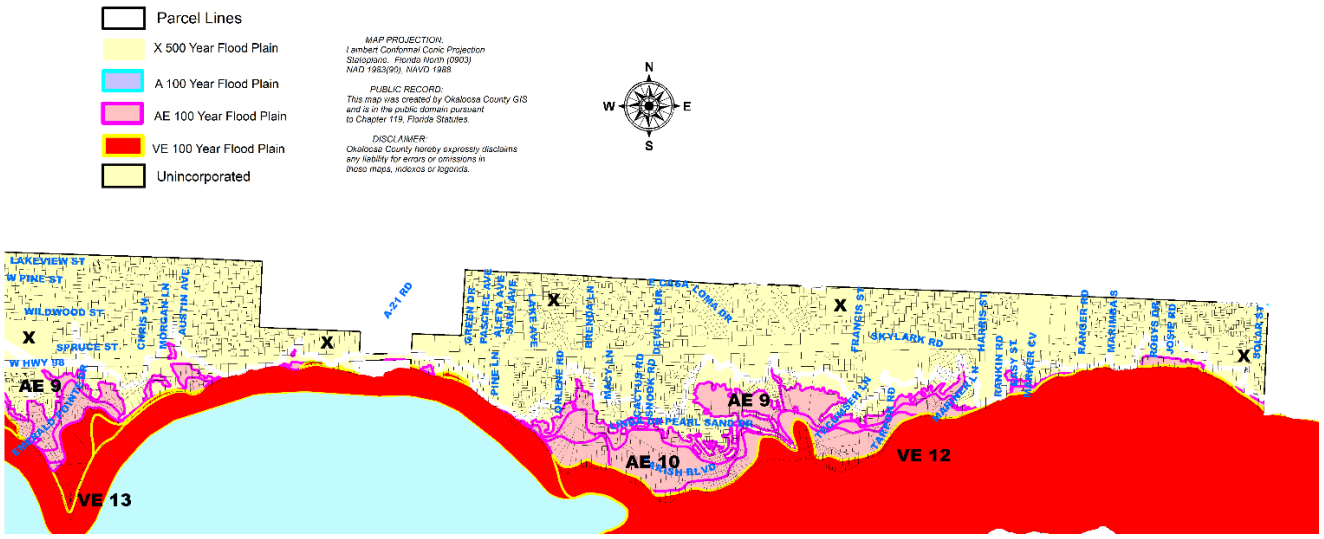


Source: FEMA Map Service Center, March 9, 2021

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Unincorporated Okaloosa County

Figure 5.10.01.04.3: Unincorporated Area of Florosa Flood Zones

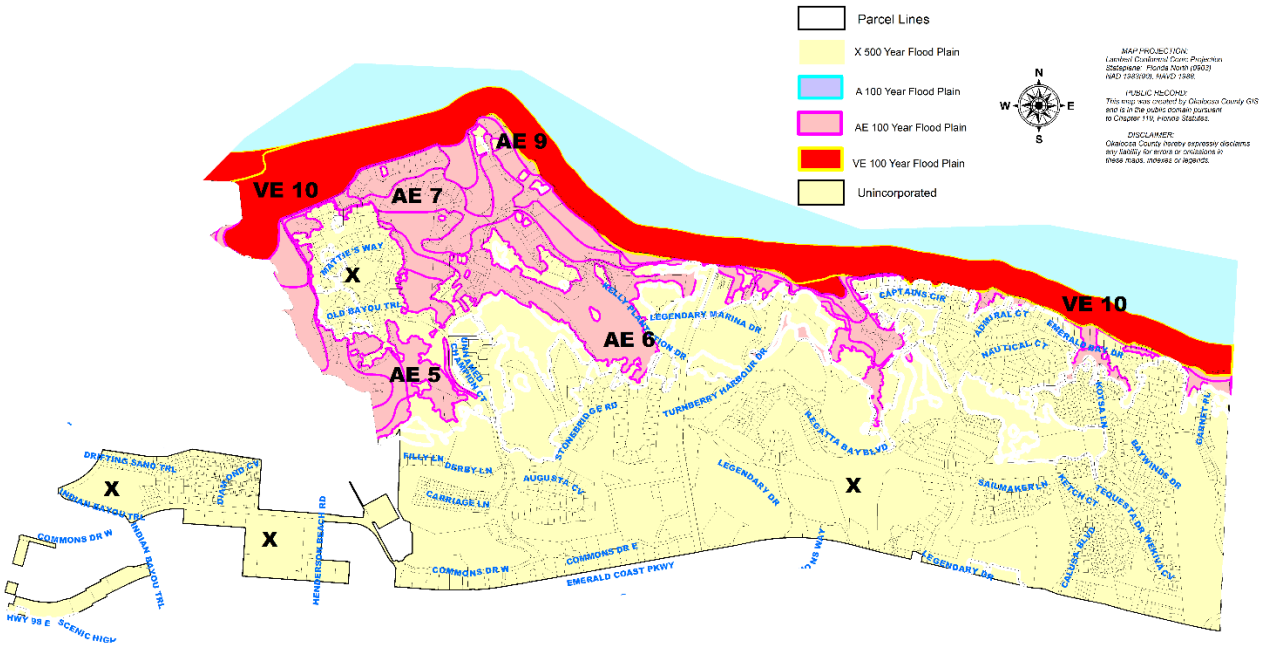


Source: FEMA Map Service Center, March 9, 2021

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Unincorporated Okaloosa County

Figure 5.10.01.04.4: Flood Zones of the Unincorporated Area around the City of Destin

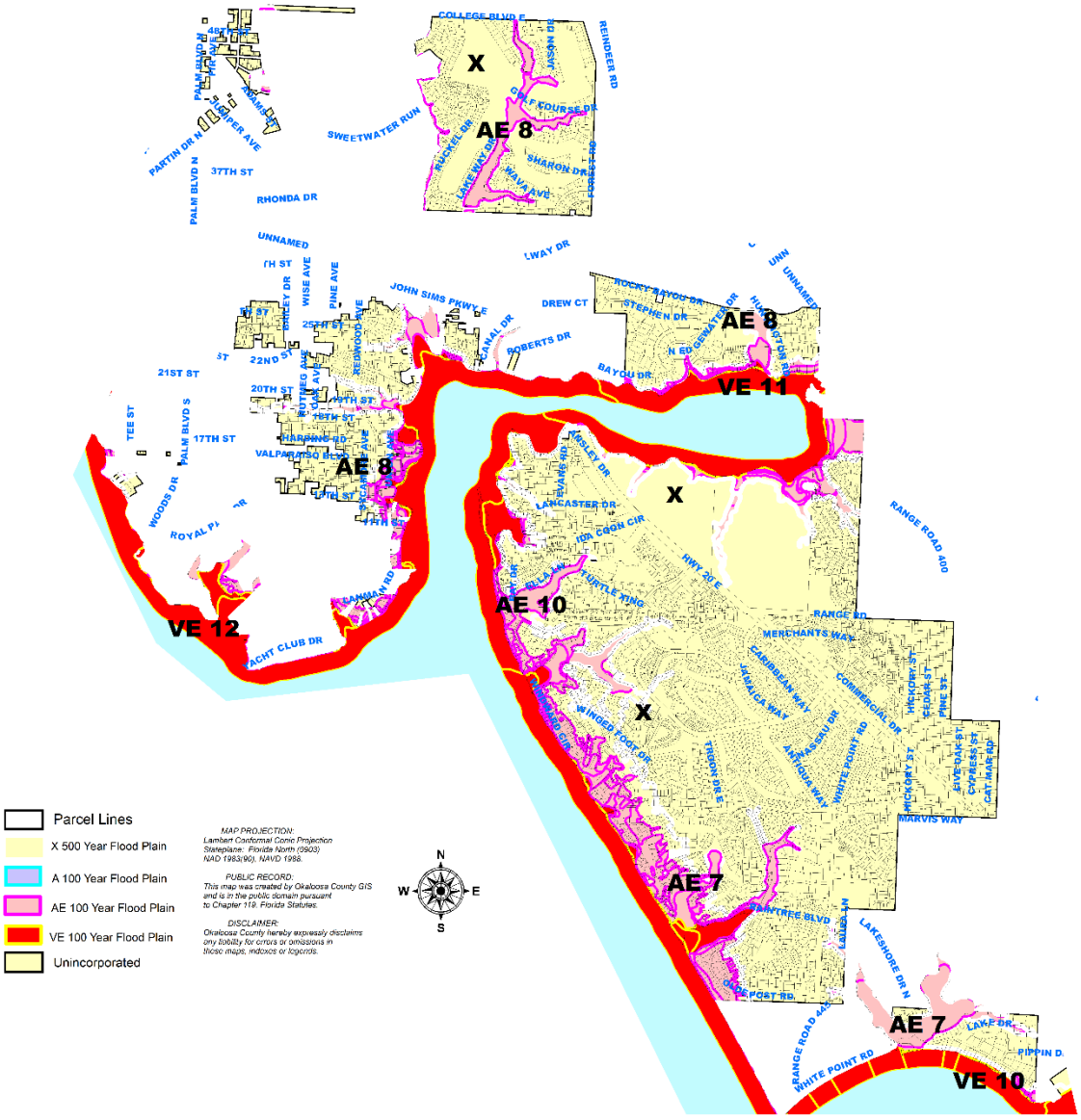


Source: FEMA Map Service Center, March 9, 2021

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Unincorporated Okaloosa County

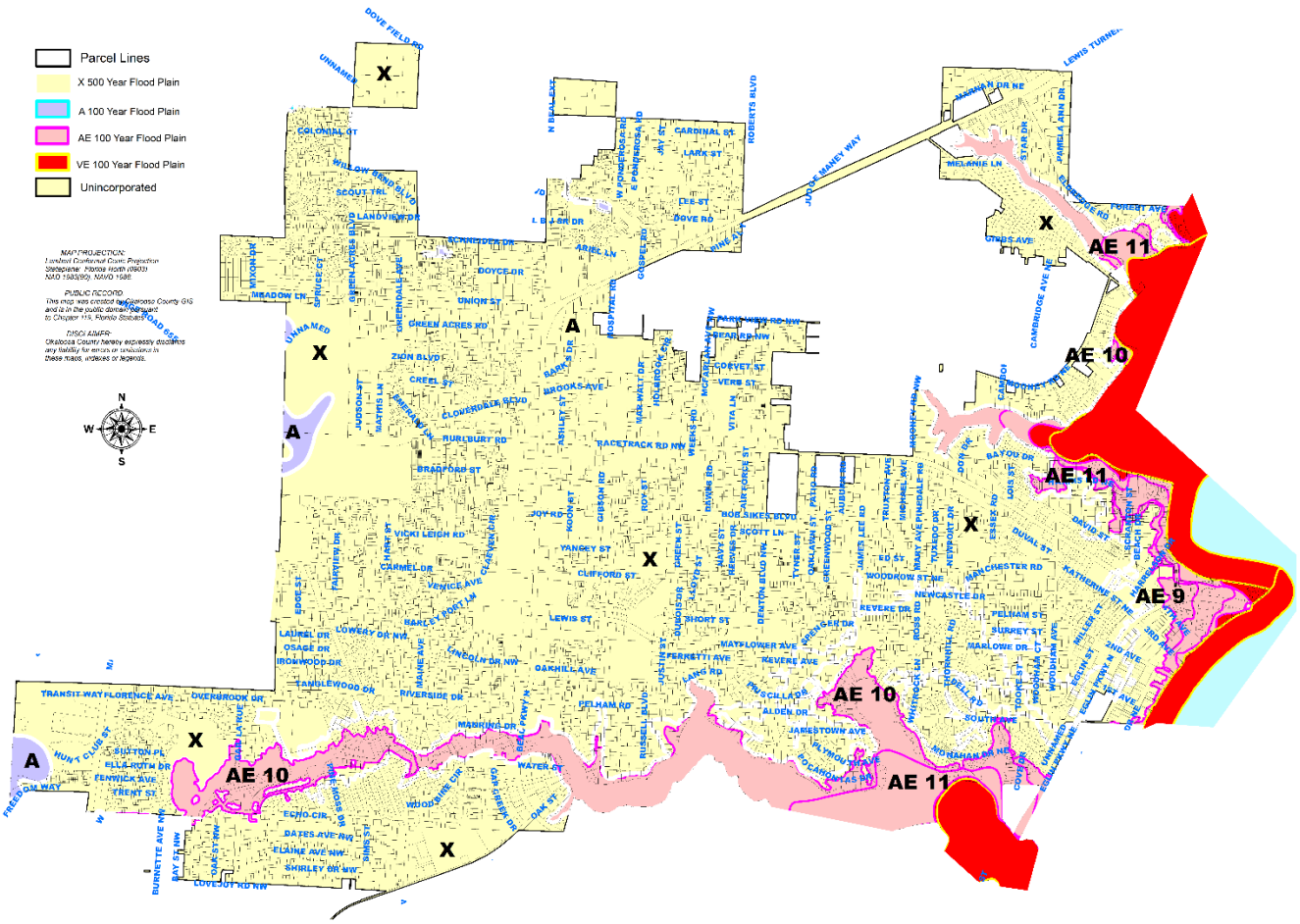
Figure 5.10.01.04.5: Flood Zones of the Unincorporated Area of Bluewater Bay



Source: FEMA Map Service Center, March 9, 2021

Unincorporated Okaloosa County

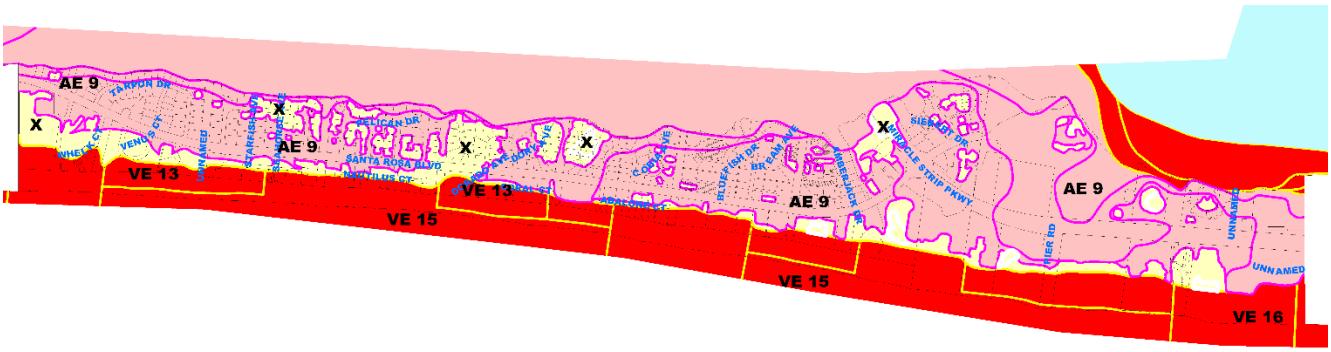
Figure 5.10.01.04.6: Flood Zones of the Unincorporated Area of Ocean City Wright



Source: FEMA Map Service Center, March 9, 2021

Unincorporated Okaloosa County

Figure 5.10.01.04.7: Flood Zones of the Unincorporated Area of Okaloosa Island

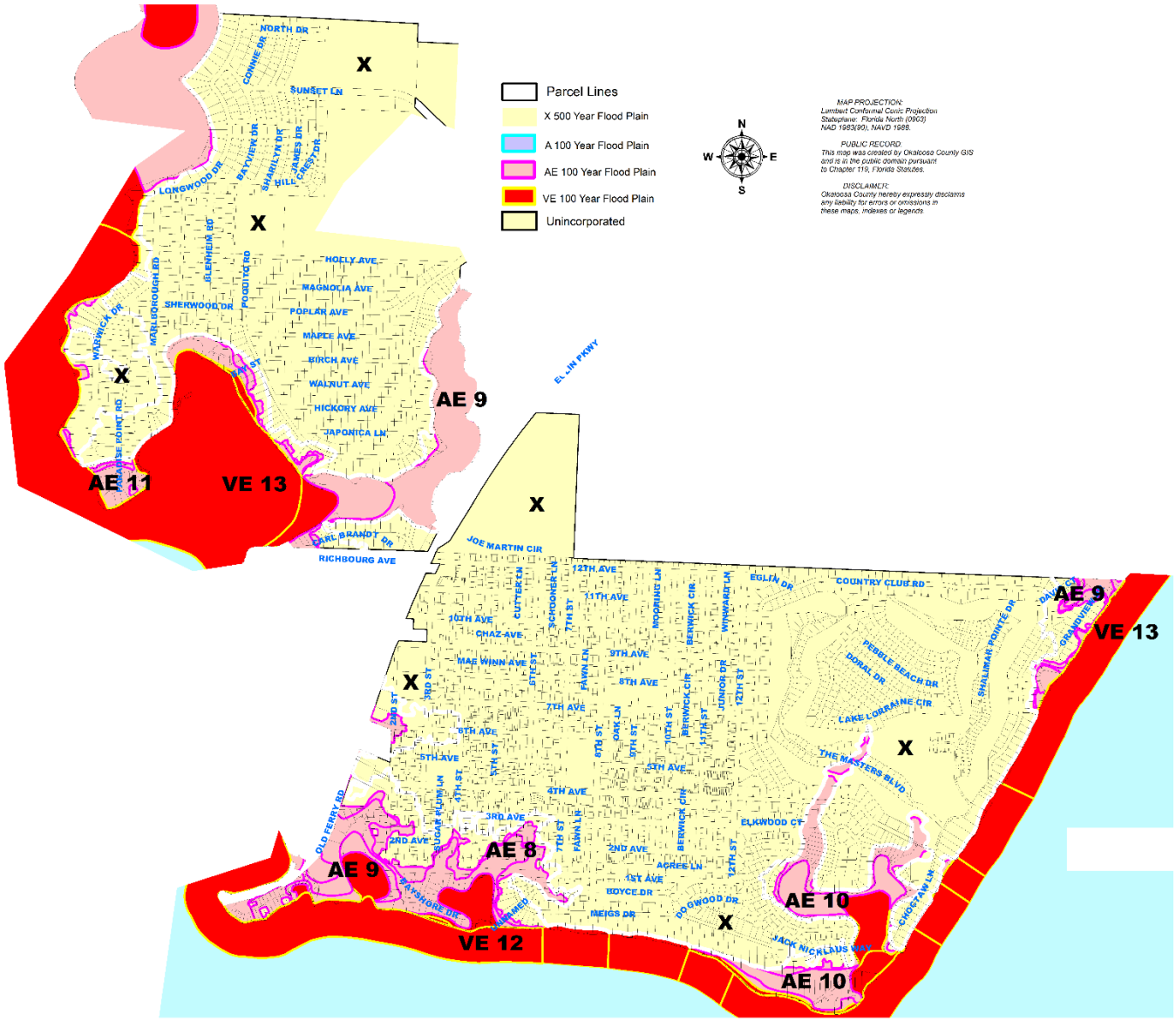


Source: FEMA Map Service Center, March 9, 2021

This area is intentionally blank.

Unincorporated Okaloosa County

Figure 5.10.01.04.8: Flood Zones of the Unincorporated Area around the Town of Shalimar



Source: FEMA Map Service Center, March 9 2021

Temporary, localized flooding can also severely impact roadways during moderate to heavy rain events, which could result in road-closures. It is particularly difficult to prepare transportation systems for "trailing" storm systems that tend to saturate land as well as overload drainage and retention systems. Flooding rain events on Highway 85 have resulted in lane closures or entire road segment closures. Arterial roads, dirt roads, and roads constructed prior to uniform standards and regulations are some of the roadways typically impacted by isolated heavy rain events. Unpaved roads are vulnerable to flooding and highly subject to washout. Culverts and small bridges can sometimes be undermined, causing people to be stranded and isolated until the repairs can be made. Some major roadways used for evacuation are subject to flooding.

Although localized flooding is common, nearly all of the urbanized areas of the unincorporated areas of the county are naturally elevated to avoid any major, sustained flooding. These areas include all the areas near the southern perimeter of Eglin Air Force Base and adjacent to Choctawhatchee Bay. The total unincorporated population in these areas is approximately 69,629 people, the vast majority of the population, approximately 73%, is concentrated in the bay and coastal areas (Table 5.10.01.04.1). To calculate this concentration, census tracts were used with the tracts south of Eglin Air Force Base considered the bay and coastal areas. (Note: This population data is slightly outdated; however, it will not be updated until the 2020 Census data becomes available.)

Table 5.10.01.04.1: Unincorporated Population

Area	2010 Census	2020 Census	2030 Projection
Okaloosa County Total Population	180,822	211,668	230,500
Estimated Unincorporated Population	104,919	122,800	133,700
Census Tracts South of Eglin AFB	123,963	—	—
Unincorporated South of Eglin AFB	69,629	81,000	88,200

Source: U.S. Census Bureau, 2010 and 2020 Decennial Census; American Community Survey (ACS) 5-Year Estimates (2019–2024). 2030 projections were developed using a trend-based annual growth rate derived from 2010–2020 population change. Values for unincorporated areas are estimates based on proportional allocation methods.

PROBABILITY:
As mentioned in the Risk Assessment of the overall County, from 1970-2020 there were 10 'Major Floods' in Okaloosa County. Based on this data, the future probability of a major flood occurring in the unincorporated areas of the county is less than 1 major flood per year.

Section 5.10.01.05 Dam Safety

DEFINITION:
Please refer to Chapter 4 which provides the Risk Assessment of the overall County for the definition of this hazard.

Dams are located all throughout the northern unincorporated areas in Okaloosa County. However, in the southern unincorporated area, there are only a few dams located around the City of Niceville.

HISTORICAL CONTEXT:
Please refer to Chapter 4 which provides the Risk Assessment of the overall County for the historical occurrences of this hazard because most of Okaloosa County is equally susceptible to this hazard.

EXTENT:
The possible damages associated with dam failure are flooding of roads and properties and agricultural losses. Regarding dam failure, a worst-case scenario is difficult to determine due to the variability in dam specifications (i.e. dam size, storage capacity, and topography) and the surrounding areas' elevations. Therefore, a possible worst-case scenario is not provided at this time due to inadequate data.

PROBABILITY:
Due to the rarity of dam failure in the unincorporated areas of Okaloosa County, the probability of future dam failure resulting in flooding is less than 1 per year.

Section 5.10.01.06 Land Erosion

DEFINITION:
Please refer to the Risk Assessment of the overall County for the definition of this hazard.

All of the unincorporated areas of Okaloosa County are susceptible to land erosion in some localized areas.

HISTORICAL OCCURRENCE:
Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard because all of Okaloosa County is equally susceptible to this hazard.

EXTENT:
Erosion from the process of weathering and the transport of solids is called sheet erosion, and if left unchecked, can damage natural water bodies, drainage ditches, fill stormwater retention ponds with sediment, and cause erosion into property. Damage to structures is possible from extensive erosion. Most erosion of this nature occurs in some agricultural areas of the unincorporated areas of the County and along unpaved roadways in hilly areas. In this instance, the result is the deposition and buildup of soils/sands on the roadways and in the drainage systems. The Okaloosa County Public Works Department has an aggressive Master Stormwater Maintenance schedule as well as a proactive road grading program which helps reduce the conditions that could lead to erosion.

In the worst-case scenario, soil erosion will cause land to be unusable for agriculture and other purposes because of the degraded soil quality, structure, stability and texture. Also, the yield, quality, and market value of crops will be reduced. Erosion along stream and ditch banks will

cause loss of productive farmland, undermining of structures (bridges, etc), and washing out of lanes, roads, and fence rows.

PROBABILITY:
Based on the existence of potentially highly erodible soils and erodible soils there is a possibility of land erosion in the unincorporated areas of Okaloosa County. Although the specific amount of these soils in the county is known, the future probability of soil erosion cannot be determined because no record of occurrences has been found.

Section 5.10.01.07 Severe Storms

The Severe Storms segment of the LMS Hazards Assessment will include tornadoes and waterspouts, thunderstorms and lightning, and winter storms (hurricanes are excluded from this section because they are covered in another section of this chapter).

Section 5.10.01.07.01 Tornado and Waterspout

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

Tornadoes occur over land and therefore all the unincorporated areas in Okaloosa County are susceptible to tornadoes. Only the unincorporated coastal and bay areas are susceptible to waterspouts because they only occur over water.

HISTORICAL OCCURRENCE:
Please refer back to the Risk Assessment of the overall County, Tables 4.01.07.01.2 and 4.01.07.01.3, for the historical occurrences of this hazard because all of Okaloosa County is equally susceptible to this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific unincorporated areas of the county.

EXTENT:
Because of the unpredictable patterns of tornadoes, and because Okaloosa County has a relatively high frequency of occurrence (less than 2 per year) the entire County is vulnerable to tornado damage. The damage potential for a tornado increases as a function of population density. As the number of structures and people increase, the potential damage/injury rate increases. Manufactured housing, poorly constructed or substandard housing and apartment complexes are especially susceptible to damage from a tornado. Manufactured housing and substandard housing are exceptionally susceptible because of their lack of resistance to high winds, and apartment complexes because of their size and densities.

The worst possible scenario in terms of tornado damage would be if an F-5 tornado hit the urbanized areas of the unincorporated areas Okaloosa County. It is very unlikely that an F-5 tornado would strike the unincorporated areas of the County, but in the occurrence of an F-5, complete destruction of homes and businesses that were in the tornado's path. Trees and power lines would be snapped, building debris scattered about, and severe structural damage would be evident on any building left standing.

Unincorporated Okaloosa County

The most common and active weather threat in the unincorporated areas of Okaloosa County is the formation of tornadoes in severe thunderstorms associated with frontal boundaries. Frontal boundaries and summertime afternoon air mass thunderstorms can reach severe limits because of atmospheric uplift. High winds relating to gust fronts and "microbursts" can create high wind speeds up to 100 MPH. Buildings and highway traffic are vulnerable to these storms.

PROBABILITY:
From 1958-2022 there have been a total of 94 reported tornadoes in Okaloosa County. Based on this data, the future probability of a tornado in the unincorporated area of Okaloosa County has been determined to be less than 2 per year. Also, since there were only 9 reported waterspouts from 1996-2020, the future probability was determined to be less than 2 waterspouts per year.

Section 5.10.01.07.02 Thunderstorms and Lightning

DEFINITION:
Please refer to the Risk Assessment of the overall County for the definition of this hazard.

All of the unincorporated areas of Okaloosa County are vulnerable to thunderstorms and lightning.

HISTORICAL OCCURRENCE:
Please refer to the Risk Assessment of the overall County for the historical occurrences of this hazard because all of Okaloosa County is equally susceptible to this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific unincorporated areas of the county.

EXTENT:
Thunderstorm damage can include traffic accidents on wet roads, flash-flooding, lightning damage to electronics and structures, lightning strikes on people, and wind and hail damage. Aside from being able to produce tornadoes, thunderstorms can produce damaging high winds. Cold upper level air descending from the top of a thunderstorm to the ground usually causes these winds. In a worst-case scenario, if the upper level air speed of descent is rapid, these cold "microbursts" can fan out as they come in contact with the ground at a high rate of speed. This is sometimes referred to as "straight line winds." These winds can cause significant property damage, injuries, and deaths similar to a F0 to F2 tornado or Category 1 or 2 hurricanes.

PROBABILITY:
Based on historical data (See Risk Assessment of overall County of this hazard's historical occurrences), the unincorporated areas of Okaloosa County has a future probability of experiencing less than 5 severe thunderstorms per year. Also based on historical data (See Risk Assessment of overall County for this hazard's historical occurrences), the unincorporated areas of Okaloosa County is likely to experience 4 to 16 flashes of lightning per square kilometer per year.

Section 5.10.01.07.03 Winter Storms

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

All of the unincorporated areas in Okaloosa County are vulnerable to winter weather, although some locations, such as the northern portions of the county, are at greater risk of experiencing winter weather.

HISTORICAL OCCURRENCE:
It was difficult to find temperature data for the unincorporated areas of the county as a whole, therefore please refer back to the Risk Assessment of the overall County for the historical occurrences of winter weather because all of Okaloosa County is equally susceptible to this hazard.

EXTENT:
The worst-case scenario in terms of winter storms in the unincorporated areas would be if freezing or below freezing temperatures lasted for a week or more, and if the storm responsible for such freezing temperatures knocked down power lines resulting in power loss, and the inability of residents to heat their homes. A freeze's greatest risk is generally unprotected or under-protected water pipes in homes, businesses and infrastructure. Outdoor irrigation systems and plumbing in homes where insulation is inadequate in walls or in off-grade homes where plumbing is exposed are most vulnerable. Unmitigated older structures and manufactured housing are probably the most vulnerable structures.

An icing, glaze, or sleet incident in the unincorporated areas of Okaloosa County would likely result in severe traffic problems and safety concerns throughout the community and its roadways, including I-10. With no means of salting roadways or removing ice, emergency response would be severely slowed in iced areas. Electrical service would likely be interrupted or totally absent in many areas due to power line glazing and tree branch falls. Mitigation efforts should focus on sheltering and ability to receive outside mutual aid assistance, rather than on equipment and ice buildup prevention due to the infrequency and inconsistency of such events.

PROBABILITY:
Based on the data of total below freezing days, the future probability of freezing temperature days in the county's southern unincorporated region is estimated to be 55 days in a 5-year time frame. In the county's northern unincorporated region, the future probability is estimated to be 100 days in that same time. Because a snow event in the unincorporated areas of Okaloosa County is so rare, a single snow "event" over five or ten years is probably the average.

Section 5.10.01.08 Heat Wave and Drought

Heat Wave

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of heat waves.

Unincorporated Okaloosa County

All of the unincorporated areas in Okaloosa County are susceptible to heat waves.

HISTORICAL OCCURRENCE:
All of Okaloosa County is equally susceptible to this hazard. Please refer to the Risk Assessment of the overall County provided in Chapter 4 for the historical occurrences of heat waves.

EXTENT:
The worst-case scenario in terms of a heat wave would be if excessive heat and humidity lasted for a week or more. Dangerous conditions are present when both heat and high humidity combine to make outside temperatures feel in the 103-124° F range. External danger warnings are issued when high temperatures and humidity combine to make outside temperatures feel in the 126-137° F range. Heat disorders may develop in people who work outside for long periods of time, such as construction workers or agricultural workers. To combat the dangerous effects of excessive heat residents should dress appropriately, stay indoors, refrain from strenuous work during the hottest part of the day and stay hydrated.

Electrical system failures due to demand is a true possibility during excessive heat conditions. The general threat to the community is to agricultural crops, livestock, poultry, and individuals without adequate cooling systems in their homes, with emphasis on low income and the elderly. Electrical system failures due to demand would only enhance problems for all of these industries and populations. (*NOAA Watch: Heat Wave*).

PROBABILITY:
Based on the City of Niceville and the City of Crestview heat wave data, it is predicted that the future probability of a heat wave occurring in the unincorporated areas of Okaloosa County is on average three times during a 5-year period.

Drought

DEFINITION:
Please refer to the Risk Assessment of the overall County for the definition of drought.

All of the unincorporated areas in Okaloosa County are susceptible to drought.

HISTORICAL OCCURRENCE:
Please refer to the Risk Assessment of the overall County for the historical occurrences of drought because all of Okaloosa County is equally susceptible to this hazard. *Note* the data applies to Okaloosa County as a whole entity and cannot be extrapolated into the specific unincorporated areas of the county.

EXTENT:
The worst-case scenario in terms of drought would be if an exceptional drought (D4) lasted for months or years. Bay swamps and bodies of water would see a drastic decline in natural water levels, agricultural losses would be widespread, and water shortages in reservoirs and wells would create water emergencies. Precipitation levels would be less than 2.0 inches. Also, the risk of wildfire increases as drought deepens. (U.S. Drought Monitor, 2010).

Unincorporated Okaloosa County

Droughts impact the unincorporated areas of the County in a number of ways. For example, declining water levels and altered hydro-periods in swamps can disrupt breeding cycles of fish and amphibians which can affect other species which prey on, or which are preyed upon, such fish and amphibians. Agricultural losses occur primarily with summer crops. Increased demand created by drought conditions on public and private water supply systems that serve the public can cause some generators and pumps to fail at critical moments, creating low or no pressure for critical facilities such as fire hydrants and medical centers.

PROBABILITY:
Abnormally dry conditions were experienced in Okaloosa County for 49 out of 120 months from 2000 and 2009. Based on this data, the county has a future probability of experiencing on average less than 5 abnormally dry months every year. Also, from 2000-2009, there were a total of 51 out of 120 months where moderate, severe, extreme, or exceptional drought occurred in Okaloosa County. The future probability of a moderate to severe drought occurring in the unincorporated areas of the county is on average 5 months per year.

Section 5.10.01.09 Wildfire

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

The unincorporated areas in Okaloosa County most vulnerable to wildfire are the forested areas owned by Eglin Air Force Base, and those areas directly surrounding it, and the forested areas owned by the State of Florida and those private forested lands in the northern portion of the county.

HISTORICAL OCCURRENCE:
Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard because all of Okaloosa County is equally susceptible to this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific unincorporated areas of the county.

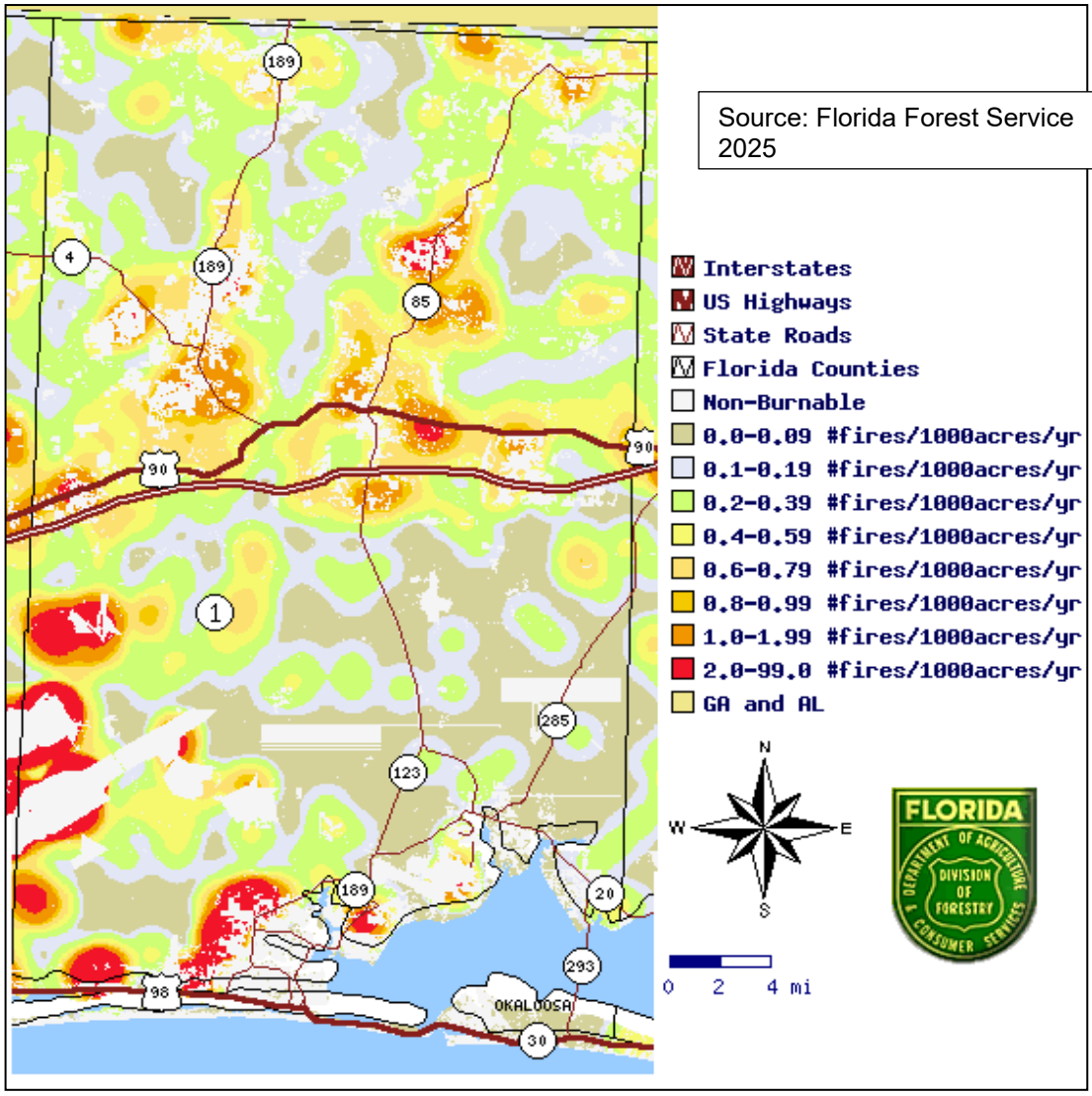
EXTENT:
Based on the Wildland Fire Risk Assessment of Okaloosa County, the worst case scenario would be if the areas with the greatest Level of Concern (LOC) experienced a massive wildfire. These areas have a greater likelihood of danger and destruction due to their inadequate infrastructure, inaccessibility to critical facilities or firefighting resource locations, and location in the wildland-urban interface. *Note* According to the Florida Department of Forestry, wildland urban interface is defined as “the zone where structures and other human development meets/intermingles with undeveloped wildland fuels and other natural features.” Fires could come into subdivisions and neighborhoods in urban and suburban areas, which could be a potentially catastrophic situation. Smoke and ash from dangerous wildfires could decrease visibility on highways and local roads.

Unincorporated Okaloosa County

PROBABILITY:
The Blackwater Forestry Area (which encompasses Okaloosa County) will experience on average 160.9 small, human-induced wildfires per year. It will also experience on average 1.3 natural lightning fires per.

The Wildland Fire Risk Assessment System of the Florida Forest Service provides a county-wide wildfire probability map specific to Okaloosa County. The number of potential wildfires per year in the county greatly varies due to a number of factors; such as intensity of urban development, vegetation and soil type, and forest management and practices. The map below shows how many wildfires per year an area might reasonably expect per 1,000 acres.

Figure 5.10.01.09.1: Wildfire Risk Assessment for Okaloosa County



Unincorporated Okaloosa County

Section 5.10.01.10 Beach Erosion

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

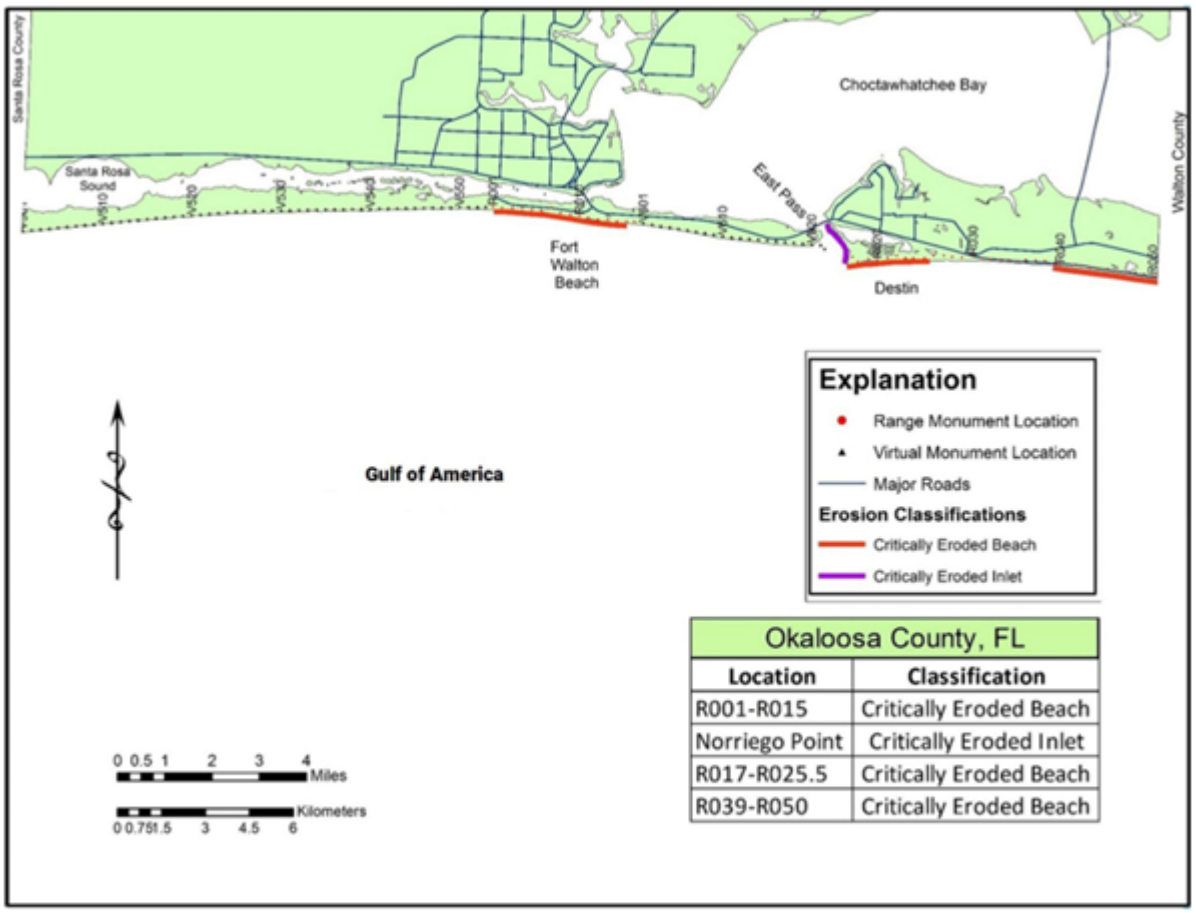
Beach erosion only along coastal areas, and most particularly where the coastline is comprised of loose unconsolidated substrates such as sand, crushed shell, and other materials typically found on an open beach. For this reason, therefore only the coastal unincorporated areas of the county are at risk of experiencing this type of natural hazard.

HISTORICAL OCCURRENCE:
Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard because all of Okaloosa County's coastal areas are equally susceptible to this hazard.

EXTENT:
According to the Florida Department of Environmental Protection, Bureau of Beaches and Coastal Systems, there are 6.5 miles of critically eroded beaches in Okaloosa County. The locations of these critically eroded areas include 2.8 miles of developed land on Santa Rosa Island near Ft. Walton Beach in the unincorporated area of the county. This can be seen in the figure below. Beach erosion will undermine the integrity of infrastructure, beachfront homes and businesses, and other structures by washing away the sediments that support the structural foundation sometimes resulting in complete destruction. The worst-case scenario of a beach erosion occurrence is if a major storm with significantly strong winds and storm surge washed-out the coastal areas. The damage will be much worse for portions of the coastline already declared as "critically eroded."

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Figure 5.10.01.10.1: Beach Erosion Classification in Okaloosa County, 2025



Okaloosa County, FL	
Location	**Classification**
R001-R015	Critically Eroded Beach
Norriego Point	Critically Eroded Inlet
R017-R025.5	Critically Eroded Beach
R039-R050	Critically Eroded Beach

Source: Critically Eroded Beaches in Florida Office of Resilience and Coastal Protection Florida Department of Environmental Protection August 2025

PROBABILITY:
Based on recent historical data, it appears that beach erosion will most certainly occur in the future. The frequency and extent of erosion is highly dependent on the frequency and intensity of tropical storms and hurricanes. Therefore, a numerical value will not be given for the estimated future amount of beach erosion. It must also be noted that beach erosion is a natural part of a coastal system and can be expected to occur at various locations and at different rates over time.

Section 5.10.01.11 Sea Level Rise

As defined by multiple agencies, the term “sea level rise” refers to an increase in the ocean’s surface height relative to the land in a particular location. Thermal expansion of the Earth’s

oceans and melting polar ice are commonly identified as the two primary causes of sea level rise, though land subsidence is also cited as a factor While sea level rise most directly impacts coastal regions, its impacts may be felt far beyond the shoreline as impacted areas react to changing conditions and must expand substantial amounts of funds in mitigation activities that may include construction of water control structures, relocating or re-routing roads and other infrastructure, and relocation of impacted populations.

In 2023, Okaloosa County applied for and received a grant through the Resilient Florida Program to develop a Vulnerability Assessment and implementing Adaptation Plan and, pursuant to and in compliance with section 380.093, Florida Statutes, awarded a contract to Jacobs Engineering Group to develop said Vulnerability Assessment (VA) and implementing Adaptation Plan (AP). The VA and implementing AP developed by Jacobs Engineering Group is incorporated herein by reference (see Appendix E) for purposes of establishing vulnerability to sea level rise and various flooding scenarios for the entirety of Okaloosa County including the unincorporated as well as all of the municipalities except for the City of Destin (which has undertaken its own analysis).

Completed in August 2025, the Okaloosa County VA utilizes the sea level rise scenarios presented in NOAA/NOS' Center of Operational Oceanographic Products and Services report "Global and Regional Sea Level Rise Scenarios for the United States", NOAA Technical Report NOS CO-OPS 083 (Sweet, W.V., R.E. Kopp, C.P. Weaver, J. Obeysekera, R.M Horton, E.R. Thieler, and C. Zervas. 2017) in conjunction with tidal flooding and 1% annual chance flood events to determine the vulnerability of 4 classes of assets to several different sea level rise and sea level rise enhanced flood event scenarios.

Based on these analyses, the VA finds that the "vast majority of assets in the County (89.2%) have no flood risk" under any of the scenarios. However, the VA does identify a number of assets, in both the incorporated as well as the unincorporated areas that are at risk. These assets are identified through the VA which may be viewed in Appendix E.

The implementing Action Plan (AP) developed by Jacobs Engineering provides a list of strategies to help the County and municipalities increase the resiliency of those assets identified as having some level of vulnerability. In line with these strategies, the AP also presents lists of projects specific to each municipality as well as the County of based on the Vulnerability Analysis. Table ES-1 of the Adaptation Plan lists the following overall priority projects across all jurisdictions except the City of Destin:

Table ES-1. Prioritized Adaptation Projects

Priority	Vulnerable Asset/Area	Project	Project Owner	Cost
Critical Community and Emergency Facilities				
1	Okaloosa Fire Station #4	Okaloosa Fire Station #4 Hardening	Okaloosa County	Variable
2	Elliott Point Elementary	Harden Elliott Point Elementary School for flooding	Okaloosa County School Board	Variable
Transportation and Evacuation Routes				
1	US-98	US-98 Living Shoreline	Okaloosa County	$750,000 (design)
2	US-98	Vulnerability Assessment	FDOT	$150,000
3	SR-85	Elevate Shoal River Bridge and Approaches	FDOT	TBD
4	CR-393	Elevate Bridge at Shoal River and Pond Creek	Okaloosa County	TBD
5	Miracle Strip Parkway (US-98)	Miracle Strip Parkway Road Elevation and Drainage Improvements	FDOT	TBD
Critical Infrastructure				
1	Gap Creek	Sanitary Lift Station Hardening	Okaloosa County	$400,000
2	Wynne Haven, Parrish Point	Community Resilience Vision Plan	Okaloosa County	TBD
3	Bluewater Bay	Community Resilience Vision Plan	Okaloosa County	TBD
4	Gap Creek	Gap Creek H&H Study	Okaloosa County	$250,000
5	Mary Esther	Regional Coastal Resilience Plan	Okaloosa County	TBD
Natural, Cultural, and Historical Resources				
1	Lions Park/Niceville	Lions Park Expansion and Hicks Basin Conservation Area	Niceville	TBD
2	Various Parks/Valparaiso	Valparaiso Resilient Parks	Valparaiso	$50,000 per park

Finally, immediately following Table ES-1, the AP states that:

> "the elevation of the Shoal River Bridge at SR-85 and its approaches is the greatest priority for implementation for the community – it was discussed in multiple meetings with both community members and County staff. The bridge is one of the single-most critical assets in the County; it is the primary connection between north and south County and is crucial for daily activities and commutes as well as evacuations during emergencies. ***Jacobs recommends that FDOT and the County prioritize the elevation of the Shoal River Bridge first to support operations and public safety.***"

Unincorporated Okaloosa County

To ensure coordinated implementation of the Adaptation Plan with the activities of this LMS, Chapter 3 of this LMS has been amended to include reference to the VA and AP in the LMS project ranking criteria,

Section 5.10.01.12 Other Hazards

The hazards listed below have been analyzed and determined that the impact would be minimal or non-existent in the unincorporated areas of Okaloosa County. The following data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific unincorporated areas of the county.

Section 5.10.01.12.01 Sinkhole

The map and description prepared by the United States Geologic Survey (USGS) in its "Sinkhole, Type, Development and Distribution in Florida" (1985) indicates that Okaloosa County in its entirety is located in an area where sinkholes seldom, if ever, occur. The Florida Geologic Survey's statewide sinkhole database indicates no sinkholes in the County. Since there is no history of this hazard in the County, no further analysis or risk assessment will be conducted for this plan. However, should conditions change and geological features be discovered which contribute to the development of sinkholes, the LMS committee will include any new occurrence information in ongoing updates.

The probability of a sinkhole occurring in the future is less than 1% based upon no documented sinkholes in the county and the soil strata is non-conducive to the formation of sinkholes.

Section 5.10.01.12.02 Expansive Soils

According to the *Soil Survey of Okaloosa County Florida* (USDA, June 1995), two types of soils are considered vulnerable to expansion. These are known as shrinking and swelling or "expansive soils." Another way of describing expansive soils is the change of volume of a soil with a change of moisture content. All of the soils listed in the expansive class are also considered erodible soils. Okaloosa County may be susceptible to expansive soils in some localized areas. There have been no previous occurrences recorded of expansive soils in the County. The following table lists soils having moderate to high shrink swell potential in Okaloosa County. Only those soils with an associated risk of "High" are listed:

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Table 5.10.01.12.02.1: Shrink/ swell potential of soils in Okaloosa County.

Soil Type	ME Soils*	HE Soils**	Total Acreage	% Total Land Area
#35-Angie (2 to 5 percent slopes)		X	1,073.26	.16
#49-Angie (5 to 12 percent slopes)		X	10,280.79	1.61
#20-Udorthents (nearly level)	X		655.31	.11
Total	**.11**	**1.77**	**12,009.36**	**1.88**

* Moderate Erodible Soils **Highly Erodible Soils

Note: Expansive soils and erodible soils are classified as the same.
Source: Soil Survey of Okaloosa County, Florida; June 1995.

Expansive soils can lessen the strength of building foundations, which could result in structural collapse or instability. In addition, these soils have limitations for use as local roads and streets because of lack of strength to support roadways and traffic. There is a possibility of shrink/swell potential or soil expansion based on the existence of moderately erodible soils and highly erodible soils in Okaloosa County. Although the specific amount of these soils in the county is known, the future probability of this occurring is minimal because this issue is addressed during the time of construction and there are no previous records of occurrence.

Section 5.10.01.12.03 Earthquake

According to the U.S. Geological Survey Earthquake Probability maps, Okaloosa County has between a 0.005 and 0.010% chance of experiencing a 5.0 magnitude earthquake within 100 years. This is considered a very minimal risk. Also, since there is no history of earthquakes in the county, no further analysis or risk assessment will be conducted for this plan. The future probability of an earthquake occurring in Okaloosa County has been determined to be less than 1 in 100 years.

Section 5.10.01.12.04 Avalanche

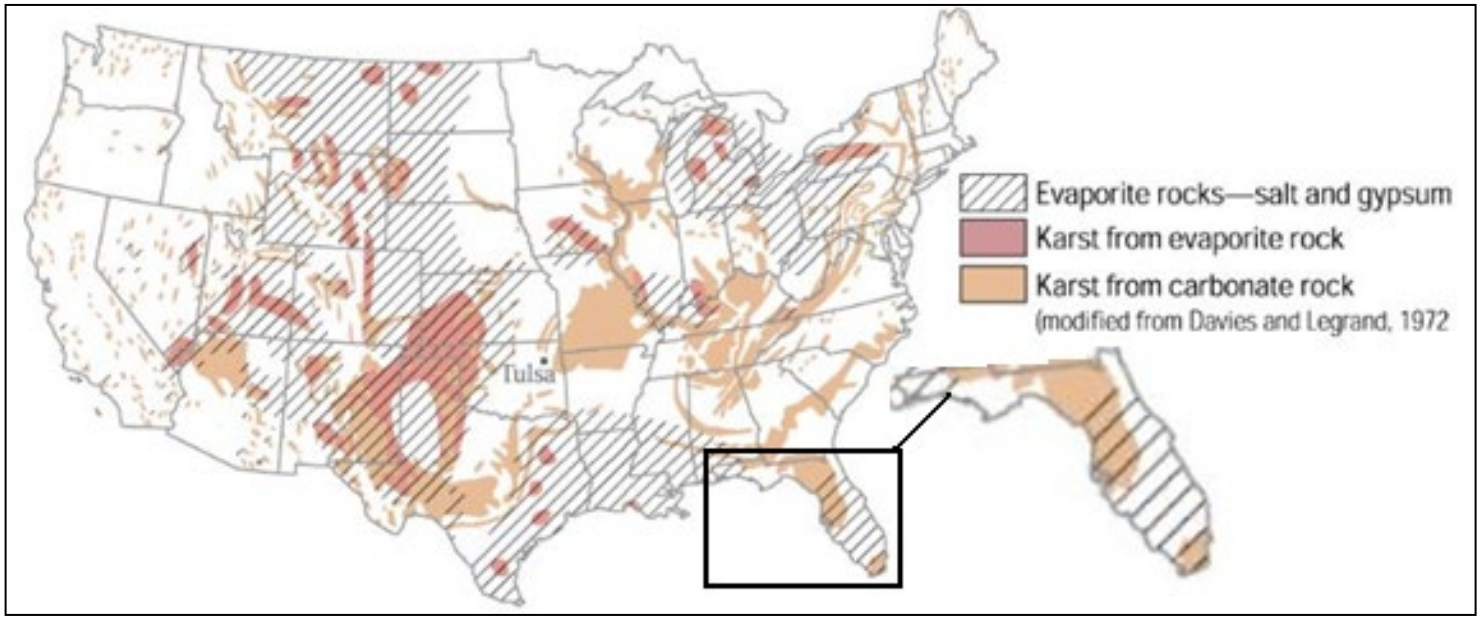
Okaloosa County does not have topography nor snowfall amounts that would create conditions for an avalanche. Since there is no history of this hazard in the county, no further analysis or risk assessment will be conducted for this plan. The future probability of an avalanche occurring in Okaloosa County has been determined to be less than 1 in 100 years.

Section 5.10.01.12.05 Land Subsidence

According to the U.S. Geological Survey, “land subsidence occurs when large amounts of ground water have been withdrawn from certain types of rocks, such as fine-grained sediments. The rock compacts because the water is partly responsible for holding the ground up. When the water is withdrawn, the rock falls in on itself. Land subsidence is most often caused by human activities, mainly from the removal of subsurface water” (U.S. Geological Survey). Okaloosa County has a

minimal amount of the most common rock types that are connected to land subsidence (Figure 5.10.01.11.05.1). Since there is no history of this hazard in the county, no further analysis or risk assessment will be conducted for this plan. The future probability of land subsidence occurring in Okaloosa County has been determined to be less than 1 in 100 years.

Figure 5.10.01.12.05.1: Rock types connected to collapse (subsurface cavities/sinkholes) in the U.S.



Source: U.S. Geological Survey

Section 5.10.01.12.06 Landslide

According to U.S. Geological Survey Map of Relative Incidence and Susceptibility Map, Okaloosa County has a very low landslide incidence with less than 1.5% area susceptible to a landslide (USGS, 2010). Landslides are therefore considered to be a minimal risk to the county and no further analysis or risk assessment will be conducted for this plan. The future probability of a landslide occurring in Okaloosa County has been determined to be less than 1 in 100 years.

Section 5.10.01.12.07 Volcano

There are no geological features in or near Okaloosa County or the Southeast related to volcanism. Since there is no history of this hazard in the county, no further analysis or risk assessment will be conducted for this plan. The future probability of a volcanic eruption occurring in Okaloosa County has been determined to be less than 1 in 100 years.

Section 5.10.01.12.08 Tsunami

According to the U.S. Geological Survey, Okaloosa County is not located in an area that has historically been subjected to tsunamis, even though it is a coastal county. Since there is no history of this hazard in the county, minimum analysis and risk assessment will be conducted for this plan. The Local Mitigation Strategy Committee will monitor any developments in the ability to predict, monitor and issue warnings. There is no record of a tsunami occurring in Okaloosa County; therefore, the future probability has been determined to be less than 1 in 100 years.

Section 5.10.01.13 Summary

The risk assessment section of this LMS document highlighted the hazards that the unincorporated areas of Okaloosa County is exposed to. This provides the foundation for the subsequent section covering how vulnerable the unincorporated areas are to these identified hazards. Numerous facilities, infrastructure, and neighborhoods in the unincorporated areas of Okaloosa County need to be assessed for their vulnerability to disasters.

Section 5.10.02 Vulnerabilities

Section 5.10.02.01 Introduction

The intent of this section is to provide a vulnerability assessment for the potential damage and estimated loss to building structures in the unincorporated areas of Okaloosa County.

This section includes a brief summary description of the unincorporated county's vulnerability to each hazard and the impact of each hazard on the unincorporated areas. It also describes the vulnerability in terms of the types and numbers of repetitive loss properties in the identified hazard areas. Additionally, this section describes vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard area.

The section also provides an estimate of potential dollar losses to vulnerable structures and a description of the methodology used to complete the estimate. Lastly, this section describes vulnerability in terms of providing a general description of land uses and development trends within the various jurisdictions so that mitigation options can be considered in future land use decisions.

Section 5.10.02.02 Methodology

The Okaloosa County Staff used the same methods of quantifying the estimated dollar losses to the vulnerable structures potentially impacted by each hazard for the unincorporated areas of Okaloosa County as the overall County. Therefore, please refer to Okaloosa County's Overall Vulnerabilities, Section 4.02.02, for more information.

Section 5.10.02.03 Summary Description of Unincorporated Okaloosa County

Okaloosa County is split into three geographic areas: south county, Eglin Air Force Base and Hurlburt Field, and north county. The unincorporated areas of the south county are located directly on the Gulf of Mexico, Choctawhatchee Bay and its contiguous bayous, and Santa Rosa Sound. Due to the presence of Eglin Air Force Base, most of the unincorporated population is geographically constricted to living on pockets of non-federal lands that are located mostly as enclaves or in between the municipalities. There are 3.04 miles of coastline along the Gulf of Mexico, 48.48 miles along the Choctawhatchee Bay, and 12.36 miles along the Santa Rosa Sound.

Okaloosa County also has a significant portion (45%) of unincorporated land that is federally owned and part of Eglin Air Force Base and Hurlburt Field. Utilities and public infrastructure, housing, research facilities, aircraft operations, and other components on the bases are federally controlled. Although these areas are equally vulnerable to the impacts of natural disasters, particularly flooding, storm surge, and hurricanes, the County does not control mitigation activities in these areas.

Unincorporated Okaloosa County

The County enforces the Florida Building Code as required by Chapter 553 of the Florida Statutes. This is accomplished through the Inspections Division of the County's Growth Management Department which employs a full-time Certified Building Official (CBO) as well as multiple inspectors and plans examiners all of whom are licensed pursuant to Chapter 468, Florida Statutes. For determining whether an addition or redevelopment of a structure constitutes a substantial improvement pursuant to the NFIP, these staff members coordinate with the Planning Coordinator within the same department (see below) who oversees the day-to-day implementation of the program. The CBO has the authority to request certified appraisals when considering whether a proposed activity constitutes a substantial improvement. The CBO, plans examiners, and inspectors conduct substantial damage assessments at need and are joined by the County's certified Code Enforcement Officers for damage assessment following a major storm event. The damage assessments are done in accordance with FEMA standards.

In addition to a licensed building official and inspectors, the County also employs within the Growth Management Department a Planning Coordinator who is a Certified Floodplain Manager who oversees the day-to-day implementation of the County's program. The technical aspects of the program are the responsibility of a Florida-licensed Professional Engineer within the Public Works Department who serves as the Floodplain Administrator and who co-operates with the Planning Coordinator on floodplain matters. Being in separate departments and separate chains-of-command allow these positions to serve as a check and balance in interpretation and enforcement of the program.

Emergency management activities are coordinated through the Division of Emergency Management within the County's Department of Public Safety under the Public Safety Director and Emergency Management Chief. The Emergency Management Chief is a member of the County's LMS Committee and is in regular communication with the emergency managers within the municipalities. The Public Safety Director and Emergency Management Chief coordinate the County's emergency response activities and communicate directly with the State.

Okaloosa County maintains an Office of Management and Budget which includes staff trained and dedicated to the administration of grants. In addition, specific departments such as the Public Works and Water and Sewer departments also have staff assigned to grant admnistration. As such, the County has the skill and capacity to administer state and federal grants.

Okaloosa County has participated in the National Flood Insurance Program (42 U.S.C. §§4001 et seq.) since July of 1977. Since that time, the County has regularly updated its floodplain regulations to remain consistent with the program's requirements. The most recent update is the adoption of County Ordinance 21-01 which amended Chapter 3 of the Land Development Code (LDC) and other sections of the LDC pertaining to the County's floodplain management regulations. This ordinance specifically adopted Section 3.06 of the LDC which includes the following language:

> 3.06.02.C. Basis for establishing flood hazard areas. The Flood Insurance Study for Okaloosa County, Florida and Incorporated Areas dated March 9, 2021, and all subsequent amendments and revisions, *and the accompanying Flood Insurance Rate Maps (FIRM), and all subsequent amendments and revisions to such maps,*

> *are adopted by reference as a part of this section and shall serve as the minimum basis for establishing flood hazard areas* [emphasis added]. Studies and maps that establish flood hazard areas are on file at the Growth Management Department.

Okaloosa County participates in the NFIP Community Rating System (CRS) which assesses the County's floodplain management activities, both regulatory and programmatic and, using a point system spread across different categories, assigns a numeric rating based on its performance. As of this writing, Okaloosa County has a rating of 5, garnering a 25% discount on flood insurance premiums.

Okaloosa County's single largest point score, 580 points, is in CRS Activity 420, Open Space Preservation. This is due in large part to the amount of County and State-owned land along the Shoal, Blackwater, and Yellow rivers. The State-owned lands are protected through their managing entities, including the Florida Department of Environmental Protection, Northwest Florida Water Management District, and Florida Fish and Wildlife Conservation Commission, while the majority of the County lands are protected through conservation easements and other restrictions. The conservation and other protective use deeds associated with the Open Space lands are kept in the County's official records maintained by the Clerk of the Circuit. In addition, as required by Chapter 125, Florida Statutes, the County must perform a tri-annual review of all of its property, including additional floodplain lands not found along the Shoal River. Because of this review, the restrictions on use associated with its floodplain and other environmentally sensitive lands are routinely monitored.

Section 5.10.02.04 Vulnerable Populations

Hazards do not uniformly affect the entire population. Therefore, special attention needs to be given to the more vulnerable populations. In general, the selected populations are more vulnerable to some of the hazards due to their more limited mobility and resources to prepare before and respond after a hazard. In particular, populations that are language isolated may not be able to understand the important hazard information being communicated to them. Special mitigation efforts targeted at these populations may be necessary. Please refer back to the overall County's Vulnerability Assessment for further explanation on these vulnerable populations. The following categories listed below have been determined to be the vulnerable populations in this analysis.

Table 5.10.02.04.1: Estimated Vulnerable Populations in Unincorporated Okaloosa County, 2025

Population Group	Percent (%)	2020 Estimated Population	2030 Projected Population
Elderly (65+)	17.3%	36,614	39,900
Language Isolation*	12.5%	26,459	28,800
Disabled	11.3%	23,918	26,100
Single Parent Households	24.5%	20,570	22,400
Poverty	10.6%	22,436	24,400
Minority Population	30.3%	64,140	69,900

Unincorporated Okaloosa County

Source: U.S. Census Bureau, 2010 and 2020 Decennial Census; American Community Survey (ACS) 5-Year Estimates (2019–2024). 2030 projections were developed using a trend-based annual growth rate derived from 2010–2020 population change. Values for unincorporated areas are estimates based on proportional allocation methods.

Section 5.10.02.05 Repetitive Loss and Severe Repetitive Loss Properties

The Federal emergency Management Agency defines repetitive loss and severe repetitive loss properties as follows (44 CFR Part 77 § 77.2):

Repetitive loss structure means a structure covered under an NFIP flood insurance policy that:

(1) Has incurred flood-related damage on 2 occasions, in which the cost of repair, on average, equaled or exceeded 25% of the value of the structure at the time of each such flood event; and

(2) At the time of the second incidence of flood related damage, the contract for flood insurance contains increased cost of compliance coverage.

Severe repetitive loss structure means a structure that is covered under an NFIP flood insurance policy and has incurred flood-related damage:

(1) For which 4 or more separate claims payments have been made under flood insurance coverage under subchapter B of this chapter, with the amount of each claim (including building and contents payments) exceeding $5,000, and with the cumulative amount of such claims payments exceeding $20,000; or

(2) For which at least 2 separate flood insurance claims payments (building payments only) have been made, with cumulative amount of such claims exceeding the value of the insured structure.

Hurricanes, tropical storms, storm surge, flooding, and thunderstorms are the hazards responsible for repetitive loss properties throughout the unincorporated County and its municipalities. These properties are more vulnerable to certain hazards than other structures in the County because they have already experienced significant flood damage. Please see Section 4.02.05 and Table 4.02.05.1 for this LMS' discussion of Repetitive Loss and Severe Repetitive Loss properties throughout the County.

Unincorporated Okaloosa County

Section 5.10.02.06 Hurricane and Tropical Storm

While all of the unincorporated areas of Okaloosa County are vulnerable to hurricanes and tropical storms, only Okaloosa Island (an unincorporated coastal resort community located on Santa Rosa Island, a barrier island located between Destin and the Okaloosa/Santa Rosa County line) is located *directly* on the Gulf of Mexico. These areas, as well as those located on Choctawhatchee Bay and associated bayous and inlets, are vulnerable to the most damaging effects of storm surge, heavy rains, and winds during a hurricane or tropical storm. The unincorporated areas in north Okaloosa County are vulnerable to hurricane damage in the form of heavy rains and substantial winds. In the area north of Eglin Air Force Base, outside of the incorporated boundaries of Crestview and Laurel Hill, are thousands of homes and hundreds of businesses. Okaloosa County has a varied topographical terrain, ranging from sea level in the south to elevations over 200 feet in the north. The whole county may experience heavy rains and wind damage during a hurricane or tropical storm. High winds damage structures by removing roofs, siding, and create flying debris out of sources that are not anchored.

The following tables depict the evacuation zones for hurricanes and the vulnerable structures within each zone.

Table 5.10.02.06.1: Evacuation Zones and the Vulnerable Residential Structures within

Total:	Condominium	SFR-Townhouse	Single-Family	Mobile Home	Multi-Family
Zone A	0	0	167	0	2
Just Value	$0	$0	$80,070,224	$0	$253,879
Zone B	37	28	852	4	12
Just Value	$8,341,290	$7,640,343	$342,208,199	$832,760	$15,003,993
Zone C	85	280	2831	18	57
Just Value	$18,145,410	$47,738,361	$1,085,789,496	$2,332,165	$37,745,635
Zone D	91	764	6942	225	158
Just Value	$19,153,990	$99,094,042	$1,883,835,503	$17,685,332	$75,715,240
Zone E	96	1557	10970	249	197
Just Value	$20,158,990	$191,203,437	$2,803,491,974	$19,797,099	$111,149,598

Note Evacuation Zones correspond with Hurricane Categories (Ex. Evacuation Zone A = Category 1 Hurricane)
Source: Emerald Coast Regional Planning Council & Okaloosa County Property Appraiser, 2025 (Okaloosa County Staff generated table from overlaying the evacuation zones and property appraiser data)

Table 5.10.02.06.2: Evacuation Zones and the Vulnerable Structures within

Total:	Commercial	Government / Institutional	Trailer Park
Zone A	2	0	0
Just Value	$1,821,923	$0	$0
Zone B	20	3	0
Just Value	$28,891,264	$15,394,568	$0
Zone C	114	10	3
Just Value	$161,413,440	$65,849,302	$1,321,528
Zone D	246	18	18
Just Value	$225,609,814	$85,672,303	$4,188,910
Zone E	405	27	31
Just Value	$427,103,445	$57,974,073	$7,732,369

Note Evacuation Zones correspond with Hurricane Categories (Ex. Evacuation Zone A = Category 1 Hurricane)
Source: Emerald Coast Regional Planning Council & Okaloosa County Property Appraiser, 2025 (Okaloosa County Staff generated table from overlaying the evacuation zones and property appraiser data)

Section 5.10.02.07 Storm Surge

All of the coastal areas of unincorporated Okaloosa County are vulnerable to the damaging effects of storm surge, with Okaloosa Island and the structures located *directly* on the Gulf of Mexico being the most vulnerable to storm surge. The structures located in the unincorporated areas of Choctawhatchee Bay and associated bayous and inlets are vulnerable to storm surge as well.

Depending on the severity of the storm, storm surge levels can vary from a normal high-tide, which would only affect low lying sparsely populated areas, to the complete overflow of Okaloosa Island. This could push water and storm debris into Choctawhatchee Bay and onto the northern shore of the bay and local bayous reaching an elevation of 21 feet above mean high water line. Storm surge levels this high would destroy numerous homes, infrastructure, and critical facilities. The following tables depict the vulnerable structures to storm surge.

In 1994 Hurricane Opal made landfall on Pensacola Beach, Florida. The main impact from Opal was from storm surge. A combination of storm surge and breaking waves inundated portions of the western Florida Panhandle coast to a depth of 10 to 20 ft. The surge pushed the sand dunes on Okaloosa Island into Choctawhatchee Bay. Storm surge was responsible for the bulk of the $3 billion in damage attributed to Opal in the United States. (NOAA: Hurricane History)

Table 5.10.02.07.1: Vulnerable Residential Structures to Storm Surge

Total:	Condominium	SFR-Townhouse	Single-Family	Mobile Home	Multi-Family

Surge Level 1	16	17	1382	5	17
Just Value	$2,162,500	$3,963,376	$833,916,116	$1,467,210	$13,907,016
Surge Level 2	76	123	1854	5	44
Just Value	$15,724,410	$20,697,781	$984,063,998	$1,467,210	$35,872,263
Surge Level 3	91	557	4973	25	117
Just Value	$19,153,990	$77,244,270	$1,684,209,006	$2,692,222	$60,066,675
Surge Level 4	91	557	4973	25	117
Just Value	$19,153,990	$77,244,270	$1,684,209,006	$2,692,222	$60,066,675
Surge Level 5	96	963	7396	43	143
Just Value	$20,158,990	$136,008,617	$2,246,026,987	$3,699,334	$91,913,772

Note Storm Surge Zones correspond with Hurricane Categories (Ex. Storm Surge Zone 1 = Category 1 Hurricane)
Source: Emerald Coast Regional Planning Council & Okaloosa County Property Appraiser, 2025 (Okaloosa County Staff generated table from overlaying the surge levels and property appraiser data)

Table 5.10.02.07.2: Other Vulnerable Structures to Storm Surge

Total:	Commercial	Government / Institutional	Trailer Park
Surge Level 1	23	10	2
Just Value	$91,868,706	$348,063,846	$1,011,076
Surge Level 2	58	12	2
Just Value	$135,586,329	$368,265,539	$1,011,076
Surge Level 3	103	12	8
Just Value	$152,293,541	$368,265,539	$2,936,465
Surge Level 4	136	14	8
Just Value	$166,977,252	$375,007,270	$2,936,465
Surge Level 5	361	20	16
Just Value	$412,012,433	$399,311,151	$5,366,581

Note Storm Surge Zones correspond with Hurricane Categories (Ex. Storm Surge Zone 1 = Category 1 Hurricane)
Source: Emerald Coast Regional Planning Council & Okaloosa County Property Appraiser, 2025 (Okaloosa County Staff generated table from overlaying the surge levels and property appraiser data)

Section 5.10.02.08 Flooding

As used in this section, the term “flooding” only considers flooding that is a result of rainfall, which includes tropical rains during a hurricane. All of the unincorporated areas of Okaloosa County are vulnerable to flooding and susceptible to damage from this hazard. Localized roadway flooding from heavy rains can occur in all the areas of the county.

Unincorporated Okaloosa County

The southern tier of the county is affected by flooding due to heavy rain events. Since this tier is largely developed, an additional factor of flooding comes from inadequate storm water drains which were installed prior to current standards. Flooding in this area can range from flooding a few yards and streets to the flooding of homes and businesses.

The northern tier of the county is vulnerable to flooding caused by hurricanes, tropical storms and heavy rain events as well. Pockets of this area have been developed and have some flooding due to inadequate storm water facilities. Flooding in the northern tier can range from flooding of streets and yards to flooding of homes up to a depth of 6 feet. It is to be noted that the most severe flooding would only affect approximately 100 homes.

The following table depicts the structures located in the 1 % chance per year (AE and A) and velocity (VE), flood zones in Okaloosa County's unincorporated area.

Table 5.10.02.08.1: Structures Located in Flood Zones in the unincorporated Okaloosa County

	Total in Flood Zone AE	Just Value	Total in Flood Zone VE	Just Value	Total in Flood Zone A	Just Value
Condominium	15	$2,289,100	15	$3,969,000	0	$0
SFR-Townhouse	30	$10,539,197	4	$1,930,236	10	$1,096,004
Single-Family	624	$285,080,864	28	$11,573,685	140	$25,186,551
Mobile Home	3	$187,517	0	$0	1	$73,660
Multi-Family	14	$7,003,457	5	$22,629,397	0	$0
Commercial	73	$104,944,347	7	$35,287,188	14	$9,452,738
Government/ Institutional	10	$329,836,884	4	$40,888,666	8	$69,078,193
Critical Facility	2	$11,833,573	0	$0	2	$2,426,117

Source: Okaloosa County Department of Growth Management, 2025 and Okaloosa County Property Appraiser Office, 2025

A number of measures are available to help mitigate flood damage. These include:

- Elevation of new and substantially rebuilt structures above established base flood elevations
- Elevation of infrastructure (e.g., roads, lift stations, etc) above established base flood elevations
- Floodproofing of structures that exist below base flood elevations
- Relocation of structures and infrastructure out of the 100-Year Floodplain

- Implementation of public warning/notification systems to avoid or minimize injury or loss of life and property damage
- Restrict development in substantially intact floodplain areas
- Purchase of fee simple title to, or development restricting easements over, properties in floodplains.

As shown by Sections 5.10.04.2 through 5.10.04.10, Okaloosa County has utilized all of the above measures to varying degrees as part of its floodplain and growth management programs. It is important to note, however, that the degree to which a measure is implemented is sometimes dependent on practicality and/or funding. For example, Okaloosa County requires that the finished floor elevation of all structures within the 100-Year Floodplain be a minimum of 1 foot above the established base flood level; it does not require that the finished floor elevations of all structures be elevated 3 feet above the base flood elevation. This is due to the practicality of requiring large amounts of fill onto small lots undergoing development. Not only are there potential construction problems with establishing slopes and other site characteristics, the overuse of fill can exacerbate existing flooding problems, particularly when dealing with infill type developments in older areas whose stormwater systems pre-date modern requirements. Similarly, as older homes are updated, the County requires the entire structure to meet current elevation requirements when the renovations/additions exceed 50% of the value of the original structure. The County does not require this level of retroactive elevating if the value of the work being performed is less than 50% of the value of the original structure, as this would place a serious constraint on redevelopment activities that could, in some areas, help preempt blight conditions.

In deciding which, and to what extent, flood mitigation measures will be implemented, Okaloosa County balances the cost (whether to individual property owners or to the taxpayers at large for public projects) with the benefit. While no formal formulae have been established, the underlying philosophy is that flood mitigation should be kept attainable by the average property owner and, in the case of public projects, should not cause an inordinate tax burden.

Section 5.10.02.09 Dam Safety

Most of the dams located in the county are found in the unincorporated area of north Okaloosa County. These dams are manmade earthen-works dams usually on manmade lakes and ponds. The dams range in height above natural grade from 3 feet to a maximum of 27 feet. In general dams over 10 feet in height are regulated by the Northwest Florida Water Management District. The largest dam in the unincorporated is 27 feet high and located in the Blackwater Forest on Hurricane Lake. If this dam were to fail, the flooding damage would only affect the forested areas, which are undeveloped and scarcely inhabited.

The specific impacts of dam failure in Okaloosa County is unavailable because there have been no studies conducted on the impact that dam failure would have on the potentially affected areas. Only broad general impacts can be given, which provide an indication of what impacts are expected with dam failure. Homes and roadways in the unincorporated areas of north Okaloosa County are vulnerable to flooding as a result of dam failure although the probability of a failure

occurring is very low. There are two small dams in unincorporated south Okaloosa County and some homes and roadways in the area surrounding them are vulnerable to flooding from dam failure. Additional information regarding dam failure is provided in Chapter 4.

Section 5.10.02.10 Land Erosion

Unincorporated Okaloosa County is vulnerable to land erosion in localized areas. Land erosion is generally caused by disturbed soils from construction and agricultural activities and usually isolated to an area less than 1 acre in size. Some river front homes in unincorporated Okaloosa County are vulnerable to erosion but would only affect about 20 homes.

Section 5.10.02.11 Severe Storms

In the tables below, the estimated cost of damage to residential and non-residential structures in the event of a severe storm is provided. The numbers and estimated value represents the total number of structures in the unincorporated areas of Okaloosa County. Although it is highly unlikely that all structures will be impacted during a singular severe storm event, all structures are equally vulnerable to severe storms and so it was deemed appropriate to list all structures in the unincorporated county.

Table 5.10.02.11.1: Residential Structures Vulnerable to Severe Storms in Unincorporated Okaloosa County

Total:	Condominium	SFR-Townhouse	Single-Family	Multi-Family
	143	112	20,218	238
Just Value	$30,249,670	$36,416,401	$4,710,885,325	$161,829,667

Storms in Unincorporated Okaloosa County
Source: Okaloosa County Department of Growth Management, 2025 and Okaloosa County Property Appraiser, 2025

Table 5.10.02.11.2: Other Structures Vulnerable to Severe Storms in Okaloosa County

Total:	Commercial	Government / Institutional
	1,666	133
Just Value	$1,369,710,358	$1,455,793,77

Source: Okaloosa County Department of Growth Management, 2010 and Okaloosa County Property Appraiser, 2025

Since severe storms includes tornadoes and waterspouts, thunderstorms and lightning, and winter storms, the values listed in the tables above apply to all of those special hazard types.

Section 5.10.02.11.01 Tornado and Waterspout

All of unincorporated Okaloosa County is vulnerable to tornado damage, and all structures within the unincorporated areas are susceptible to their impacts due to the unpredictable nature of this hazard. The unincorporated areas most vulnerable to tornado damage are those with a high density or large population, such as Okaloosa Island, because the damage rate increases as a function of population density. The types of structures most vulnerable to damage are mobile homes, manufactured housing, poorly constructed or substandard housing and apartment complexes are especially susceptible to damage from a tornado. Manufactured housing and substandard housing are exceptionally susceptible because of their lack of resistance to high winds, and apartment complexes because of their size and densities.

According to the Mapping for Emergency Management, Parallel Hazard Information System (MEMPHIS) study in 2005, nearly all of the unincorporated Okaloosa County has a medium risk, 1 in 250 per year, of a tornado event occurring. Near the northwestern portion of the Blackwater River State Forest, the unincorporated area has a high risk, 1 in 100 per year, of a tornado event occurring.

All of the coastal unincorporated areas along the Gulf of Mexico and Choctawhatchee Bay are vulnerable to waterspouts because although they form over water, they can move onshore and damage coastal structures. The specific impacts of waterspouts in Okaloosa County are unavailable because there have been no studies conducted regarding this hazard's impacts in the County.

Section 5.10.02.11.02 Thunderstorms and Lightning

All of unincorporated Okaloosa County is vulnerable to thunderstorms and lightning, and all structures within the unincorporated area are susceptible to the damaging effects of wind, hail, and lightning associated with severe thunderstorms. According to the Mapping for Emergency Management, Parallel Hazard Information System (MEMPHIS) study in 2005, all of Okaloosa County has the threat of a thunderstorm or lightning event occurring, in terms of causing economic damage or loss of over $50, of 1 in 50 per year.

Section 5.10.02.11.03 Winter Storms

All of the unincorporated areas in Okaloosa County are vulnerable to winter storms, and all structures are susceptible to the effects of freezing temperatures. All of the unincorporated areas are minimally vulnerable to snow, freezing rain, icing and glazing events because they are so rare. The specific impacts of winter storms in Okaloosa County are unavailable because there have been no studies conducted regarding these hazards' impacts in the County. Only broad general impacts of this hazard can be given, which provide an indication of what impacts are expected with winter storms. As discussed in greater detail in Chapter 4, Winter Storm Enzo, which struck northwest Florida in January of 2025, provides an illustrative example of the kinds

of impacts that may happen during a winter storm event. The homes in Okaloosa County that are most vulnerable to winter storms are those with unprotected or under-protected water pipes and homes in which plumbing and insulation is inadequate. Unmitigated older structures and manufactured housing are also very vulnerable.

Section 5.10.02.12 Heat Wave and Drought

The entire unincorporated area is vulnerable to heat wave and drought. The specific impacts of heat wave and drought in Okaloosa County are unavailable because there have been no studies conducted regarding these hazards' impacts in the County. In addition, the nature of these hazards tends to only affect the populations without adequate cooling systems in their homes, low income, elderly, children, and outside workers. Only broad general impacts of these hazards can be given, which provide an indication of what impacts are expected with heat wave and drought.

Everyone living within the county is susceptible to heat exhaustion. All households are susceptible to power outages due to increased electricity demand during periods of extreme heat. Electrical system failures due to demand would only enhance problems for the entire population, especially for the vulnerable populations. All water bodies and municipal water supplies are susceptible to declining water levels and water shortages due to drought. Additional information regarding the impacts of heat waves and drought are provided in Chapter 4, including an estimate of the potential loss of agricultural products in northern Okaloosa County that could occur during a prolonged drought and heat wave. .

Section 5.10.02.13 Wildfire

All of the unincorporated areas in Okaloosa County are vulnerable to wildfire due to the proximity of houses and businesses within the wildland/urban interface. The homes located on the southern and northern perimeter of Eglin Air Force Base and in the northern unincorporated areas of the county are the most vulnerable because these areas have large acres of open forest land that are historically related to the Long Leaf Pine ecosystem and naturally dependent on wildfire. Homes located near the wildland/urban interface are most vulnerable to damage from wildfires. The following tables depict the structures with 'medium (levels 4-6)' to 'high (levels 7-9)' wildfire level of concern. Levels 0-3 were determined to be of such minimal to low vulnerability to wildfire they were not included in this assessment.

Table 5.10.02.13.1: Medium to High Wildfire Level of Concern for Residential Structures

Total:	Condominium	SFR-Townhouse	Single-Family	Mobile Home	Multi-Family
Level 4	0	9	2076	447	29
Just Value	$0	$773,725	$365,553,767	$29,049,036	$13,591,867
Level 5	0	6	1660	374	23
Just Value	$0	$944,650	$341,214,475	$25,227,545	$29,847,755
Level 6	0	1	576	199	7

Just Value	$0	$92,221	$103,958,972	$12,913,901	$20,026,158
Level 7	3	4	2271	478	18
Just Value	$252,580	$417,734	$330,179,622	$30,517,407	$8,013,709
Level 8	1	0	656	108	10
Just Value	$129,000	$0	$96,089,851	$6,914,257	$2,109,893
Level 9	0	0	77	16	1
Just Value	$0	$0	$13,412,231	$954,994	$125,185

Source: Florida Division of Forestry and Okaloosa County Property Appraiser, 2025 (Okaloosa County Staff generated table from overlaying the wildfire level of concern and property appraiser data)

Table 5.10.02.13.2: Medium to High Wildfire Level of Concern for Structures

Total:	Commercial	Government/ Institutional	Trailer Park	RV Park
Level 4	74	19	11	1
Just Value	$81,602,305	$366,179,594	$2,651,357	$118,626
Level 5	99	28	7	1
Just Value	$238,480,074	$450,530,372	$1,702,156	$118,626
Level 6	40	19	2	0
Just Value	$78,384,471	$368,007,190	$310,583	$0
Level 7	75	20	4	0
Just Value	$80,591,649	$328,483,421	$710,623	$0
Level 8	26	13	3	0
Just Value	$32,677,748	$312,305,938	$1,191,355	$0
Level 9	7	6	0	0
Just Value	$10,859,378	$40,441,211	$0	$0

Source: Florida Division of Forestry and Okaloosa County Property Appraiser, 2025 (Okaloosa County Staff generated table from overlaying the wildfire level of concern and property appraiser data)

Section 5.10.02.14 Beach Erosion

All of the coastal unincorporated areas in Okaloosa County are vulnerable to beach erosion. Homes located on beach-front or bay-front property are the most vulnerable to beach erosion. Intensive wind and wave action, usually during tropical storms and hurricanes, can accelerate the natural rate of beach erosion. The majority of the unincorporated population that resides in the southern portion of the county lives in the coastal areas. Therefore, beach erosion impacts infrastructure, critical facilities, residences and commercial buildings. Hurricanes, tropical storms

and severe storms can cause beach erosion. The following table depicts the vulnerable structures to beach erosion in Okaloosa County's unincorporated area.

Table 5.10.02.14.1: Total Structures Susceptible to Beach Erosion

	Condominium	SFR-Townhouse	Single-Family	Multi-Family	Commercial	Government /Institutional
Total	8	1	381	4	15	13
Just Value	$1,492,000	$223,393	$279,192,527	$1,950,566	$83,248,365	$52,441,043

Source: Okaloosa County Department of Growth Management and Okaloosa County Property Appraiser
Note: Table was generated from Property Appraiser data based on the structures that were determined to be located along the coastal areas in Okaloosa County.

Section 5.10.02.15 Sea Level Rise

As previously stated in Section 5.10.01.11, the 2025 Okaloosa County Vulnerability Assessment (VA) attached hereto as Appendix E utilizes multiple potential sea level rise scenarios in combination with various flood events to illustrate the County's vulnerability to impacts associated with rising sea levels on both coastal inundation and 1% annual chance flood events. Due to the variety of possible outcomes, it is not possible to reliably show the financial exposure unique to the unincorporated County associated with this hazard. However, a number of figures and tables within the VA are illustrative of the level of threat posed by this hazard across the County and its municipalities (not including Destin which has prepared its own Vulnerability Assessment) including but not limited to the following:

Table ES-1. Assets with the Highest Risk
Table 6-1. Percent Inundation of Parcels by Type for Flood Scenarios
Table 6-2. Asset Class Exposure by Flood Scenario
Figure 8-1. Critical infrastructure vulnerability (lift stations) in North County
Figure 8-2. Roadway Vulnerability in North County
Table 8-3. High or Extreme Vulnerability County-Owned or Maintained Roads
Table 8-4. Vulnerable Parks in North County
Figure 8-4. Critical Community and Emergency Facilities in South County
Figure 8-8. Critical Water Utilities (lift stations) in South County
Figure 8-9. Roadway Vulnerability in South County
Table 8-5. Critical Southern Roadways Flood Impacts
Figure 8-11. Shoreline Vulnerability in South County
Table 9-2. Top 10 Highest Risk Assets, High-Criticality Built Infrastructure Assets

Readers are encouraged to review the VA to understand the full import of the information presented in the tables above and elsewhere throughout the study.

Following up on the VA, Jacobs Engineering also produced the 2025 Okaloosa County Adaptability Plan (AP) which is intended to establish a comprehensive, science-based framework

for adapting to the evolving risks posed by extreme weather events and sea level rise" (Jacobs Engineering 2025). In addition to laying out strategies and making policy and planning recommendations, the PA also identifies specific projects which, in completed, will he increase the County's – and municipalities' – resilience to sea level rise and extreme weather. The most important projects are listed in Table ES-1:

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Table ES-1. Prioritized Adaptation Projects

Priority	Vulnerable Asset/Area	Project	Project Owner	Cost
Critical Community and Emergency Facilities				
1	Okaloosa Fire Station #4	Okaloosa Fire Station #4 Hardening	Okaloosa County	Variable
2	Elliott Point Elementary	Harden Elliott Point Elementary School for flooding	Okaloosa County School Board	Variable
Transportation and Evacuation Routes				
1	US-98	US-98 Living Shoreline	Okaloosa County	$750,000 (design)
2	US-98	Vulnerability Assessment	FDOT	$150,000
3	SR-85	Elevate Shoal River Bridge and Approaches	FDOT	TBD
4	CR-393	Elevate Bridge at Shoal River and Pond Creek	Okaloosa County	TBD
5	Miracle Strip Parkway (US-98)	Miracle Strip Parkway Road Elevation and Drainage Improvements	FDOT	TBD
Critical Infrastructure				
1	Gap Creek	Sanitary Lift Station Hardening	Okaloosa County	$400,000
2	Wynne Haven, Parrish Point	Community Resilience Vision Plan	Okaloosa County	TBD
3	Bluewater Bay	Community Resilience Vision Plan	Okaloosa County	TBD
4	Gap Creek	Gap Creek H&H Study	Okaloosa County	$250,000
5	Mary Esther	Regional Coastal Resilience Plan	Okaloosa County	TBD
Natural, Cultural, and Historical Resources				
1	Lions Park/Niceville	Lions Park Expansion and Hicks Basin Conservation Area	Niceville	TBD
2	Various Parks/Valparaiso	Valparaiso Resilient Parks	Valparaiso	$50,000 per park

The PA notes that, “[o]f the projects described in this Plan, the elevation of the Shoal River Bridge at SR-85 and its approaches is the greatest priority project for implementation for the community” as it is the “primary connection between north and South County and is crucial for daily activities and commutes as well as evacuations during emergencies.”

Section 5.10.02.16 Other Hazards

As previously stated in the Risk Assessment, the following hazards, sinkholes, expansive soils, earthquake, avalanche, land subsidence, volcano, and tsunami have been determined to be a minimal risk to Okaloosa County. Therefore, the County has not assessed its vulnerability to these hazards. If any of the hazards become a greater risk in the unincorporated Okaloosa County, then the LMS Committee will update this section to reflect those changes.

Section 5.10.02.17 Summary

The vulnerability assessment section of this LMS document highlighted how vulnerable the unincorporated Okaloosa County is to the identified hazards from the Risk Assessment. It discussed the vulnerable populations, repetitive loss properties, and structure and infrastructure damages associated with these hazards.

Section 5.10.03 Critical Facilities

Sections 5.10.03.01 through 5.10.3.10 provide a list of all critical facilities found inside the unincorporated areas of Okaloosa County. It is to be noted that some critical facilities are private, and some belong to and are maintained by jurisdictions other than Okaloosa County.

Three of the facilities listed below – the Shoal River Bridge East, the Conference Center Parking Lot, and Okaloosa Island Fire Station 4 – are within the 100-Year Floodplain. Policies that address the construction and reconstruction of such facilities are provided under Goal 4 of the Post Disaster Redevelopment Plan which is included as Section 5.10.06 of this LMS. The specific circumstances of each of these facilities are discussed briefly, below.

The Shoal River Bridge East is a reference point for Rapid Assessment Teams. Since it is a bridge, it must perforce remain in place should post-disaster re-development be necessary, in which case Policy 4.1.3 of the Okaloosa County Post Disaster Redevelopment Plan requires that it be rebuilt according to all current codes and standards.

The County-owned Conference Center Parking Lot serves as a staging area for disaster recovery efforts where its location and the fact that it is under public ownership make it irreplaceable as a location at which vehicles and personnel may be marshaled, vehicles and equipment stored, and debris temporarily kept prior to final removal from Okaloosa Island to the appropriate approved facilities. Because of its location and ability to provide a variety of post disaster functions where large open areas are needed, it is unlikely that the County would try to relocate or replace it in the wake of a flood or other disaster.

Island Fire Station Number 4 serves as headquarters for the Okaloosa Island Fire Control District, and independent special district established to provide fire control and life safety services to Okaloosa Island. Because the entire area for which this facility must provide service is located on the Island, it is unlikely that a more suitable location would be found. Therefore, it is unlikely that this facility could be relocated, though any post-disaster repairs would have to comply with all current building codes and other standards.

Section 5.10.03.01 Fire Stations

Site Name	Address	X-COORD	Y-COORD
ALMARANTE VOLUNTEER FIRE DEPARTMENT	3710 OLD CALIFORNIA RD	1347808.38	709746.62
BLACKMAN VOLUNTEER FIRE DEPARTMENT	1850 HWY 2	1299060.79	706269.03
NORTH OKALOOSA FIRE DISTRICT STN 81 (AUBURN)	3052 HEMPHILL RD	1328896.80	668543.00
DORCAS VOLUNTEER FIRE DEPARTMENT - STN 1	4418 POVERTY CREEK RD	1364699.02	660961.18

NORTH OKALOOSA FIRE DISTRICT STN 82 (AIRPORT)	5549 JOHN GIVENS RD	1332792.58	651456.62
DORCAS VOLUNTEER FIRE DEPARTMENT - STN 2	5232 DEER SPRINGS DR	1357755.62	642472.74
NORTH OKALOOSA FIRE DISTRICT STN 83 (MILLIGAN)	5241 HWY 4	1294753.98	644480.80
EAST NICEVILLE FIRE DISTRICT - STN 13	1709 27TH ST	1351957.34	555417.85
NORTH OKALOOSA FIRE DISTRICT STN 84 (JOHN KING)	429 JOHN KING RD	1326762.60	631316.60
HOLT VOLUNTEER FIRE DEPARTMENT	490 HWY 90 W	1261189.61	630042.28
NORTH BAY FIRE CONTROL DISTRICT	1024 WHITE POINT RD	1364764.04	539541.28
OCEAN CITY-WRIGHT FIRE CONTROL DISTRICT - STN 1	233 RACETRACK RD NE	1304854.31	531655.72
OCEAN CITY-WRIGHT FIRE CONTROL DISTRICT - STN 3	24 OAK ST	1294901.25	526047.16
OKALOOSA ISLAND FIRE DISTRICT - STN 4	104 SANTA ROSA BLVD	1306670.99	514326.16
FLOROSA FIRE DEPARTMENT - STN 5	2252 W HWY 98	1263205.27	520543.66

Section 5.10.03.02 Government Centers

Site Name	Address	X-COORD	Y-COORD
COUNTY WATER & SEWER	1804 LEWIS TURNER BLVD STE 100	1297718.456	537775.713
COUNTY ADMINISTRATION BUILDING	1250 EGLIN PKWY N	1313074.796	531761.307

Section 5.10.03.03 Hospitals

Site Name	Address	X-COORD	Y-COORD
FWB MEDICAL CENTER	1000 MAR WALT DR FORT WALTON BEACH FL 32547	1296275.172	535337.291

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Section 5.10.03.04 Adult Congregate Living Facilities

Site Name	Address	X-COORD	Y-COORD
SAFE AND SECURE RESPITE CARE, LLC	3091 SKYLINE DR	1329171.17	647892.09
EASTON'S PLACE LLC	2301 JAMES LEE BLVD W	1308593.44	648521.95
CARINGTON MANOR	3215 JAMES LEE BLVD E	1332398.37	644209.55
MANOR AT BLUEWATER BAY	1500 N WHITE POINT RD RM 115	1365888.41	544417.47
BROOKDALE BLUEWATER BAY	1551 MERCHANTS WAY RM 101	1364291.65	546176.21
HAWTHORN HOUSE	1200 HAWTHORN HOUSE DR UNIT 106	1313617.70	538544.11
BEE HIVE HOMES OF NICEVILLE	4268 IDA COON CIR	1357855.00	549034.30
FORT WALTON BEACH DEVELOPMENT CENTER	1045 MAR WALT DR	1295261.17	535791.02
BELVEDERE COMMONS OF FORT WALTON BEACH	2000 PRINCIPAL LN	1297126.38	534105.14
FORT WALTON BEACH REHABILITATION CENTER	1 L B J SR DR	1295543.39	538075.59
BROOKDALE FORT WALTON BEACH	233 CARMEL DR	1292399.76	531065.01
GULF COAST TREATMENT CENTER	1015 MAR WALT DR	1295525.15	535772.08

Section 5.10.03.05 Public Works Facilities

Site Name	Address	X-COORD	Y-COORD
OKALOOSA INDUSTRIAL PARK WWTP	5581 FAIRCHILD RD	1335540.03	652460.89
OKALOOSA CO FACILITY MAINTENANCE	5489 OLD BETHEL RD	1310253.23	650633.96
RUSSELL STEPHENSON WWTP	3182 W HWY 98	1244284.11	520156.43

Section 5.10.03.06 Rapid Impact Assessment Team Reference Points

Site Name	Address	X-COORD	Y-COORD
YELLOW RIVER BRIDGE	1954 HWY 90 W	1299638.35	643673.19
SHOAL RIVER BRIDGE (HWY 90)	3393 HWY 90 E	1337207.57	643259.49
BAKER COMMUNITY	5808 HWY 189 N BLDG B	1283458.18	660335.64
SHOAL RIVER BRIDGE (HWY 393)	5778 HWY 393	1365449.77	656302.69
SHOAL RIVER BRIDGE (HWY 85)	5999 S FERDON BLVD	1317537.85	623148.51
SHALIMAR BRIDGE	843 EGLIN PKWY N	1309026.55	530082.68
EMERALD COAST CONVENTION CENTER	1250 MIRACLE STRIP PKWY	1308065.96	514360.25
FLOROSA FIRE DEPARTMENT - STN 5	2252 W HWY 98	1263205.27	520543.66
FLOROSA ELEMENTARY SCHOOL	1700 W HWY 98	1265662.95	520882.85

Section 5.10.03.07 Helicopter Landing Zones and Possible Staging Areas

Site Name	Address	X-COORD	Y-COORD
CRESTVIEW AEROSPACE	5486 FAIRCHILD RD CRESTVIEW FL 32539	1335443.6	649842.999
FWB MEDICAL CENTER	1000 MAR WALT DR FORT WALTON BEACH FL 32547	1296575.954	535556.036

Section 5.10.03.08 Disaster Recovery Centers/Comfort Stations/Field Clinics

Site Name	Address	X-COORD	Y-COORD
BAKER COMMUNITY CENTER	5503 HWY 4 BAKER FL 32531	1286052.568	651369.699
BLUEWATER BAY ELEMENTARY	4545 RANGE RD	1364218.67	547098.08

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Section 5.10.03.09 Hurricane Shelters *(See Note)*

Site Name	Address	X-COORD	Y-COORD
BAKER SCHOOL	1369 14TH ST BAKER FL 32531	1284339.339	658748.033

NOTE: Some of the sites listed above may be dual-use. It is not the intention of this plan that all the listed facilities would be opened as temporary shelters in any given event. Temporary living shelters would be opened as needed in geographic regions of the county. If additional sites are needed due to damage of those above or a heavy demand, any surviving school may be pressed into service under the provisions of Chapter 252, F.S.S.

Section 5.10.03.10 Mobile Home Parks and RV Campgrounds

Site Name	Address	X-COORD	Y-COORD
ACTION ON BLACKWATER RIVER	6293 HWY 4 W	1268198.65	673270.51
ANCHOR TRAILER PARK	509 23RD ST LOT 8	1348969.65	554439.62
ARCHWAY TRAILER PARK	110 ECCLES RD	1293003.85	532959.91
AZALEA TRAILER PARK	326 CARMEL DR LOT 41	1290819.00	530615.19
BAY COVE TRAILER PARK	60 BAYOU DR LOT 20	1303778.37	533364.61
BEACH DR MOBILE HOME PARK	117 BEACH DR	1306996.81	531262.09
BETHEA MHP	505A SCOTT LN	1298679.08	531600.03
BLUEBERRY COUNTRY ESTATES	5975 COBBLER LN	1326539.33	663026.18
BRAD MAR TRAILER PARK 1	155 AIR FORCE ST	1299014.17	532959.81
BRAD MAR TRAILER PARK 2	843 GIBSON RD LOT 2	1296013.00	532547.17
CAMERON'S TRAILER PARK	208 CASPER DR LOT 1	1295602.90	527733.37
CAPRI COMMONS MOBILE HOME PARK	928 CARLOS DR	1298396.77	534143.89
CAVALIER MHP	5294 CAVALIER DR	1333275.00	644833.40
CEDAR CREEK MHP	5301 HARE ST LOT 23	1332247.13	645093.62
COACHLIGHT TRAILER PARK	705 LLOYD ST LOT 4	1298102.13	530931.94
COUNTRY BREEZE MOBILE HOME PARK #1	510 UNION ST LOT 7	1292905.77	536312.31
COUNTRY BREEZE MOBILE HOME PARK #2	523 UNION ST LOT 11A	1292489.72	536491.68
CROSSWINDS	208 SPRUCE ST LOT 1	1246995.07	520460.50

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DENTON TRAILER PARK	675 DENTON BLVD NW LOT 1	1299282.00	530681.70
DURHAM MOBILE HOME PARK	44 BRENDA LN	1256893.99	520645.92
EMERALD COAST VILLAS	20 SOUNDINGS WAY	1364063.92	507515.81
EVANS TRAILER PARK	729 GREEN ST LOT 7	1297682.92	531700.52
FOREST GROVE TRAILER PARK	1318 LEWIS TURNER BLVD LOT 20	1295322.88	536802.44
FOREST HEIGHTS TRAILER PARK	820 TANAGER RD LOT 5	1297753.33	538751.86
FREEDOM HOME MOBILE PARK	2210 JAMES LEE BLVD W LOT 11	1306162.60	645133.20
FUNLAND TRAILER COURT	825 EGLIN PKWY N LOT 5	1308416.21	529856.05
GRANTS TRAILER PARK	415A LAKEVIEW ST┬á	1244284.11	520156.43
GRAYS TRAILER PARK	678 KEHLHEM RD	1298600.32	530324.37
GREENWOOD MOBILE HOME COMMUNITY	103 JULIE ST LOT 16	1304854.31	531655.72
HARDIE MHP	13 HARDIE LN	1299152.07	530588.83
HILLTOP TRAILER PARK	931 JAMES LEE BLVD W LOT 10	1310861.72	647617.72
HOUSTON PARK	239 CARMEL DR LOT 5	1291910.75	531004.69
HUDSONS MOBILE HOME PARK	826 MAYO TRL LOT 16	1311434.60	647198.40
JACK PARKER TRAILER PARK	814 TANAGER RD LOT 25	1297070.34	539075.13
KILLINGSWORTH MOBILE HOME PARK	106 LINCOLN DR NW LOT 4	1293650.63	529340.94
LAURENT MOBILE HOME PARK	2496 W HWY 98 LOT 1	1255576.04	520342.66
LAZY OAKS TP	4600 WILKERSON BLUFF RD LOT A	1284673.01	627442.33
MAJOR MANOR	801 FAIRVIEW DR LOT 1	1290613.34	531029.72
OAKDALE VILLAGE MOBILE HOME PARK	820 GIBSON RD LOT 1	1295828.91	531546.59
OAKRIDGE ROAD MOBILE HOME PARK	800 OAKRIDGE RD	1296477.87	532129.55
PALM TRAILER PARK	1015 PARTIN DR N LOT 8	1347301.50	560278.25
PARKER'S PARK/CARDINAL COVE	821 CARDINAL ST LOT 9	1298181.76	539919.69
PATTYS TRAILER PARK	781 NAVY ST	1298450.44	531253.01
PAULETTE'S TRAILER COURT	1778 HURLBURT RD LOT 4	1292387.00	533341.66

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PEGGY MARLER MHP	1303A BEVERLY ST	1293483.00	536149.32
PINECREST TRAILER PARK	441 RACETRACK RD NW LOT 20	1295435.75	533254.94
PINEOAKS TRAILER PARK	622 GAP CREEK DR LOT 1	1293275.47	526530.61
PLANTATION TRAILER PARK	816 TANAGER RD LOT 1	1297496.39	538984.48
PLAYGROUND MOBILE HOME PARK	807 GIBSON RD	1295967.05	531403.42
PREBLE'S TRAILER COURT/LLOYD ST MHP	724 LLOYD ST LOT 3	1297773.38	531467.75
PRIETO'S TRAILER PARK/ASHLEY MHP	1504 18TH ST	1349551.57	552160.36
QUALITY TRAILER PARK	1814 HURLBURT RD LOT 1	1293193.64	533471.25
RICHARDS TRAILER PARK	1507 HICKORY ST	1366903.16	544154.79
ROCKIN'W TRAILER PARK/ADAMS MHP	800 CARDINAL ST LOT 4	1297385.94	539750.43
RODRIQUEZ TRAILER PARK/CRADDOCK'S	54 CACTUS RD	1257741.94	519967.14
RUZOWSKI RV PARK	134 FETTING AVE NW LOT 1-6	1295419.12	532619.19
RYALS TRAILER PARK	800 LARK ST LOT 1	1297071.43	539432.06
SANDERS TRAILER PARK	703 SHADY LANE DR	1293500.42	528294.49
SARAH'S MOBILE HOME PARK/NEESE MHP	818 NAVY ST LOT A	1298408.60	532676.47
SIMPLERS TRAILER PARK	1303 GREEN ACRES AVE	1292205.50	536105.56
SIR ROBERTS TRAILER PARK	1302 GREEN ACRES AVE LOT 18A	1291990.84	535980.13
SMITH'S MOBILE HOME PARK	703 VIOLA DR	1295221.51	531126.89
TAUNTON TRAILER PARK/BOEHNERS VILLAGE	105 HARDING RD	1349616.25	551703.06
THOMAS TRAILER PARK	701 LEONARD RD LOT 4	1294867.13	531212.38
TISA TRAILER PARK/WADE	101 SASSER ST	1349514.88	554600.44
TJP ENTERPRISE	1041 48TH ST LOT B	1348076.66	562919.72
TYNER COURT MOBILE HOME PARK	700 TYNER ST LOT 3	1299836.00	530850.44
VACHE ROYALE	800 DENTON BLVD NW LOT 8	1299105.81	532216.60
VILLA BREEZE PARK	517 SCOTT LN	1299099.63	531570.76
VILLA WINDS TRAILER PARK	678 DENTON BLVD NW LOT 7	1299175.25	531386.50

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WARDS MOBILE HOME PARK	1502 W PONDEROSA RD	1296407.87	538867.19
WARRENS TRAILER PARK/MONTEVERDE MHP	650 REEVES DR	1298685.04	530852.18
WAYER MOBILE HOME PARK	5864 C B DR	1319881.33	659041.90
WHISPERING PINES COURT	1 NEWCASTLE DR LOT A	1299303.18	530418.76
WILLIAMS COURT VENTURES	916 WILLIAMS CT	1296505.49	530987.59
WILLOW WINDS MOBILE HOME PARK	127 RAY VECCHINO RD	1263648.35	521224.04
WRIGHT CIRCLE MOBILE HOME PARK	912 CANOPY LN	1290685.76	531233.71
WRIGHT TRAILER COURT	150 BARKS DR	1294875.25	534712.62
ZUPCO MOBILE HOME COURT	226A OAKHILL AVE	1295684.31	528639.38

Unincorporated Okaloosa County

Section 5.10.04 Mitigation Actions

Section 5.10.04.01 Introduction

Sections 5.10.04.2 through 5.10.04.10 list the mitigation actions currently being taken by Okaloosa County to help reduce the County's exposure to the identified hazards. These actions implement the directives of the Okaloosa County Comprehensive Plan, Land Development Code, and other applicable codes and ordinances. Many of these activities are listed as "ongoing" as they are not static measures (e.g., building a new emergency operations center), but rather require either constant or periodic actions on the part of the County department tasked with their implementation. A good example of this is section 5.10.04.02.3 which recognizes the County's enforcement of the Florida Building Code (FBC); this is not a one-time action, the FBC must be consistently enforced through review of building permit applications without which construction cannot occur.

Section 5.10.04.02 Hurricane and Tropical Storm

1. Support efforts to shutter critical facilities. *Status: Ongoing; subject to new structural codes and buildings*
2. Ensure the public is informed of pending conditions. *Status: ongoing; Public Safety*
3. Enforce Florida Building Codes for new structures. *Status: ongoing; Growth Management*
4. Ensure adequate equipment exists to remove debris, clear roads, perform search and rescue functions, and otherwise respond and recover from hurricane impacts. *Status: ongoing; Public Works and Public Safety*
5. Ensure communications are wind and electrical-failure resistant to allow for 24/7 communications during the first 72 hours following a disaster. *Status: ongoing; Public Safety, Information Systems, State of Florida, FEMA, and Private entities*
6. Ensure adequate and safe public risk shelters are available in all locations in the County to prevent homelessness, including adequate dining facilities and to maintain sanitary conditions. *Status: ongoing; Public Safety, Okaloosa County School District, Northwest Florida State College and the American Red Cross*
7. Promote and support funding that allows for buildings to remain functional before, during and after a hurricane or tropical storm event in order to support the function of Okaloosa County Emergency Management's mandates. *Status: ongoing; Board of County Commissioners*
8. Support protection of county infrastructure named in the Okaloosa County Comprehensive Emergency Management Plan and its Emergency Support Functions. *Status: ongoing; Public Works and Okaloosa County Water & Sewer*
9. Promote public awareness of hurricane and tropical storm hazards. *Status: ongoing; Public Safety*

10. Promote ways that private structure owners and landowners can mitigate using governmental or private sector investment. *Status: ongoing; Public Safety and Growth Management*
11. Ensure roads are designed and engineered for the amount of wind, surge, flooding and debris that can be expected from a hurricane or tropical storm event. *Status: ongoing; Public Works*
12. Ensure communications systems are capable to communicate during and following hurricanes/tropical storms. Also, to include the ability to erect temporary repeaters to restore communications. *Status: ongoing; Public Safety, Information Systems, State of Florida, FEMA, and Private entities*
13. Ensure internet systems are redundant to ensure continued availability of disaster management software throughout the county. *Status: ongoing; Public Safety, Information Systems, State of Florida, FEMA, and Private entities*
14. Support activities that educate the public about the dangers of hurricanes/tropical storms. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office. *Status: ongoing; Public Safety and Growth Management*

Section 5.10.04.03 Storm Surge

1. Promote public awareness of storm surge. *Status: ongoing; Public Safety and Growth Management*
2. Ensure the public is informed of pending conditions. *Status: ongoing; Public Safety*
3. Ensure that maps accurately reflect the amount of storm surge, wave and flood action that can occur during hurricanes and tropical storms. *Status: ongoing; Information Systems, Public Safety and Growth Management*
4. Provide opportunities for property owners to elevate existing structures, move them to higher ground, or to have properties purchased by local governments in order to reduce overall community vulnerability to storm surge. *Status: ongoing; Growth Management and Grants*
5. Promote the continued purchase of lands that are at high risk of storm surge, with proper considerations of private property rights and constitutional requirements for just compensation, as appropriate. *Status ongoing; Growth Management and Board of County Commissioners*
6. Ensure roads are designed and engineered for the amount of storm surge that can be expected. *Status: ongoing; Public Works*
7. Support activities that educate the public about the dangers of storm surge. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office. *Status: ongoing; Public Safety and Growth Management*

Unincorporated Okaloosa County

Section 5.10.04.04 Flooding

1. Ensure all future buildings are constructed to the Florida Building Code. *Status: ongoing; Growth Management; for NFIP Compliance*
2. Ensure all future buildings are built with a minimum finished floor height of 1' above the established Base Flood Elevation on the Flood Insurance Rate Maps for those buildings located within the AE Flood Zones. *Status: ongoing; Growth Management; for NFIP Compliance*
3. Ensure all future buildings built within the V Flood Zones meet the minimum 1' freeboard requirement. *Status: ongoing; Growth Management; for NFIP Compliance*
4. Ensure all future buildings are built with a minimum finished floor height of 5' above the highest adjacent grade for those buildings located within the un-numbered A Flood Zones. *Status: ongoing; Growth Management; for NFIP Compliance*
5. Ensure all future buildings are built with a minimum finished floor height of 1' above the crown of the road, unless a variance is granted by the Public Works department. *Status: ongoing; Growth Management and Public Works; for NFIP Compliance*
6. Ensure roads are designed and engineered for the amount of flooding that can be expected. *Status: ongoing; Public Works; for NFIP Compliance*
7. Ensure that all flooding sources are documented and that the public are aware of the existence of such mapping services and products for planning purposes. *Status: ongoing; Growth Management and Public Safety; for NFIP Compliance*
8. Promote the continued purchase of lands that are at high risk of flooding, with proper considerations of private property rights and constitutional requirements for just compensation, as appropriate. *Status: ongoing; Growth Management and Board of County Commissioners; for NFIP Compliance*
9. Provide opportunities for property owners to elevate existing structures, move them to higher ground, or to have properties purchased by local governments in order to reduce overall community vulnerability to flooding. *Status: ongoing; Growth Management; for NFIP Compliance and Grants*
10. Ensure that all public buildings that serve first response and critical emergency/public needs, including recording/data collection and communication centers/infrastructure, are located outside of flood zones or flood prone areas. *Status: ongoing; Growth Management and Public Safety; for NFIP Compliance*
11. Ensure communications systems are capable to communicate during and following flood events. *Status: ongoing; Public Safety, Information Systems, State of Florida, FEMA and Private entities; for NFIP Compliance*
12. Maintain status as a NFIP and CRS community by enforcing both the NFIP requirements and additional criteria that exceeds the NFIP for CRS compliance as a class 5 community. *Status: ongoing; Growth Management, Public Safety, and Public Works*

13. Support efforts of the Institute of Food and Agricultural Services (IFAS/County Cooperative Extension Service) and the Natural Resources Conservation Services (NRCS) as it relates to reduction and mitigation of flood hazards to crops and silvacultural operations. *Status: ongoing; Growth Management and County Extension*
14. Support activities that educate the public about the dangers of flooding. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office. *Status: ongoing; Growth Management and Public Safety; for NFIP Compliance*
15. Ensure the public is informed of pending conditions. *Status: ongoing; Public Safety; for NFIP Compliance*

Section 5.10.04.05 Dam Safety

1. Support efforts that document hazards and risks associated with structural and earthen dams and upkeep. *Status: ongoing; Northwest Florida Water Management District and Public Safety*
2. Support efforts that create partnerships with property owners that promote the overall goal of communitywide and stream valley safety. *Status: ongoing; Northwest Florida Water Management District*
3. Support efforts to produce hazard zone maps that depict flooding that could result from dam failure. *Status: ongoing; Information Systems and Northwest Florida Water Management District*

Section 5.10.04.06 Land Erosion

1. Support efforts that protect natural plant systems, human plantings, special tilling methods and technologies, and other forms of vegetative erosion control. *Status: ongoing; Growth Management and Public Works*
2. Require proposed temporary and permanent erosion and sediment control plans are submitted with each application for construction approval. *Status: ongoing; Public Works and Growth Management*
3. Require no clearing, grading, excavating, filling, or other disturbance of the natural terrain shall occur until erosion and sedimentation control measures have been approved by Okaloosa County and installed and be maintained throughout the length of construction activity. *Status: ongoing; Growth Management and Public Works*
4. Sediment shall be retained on site. *Status: ongoing; Growth Management, Public Works, and State of Florida*
5. Wetlands and other water bodies shall not be used as sediment traps during construction. *Status: ongoing; Public Works, Growth Management and State of Florida*

6. Require land which has been cleared for construction and has not commenced shall be protected from erosion be appropriate techniques designed to re-vegetate the area. *Status: ongoing; Growth Management and Public Works*
7. Support efforts that allow public and private sector entities to gain control of problem erosion locations, gullies and rills that reduce unnatural sedimentation accumulation and cutting into natural hillsides and land, and to control coastal erosion where seawalls are necessary. *Status: ongoing; Public Works*
8. Support efforts that would allow for construction and infrastructure development to eliminate an existing erosion problem or to eliminate creation of such a problem. *Status: ongoing; Public Works and Growth Management*
9. Support efforts that help to eliminate or reduce coastal erosion due to boat/ship wake issues, while weighing the interests of the boating public. *Status: ongoing; United States Coast Guard, Public Works, and Growth Management*

Section 5.10.04.07 Severe Storms

1. Ensure the public is informed of pending conditions. *Status: ongoing; Public Safety*
2. Ensure communications systems are capable to communicate during and following severe storms. *Status: ongoing; Public Safety, Information Systems, State of Florida, FEMA and Private entities*
3. Ensure internet systems are redundant to ensure continued availability of disaster management software throughout the county. *Status: ongoing; Public Safety, Information Systems, State of Florida, FEMA and Private entities*
4. Support activities that educate the public about the dangers of severe storms. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office. *Status: ongoing; Public Safety and Growth Management*

Section 5.10.04.07.01 Tornado and Waterspout

1. Ensure communications systems are capable to communicate during and following tornados and waterspouts. *Status: ongoing; Public Safety, Information Systems, State of Florida, FEMA and Private entities*
2. Support activities that educate the public about the dangers of tornados and waterspouts. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office. *Status: ongoing; Public Safety and Growth Management*
3. Support activities to reduce the risk of loss of electronic equipment and structures due to tornados and waterspouts. *Status: ongoing; Public Safety, Information Systems, and Growth Management*
4. Ensure the public is informed of pending conditions. *Status: ongoing; Public Safety*

5. Ensure internet systems are redundant to ensure continued availability of disaster management software throughout the county. *Status: ongoing; Public Safety, Information Systems, State of Florida, FEMA, and Private entities*

Section 5.10.04.07.02 Thunderstorms and Lightning

1. Ensure communications systems are capable to communicate during and following thunderstorms and lightning. *Status: ongoing; Public Safety, Information Systems, State of Florida, FEMA, and Private entities*
2. Support activities that educate the public about the dangers of thunderstorms and lightning. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office. *Status: ongoing; Public Safety and Growth Management*
3. Support activities to reduce the risk of loss of electronic equipment and structures due to lightning strike and electrical surge. *Status: ongoing; Information Systems, Growth Management, and Private entities*
4. Ensure the public is informed of pending conditions. *Status: ongoing: Public Safety*
5. Ensure internet systems are redundant to ensure continued availability of disaster management software throughout the county. *Status: ongoing; Public Safety, Information Systems, State of Florida, FEMA and Private entities*

Section 5.10.04.07.03 Winter Storms

1. Ensure communications systems are capable to communicate during and following winter storms. *Status: ongoing; Public Safety, Information Systems, State of Florida, FEMA, and Private entities*
2. Support activities that educate the public about the dangers of winter storms. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office. *Status: ongoing; Public Safety and Growth Management*
3. Ensure winter storm shelters are capable of providing heating systems. *Status: ongoing; Public Safety, Okaloosa County School Board , and Private entities*
4. Reduce or eliminate the vulnerability to freezing or provide secondary heating or electrical systems for public facilities. *Status: ongoing; Public Safety, Facility Maintenance, and Private entities*
5. Ensure the public is informed of pending conditions. *Status: ongoing; Public Safety*

Section 5.10.04.08 Heat Wave and Drought

1. Ensure communications systems are capable to communicate during and following heat waves and droughts. *Status: ongoing; Public safety, Information Systems, State of Florida, FEMA, and Private entities*

2. Support activities that educate the public about the dangers of heat waves and droughts. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office. *Status: ongoing; Public Safety*
3. Ensure host shelters are capable of providing cooling systems. *Status: ongoing; Public Safety, Okaloosa County School District and Private entities*
4. Ensure the public is informed of pending conditions. *Status: ongoing; Public Safety*

Section 5.10.04.09 Wildfire

1. Ensure communications systems are capable to communicate during and following wildfire events. *Status: ongoing; Public Safety, Information Systems, State of Florida, FEMA and Private entities*
2. Ensure the public is informed of pending conditions. *Status: ongoing; Public Works*
3. Support activities that educate the public about the dangers of wildfire. Such activities should be coordinated with the County Public Safety Department, Emergency Management Office or the local fire department or the Florida Division of Forestry. *Status: ongoing; Public Safety and State of Florida, Department of Agriculture, Division of Forestry*
4. Require new subdivisions plats and new commercial structures to designed and built to the National Fire Codes. *Status: ongoing; Growth Management and Public Works*
5. Support activities that newly document or update maps, aerial photography, or other remote sensing imagery that shows degrees of risk for wildfire and utilize such data to focus mitigation activities against wildfire. *Status: ongoing; Information Systems, Growth Management and State of Florida, Department of Agriculture, Division of Forestry*
6. Support efforts that fire stations and their supporting equipment and personnel are adequate in terms of size, modernization, communications, in order to respond to situations by mitigating situations that are below acceptable standards to fight wildfires throughout the County and to provide mutual aid support in neighboring jurisdictions or counties. *Status: ongoing; Public Safety*
7. Support public and private mitigation efforts to provide fire hydrants to locations at risk along the urban/rural interface where water systems exist to provide such services. *Status: ongoing; Public Safety and Growth Management*
8. Support mitigation efforts that would identify public measures that would help agricultural, forestry and silvacultural prevent or lessen the risk of wildfires. *Status: ongoing; Public Safety, Growth Management, and State of Florida, Department of Agriculture, Division of Forestry*

Unincorporated Okaloosa County

Section 5.10.04.10 Beach Erosion

1. Ensure compliance with the Florida Department of Environmental Protection (FDEP) Coastal Construction Control Line (CCCL) regulations that require location of construction a sufficient distance landward of the beach to permit natural shoreline fluctuations and to preserve dune stability. Construction may occur to the extent that the natural storm buffering and protection capability of the dunes is not diminished. *Status: ongoing; Growth Management and Public Works*
2. The County will encourage activities that protect and rebuild coastal dunes. This will be accomplished by continuing, or supporting the continuation of, activities by private and public agencies for dune restoration purposes, installation of sand fences on public and private properties, and enforcing restrictions regarding the destruction of sea oats and requiring the planting of sea oats by new development in coastal areas. All activities will be coordinated with the Guiding Principles of the Local Mitigation Strategy. *Status: ongoing; Growth Management, Public Safety and Tourist Development*
3. Cooperate with the U.S. Army Corps of Engineers and the Florida Department of Environmental Protection to re-nourish public beaches using white sand made available by maintenance dredging of Choctawhatchee Bay, Santa Rosa Sound, or other water bodies within or near Okaloosa County. *Status: ongoing; Growth Management, Public Works and Tourist Development*
4. With respect to acquisition, the County, where feasible, shall protect environmentally sensitive coastal areas unduly threatened by development, through acquisition, establishment of public or private conservation easements, purchase of development rights, or through other available means as deemed appropriate. *Status: ongoing; Public Works, Tourist Development and Growth Management*
5. The County will encourage existing development and require new development to plant or replant native vegetation where appropriate, including seagrass beds and other types of shoreline, aquatic and upland vegetation. *Status: ongoing; Growth Management, Public Works and Tourist Development*
6. Coordinate with the following existing resource protection plans: Choctawhatchee River and Bay S.W.I.M. Plan, Pensacola Bay S.W.I.M. Plan, FDEP Ecosystem Management Plan, West Florida Strategic Regional Policy Plan, Rocky Bayou Aquatic Preserve Management Plan, and the Northwest Florida Resource Management Plan, and the Local Mitigation Strategy. *Status: ongoing; all Okaloosa County Departments*
7. Shoreline armoring should be discouraged in favor of alternative methods of enhancing shoreline stability that minimize erosion and allow for the growth of emergent shoreline grasses. *Status: ongoing; Growth Management, Public Works and Tourist Development*
8. New structures, other than dune walkovers, and structures needed to accommodate conservation and passive recreation uses, are prohibited within the portion of the Coastal High Hazard Area lying within the FEMA V Zone, unless all Department of Environmental

Protection Coastal Construction Control Standards and FEMA Special Hazard Area Minimum Construction Requirements are met. *Status: ongoing; Growth Management, Public Works and Tourist Development*

9. Enforce rigorous development standards consistent with the County's NFIP and the CRS program for flood hazard reduction including: location of buildings landward of the reach of the mean high tide; requirement to elevate structures one (1) foot above base flood elevation as specified on F.E.M.A. maps; anchoring standards to resist flotation, collapse, and lateral movement; prohibiting fill used as structural support in V zones, and; prohibiting alteration of sand dunes which would increase potential flood damage. *Status: ongoing; Growth Management and Public Works*

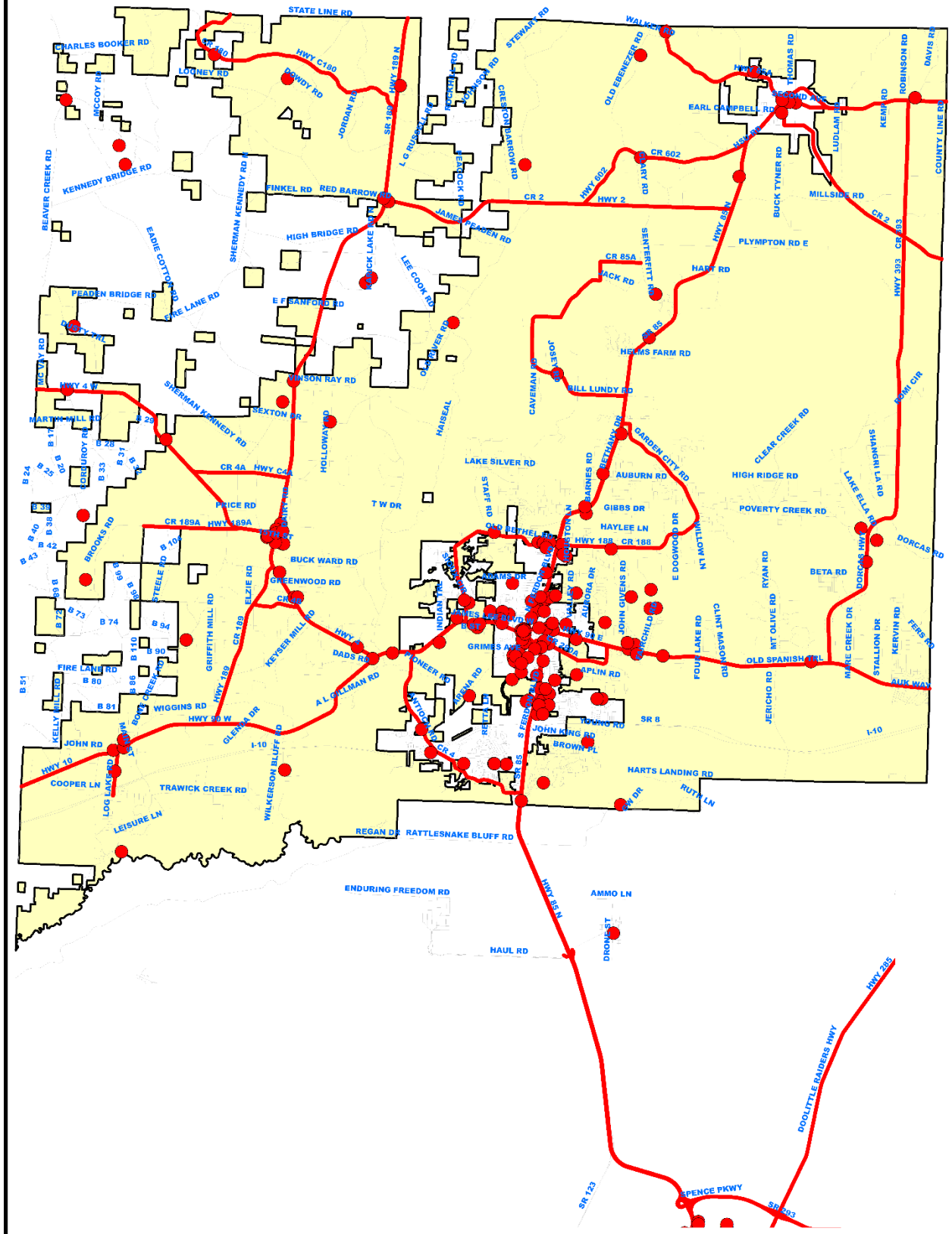
10. Public funds shall be expended in the coastal high hazard area only for development that: complies with land use densities/intensities adopted in the comprehensive plan; produces no adverse effects to the surrounding land uses or the environment without approved mitigation plans, and/or; furthers opening up the waterfront to public access. *Status: ongoing; Growth Management and Okaloosa County Board of County Commissioners*

11. Shoreline development must comply with performance standards that address lot coverage, vegetated buffers, stormwater management, and erosion and sedimentation controls. *Status: ongoing; Growth Management and Public Works*

Section 5.10.04.11 Sea Level Rise

1. Incorporate as financially feasible into the County's 5- and 10-year Capital Improvements Program the projects identified as the primary responsibility of Okaloosa County on Table ES-1 Prioritized Adaptation Projects of the 2025 Okaloosa County Adaptation Plan (Jacobs Engineering, 2025). Status: New; Okaloosa County Public Works, Facilities and Parks Maintenance, Water and Sewer, and Growth Management Departments
2. Coordinate with the non-County jurisdictions identified in Table ES-1 Prioritized Adaptation Projects of the 2025 Okaloosa County Adaptation Plan to initiate planning and implementation of projects identified as the responsibility of non-County agencies Status: New; Okaloosa County, Florida Department of Transportation, Okaloosa County Public School District, municipalities
3. Include update regarding implementation of projects identified in the 2025 Okaloosa County Adaptation Plan as part of the annual LMS review. Status: New; Okaloosa County Public Works, Public Safety, Facilities and Parks, Water and Sewer, and Growth Management Departments.
4. The mitigation actions contained in Section 5.10.04.03 Flooding will address the needs for mitigation actions for Sea Level Rise, as well.

North Okaloosa Critical Facilities



Critical Facilities

Source: Okaloosa County Public Safety, 2025

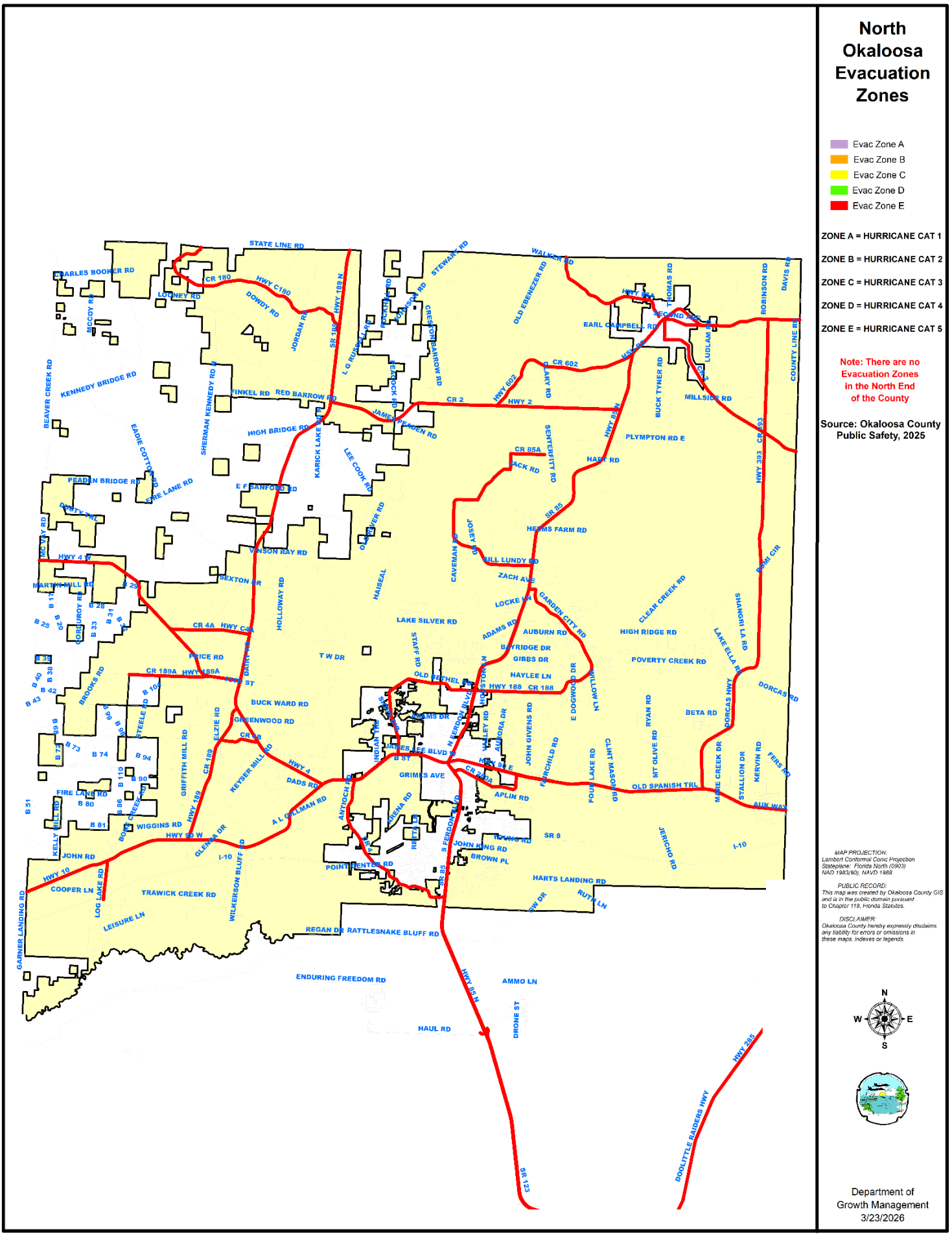
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Department of Growth Management
3/23/2026



North Okaloosa Evacuation Zones

- Evac Zone A
- Evac Zone B
- Evac Zone C
- Evac Zone D
- Evac Zone E

ZONE A = HURRICANE CAT 1

ZONE B = HURRICANE CAT 2

ZONE C = HURRICANE CAT 3

ZONE D = HURRICANE CAT 4

ZONE E = HURRICANE CAT 5

Note: There are no Evacuation Zones in the North End of the County

Source: Okaloosa County Public Safety, 2025

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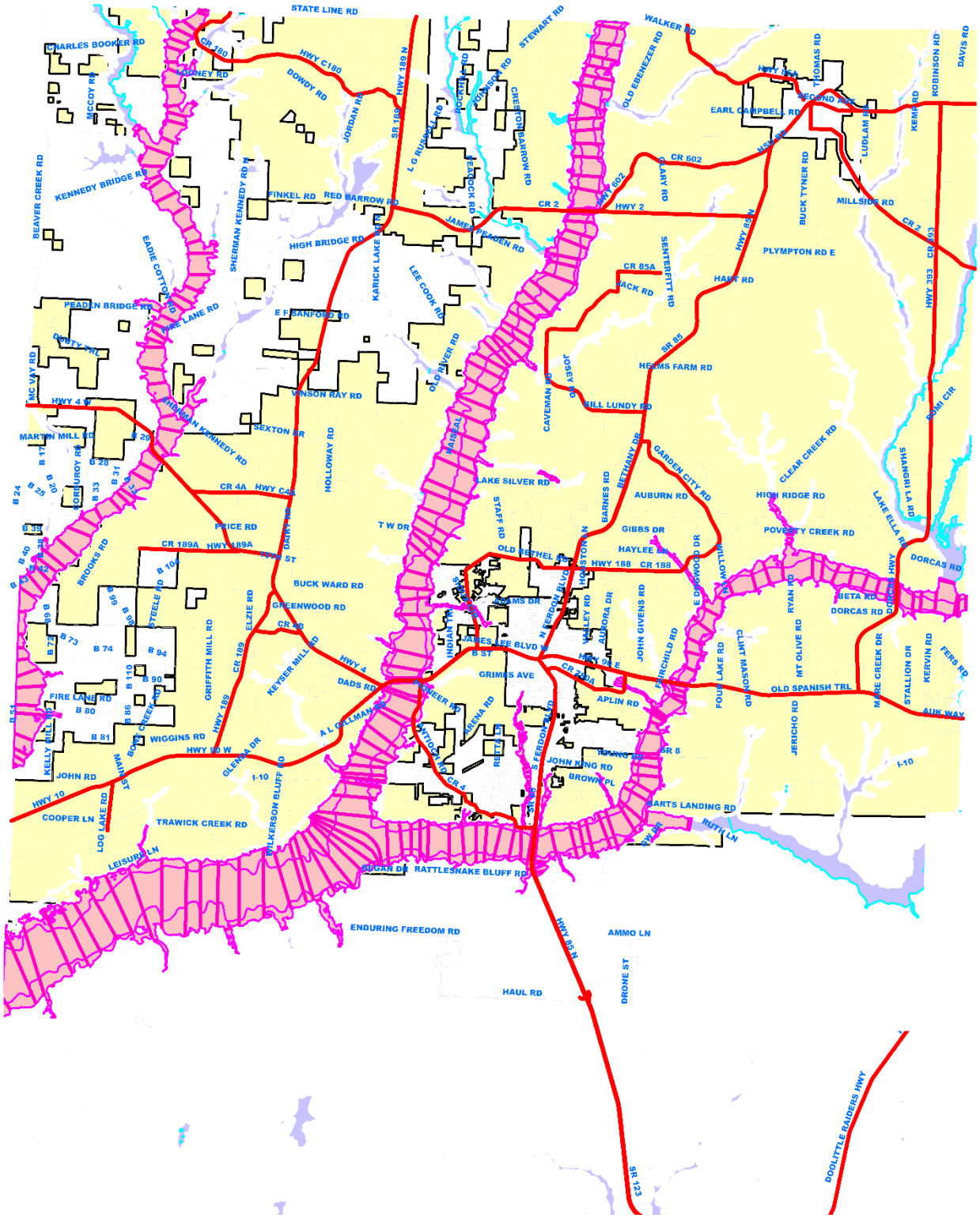
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Department of Growth Management
3/23/2026

North Okaloosa Flood Zones



X 500 Year Flood Plain
A 100 Year Flood Plain
AE 100 Year Flood Plain
VE 100 Year Flood Plain
Base Flood Elevation in a Floodway
Unincorporated

Source: FEMA Map Service Center, March 9 2021

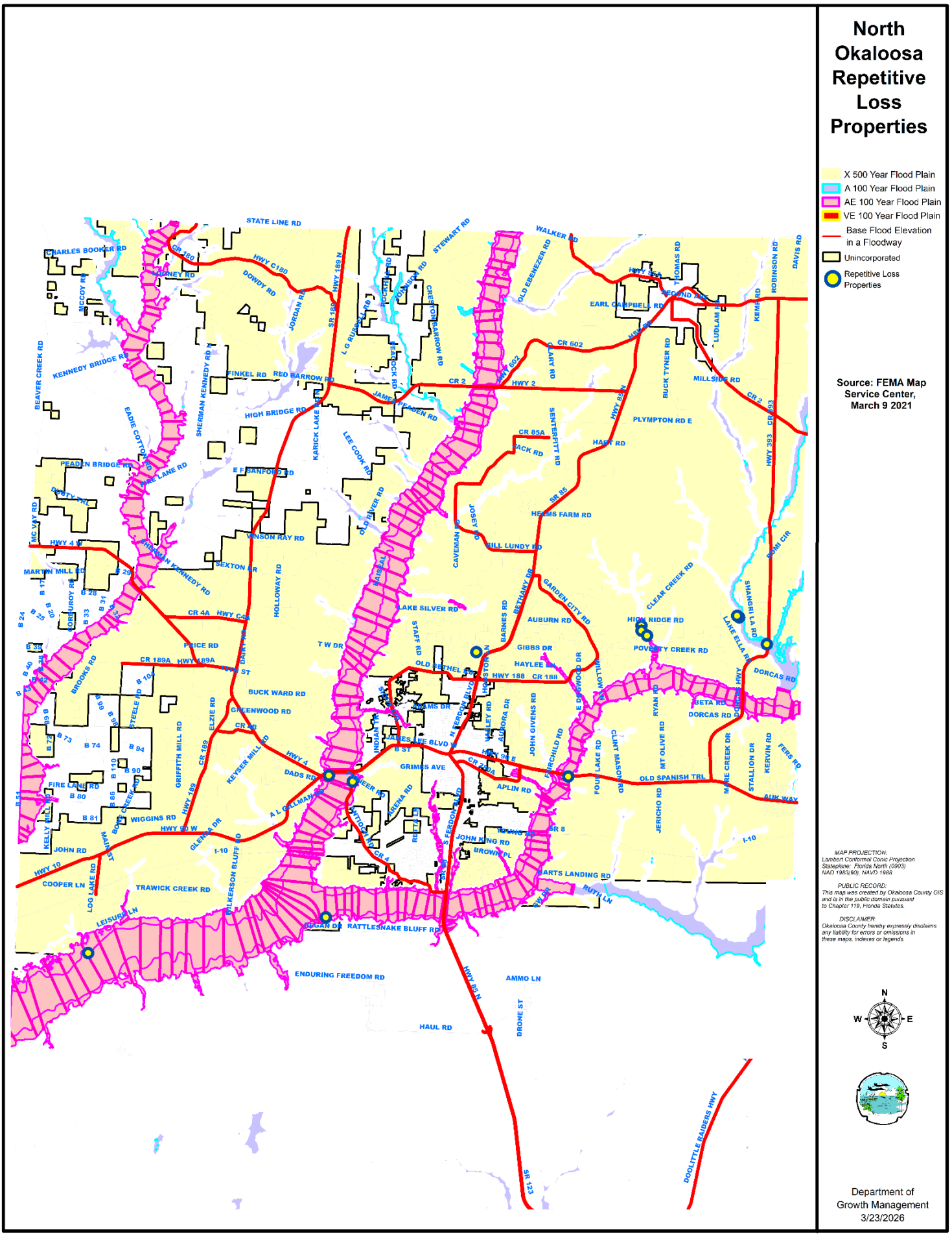
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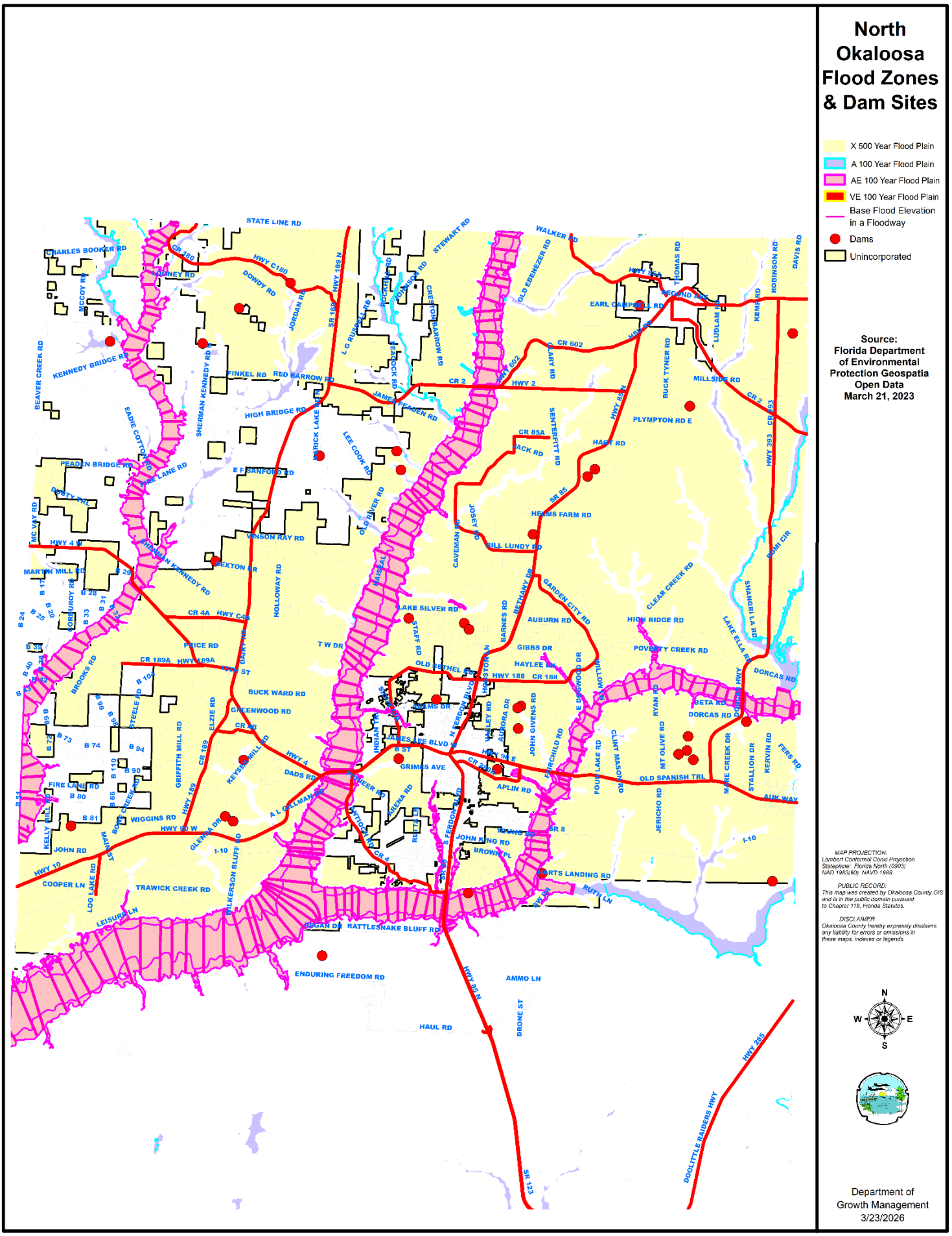
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Department of Growth Management
3/23/2026


North Okaloosa Repetitive Loss Properties
X 500 Year Flood Plain
A 100 Year Flood Plain
AE 100 Year Flood Plain
VE 100 Year Flood Plain
Base Flood Elevation in a Floodway
Unincorporated
Repetitive Loss Properties
Source: FEMA Map Service Center, March 9 2021
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Department of Growth Management
3/23/2026
STATE LINE RD
CHARLES BOOKER RD
HWY C180
DOWDY RD
KENNEDY BRIDGE RD
FINKEL RD
RED BARROW RD
HIGH BRIDGE RD
PEADEN BRIDGE RD
E F SANFORD RD
VINSON RAY RD
SEXTON DR
HOLLOWAY RD
MARTIN MILL RD
HWY 4 W
CR 4A
PRICE RD
CR 189A
HWY 189A
BUCK WARD RD
GREENWOOD RD
CR 189
HWY 4
DADS RD
FIRE LANE RD
WIGGINS RD
HWY 90 W
JOHN RD
HWY 10
COOPER LN
TRAWICK CREEK RD
LOG LAKE RD
LEISURE LN
I-10
ENDURING FREEDOM RD
HAUL RD
AMMO LN
DRONE ST
HWY 85 N
SR 123
DOOLITTLE RAIDERS HWY
RATTLESNAKE BLUFF RD
REGAN DR
WILKERSON BLUFF RD
MAIN ST
HWY 189 N
SR 189
JORDAN RD
LG RUSSELL RD
ROCKY CREEK RD
STEWART RD
CRESTON BARROW RD
WALKER RD
OLD EBENEZER RD
CR 602
HWY 602
HWY 2
JAMES PEARSON RD
KARICK LAKE RD
LEE COOK RD
OLD RIVER RD
MAISEL RD
CAVEMAN RD
JOSEY RD
HWY 85 N
SR 85
HEMS FARM RD
BILL LUNDY RD
LAKE SILVER RD
STAFF RD
T W DR
OLD BETHEL RD
BARNES RD
BETHANY DR
GARDEN CITY RD
AUBURN RD
GIBBS DR
HAYLEE LN
HWY 188
CR 188
CLEAR CREEK RD
HIGH RIDGE RD
POVERTY CREEK RD
SHANGRI LA RD
LAKE ELLA RD
DORCAS RD
BETA RD
DORCAS RD E
RYAN RD
MT OLIVE RD
JERICHO RD
OLD SPANISH TRL
MARIE CREEK DR
STALLION DR
KERVIN RD
FERS RD
AUK WAY
FOUR LAKE RD
MASSACHUSETTS
PURCHASE RD
JOHN GIVENS RD
WILLOW DR
E DOGWOOD DR
VALLEY RD
AURORA DR
N FERDON BLVD
S FERDON BLVD
JAMES LEE BLVD
B ST
GRIMES AVE
CR 285A
APLIN RD
ATHENA RD
RETTA LN
JOHN KING RD
BROWN PL
HARTS LANDING RD
RUTH LN
SR 8
HWY 85 E
INDIAN TRAIL DR
STATION RD
CR 4
PLYMPTON RD E
HART RD
CR 85A
JACK RD
SENTERFITT RD
HWY 85 N
BUCK TYNER RD
MILLSIDE RD
CR 2
HWY 393
CR 393
EARL CAMPBELL RD
SECOND AVE
HWY 85A
THOMAS RD
LUDLAM RD
KEMP RD
ROBINSON RD
DAVIS RD
DOMI CIR
SHANGRI LA RD
CLEAR CREEK RD
HIGH RIDGE RD
POVERTY CREEK

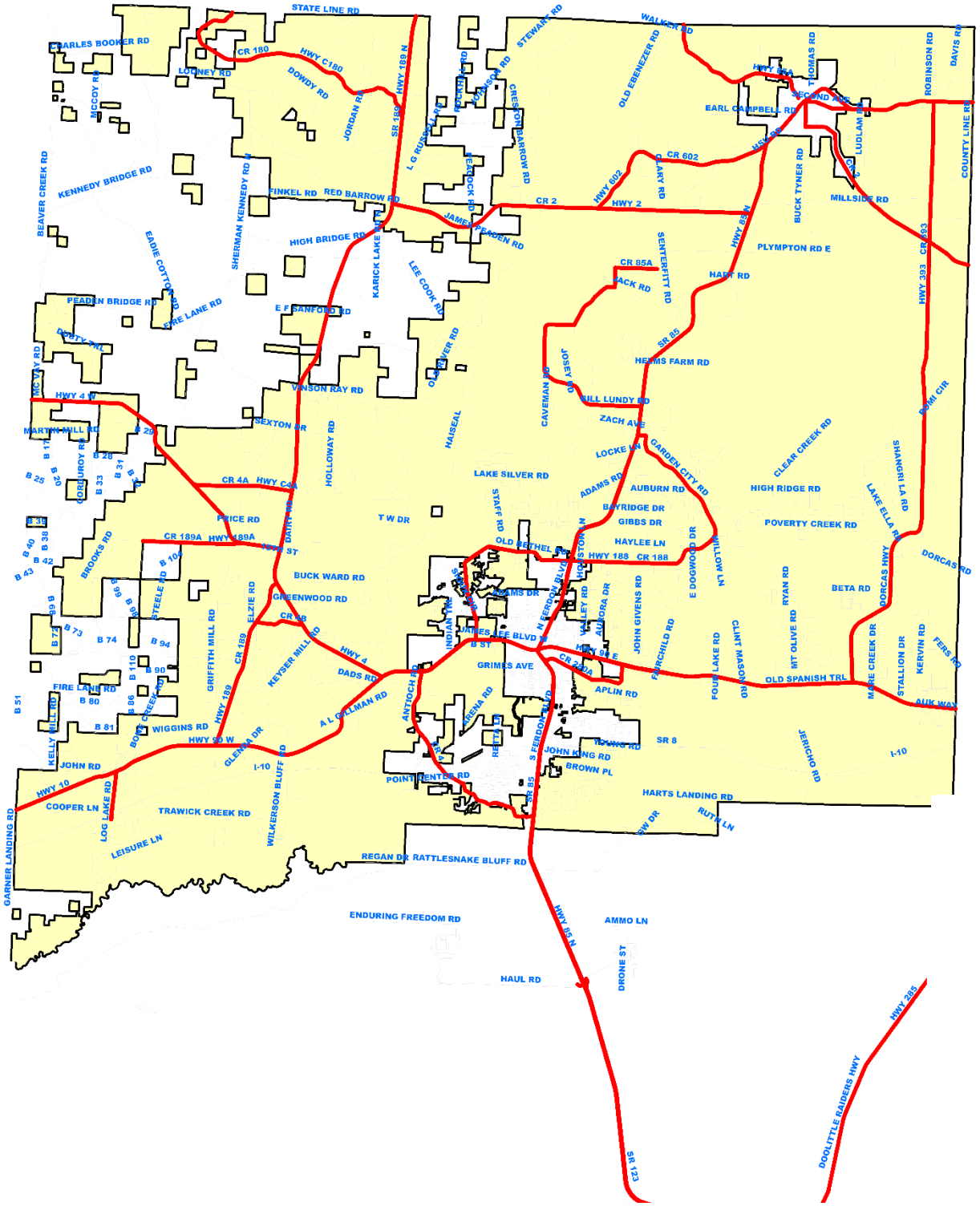

North Okaloosa Flood Zones & Dam Sites
X 500 Year Flood Plain
A 100 Year Flood Plain
AE 100 Year Flood Plain
VE 100 Year Flood Plain
Base Flood Elevation in a Floodway
Dams
Unincorporated
Source: Florida Department of Environmental Protection Geospatia Open Data March 21, 2023
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Department of Growth Management
3/23/2026
STATE LINE RD
CHARLES BOOKER RD
HWY C180
DOWDY RD
KENNEDY BRIDGE RD
FINKEL RD
RED BARROW RD
HIGH BRIDGE RD
PEADEN BRIDGE RD
E F SANFORD RD
HWY 4
MARTIN MILL RD
PRICE RD
CR 189A
BUCK WARD RD
GREENWOOD RD
FIRE LANE RD
WIGGINS RD
HWY 90 W
JOHN RD
COOPER LN
TRAWICK CREEK RD
LEISURE LN
RATTLESNAKE BLUFF RD
ENDURING FREEDOM RD
HAUL RD
AMMO LN
DRONE ST
HWY 85 N
SR 123
HWY 285
DOOLITTLE RAIDERS HWY
WALKER RD
EARL CAMPBELL RD
MILLSIDE RD
PLYMPTON RD E
HAIRT RD
HEMS FARM RD
BILL LUNDY RD
LAKE SILVER RD
AUBURN RD
GIBBS DR
HAYLEE LN
HWY 188
CR 188
POVERTY CREEK RD
HIGH RIDGE RD
CLEAR CREEK RD
DORCAS RD
BETA RD
OLD SPANISH TRL
APLIN RD
GRIMES AVE
JAMES LEE BLVD
JOHN KING RD
BROWN PL
PORTS LANDING RD
RUTH LN
SR 8
I-10
CR 2
HWY 2
CR 602
CR 85A
CR 393
HWY 393
SHANGRI LA RD
LAKE ELLA RD
DAVIS RD
ROBINSON RD
KEMP RD
THOMAS RD
BUCK TYNER RD
SENTERFITT RD
O'LEARY RD
OLD EBENEZER RD
STEWART RD
CREIGHTON BARROW RD
L G RUSSELL RD
HWY 189 N
SR 189
JORDAN RD
SHERMAN KENNEDY RD
EDDIE COTTON RD
JAKE LANE RD
MC VAY RD
HWY 4 W
VINSON RAY RD
FREEMAN KENNEDY RD
HOLLOWAY RD
DAIRY RD
LEE COOK RD
MORRICK LAKE RD
OLD RIVER RD
MAISEL RD
CAVEMAN RD
JOSEY RD
BARNES RD
BETHANY DR
GARDEN CITY RD
STAFF RD
OLD BETHEL RD
T W DR
BROOKS RD
STEELE RD
ELZIE RD
GRIFFITH MILL RD
KEYSER MILL RD
CR 189
HWY 189
DADS RD
A L GILLMAN RD
PIONEER RD
ATHENA RD
RETTA LN
INDIAN TRL
N FERDON BLVD
S FERDON BLVD
VALLEY RD
AURORA DR
JOHN GIVENS RD
FIRCHILD RD
E DAGWOOD DR
WILLOW DR
FOUR LAKE RD
MASSENGILL RD
RYAN RD
MT OLIVE RD
JERICHO RD
MARIE CREEK DR
STALLION DR
KERVIN RD
FERS RD
AUK WAY
DORCAS RD
CREEK HWY
BOGGY CREEK RD
MAIN ST
GLENDA DR
KELLY HILL RD
LOG LAKE RD
WILKERSON BLUFF RD
I-10
HWY 10
CR 4
SR 8
HWY 4
CR 393
CR 189
CR 98
CR 4A
HWY C4A
HWY 189A
HWY 188
CR 188
CR 602
CR 85A
CR 2
HWY 2
HWY 85 N
HWY 393
HWY 285
SR 123
SR 85
SR 189
SR 188
SR 602
SR 393
SR 85A
SR 4
SR 2

North Okaloosa Surge Zones

- Category 1
- Category 2
- Category 3
- Category 4
- Category 5

Note: There are no Surge Zones in the North End of the County

Source: West Florida Regional Planning Council, 2025



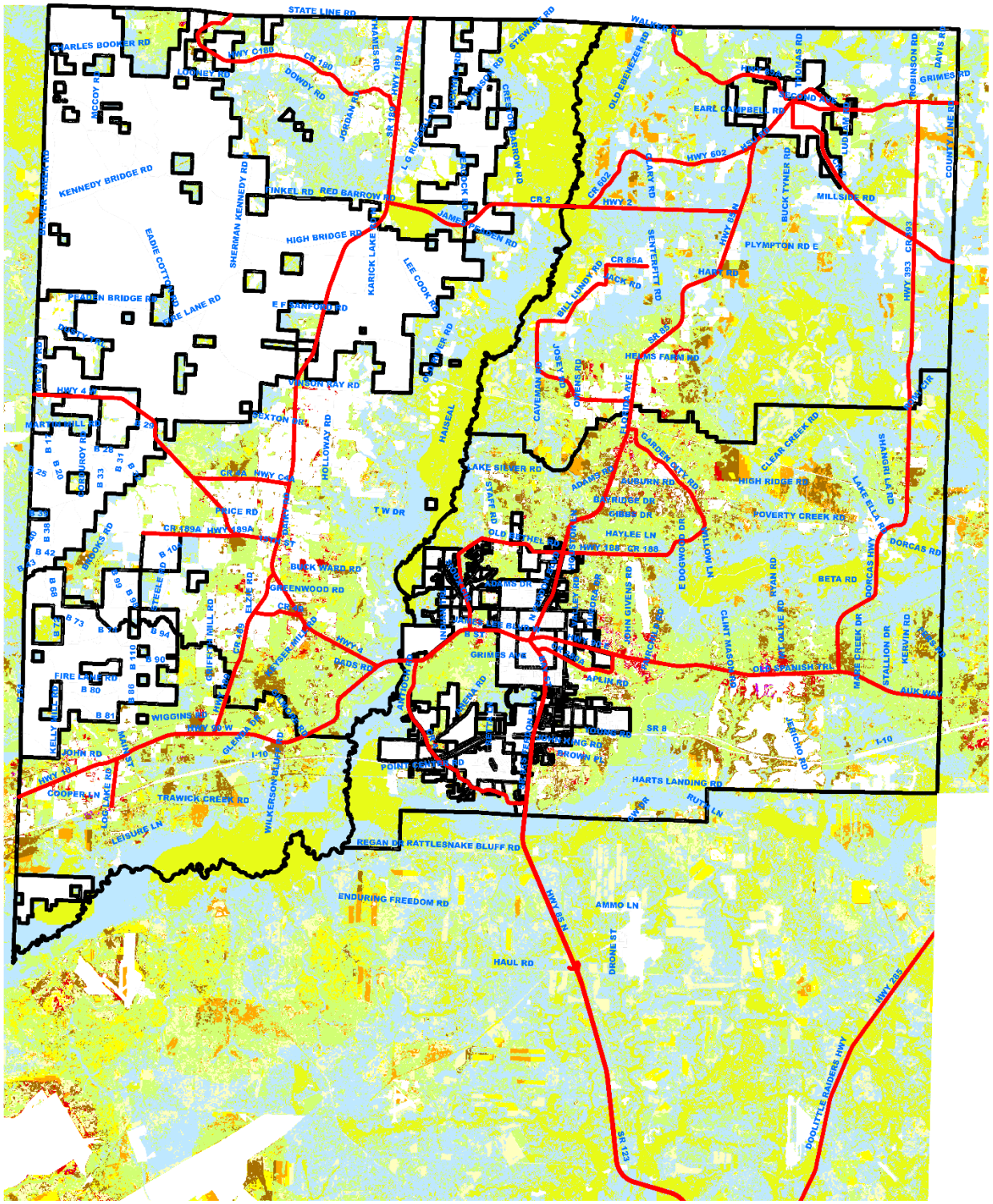
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North Okaloosa Wildfire Level of Concern

UNINCORPORATED

Level of Concern

0
1
2
3
4
5
6
7
8
9

Source: Florida Division of Forestry, 2025

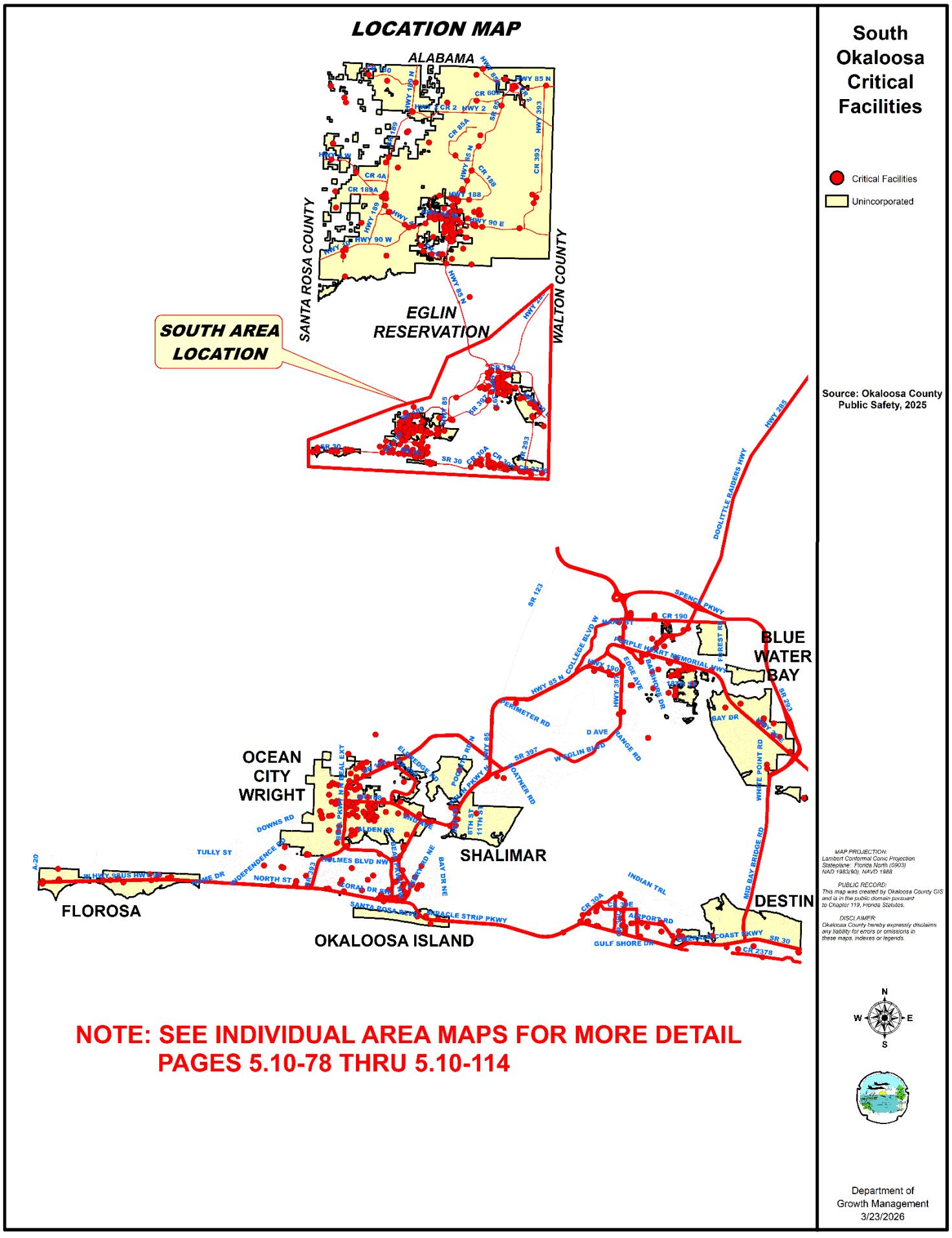
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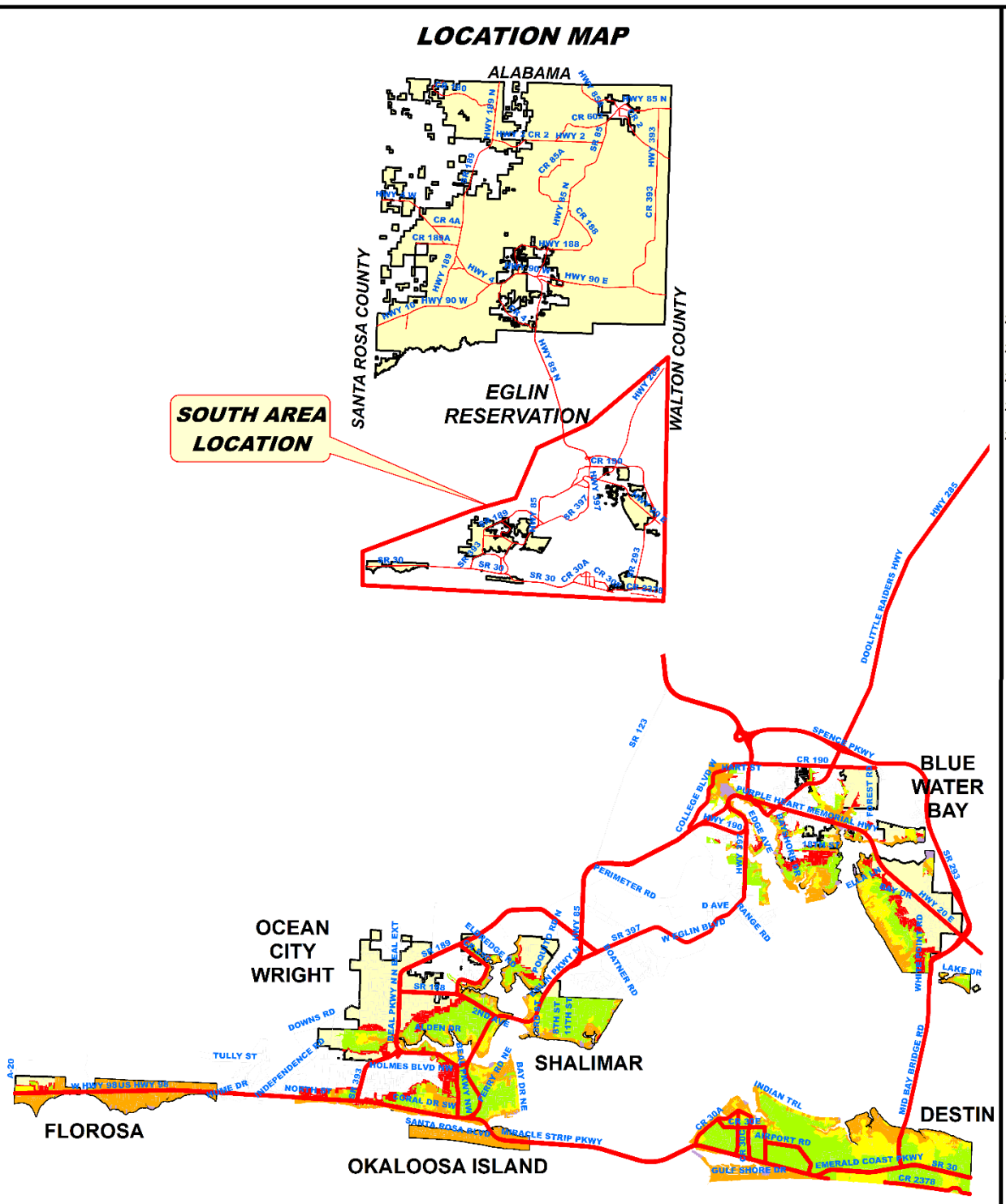
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NOTE: SEE INDIVIDUAL AREA MAPS FOR MORE DETAIL
PAGES 5.10-78 THRU 5.10-114



South Okaloosa Evacuation Zones

- Evac Zone A
- Evac Zone B
- Evac Zone C
- Evac Zone D
- Evac Zone E
- Unincorporated

ZONE A = HURRICANE CAT 1

ZONE B = HURRICANE CAT 2

ZONE C = HURRICANE CAT 3

ZONE D = HURRICANE CAT 4

ZONE E = HURRICANE CAT 5

Source: Okaloosa County Public Safety, 2025

MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
NAD 1983(90), NAVD 1988

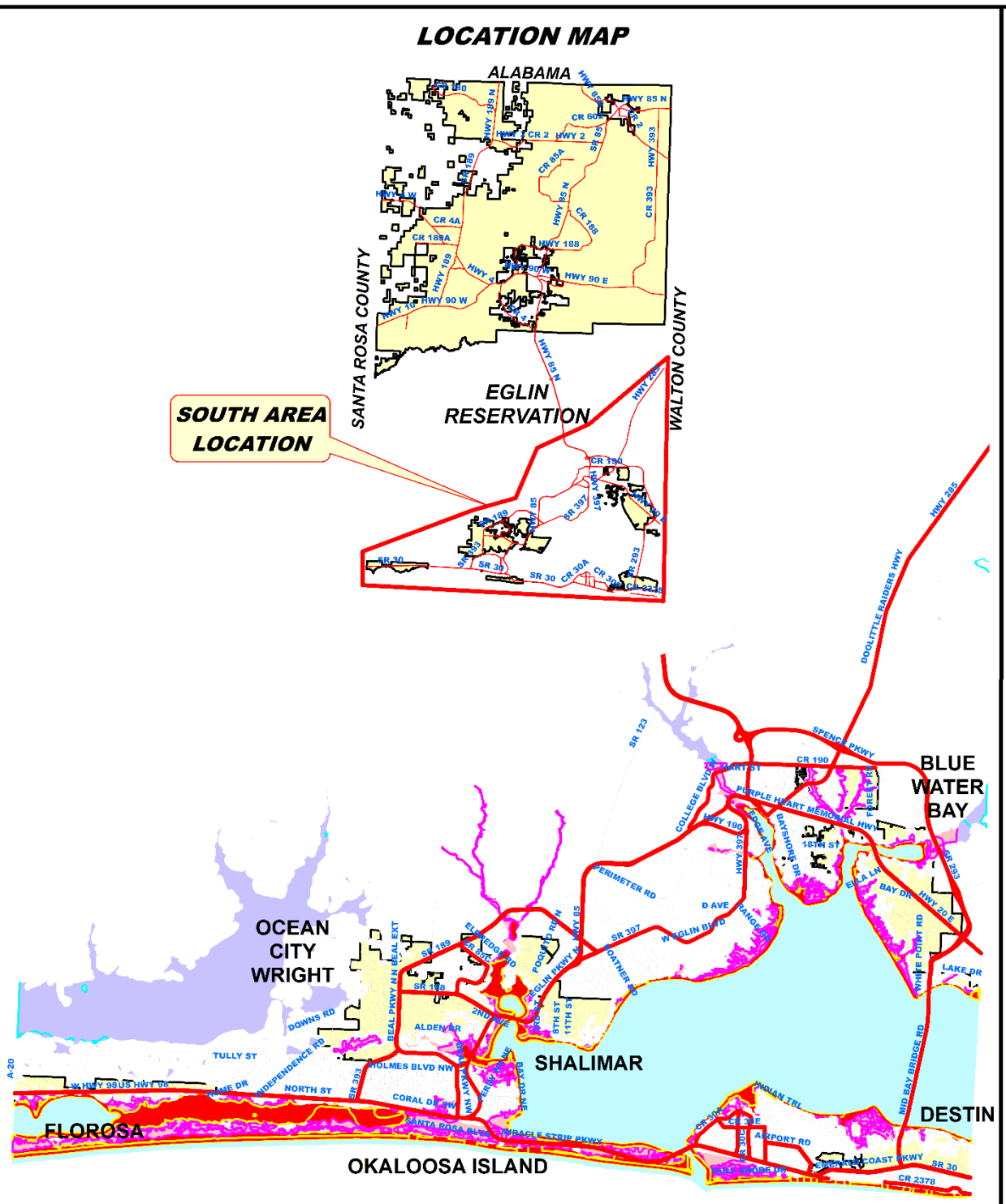
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NOTE: SEE INDIVIDUAL AREA MAPS FOR MORE DETAIL
PAGES 5.10-78 THRU 5.10-114



South Okaloosa Flood Zones

- X 500 Year Flood Plain
- A 100 Year Flood Plain
- AE 100 Year Flood Plain
- VE 100 Year Flood Plain
- Unincorporated

Source: FEMA Map Service Center, March 9 2021

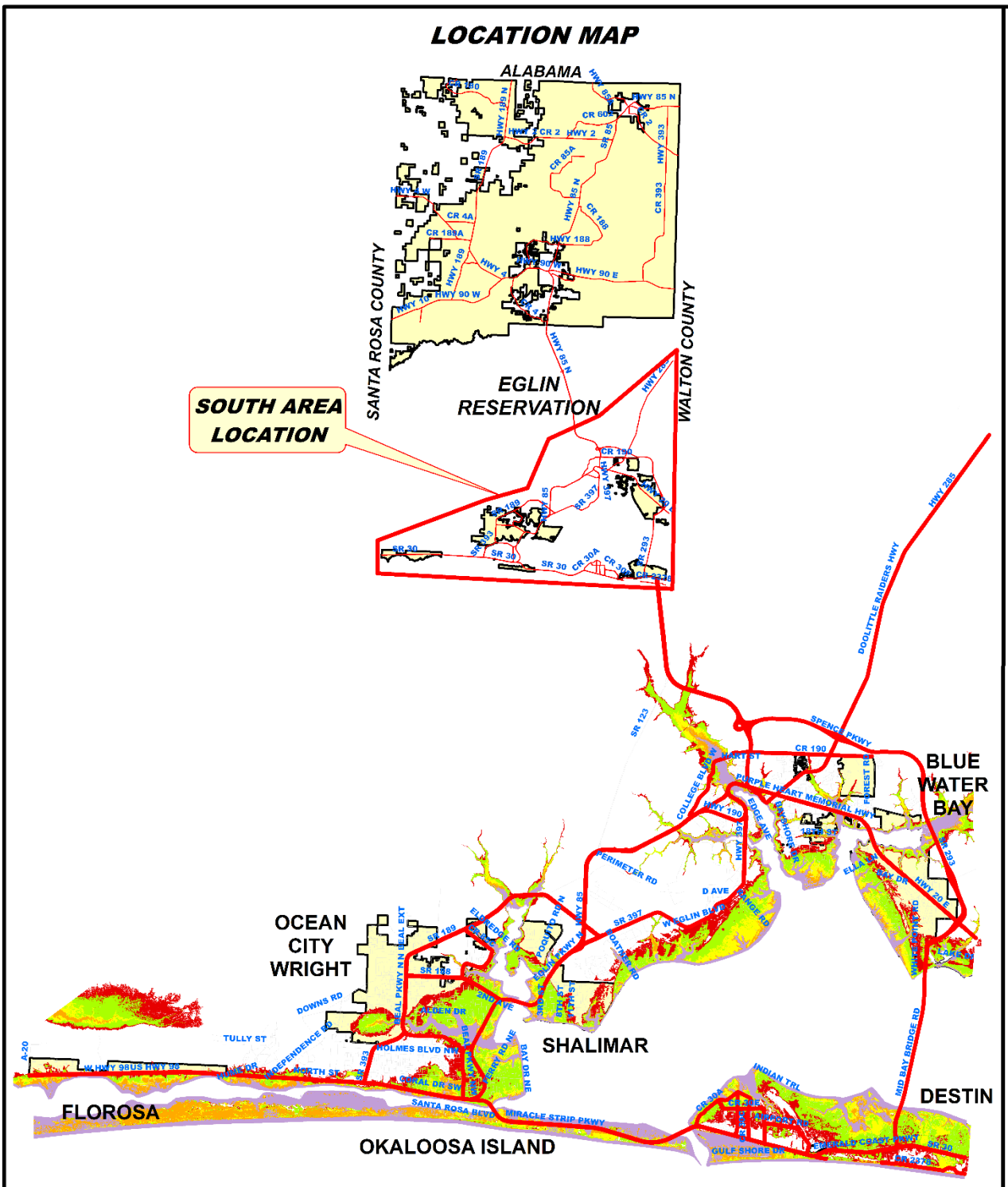
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South Okaloosa Surge Zones

- Category 1
- Category 2
- Category 3
- Category 4
- Category 5
- Unincorporated

Source: West Florida Regional Planning Council, 2025

MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
NAD 1983(90), NAVD 1988

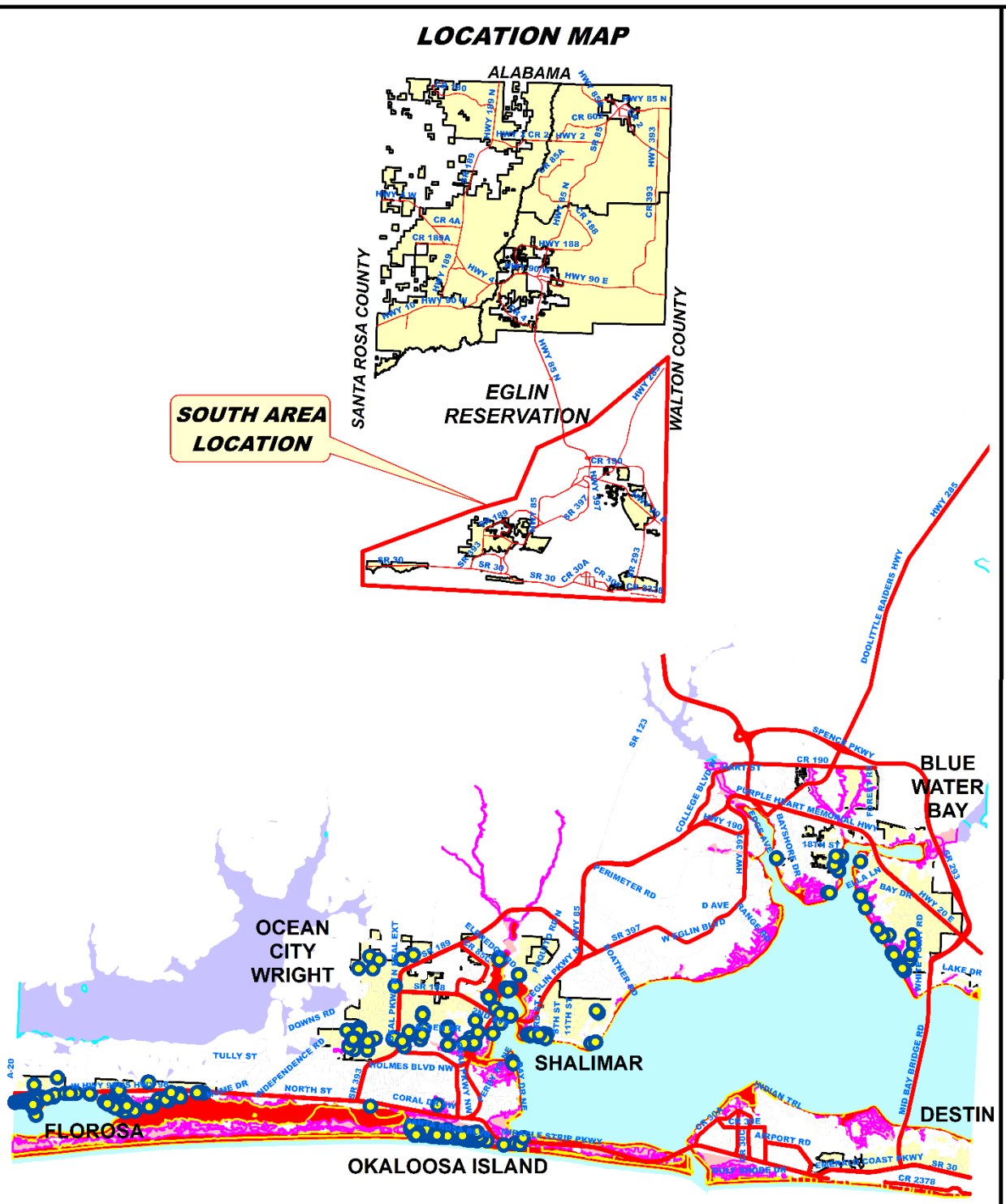
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South Okaloosa Repetitive Loss Properties

- X 500 Year Flood Plain
- A 100 Year Flood Plain
- AE 100 Year Flood Plain
- VE 100 Year Flood Plain
- Unincorporated
- Repetitive Loss Properties

Source: FEMA Map Service Center, March 9 2021

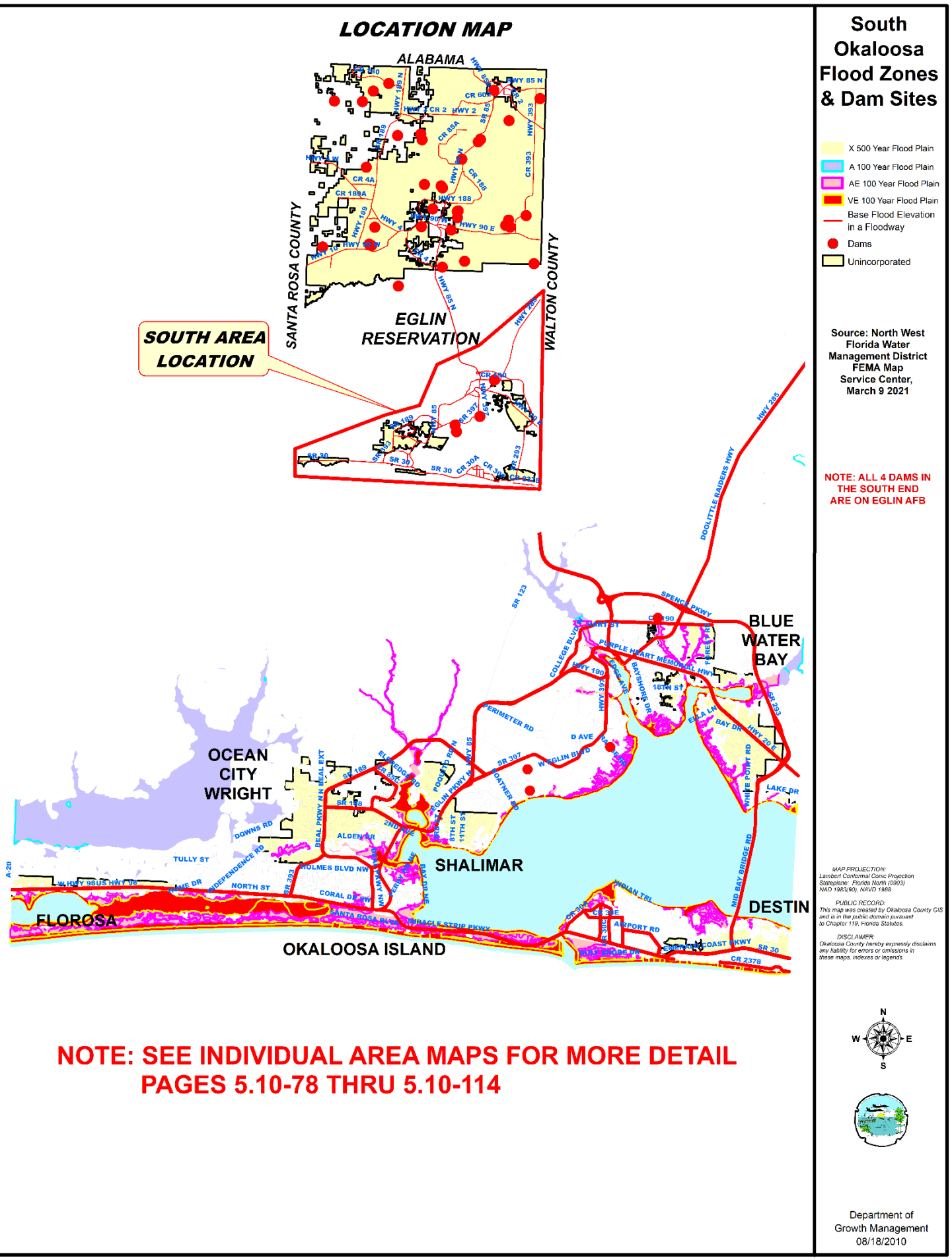
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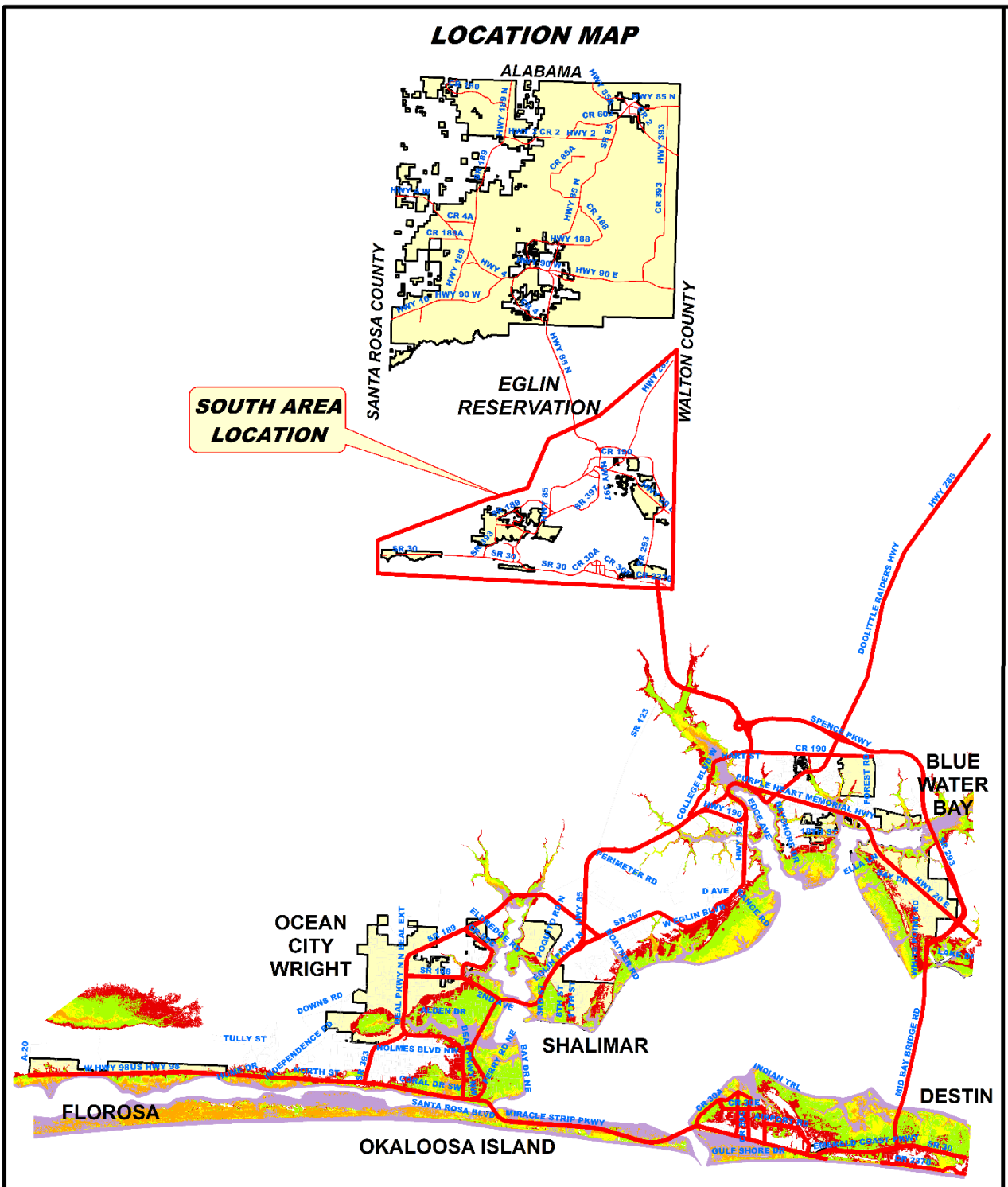
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NOTE: SEE INDIVIDUAL AREA MAPS FOR MORE DETAIL
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South Okaloosa Surge Zones

- Category 1
- Category 2
- Category 3
- Category 4
- Category 5
- Unincorporated

Source: West Florida Regional Planning Council, 2025

MAP PROJECTION:
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Stateplane: Florida North (0903)
NAD 1983(90), NAVD 1988

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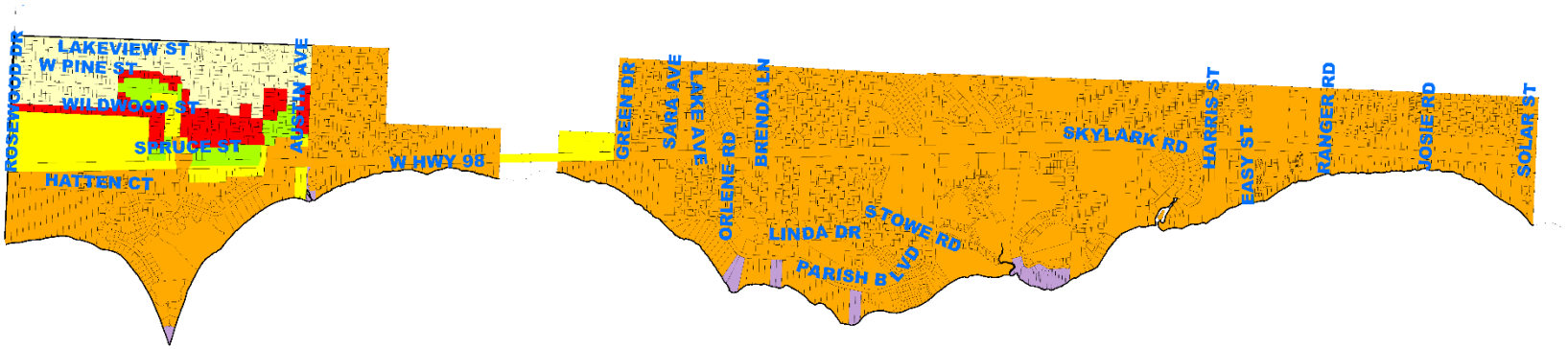
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NOTE: SEE INDIVIDUAL AREA MAPS FOR MORE DETAIL
PAGES 5.10-78 THRU 5.10-114

Department of Growth Management
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Florosa
Critical
Facilities
Parcel Lines
Critical Facilities
Unincorporated
Source: Okaloosa County
Public Safety, 2025
LAKEVIEW ST
W PINE ST
CYPRESS ST
WILDWOOD ST
ROSEWOOD DR
SPRUCE ST
OAKDALE AVE
WOODLAND AVE
CHRIS LN
MORGAN LN
AUSTIN AVE
HATTEN CT
WYNNEHAVEN BEACH RD
W HWY 98
A-21 RD
GREEN DR
PINE LN
SARA AVE
LAKE AVE
ORLENE RD
BRENDA LN
MACY LN
DEVILLE DR
E CASA LOMA DR
LINDA DR
PARISH BLVD
TECUMSEH LN
TARPON RD
FRANCIS ST
SKYLARK RD
MERRIER LN
HARRIS ST
EASY ST
RANGER RD
ROBYS DR
JOSIE RD
SOLAR ST
RANGE ROAD 242
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
NAD 1983(90), NAVD 1988.
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Florosa Evacuation Zones

- Parcel Lines
- Evac Zone A
- Evac Zone B
- Evac Zone C
- Evac Zone D
- Evac Zone E
- Unincorporated

ZONE A = HURRICANE CAT 1

ZONE B = HURRICANE CAT 2

ZONE C = HURRICANE CAT 3

ZONE D = HURRICANE CAT 4

ZONE E = HURRICANE CAT 5

Source: Okaloosa County Public Safety, 2025

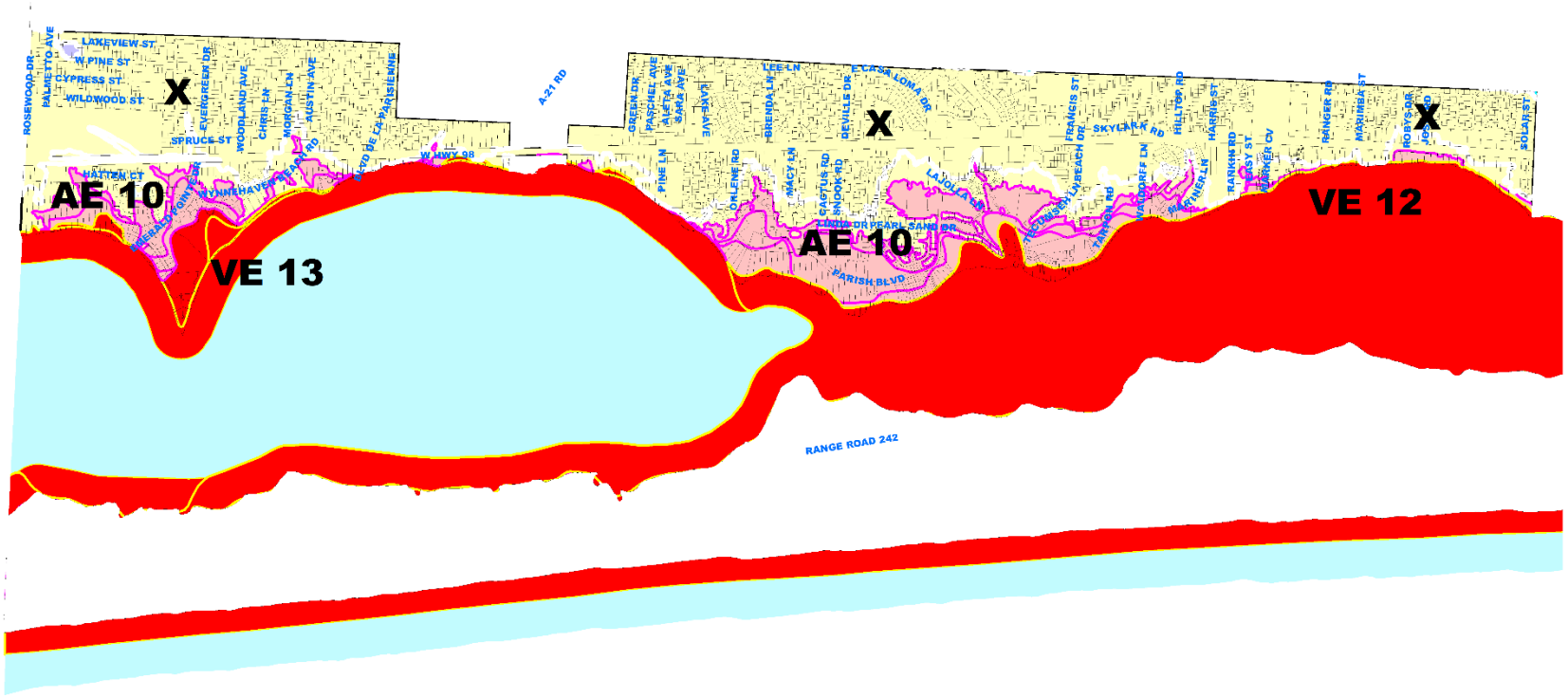
MAP PROJECTION:
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Florosa Flood Zones

- Parcel Lines
- X 500 Year Flood Plain
- A 100 Year Flood Plain
- AE 100 Year Flood Plain
- VE 100 Year Flood Plain
- Unincorporated

Source: FEMA Map Service Center, March 9 2021

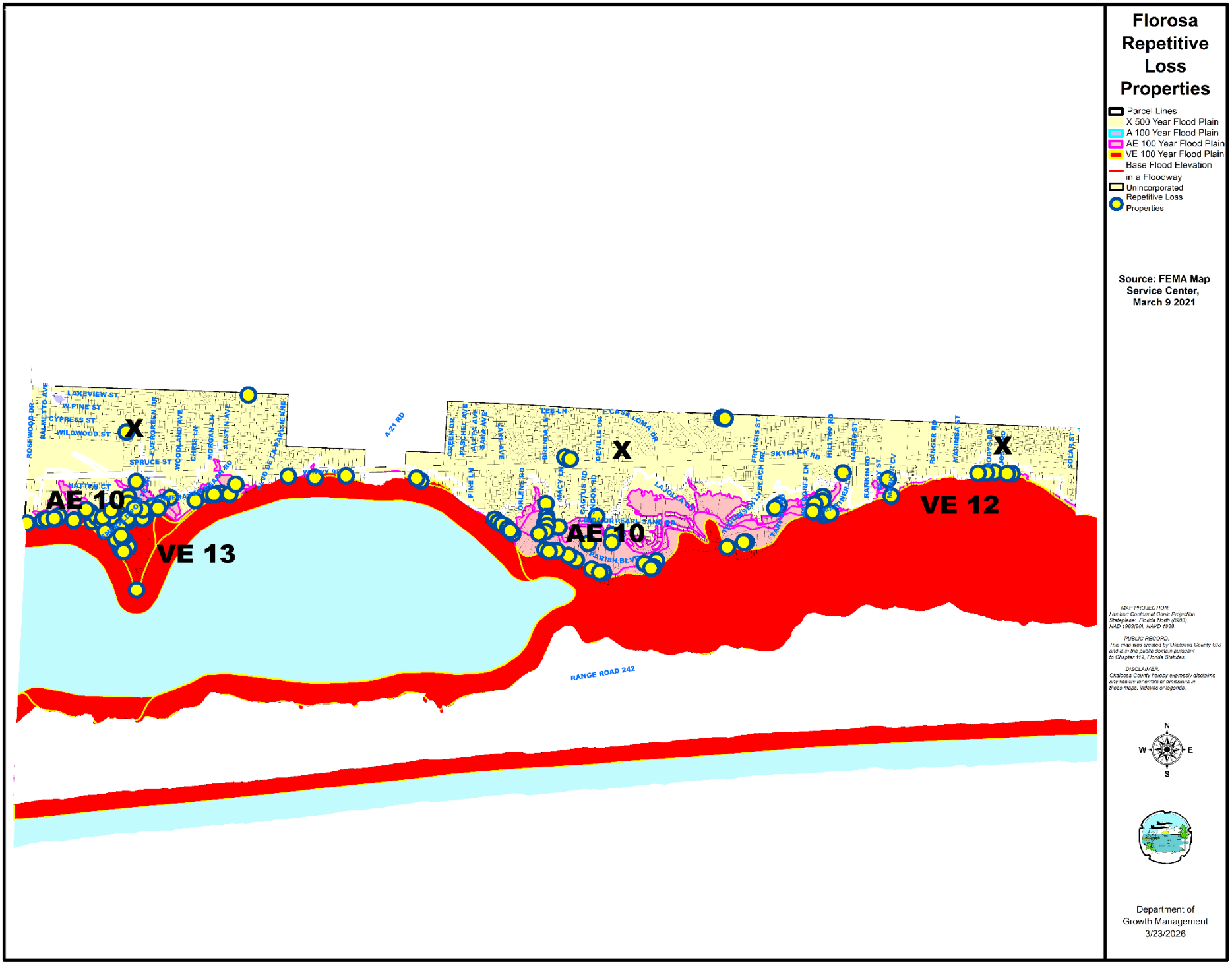
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Stateplane: Florida North (0903)
NAD 1983(90), NAVD 1988.

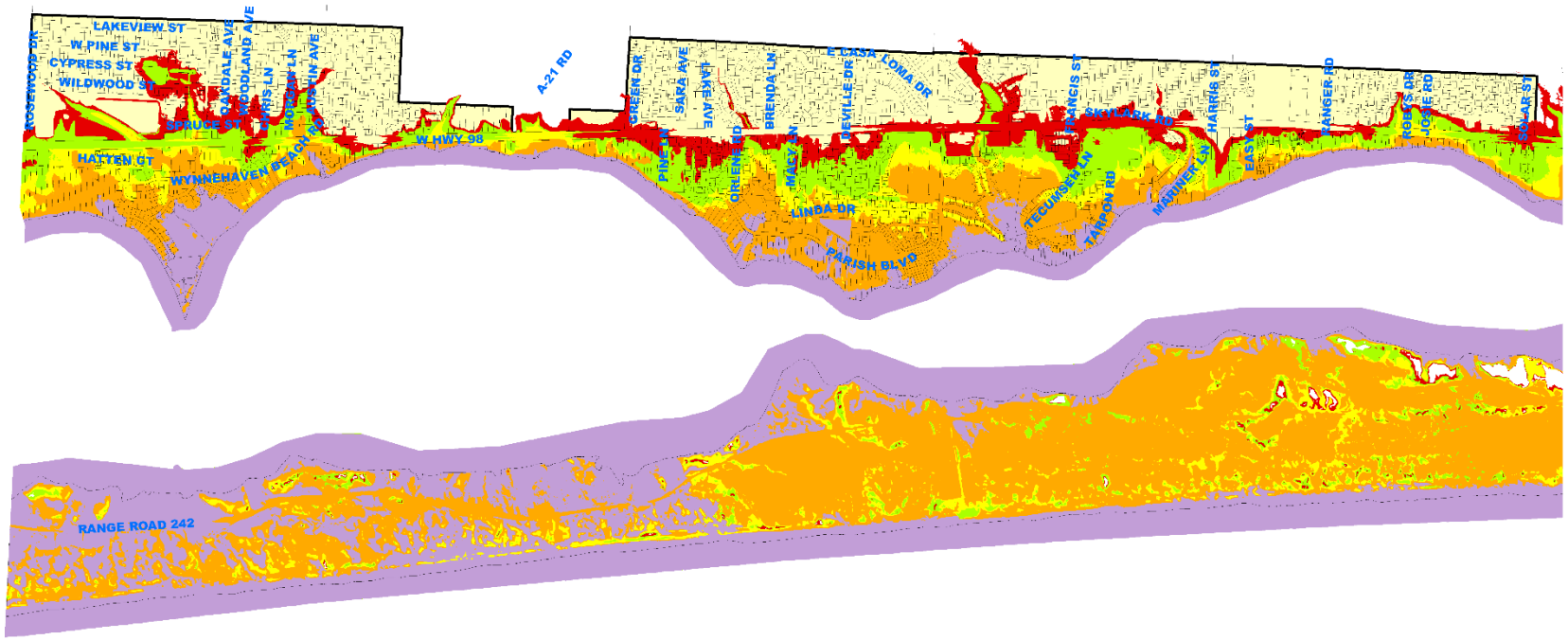
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Florosa Repetitive Loss Properties
Parcel Lines
X 500 Year Flood Plain
A 100 Year Flood Plain
AE 100 Year Flood Plain
VE 100 Year Flood Plain
Base Flood Elevation
in a Floodway
Unincorporated
Repetitive Loss
Properties
Source: FEMA Map Service Center, March 9 2021
AE 10
VE 13
AE 10
VE 12
X
X
X
RANGE ROAD 242
A-21 RD
LAKEVIEW ST
W PINE ST
CYPRESS ST
WILDWOOD ST
SPRUCE ST
HATTON CT
LEE LN
SKYLARK RD
PARISH BLVD
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
NAD 1983(90), NAVD 1988.
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Florosa Surge Zones

- Parcel Lines
- Category 1
- Category 2
- Category 3
- Category 4
- Category 5
- Unincorporated

Source: West Florida Regional Planning Council, 2025

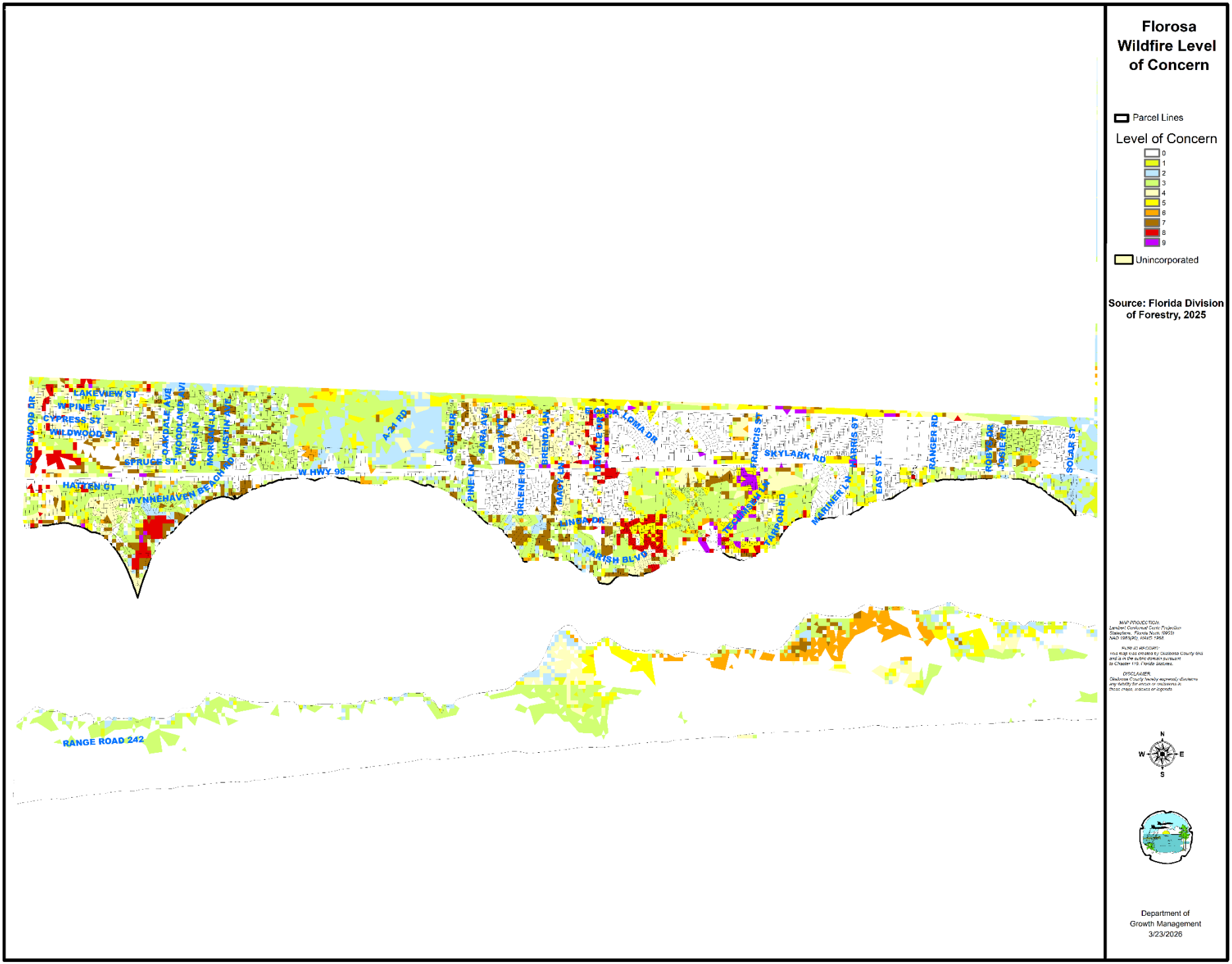
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Stateplane: Florida North (0903)
NAD 1983(90), NAVD 1988.

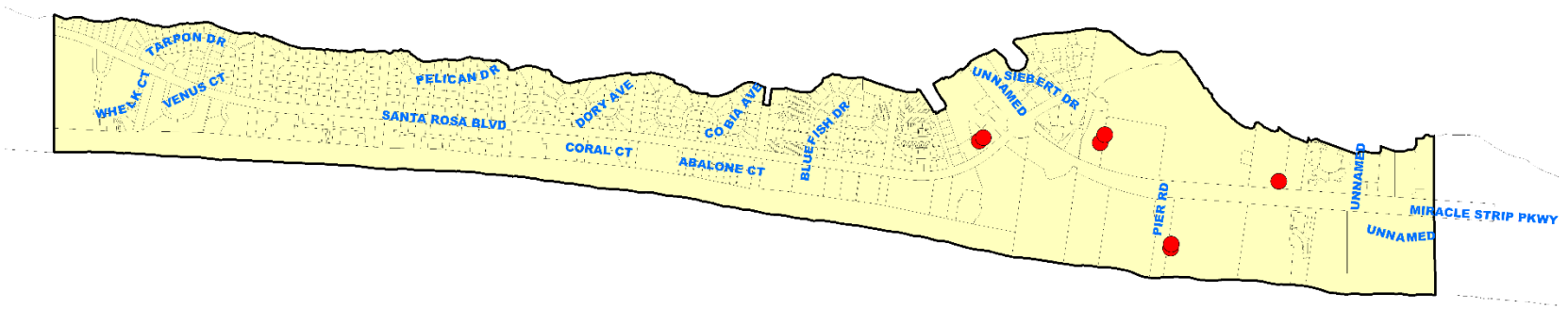
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Florosa
Wildfire Level
of Concern
Parcel Lines
Level of Concern
0
1
2
3
4
5
6
7
8
9
Unincorporated
Source: Florida Division
of Forestry, 2025
LAKEVIEW ST
PINE ST
CYPRESS ST
WILDWOOD ST
SPRUCE ST
HATTEN CT
WYNNEHAVEN BEACH RD
OAKDALE AVE
WOODLAND VI
CHRIS LN
MORGAN LN
AUSTIN LN
W HWY 98
A-21 RD
GEORGIA DR
PINE LN
OARA AVE
LAKE AVE
ORLENE RD
BRENDA LN
MARCH LN
LOMA DR
JINEVA DR
PARISH BLVD
SKYLARK RD
FRANCIS ST
TARPON RD
MARINER LN
HARRIS ST
EASY ST
RANGER RD
ROBYN DR
JOSIE RD
SOLAR ST
RANGE ROAD 242
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane, Florida North (0903)
NAD 1983(HPGN), (USFT) 1968
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Department of
Growth Management
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Okaloosa Island Critical Facilities

Parcel Lines
Critical Facilities
Unincorporated

Source: Okaloosa County Public Safety, 2025

MAP PROJECTION:
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Stateplane: Florida North (0903)
NAD 1983(90), NAVD 1988.

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Okaloosa Island Evacuation Zones

- Parcel Lines
- Evac Zone A
- Evac Zone B
- Evac Zone C
- Evac Zone D
- Evac Zone E
- Unincorporated

ZONE A = HURRICANE CAT 1

ZONE B = HURRICANE CAT 2

ZONE C = HURRICANE CAT 3

ZONE D = HURRICANE CAT 4

ZONE E = HURRICANE CAT 5

Source: Okaloosa County Public Safety, 2025

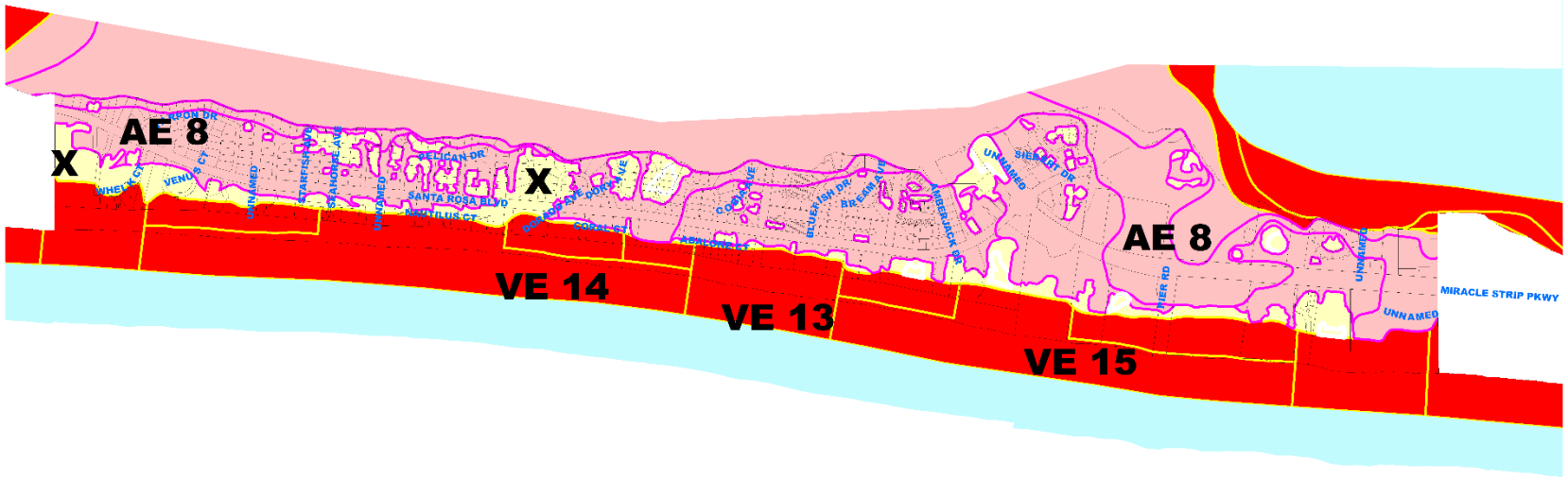
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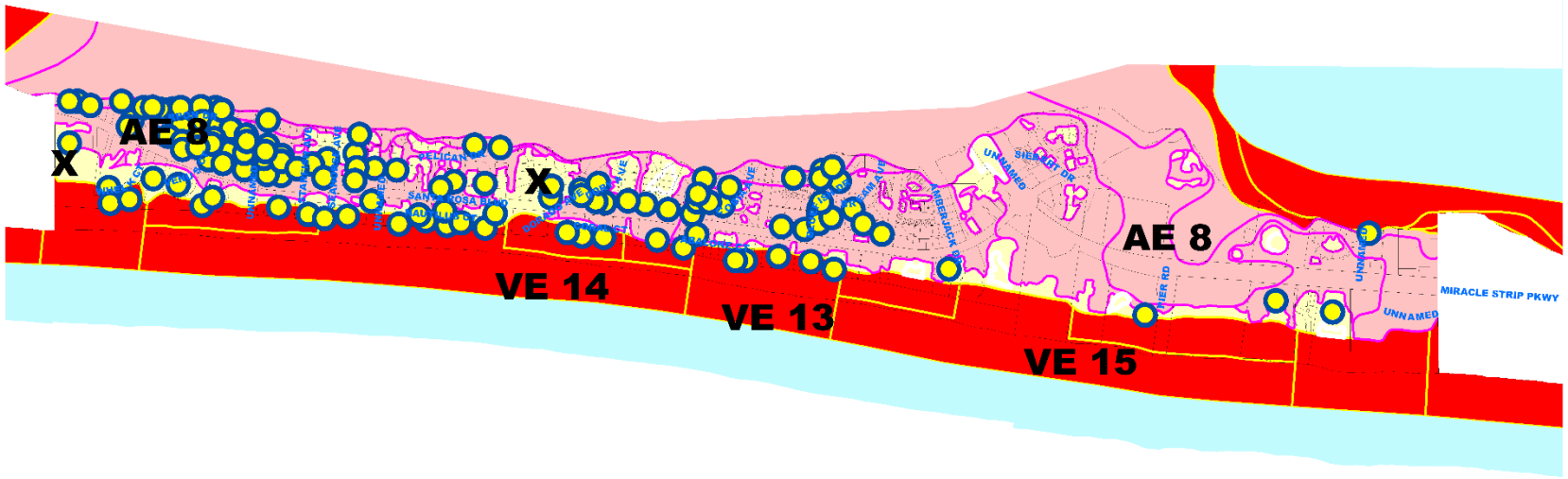
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AE 8
X
X
VE 14
VE 13
VE 15
AE 8
MIRACLE STRIP PKWY
UNNAMED
PELICAN DR
SANTA ROSA BLVD
CORAL ST
NEWPORT ST
BLUEFISH DR
SILVERLEAF DR
UNNAMED
UNNAMED
UNNAMED

Okaloosa Island Repetitive Loss Properties



- Parcel Lines
- X 500 Year Flood Plain
- A 100 Year Flood Plain
- AE 100 Year Flood Plain
- VE 100 Year Flood Plain
- Base Flood Elevation
- in a Floodway
- Unincorporated
- Repetitive Loss Properties

Source: FEMA Map Service Center, March 9 2021

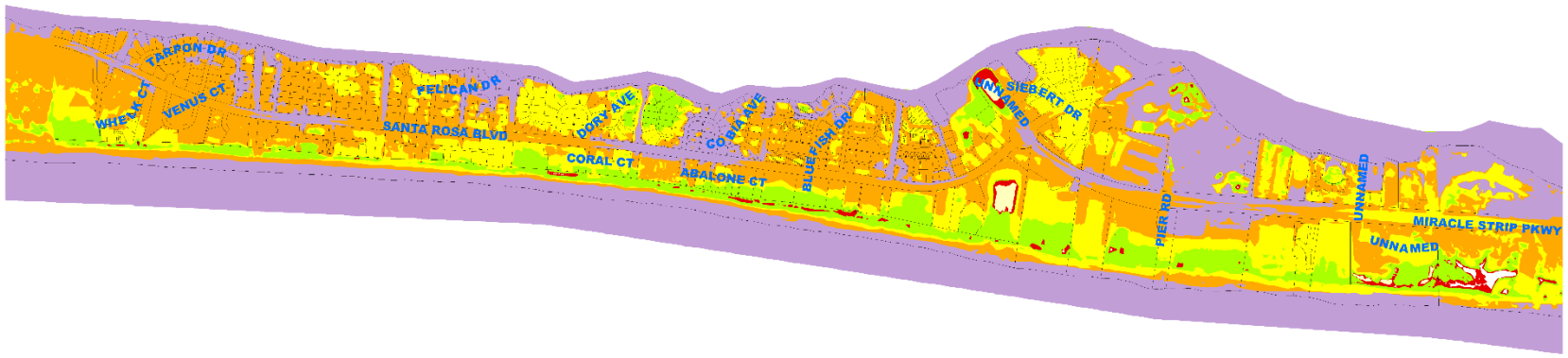
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Okaloosa Island Surge Zones

- Parcel Lines
- Category 1
- Category 2
- Category 3
- Category 4
- Category 5
- Unincorporated

Source: West Florida Regional Planning Council, 2025

MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
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Okaloosa Island Wildfire Level of Concern

Parcel Lines

Level of Concern

0
1
2
3
4
5
6
7
8
9

Unincorporated

Source: Florida Division of Forestry, 2025

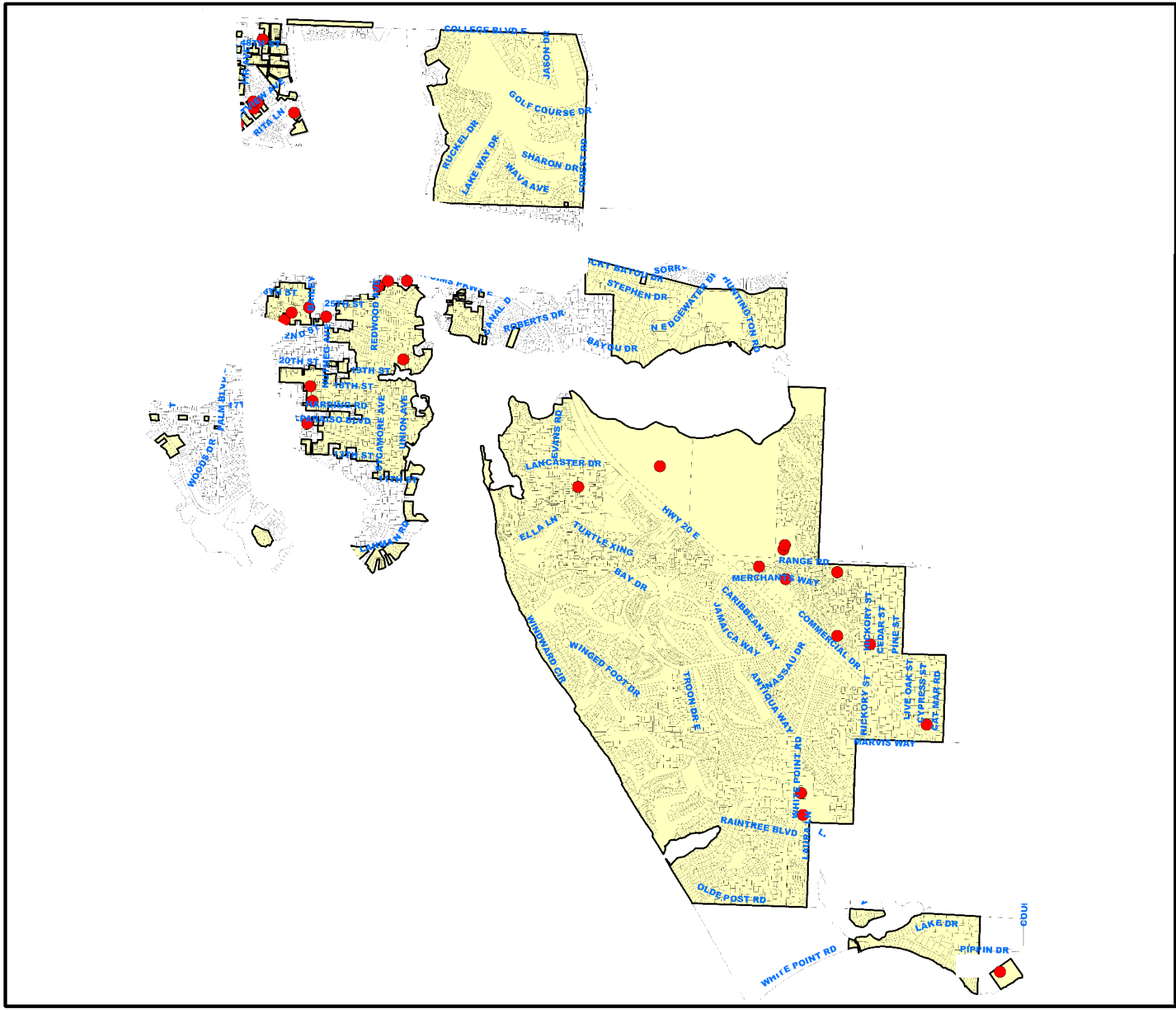
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Bluewater Bay Critical Facilities

- Parcel Lines
- Critical Facilities
- Unincorporated

Source: Okaloosa County Public Safety, 2025

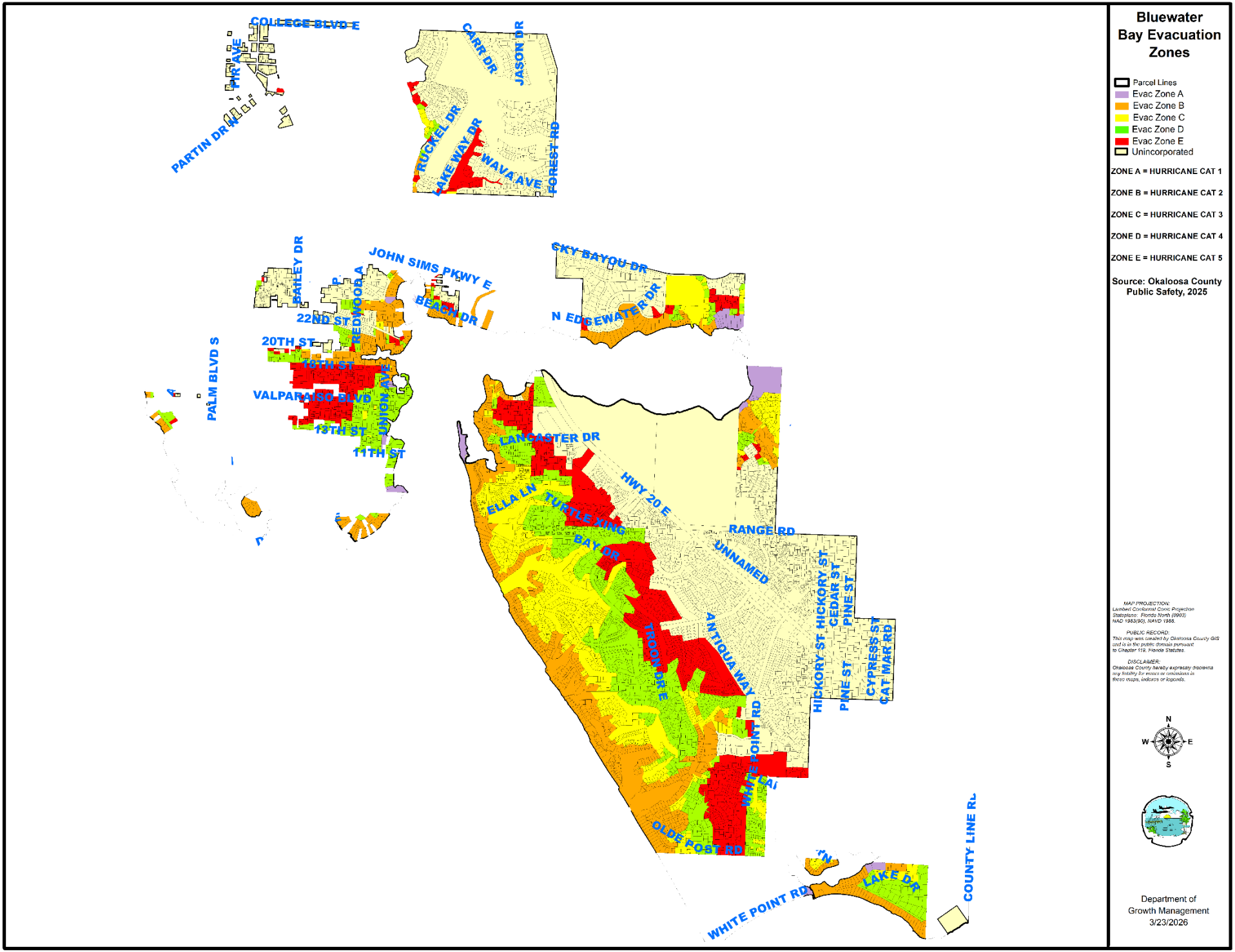
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Stateplane: Florida North (0903)
NAD 1983(90), NAVD 1988

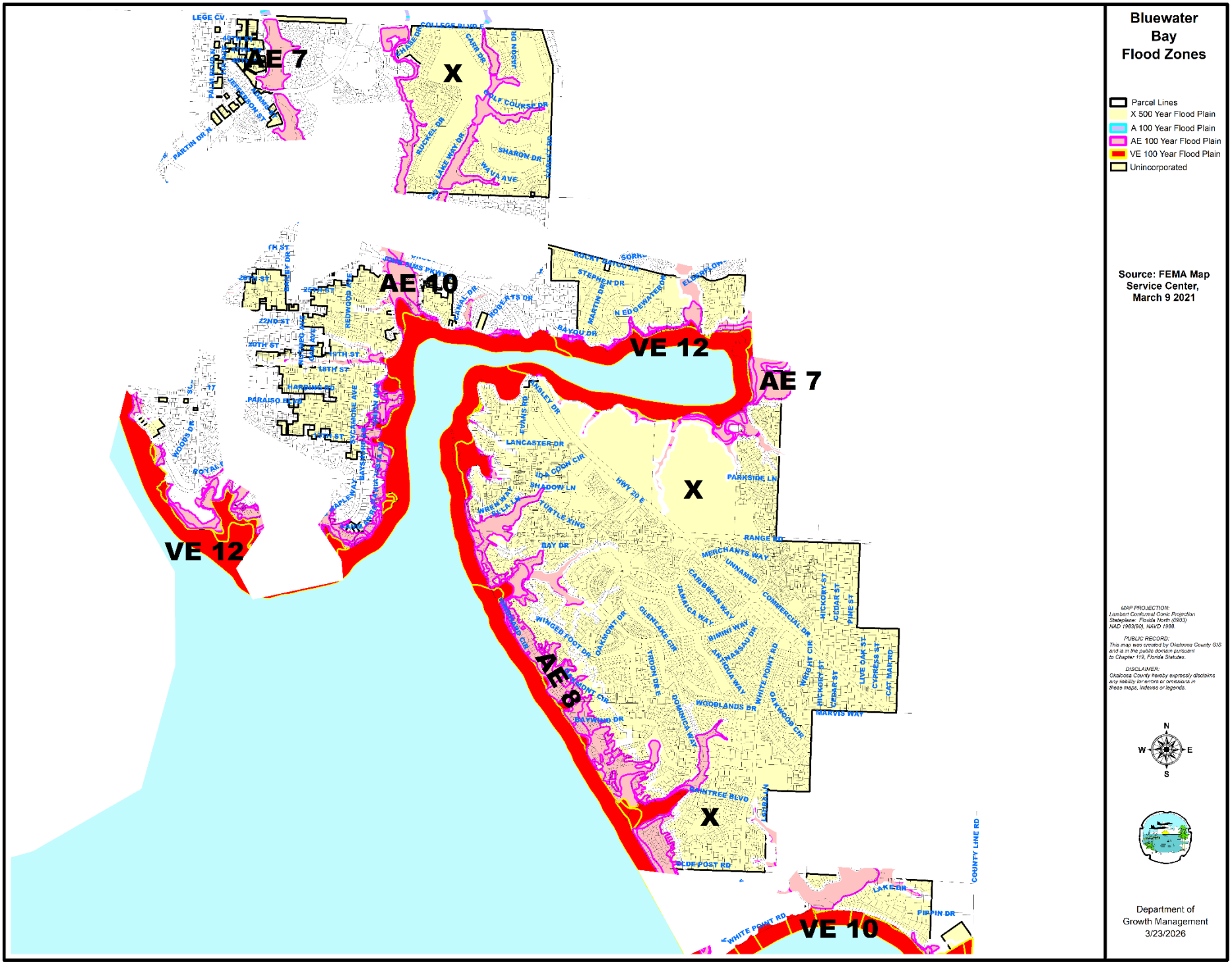
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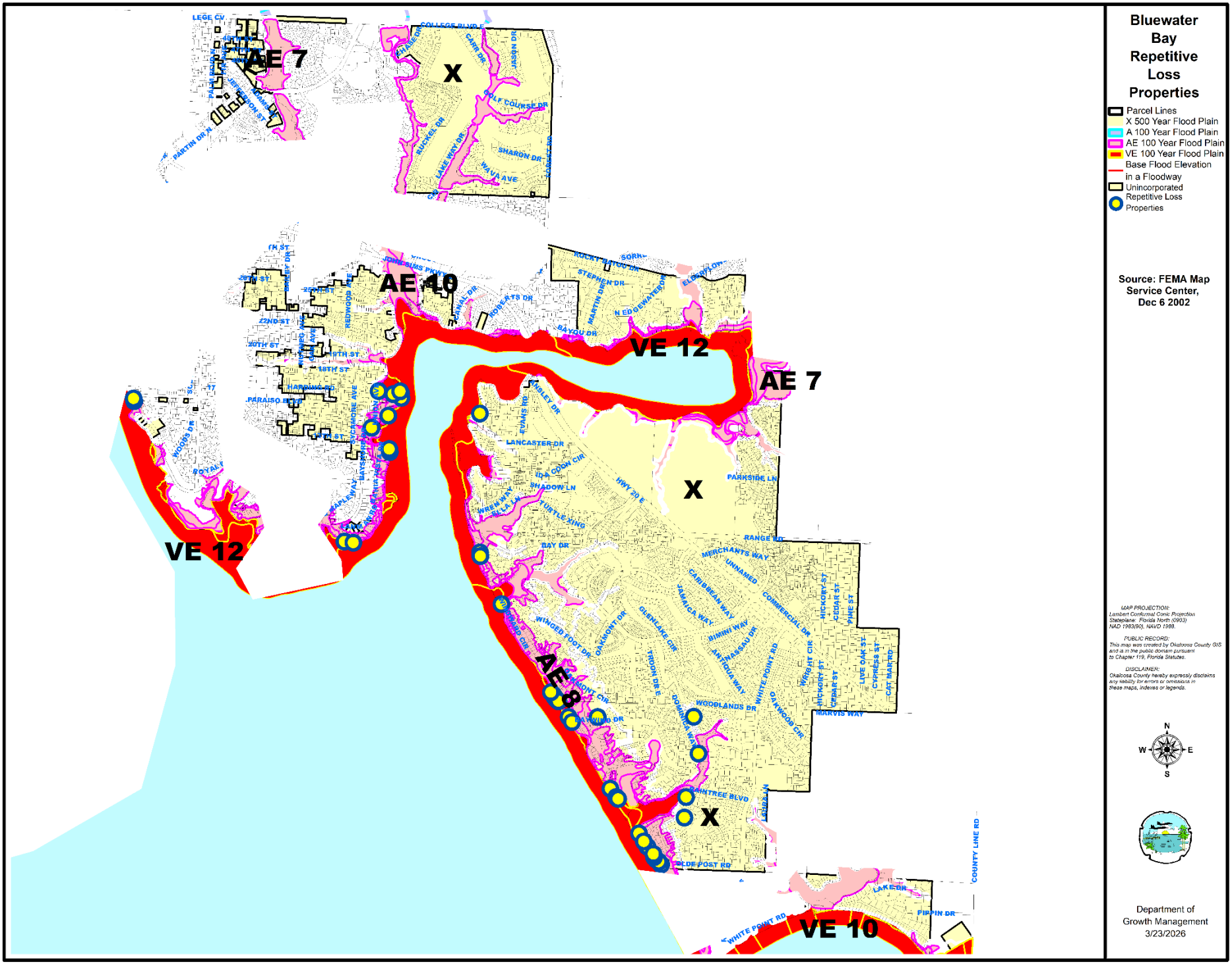
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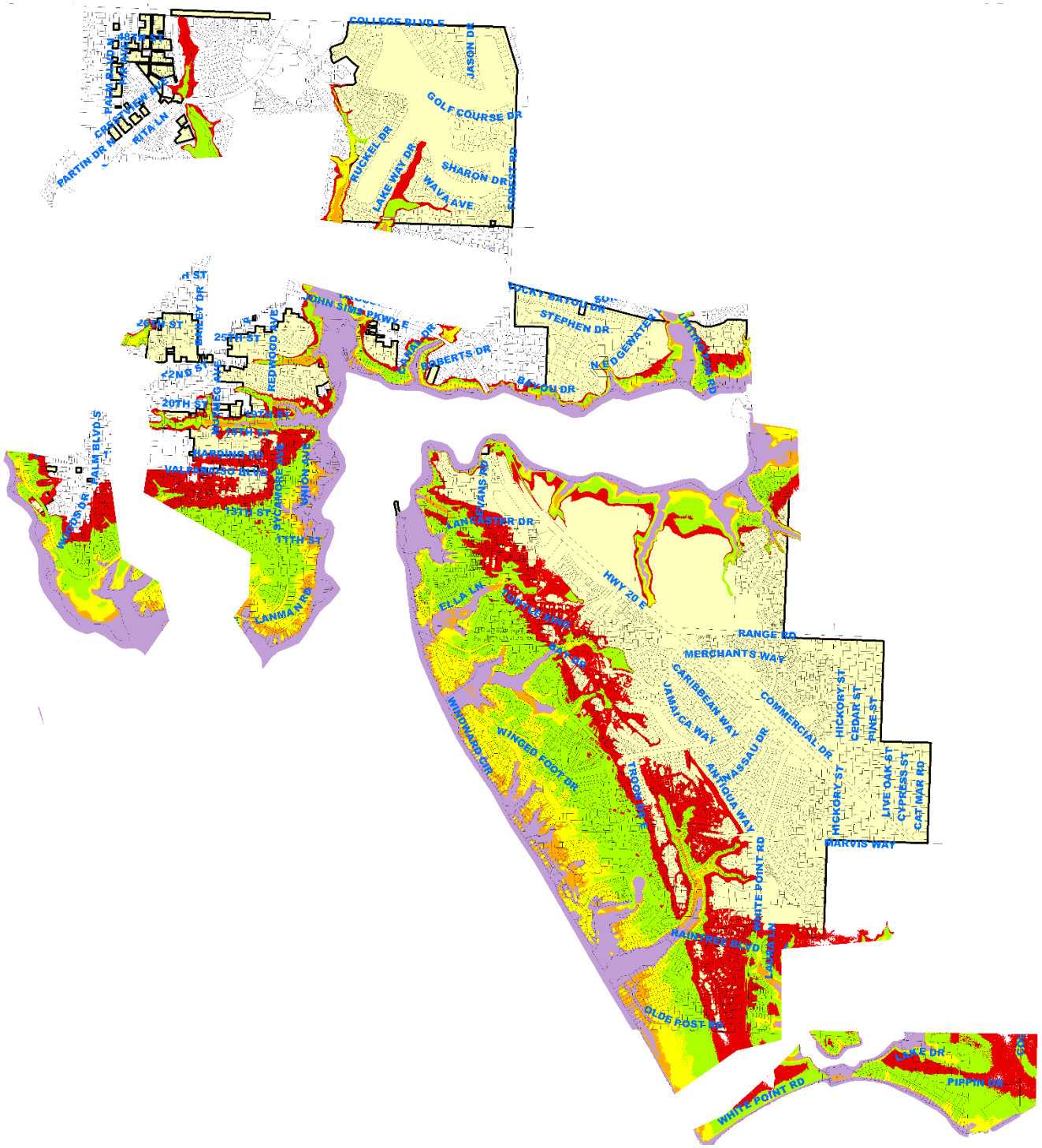
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Department of Growth Management
3/23/2026


COLLEGE BLVD E
FIR AVE
PARTIN DR E
CARR DR
JASON DR
TUCKEL DR
LAKE WAY DR
WAVA AVE
FOREST RD
BAILEY DR
JOHN SIMS PKWY E
BEACH DR
SKY BAYOU DR
N EDGEWATER DR
22ND ST
20TH ST
18TH ST
VALPARAISO BLVD
13TH ST
11TH ST
PALM BLVD S
LANCASTER DR
ELLA LN
TUCKLE AVE
BAY DR
HWY 20 E
RANGE RD
UNNAMED
HICKORY ST
CEDAR ST
PINE ST
CYPRESS ST
CAT MAR RD
ANTIQUA WAY
TYCOON DR E
WHITE POINT RD
OLDE POST RD
LAKE DR
COUNTY LINE RD
Bluewater Bay Evacuation Zones
Parcel Lines
Evac Zone A
Evac Zone B
Evac Zone C
Evac Zone D
Evac Zone E
Unincorporated
ZONE A = HURRICANE CAT 1
ZONE B = HURRICANE CAT 2
ZONE C = HURRICANE CAT 3
ZONE D = HURRICANE CAT 4
ZONE E = HURRICANE CAT 5
Source: Okaloosa County Public Safety, 2025
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
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3/23/2026


AE 7
X
AE 10
VE 12
AE 7
X
VE 12
AE 8
X
VE 10
Bluewater Bay Flood Zones
Parcel Lines
X 500 Year Flood Plain
A 100 Year Flood Plain
AE 100 Year Flood Plain
VE 100 Year Flood Plain
Unincorporated
Source: FEMA Map Service Center, March 9 2021
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
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S
Department of Growth Management
3/23/2026


AE 7
X
AE 10
VE 12
AE 7
X
VE 12
AE 8
X
VE 10
Bluewater Bay Repetitive Loss Properties
Parcel Lines
X 500 Year Flood Plain
A 100 Year Flood Plain
AE 100 Year Flood Plain
VE 100 Year Flood Plain
Base Flood Elevation
in a Floodway
Unincorporated
Repetitive Loss
Properties
Source: FEMA Map Service Center, Dec 6 2002
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
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Department of Growth Management
3/23/2026


COLLEGE BLVD E
JASON DR
GOLF COURSE DR
RUCKEL DR
LAKE WAY DR
SHARON DR
WAVA AVE
FOREST RD
PARTIN DR N
CRESTVIEW PL
RITA LN
1 ST
25TH ST
22ND ST
20TH ST
REDWOOD AVE
JOHN SIMS PKWY E
STEPHEN DR
ROBERTS DR
BAYOU DR
N EDGEWATER
PALM BLVD S
WOODS DR
VALPARAISO BLVD
19TH ST
17TH ST
LANIMAR RD
LANCASTER DR
HWY 20 E
ELLA LN
RANGE RD
MERCHANTS WAY
CARIBBEAN WAY
JAMAICA WAY
COMMERCIAL DR
ANTIGUA WAY
WINDWARD CIR
WINDED FOOT DR
TROON TRL
HICKORY ST
CEDAR ST
PINE ST
LIVE OAK ST
CYPRESS ST
CAT MAR RD
MARVIS WAY
WHITE POINT RD
RAINTREE ROAD
OLDE POST RD
PIPPIN DR
Bluewater Bay Surge Zones
Parcel Lines
Category 1
Category 2
Category 3
Category 4
Category 5
Unincorporated
Source: West Florida Regional Planning Council, 2025
MAP PROJECTION:
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Stateplane: Florida North (0903)
NAD 1983(90); NAVD 1988.
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Department of Growth Management
3/23/2026



Bluewater Bay Wildfire Level of Concern

Parcel Lines

Level of Concern

0
1
2
3
4
5
6
7
8
9

Unincorporated

Source: Florida Division of Forestry, 2025

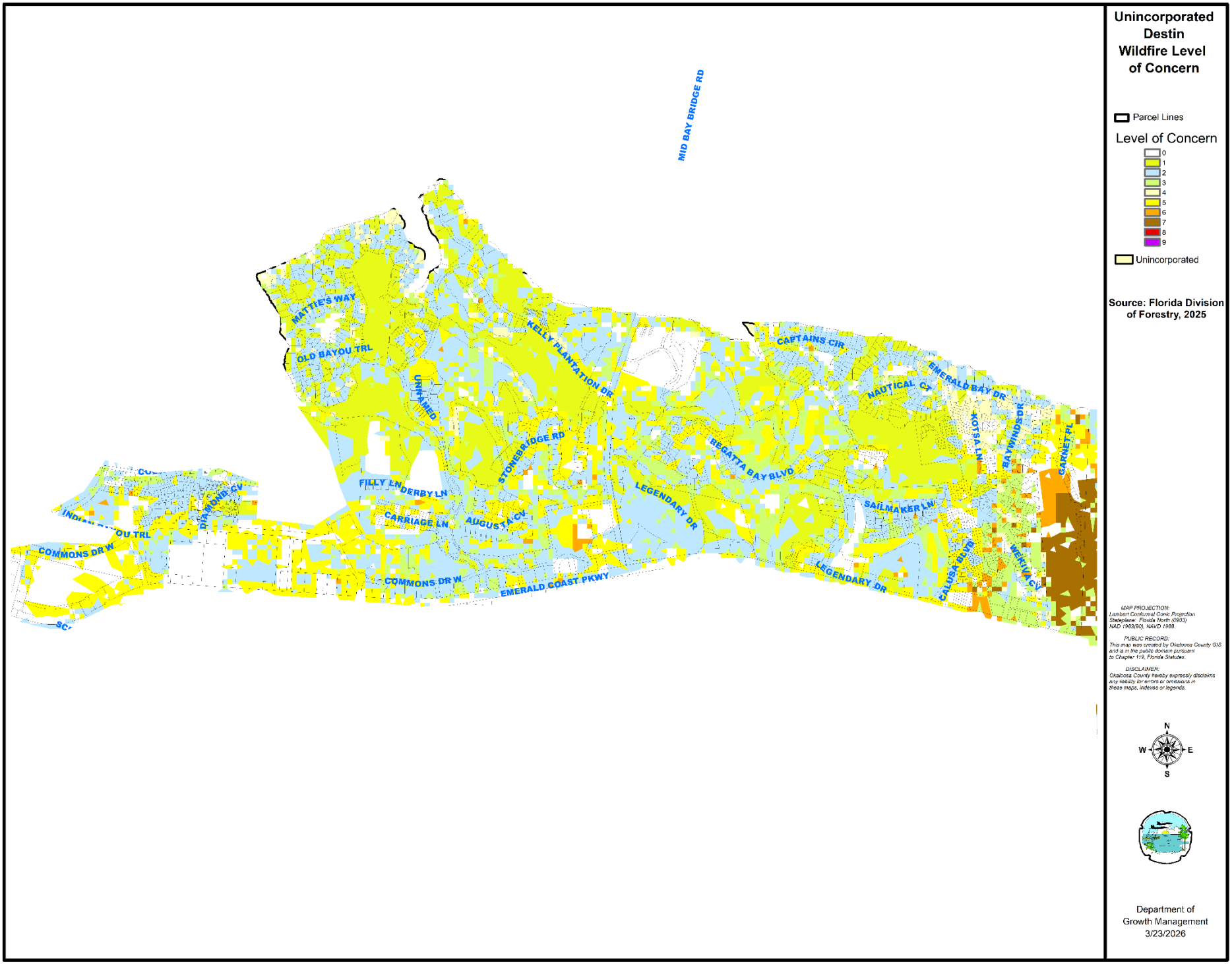
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Stateplane: Florida North, (0903)
NAD 1983(90), NAVD 1988.

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Department of Growth Management
3/23/2026



Unincorporated Destin Wildfire Level of Concern

Parcel Lines

Level of Concern

0
1
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4
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7
8
9

Unincorporated

Source: Florida Division of Forestry, 2025

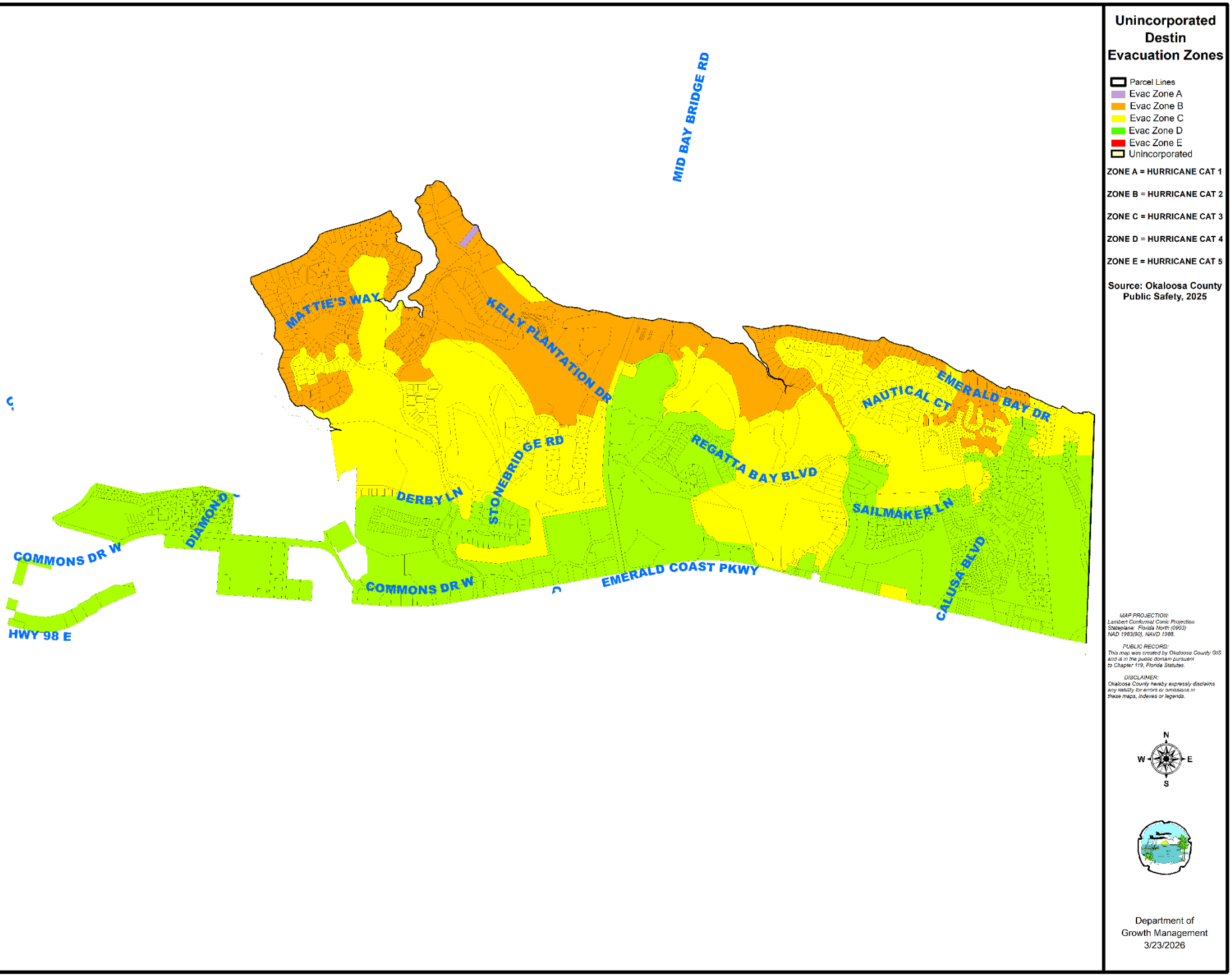
MAP PROJECTION:
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Stateplane: Florida North (0903)
NAD 1983(90), NAVD 1988.

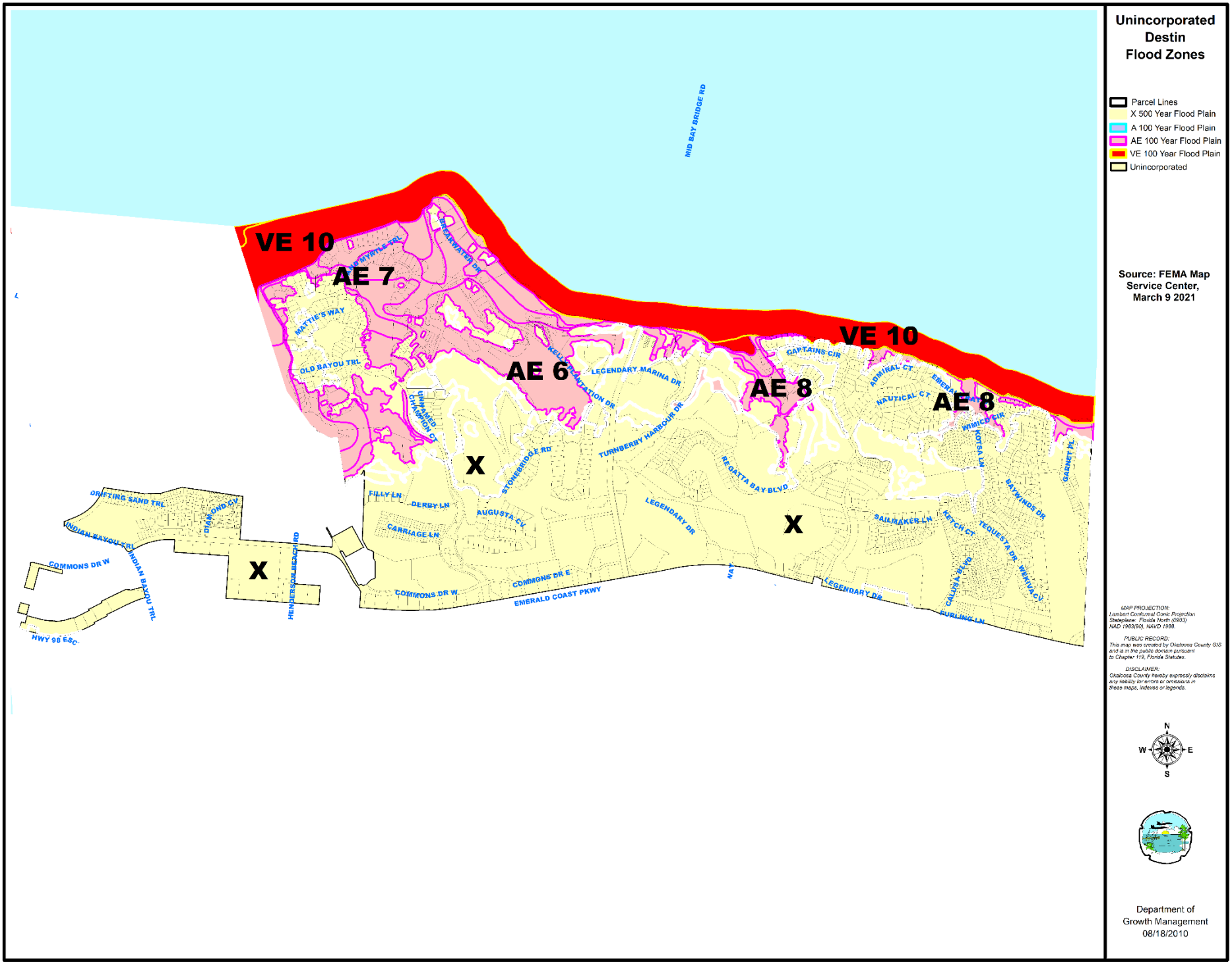
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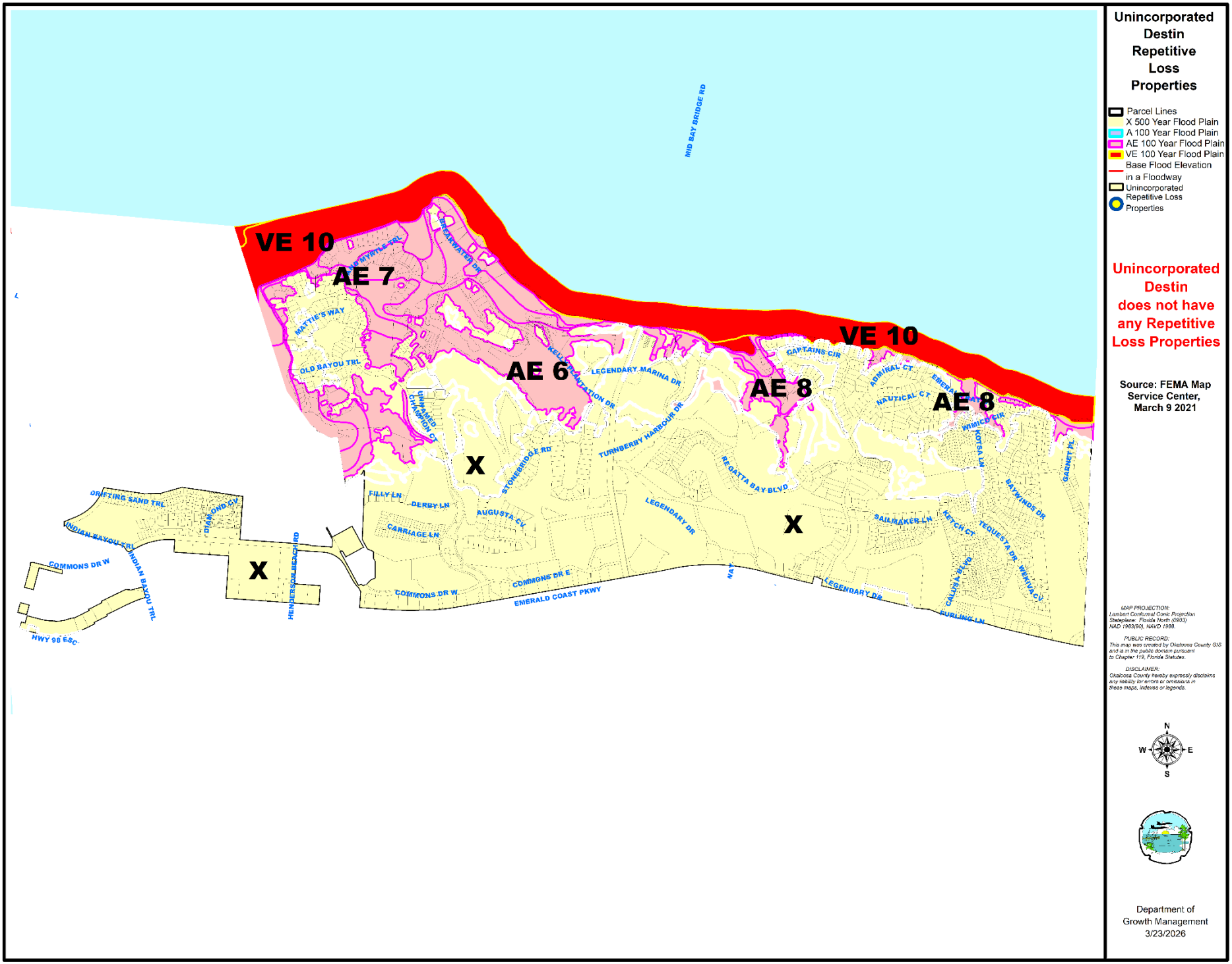
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W E
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Department of Growth Management
3/23/2026


MID BAY BRIDGE RD
MATTIE'S WAY
KELLY PLANTATION DR
NAUTICAL CT
EMERALD BAY DR
REGATTA BAY BLVD
STONEBRIDGE RD
DERBY LN
SAILMAKER LN
CALUSA BLVD
EMERALD COAST PKWY
COMMONS DR W
COMMONS DR W
HWY 98 E
Unincorporated Destin Evacuation Zones
Parcel Lines
Evac Zone A
Evac Zone B
Evac Zone C
Evac Zone D
Evac Zone E
Unincorporated
ZONE A = HURRICANE CAT 1
ZONE B = HURRICANE CAT 2
ZONE C = HURRICANE CAT 3
ZONE D = HURRICANE CAT 4
ZONE E = HURRICANE CAT 5
Source: Okaloosa County Public Safety, 2025
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
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Department of Growth Management
3/23/2026


Unincorporated Destin Flood Zones
Parcel Lines
X 500 Year Flood Plain
A 100 Year Flood Plain
AE 100 Year Flood Plain
VE 100 Year Flood Plain
Unincorporated
Source: FEMA Map Service Center, March 9 2021
VE 10
AE 7
AE 6
VE 10
AE 8
AE 8
X
X
X
MID BAY BRIDGE RD
MYRTLE TRL
BREAKWATER DR
MATTIE'S WAY
OLD BAYOU TRL
UNNAMED CHAMPION CT
RELOCATION DR
LEGENDARY MARINA DR
CAPTAINS CIR
ADMIRAL CT
NAUTICAL CT
MIMICO CIR
KOTSA LN
BAYWINDS DR
GARNET PL
TURNBERRY HARBOUR DR
REGATTA BAY BLVD
STONEBRIDGE RD
FILLY LN
DERBY LN
AUGUSTA CT
CARRIAGE LN
LEGENDARY DR
SAILMAKER LN
KETCH CT
TEQUESTA DR
WIKIVA CT
CALUSA BLVD
PURLING LN
DRIFTING SAND TRL
DIAMOND CT
INDIAN BAYOU TRL
COMMONS DR W
HENDERSON BEACH RD
COMMONS DR W
COMMONS DR E
EMERALD COAST PKWY
HWY 98 ESC
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
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Department of Growth Management
08/18/2010



Unincorporated Destin Repetitive Loss Properties

- Parcel Lines
- X 500 Year Flood Plain
- A 100 Year Flood Plain
- AE 100 Year Flood Plain
- VE 100 Year Flood Plain
- Base Flood Elevation
- in a Floodway
- Unincorporated
- Repetitive Loss
- Properties

Unincorporated Destin does not have any Repetitive Loss Properties

Source: FEMA Map Service Center, March 9 2021

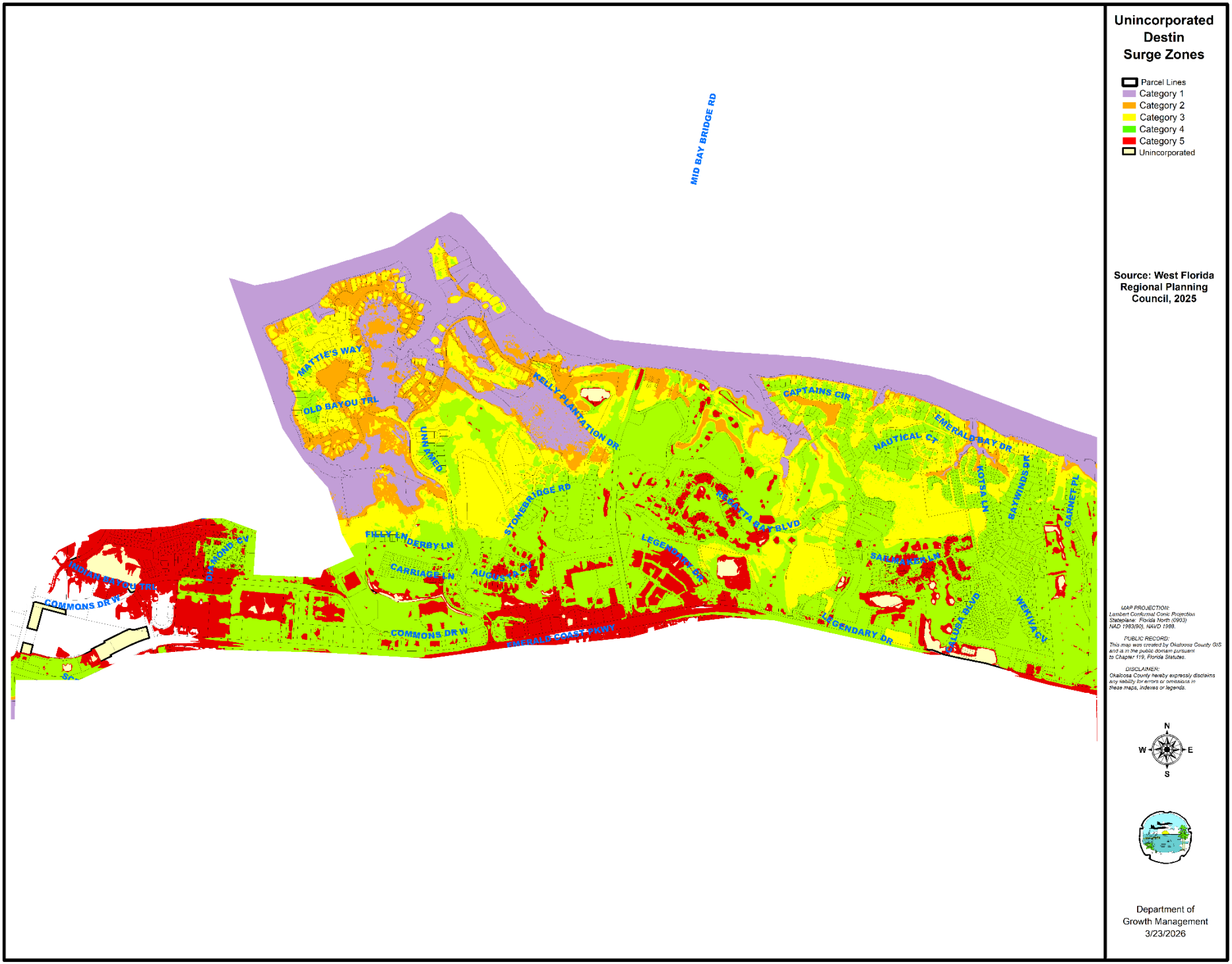
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Stateplane: Florida North (0903)
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Department of Growth Management
3/23/2026



Unincorporated Destin Surge Zones

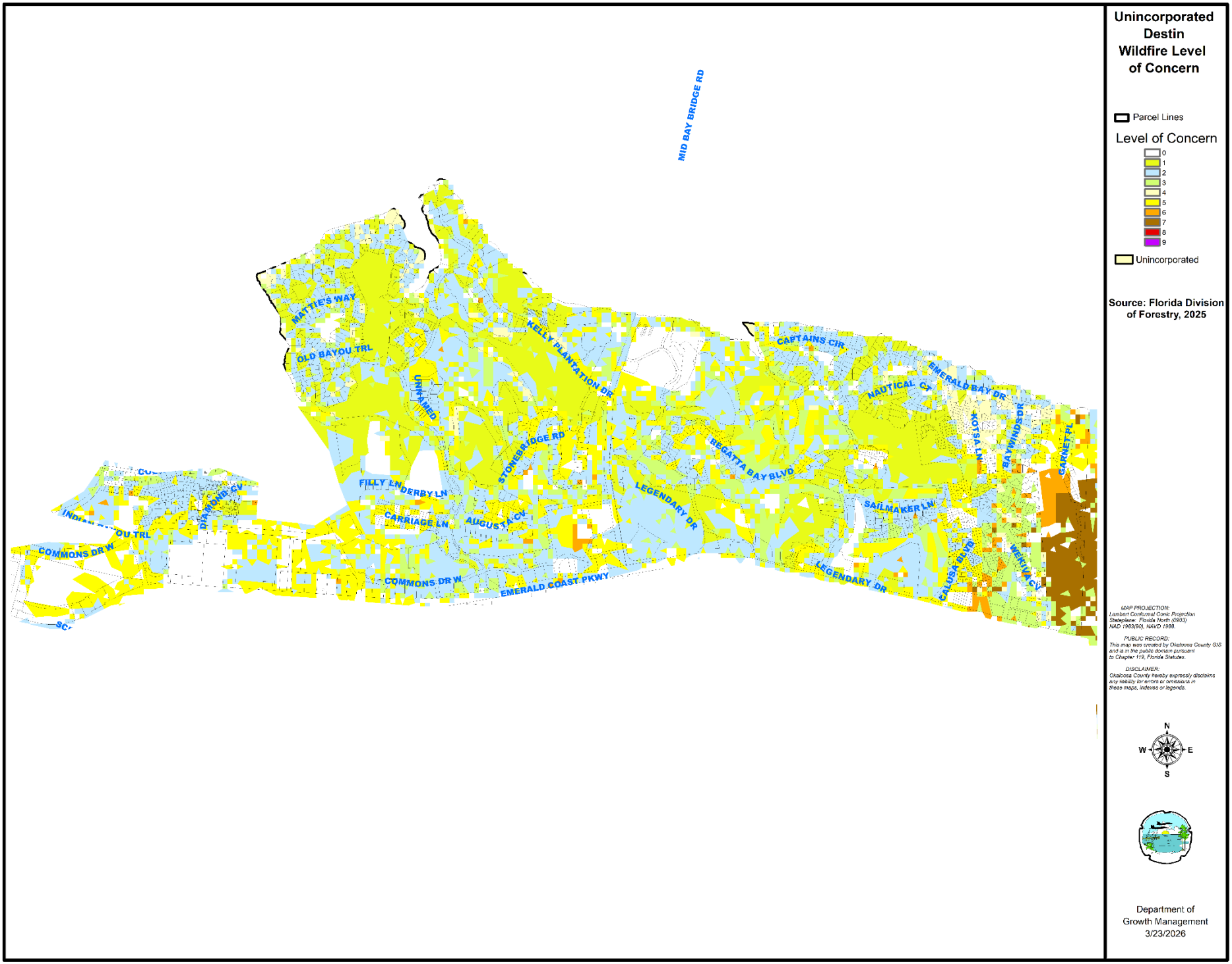
Source: West Florida Regional Planning Council, 2025

MAP PROJECTION:
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Stateplane: Florida North (0903)
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Department of Growth Management
3/23/2026



Unincorporated Destin Wildfire Level of Concern

Parcel Lines

Level of Concern

0
1
2
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9

Unincorporated

Source: Florida Division of Forestry, 2025

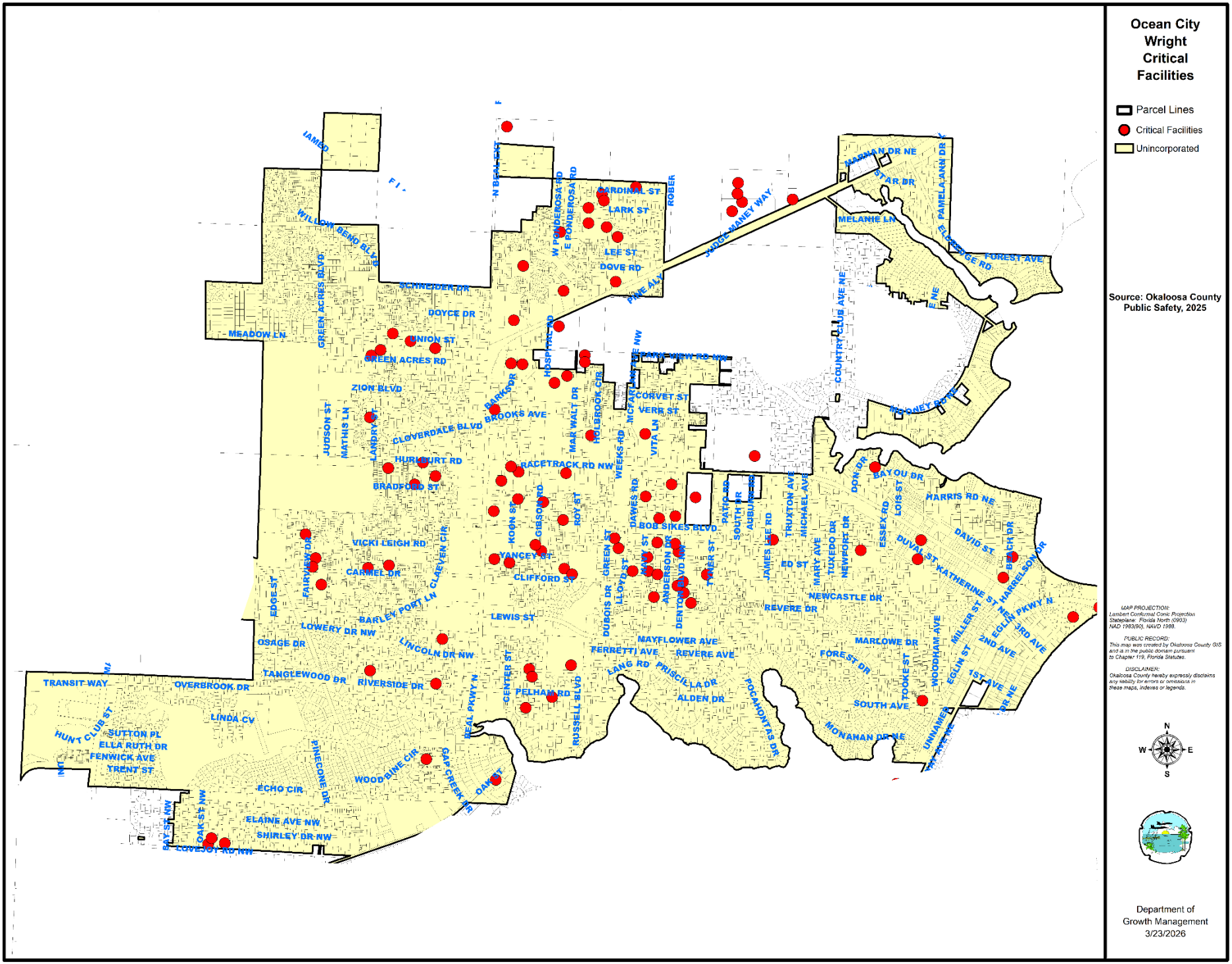
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Stateplane: Florida North (0903)
NAD 1983(90), NAVD 1988.

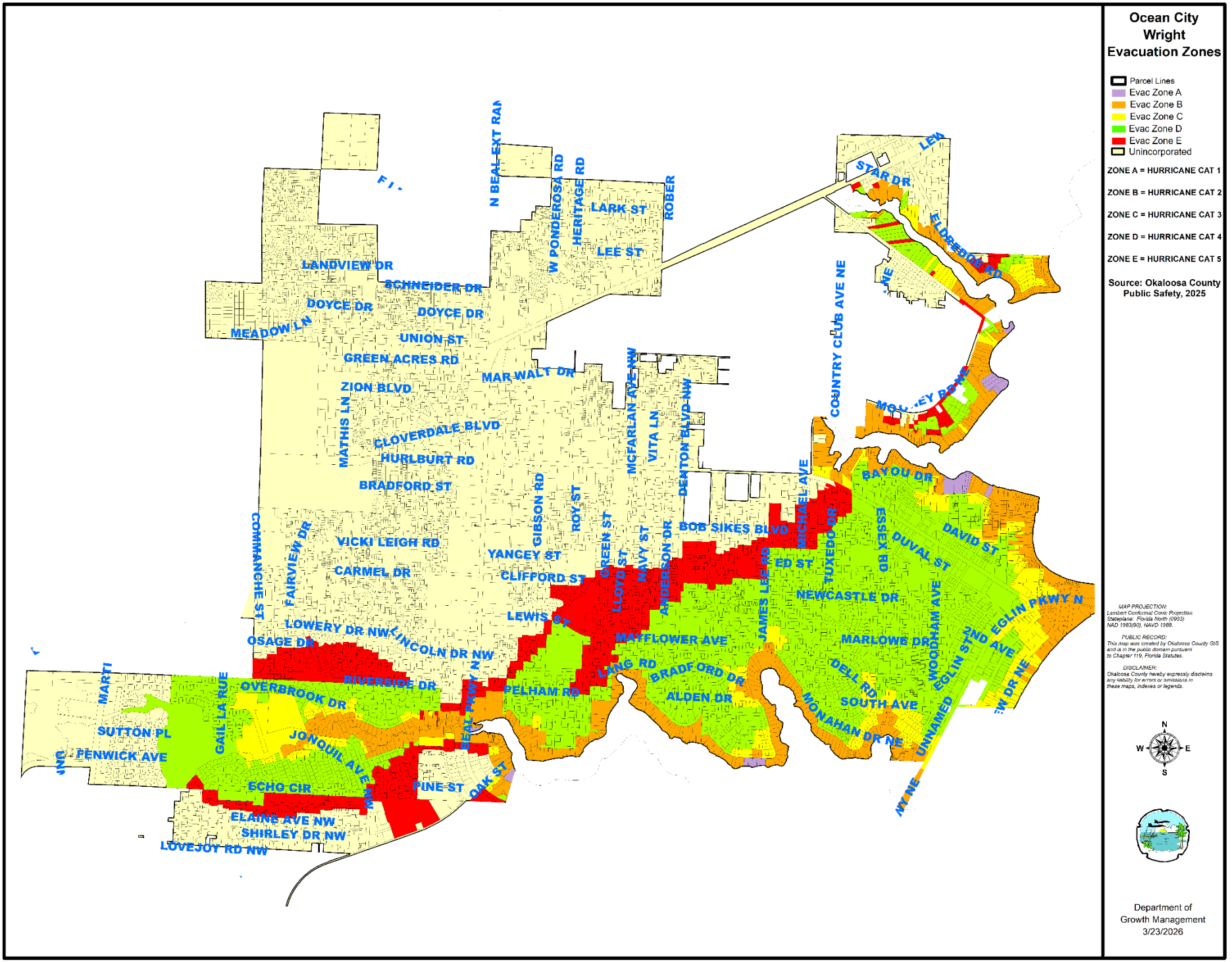
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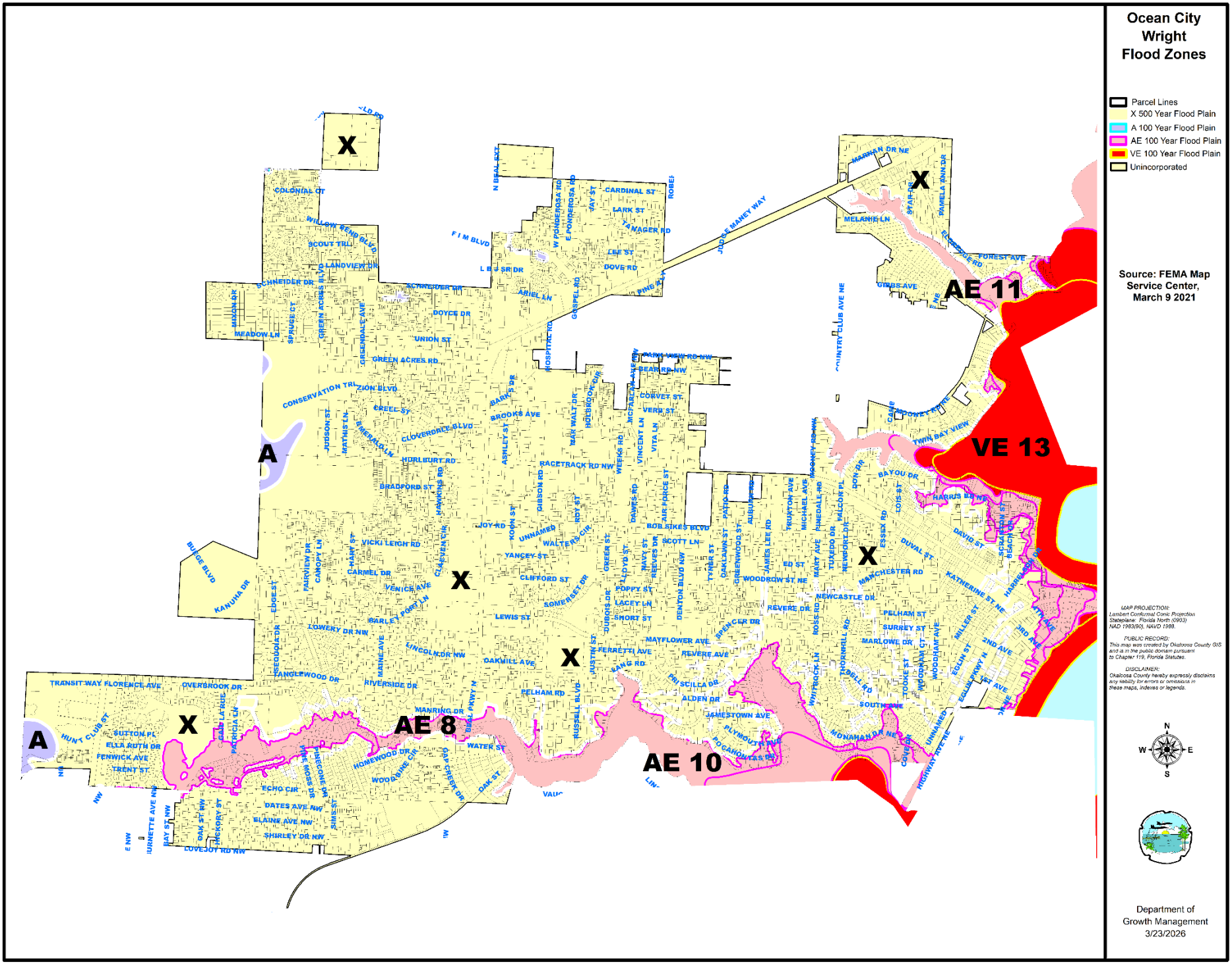
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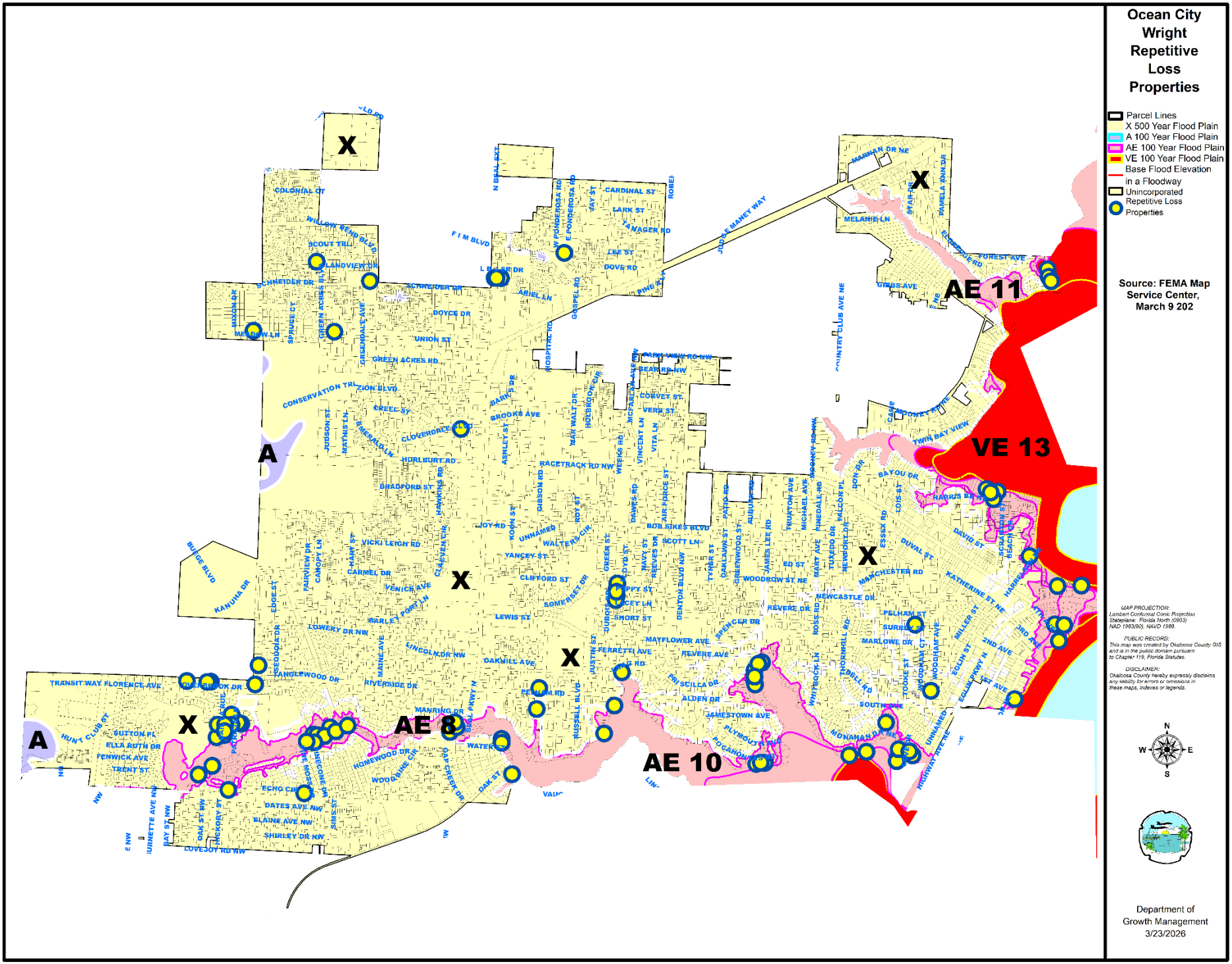
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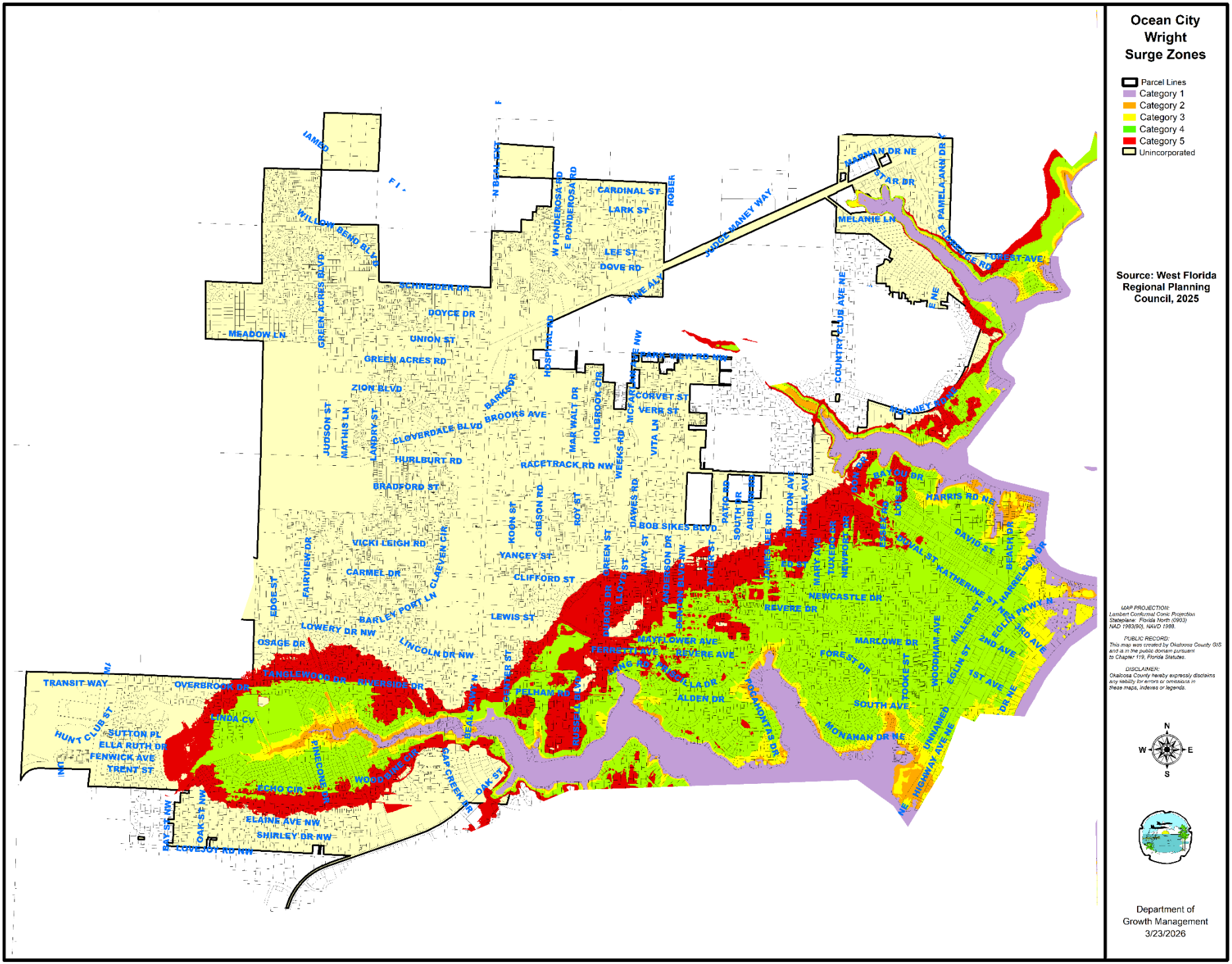
Department of Growth Management
3/23/2026

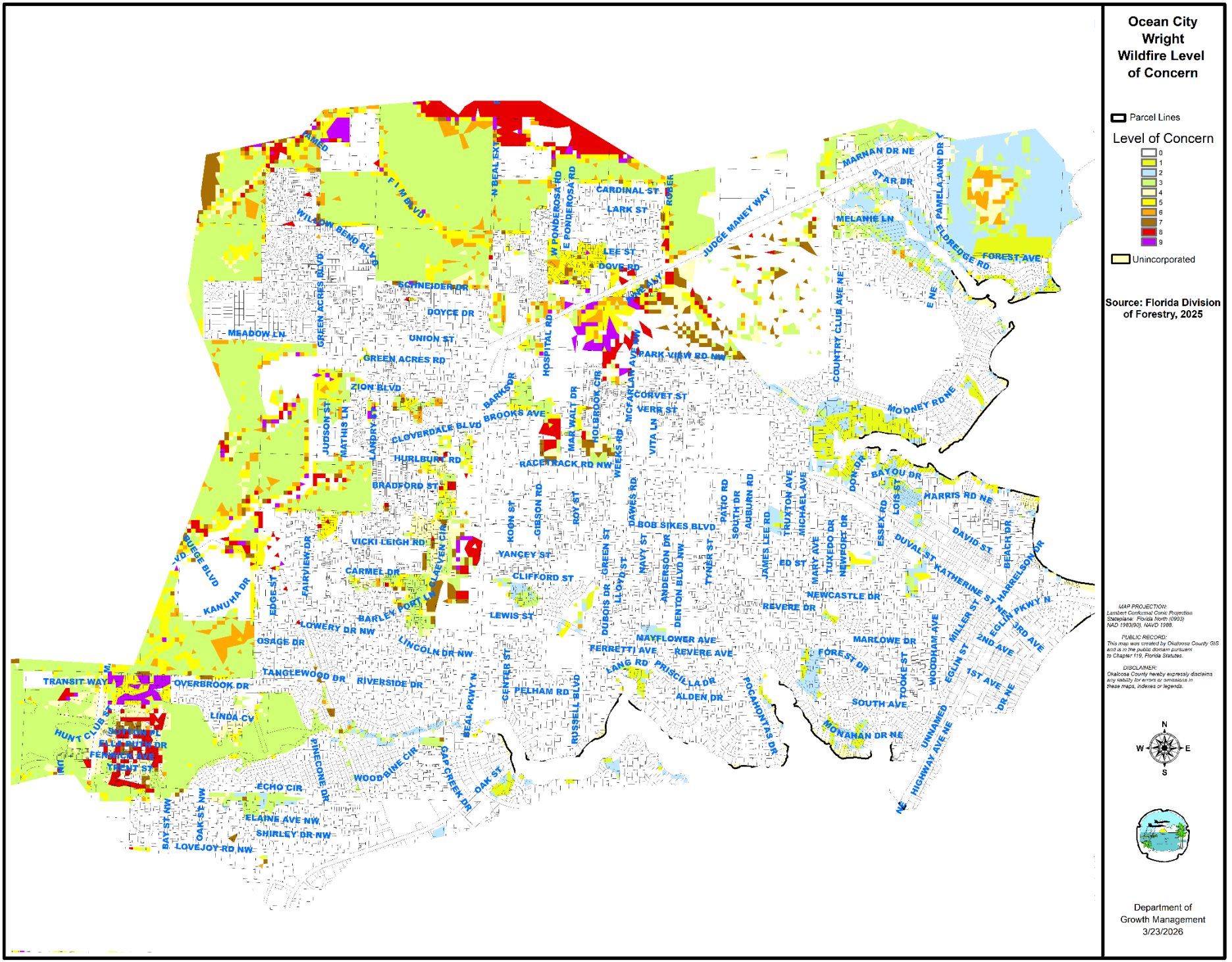

Ocean City
Wright
Critical
Facilities
Parcel Lines
Critical Facilities
Unincorporated
Source: Okaloosa County
Public Safety, 2025
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
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N
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Department of
Growth Management
3/23/2026
CARDINAL ST
LARK ST
LEE ST
DOVE RD
JUDGE HANEY WAY
MELANIE LN
FOREST AVE
DOYCE DR
MEADOW LN
UNION ST
GREEN ACRES RD
ZION BLVD
CLOVERDALE BLVD
HURLBURT RD
BRADFORD ST
RACETRACK RD NW
BROOKS AVE
CORVET ST
VERR ST
BAYOU DR
HARRIS RD NE
DAVID ST
DUVAL ST
KATHERINE ST NE
HARRELSON DR
EGLIN PKWY N
3RD AVE E
2ND AVE
1ST AVE
NEWCASTLE DR
REVERE DR
MARLOWE DR
FORE ST DR
SOUTH AVE
MONAHAN DR NE
BOB SIKES BLVD
VICKI LEIGH RD
CARMEL DR
YANCEY ST
CLIFFORD ST
LEWIS ST
MAYFLOWER AVE
FERRETTI AVE
REVERE AVE
ALDEN DR
PELHAM RD
OSAGE DR
LOWERY DR NW
LINCOLN DR NW
TANGLEWOOD DR
RIVERSIDE DR
OVERBROOK DR
TRANSIT WAY
LINDA CV
SUTTON PL
ELLA RUTH DR
FENWICK AVE
TRENT ST
HUNT CLUB ST
ECHO CIR
WOOD BINE CIR
ELAINE AVE NW
SHIRLEY DR NW
LOVEJOY RD NW
OAK ST NW
BAY ST NW
PINECREST DR
CREEK CAY CIR
DAM ST
REAL PKWY N
CENTER ST
RUSSELL BLVD
LANG RD
PRISCILLA DR
POCAHONTAS DR
UNNAMED
WOODHAM AVE
EGLIN ST
TOOKE ST
MILLER ST
GREEN ACRES BLVD
WILLOW BEND BLVD
SCHNEIDER DR
PONDEROSA RD
HOSPITAL RD
MAR WALT DR
HOLLYBROOK CIR
MCFARLAND RD NW
WEEKS RD
VITA LN
LANDRY ST
MATHIS LN
JUDSON ST
BARKO DR
GIBSON RD
KOON ST
ROY ST
DAWES RD
PATIO DR
SOUTH DR
AUBURN RD
TRUXTON AVE
MICHAEL AVE
JAMES LEE RD
MARY AVE
TUXEDO DR
NEWPORT DR
ESSEX RD
LOIS ST
DON DR
BEACH DR
TURNER ST
ANDERSON DR
DENTON BLVD NW
DUBOIS DR
GREEN ST
LLOYD ST
FAIRVIEW DR
EDGE ST
CLAEYEN CIR
BARLEY PORT LN
COUNTRY CLUB AVE NE
COONEY DR
MARILYN DR NE
PAMELA ANN DR
ELDRIDGE RD
PINE ALY
ROBER
N BEAL ST
IAMES
F I

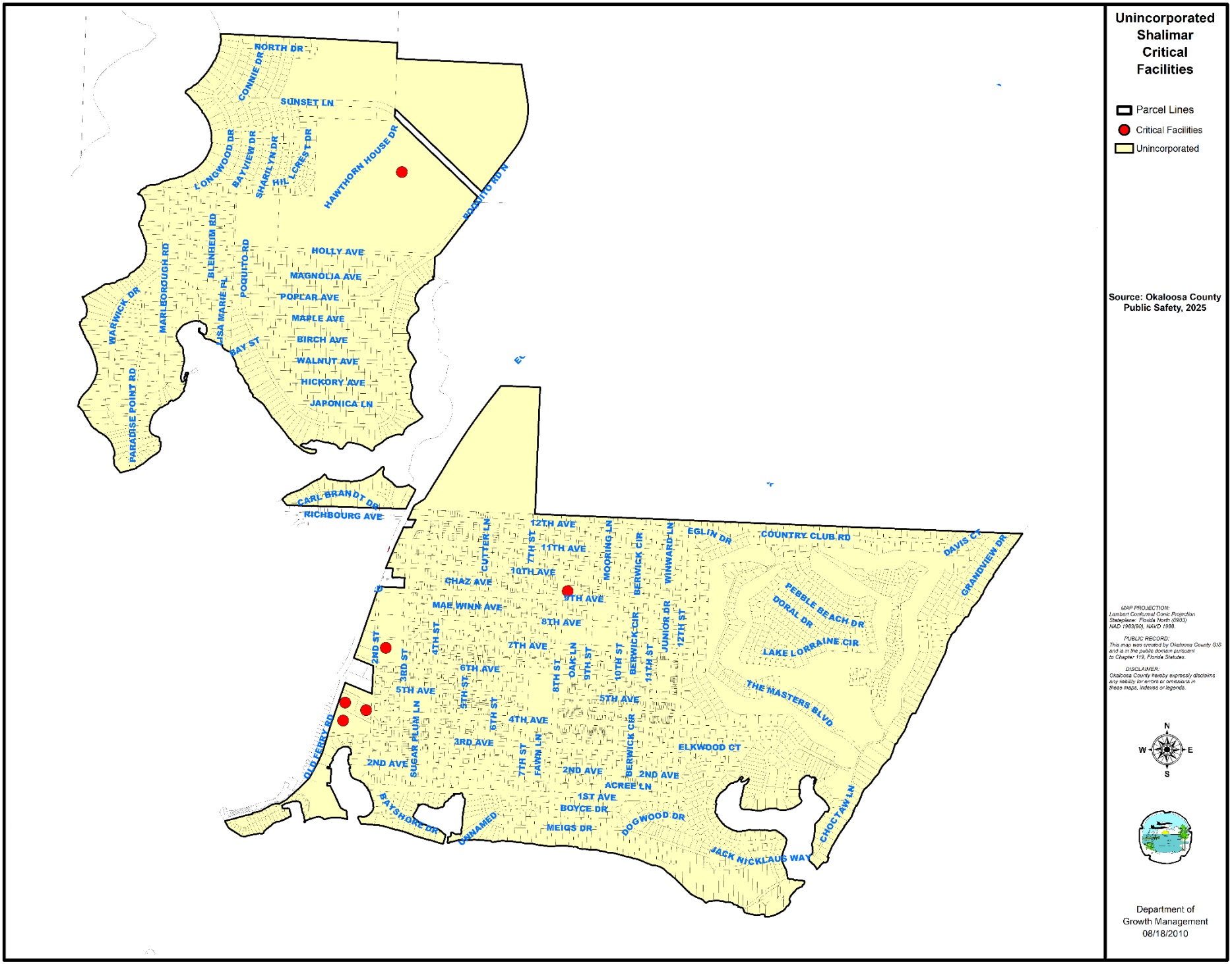

Ocean City
Wright
Evacuation Zones
Parcel Lines
Evac Zone A
Evac Zone B
Evac Zone C
Evac Zone D
Evac Zone E
Unincorporated
ZONE A = HURRICANE CAT 1
ZONE B = HURRICANE CAT 2
ZONE C = HURRICANE CAT 3
ZONE D = HURRICANE CAT 4
ZONE E = HURRICANE CAT 5
Source: Okaloosa County Public Safety, 2025
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N
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Department of
Growth Management
3/23/2026
LARK ST
LEE ST
LANDVIEW DR
SCHNEIDER DR
DOYCE DR
MEADOW LN
UNION ST
GREEN ACRES RD
ZION BLVD
MAR WALT DR
CLOVERDALE BLVD
HURLBURT RD
BRADFORD ST
VICKI LEIGH RD
CARMEL DR
CLIFFORD ST
YANCEY ST
LEWIS ST
LOWERY DR NW
LINCOLN DR NW
OSAGE DR
RIVERSIDE DR
OVERBROOK DR
PELHAM RD
MAYFLOWER AVE
BOB SIKES BLVD
NEWCASTLE DR
MARLOWE DR
SOUTH AVE
ALDEN DR
MONAHAN DR NE
SUTTON PL
FENWICK AVE
JONQUIL AVE NW
ECHO CIR
ELAINE AVE NW
SHIRLEY DR NW
LOVEJOY RD NW
PINE ST
OAK ST
SAYOU DR
DAVID ST
DUVAL ST
ESSEX RD
ED ST
2ND AVE
EGLIN PKWY N
STAR DR
COUNTRY CLUB AVE NE
MOLLEY ROAD
ELDRIDGE RD
N BEAL EXT RAN
W PONDEROSA RD
HERITAGE RD
MATHIS LN
MCFARLAN AVE NW
VITA LN
DENTON BLVD NW
GIBSON RD
ROY ST
GREEN ST
LLOYD ST
MAVY ST
ADDISON DR
MICHAEL AVE
TUXEDO DR
JAMES LEE RD
COMANCHE ST
FAIRVIEW DR
GAIL LA RUE
MARTI
UNNAMED

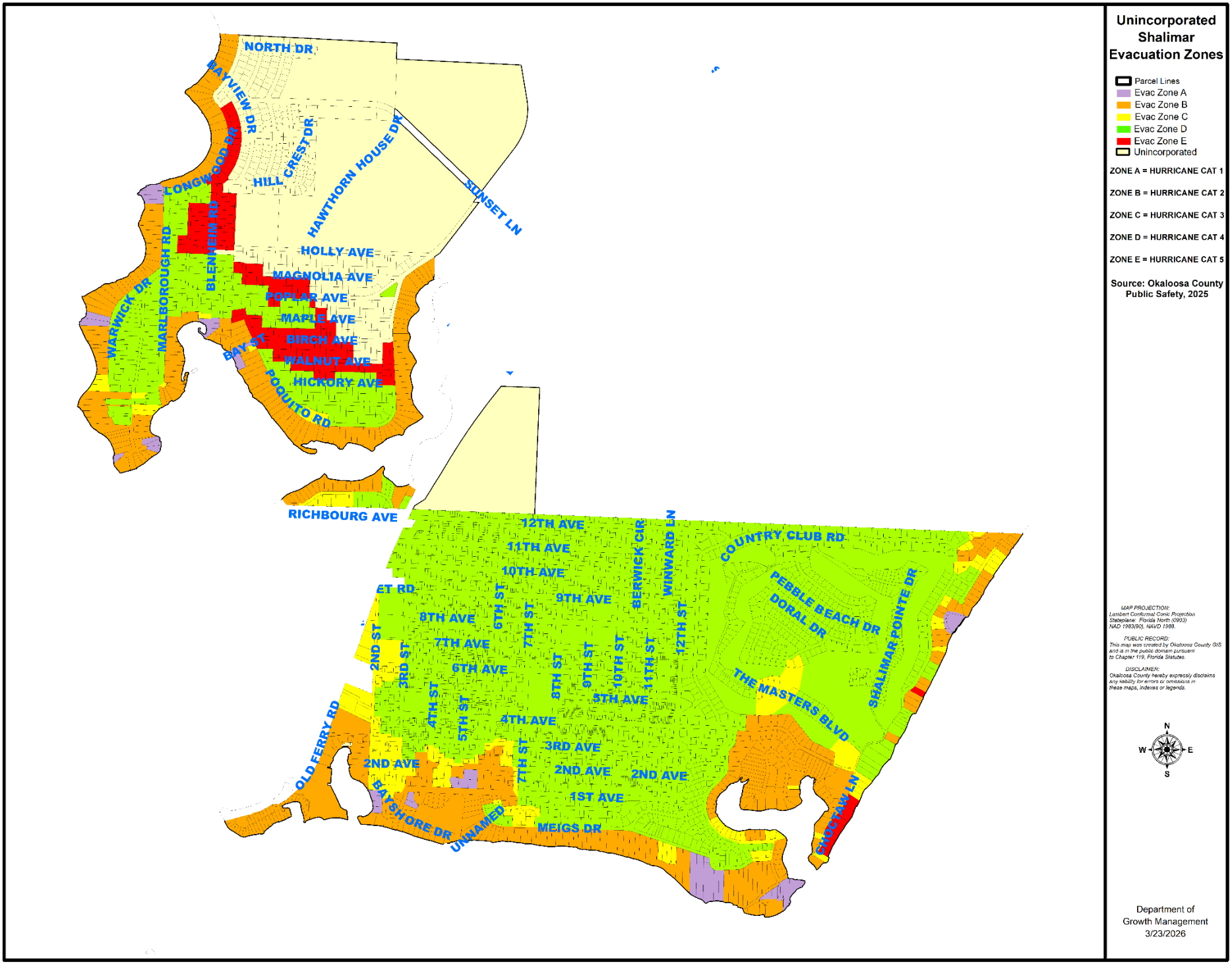

Ocean City
Wright
Flood Zones
Parcel Lines
X 500 Year Flood Plain
A 100 Year Flood Plain
AE 100 Year Flood Plain
VE 100 Year Flood Plain
Unincorporated
Source: FEMA Map Service Center, March 9 2021
AE 11
VE 13
AE 8
AE 10
X
A
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
NAD 1983(90), NAVD 1988.
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Department of
Growth Management
3/23/2026

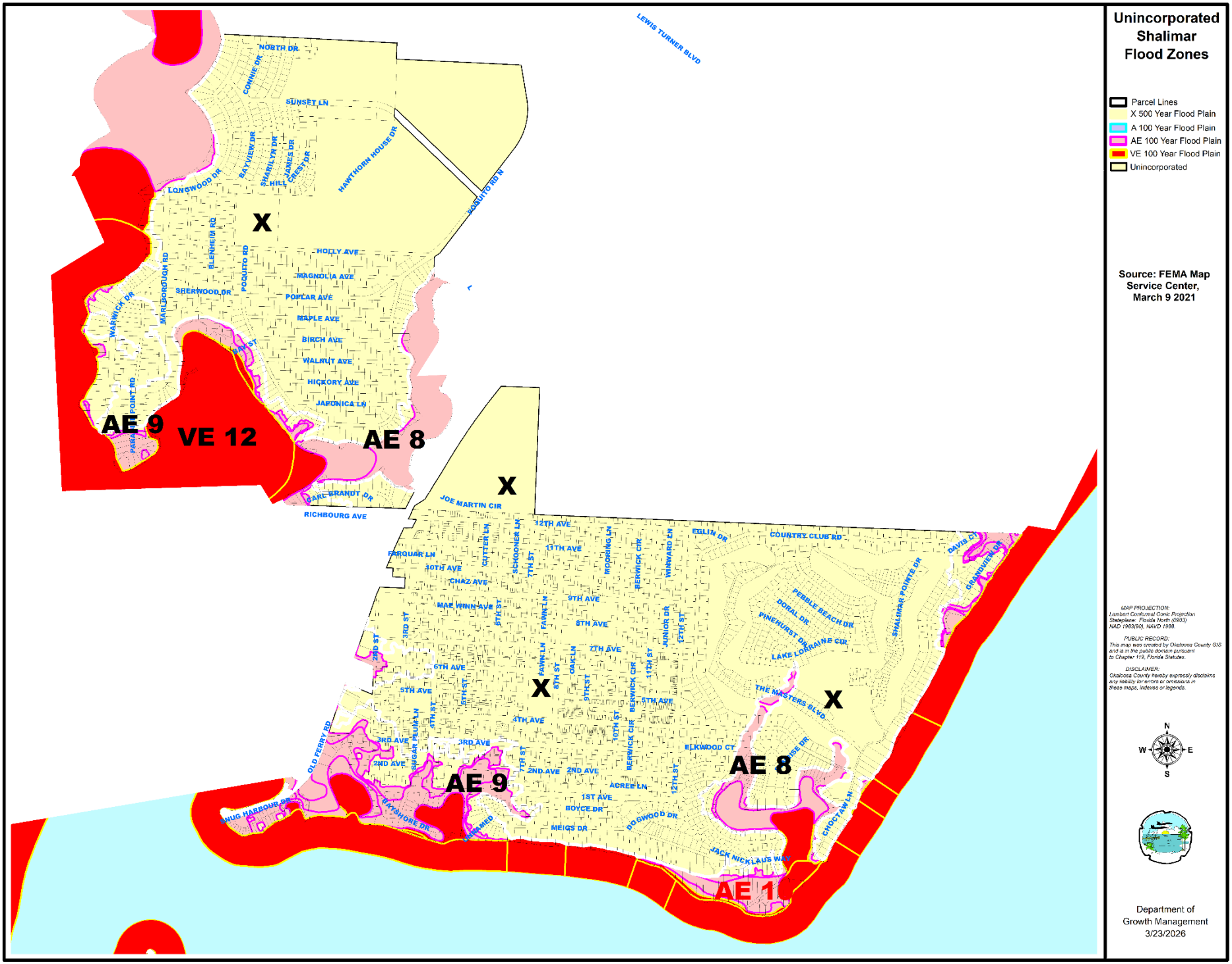

Ocean City Wright Repetitive Loss Properties
Parcel Lines
X 500 Year Flood Plain
A 100 Year Flood Plain
AE 100 Year Flood Plain
VE 100 Year Flood Plain
Base Flood Elevation in a Floodway
Unincorporated
Repetitive Loss Properties
Source: FEMA Map Service Center, March 9 202
AE 11
VE 13
AE 8
AE 10
A
X
MAP PROJECTION:
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Stateplane: Florida North (0903)
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Department of Growth Management
3/23/2026

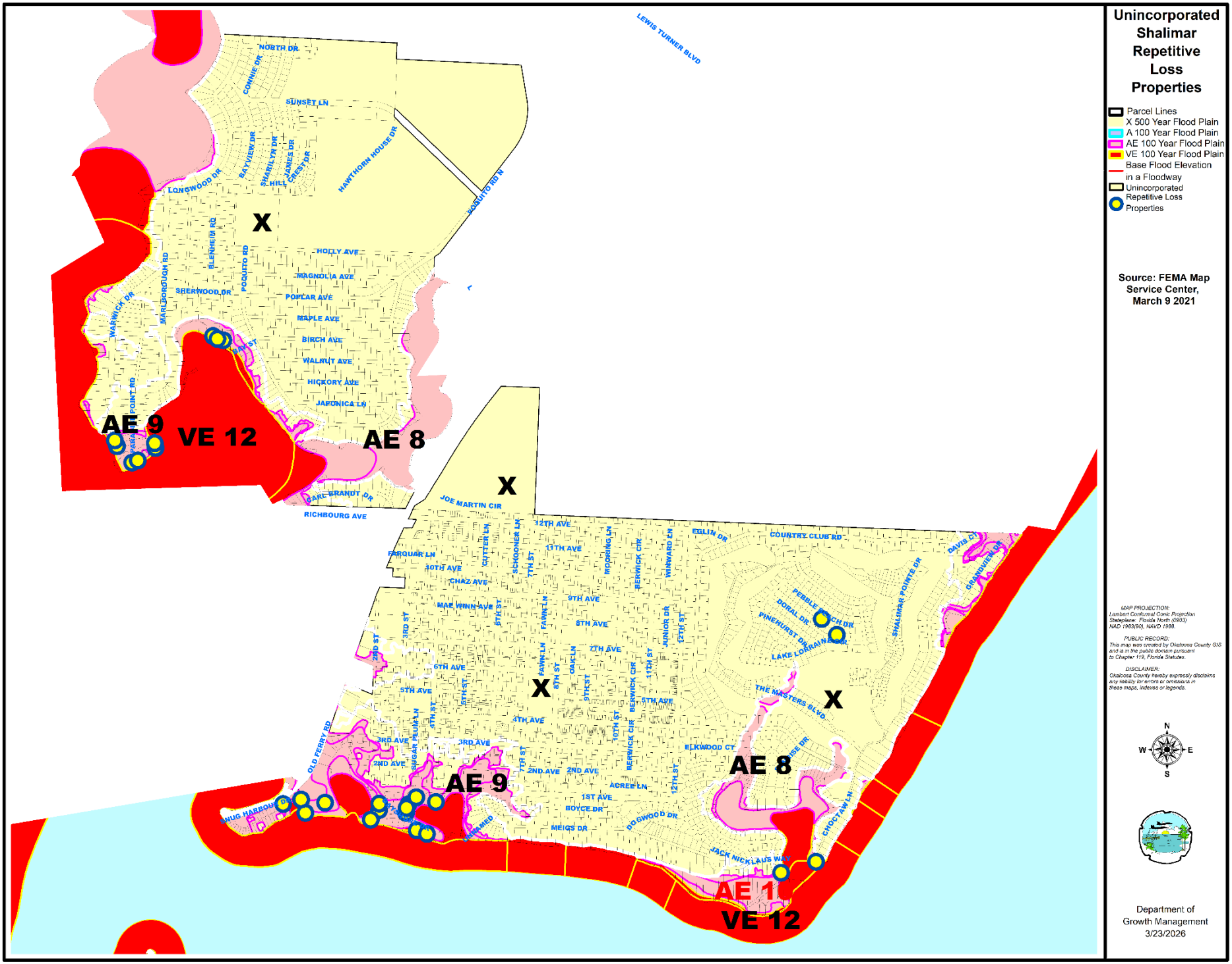

Ocean City
Wright
Surge Zones
Parcel Lines
Category 1
Category 2
Category 3
Category 4
Category 5
Unincorporated
Source: West Florida Regional Planning Council, 2025
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
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N
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Department of
Growth Management
3/23/2026
MEADOW LN
GREEN ACRES BLVD
WILLOW BEND BLVD
SCHNEIDER DR
DOYCE DR
UNION ST
GREEN ACRES RD
ZION BLVD
CLOVERDALE BLVD
HURLBURT RD
BRADFORD ST
VICKI LEIGH RD
CARMEL DR
YANCEY ST
CLIFFORD ST
LEWIS ST
LOWERY DR NW
OSAGE DR
LINCOLN DR NW
TRANSIT WAY
OVERBROOK DR
TANGLEWOOD DR
RIVERSIDE DR
LINDA CV
SUTTON PL
ELLA RUTH DR
FENWICK AVE
TRENT ST
ECHO CIR
WOODRIDGE DR
ELAINE AVE NW
SHIRLEY DR NW
LOVEJOY RD NW
CARDINAL ST
LARK ST
LEE ST
DOVE RD
JUDGE HANEY WAY
MELANIE LN
FOREST AVE
RACETRACK RD NW
BOB SIKES BLVD
HARRIS RD NE
DAVID ST
NEWCASTLE DR
REVERE DR
MARLOWE DR
SOUTH AVE
MONAHAN DR NE
ALDEN DR
FELHAM RD
MAYFLOWER AVE
BEVERE AVE
FERRELL AVE
1ST AVE
2ND AVE
3RD AVE
EGLIN PKWY E
HIGHWAY 85 NE

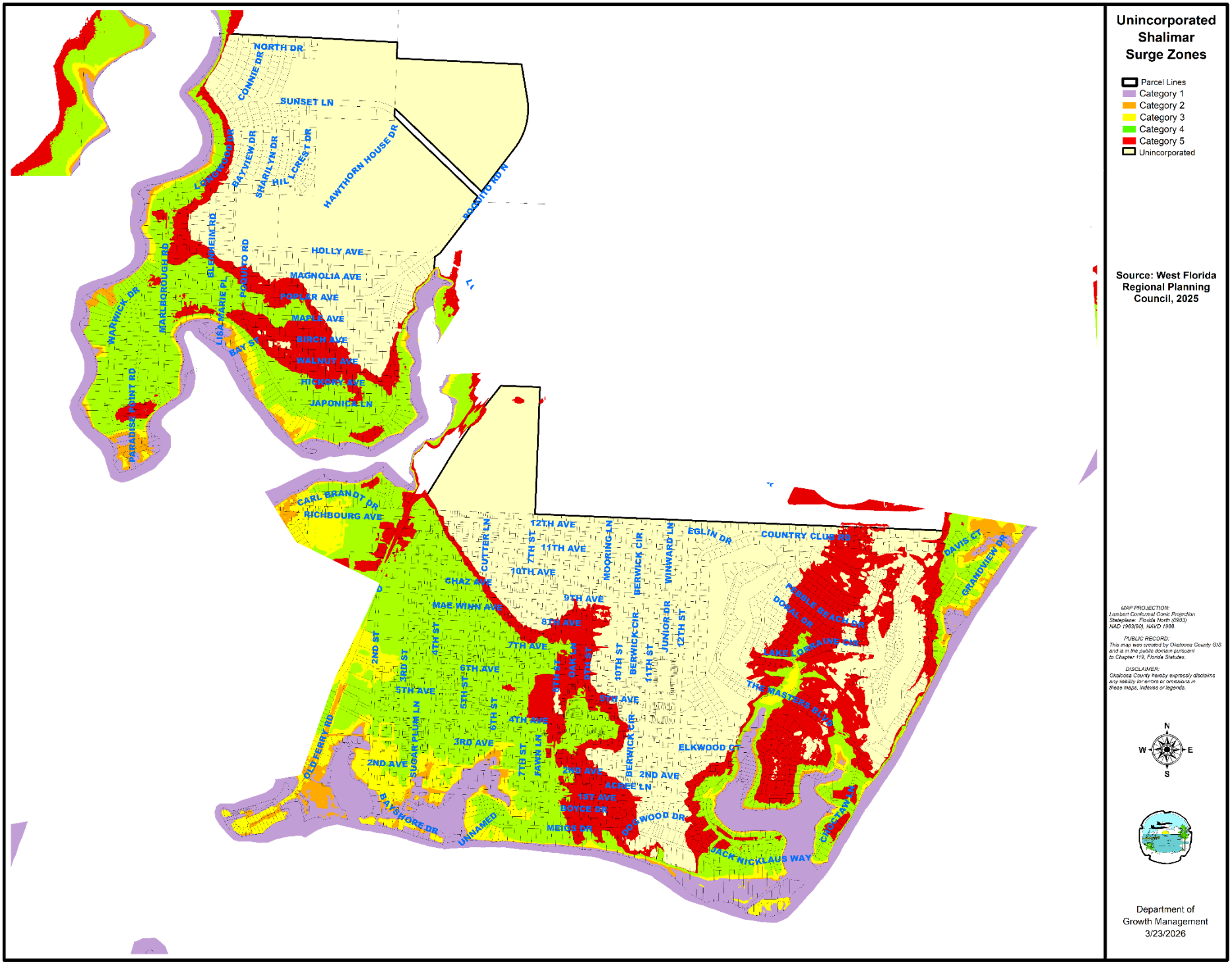

Ocean City Wright Wildfire Level of Concern
Parcel Lines
Level of Concern
0
1
2
3
4
5
6
7
8
9
Unincorporated
Source: Florida Division of Forestry, 2025
MAP PROJECTION:
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Department of Growth Management
3/23/2026
MARNAN DR NE
STAR DR
PAMELA ANN DR
MELANIE LN
ELDREDGE RD
FOREST AVE
JUDGE MANEY WAY
CARDINAL ST
LARK ST
LEE ST
DOVE RD
W PONDEROSA RD
E PONDEROSA RD
N BEAL EXT
F I M BLVD
WILLOW BEND BLVD
GREEN ACRES BLVD
SCHNEIDER DR
DOYCE DR
MEADOW LN
UNION ST
GREEN ACRES RD
ZION BLVD
HOSPITAL RD
PARK VIEW RD NW
COUNTRY CLUB AVE NE
MOONEY RD NE
BARKS DR
BROOKS AVE
CLOVERDALE BLVD
HURLBURT RD
RACETRACK RD NW
CORVET ST
VERR ST
VITA LN
MCFARLAND AVE NW
HOLBROOK CIR
MAR WALT DR
WEEKS RD
JUDSON ST
MATHIS LN
LANDRY LN
BRADFORD ST
BAYOU DR
HARRIS RD NE
DON DR
LOIS ST
ESSEX RD
DAVID ST
DUVAL ST
KATHERINE ST NE
HARRELSON DR
BEACH DR
EGLIN PKWY N
3RD AVE
2ND AVE
1ST AVE
DR NE
MILLER ST
EGLIN ST
WOODHAM AVE
TOOKE ST
FORE ST DR
MARLOWE DR
SOUTH AVE
MONAHAN DR NE
UNNAMED
HIGHWAY AVE NE
NEWCASTLE DR
REVERE DR
MAYFLOWER AVE
REVERE AVE
FERRETTI AVE
LANG RD
PRISCILLA DR
ALDEN DR
POCAHONTAS DR
BOB SIKES BLVD
DAWES RD
ROY ST
KOON ST
GIBSON RD
GREEN ST
DUBOIS DR
LLOYD ST
NAVY ST
ANDERSON DR
DENTON BLVD NW
TYNER ST
PATIO RD
SOUTH DR
AUBURN RD
JAMES LEE RD
TRUXTON AVE
MICHAEL AVE
MARY AVE
TUXEDO DR
NEWPORT DR
YANCEY ST
CLIFFORD ST
LEWIS ST
VICKI LEIGH RD
CARMEL DR
BARLEY POST LN
CLAYTON CIR
FAIRVIEW DR
EDGE ST
KANUHA DR
QUEEN BLVD
LOWERY DR NW
OSAGE DR
LINCOLN DR NW
TANGLEWOOD DR
RIVERSIDE DR
OVERBROOK DR
TRANSIT WAY
LINDA CV
HUNT CLUB ST
SAM LOWE PL
ELLA SOUTH DR
FENWICK AVE
TREAT ST
PELHAM RD
CENTER ST
BEAL PKWY N
RUSSELL BLVD
WOOD BINE CIR
CAMP CREEK DR
OAK ST
PINECREST DR
ECHO CIR
ELAINE AVE NW
SHIRLEY DR NW
LOVEJOY RD NW
BAY ST NW
OAK ST NW

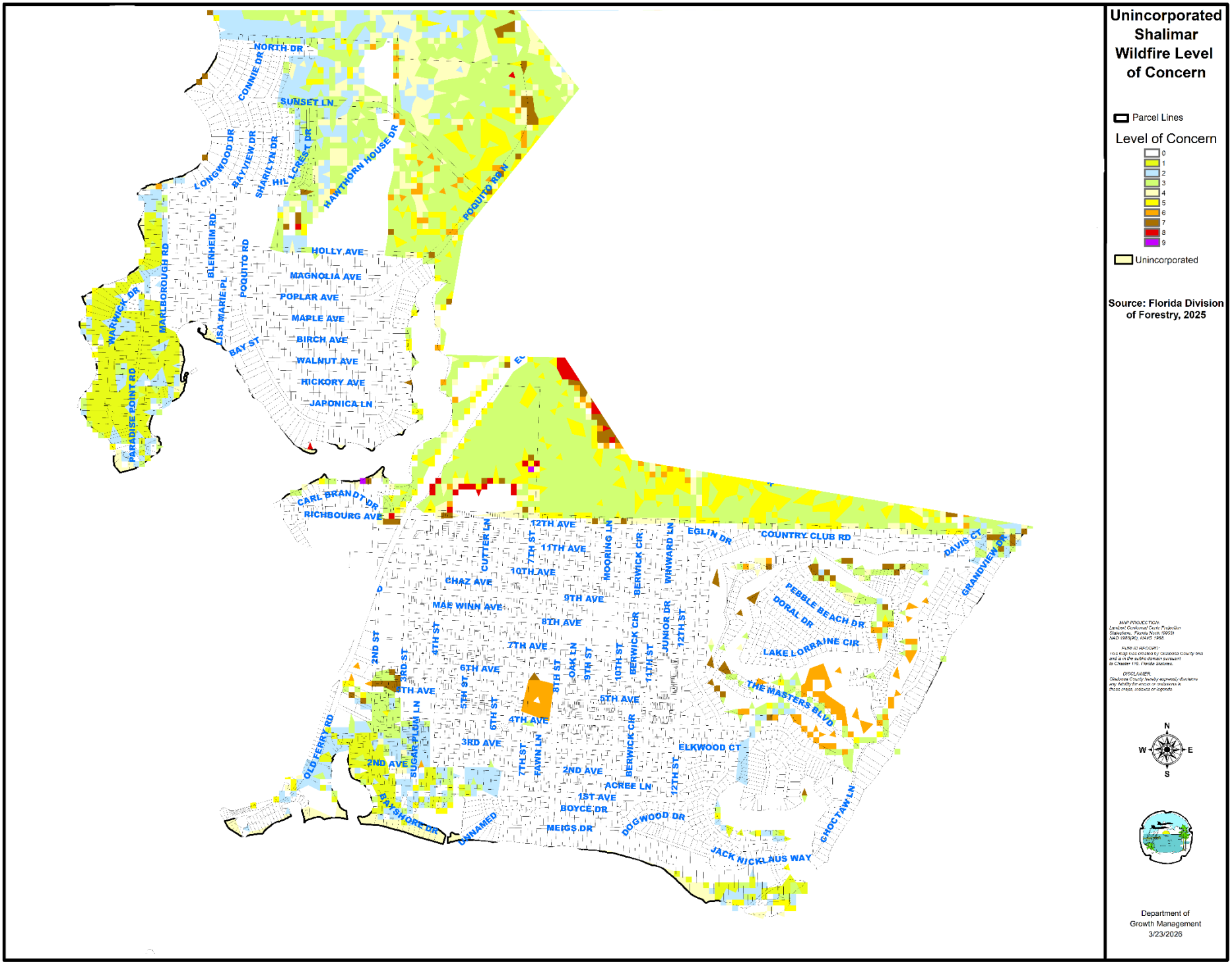

Unincorporated Shalimar Critical Facilities
Parcel Lines
Critical Facilities
Unincorporated
Source: Okaloosa County Public Safety, 2025
MAP PROJECTION:
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N
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Department of Growth Management
08/18/2010
NORTH DR
CONNIE DR
SUNSET LN
LONGWOOD DR
BAYVIEW DR
SHARILYN DR
HILLCREST DR
HAWTHORN HOUSE DR
POQUITO RD N
BLENHEIM RD
MARLBOROUGH RD
WARWICK DR
PARADISE POINT RD
POQUITO RD
LISA MARIE PL
BAY ST
HOLLY AVE
MAGNOLIA AVE
POPLAR AVE
MAPLE AVE
BIRCH AVE
WALNUT AVE
HICKORY AVE
JAPONICA LN
CARL BRANDT DR
RICHBOURG AVE
CUTTER LN
12TH AVE
11TH AVE
10TH AVE
9TH AVE
8TH AVE
7TH AVE
6TH AVE
5TH AVE
4TH AVE
3RD AVE
2ND AVE
1ST AVE
7TH ST
MOORING LN
BERWICK CIR
WINWARD LN
EGLIN DR
COUNTRY CLUB RD
DAVIS CT
GRANDVIEW DR
PEBBLE BEACH DR
DORAL DR
LAKE LORRAINE CIR
THE MASTERS BLVD
ELKWOOD CT
CHOCTAW LN
JACK NICKLAUS WAY
DOGWOOD DR
ACREE LN
BOYCE DR
MEIGS DR
UNNAMED
BAYSHORE DR
OLD FERRY RD
SUGAR PLUM LN
FAWN LN
OAK LN
JUNIOR DR
CHAZ AVE
MAE WINN AVE
2ND ST
3RD ST
4TH ST
5TH ST
6TH ST
8TH ST
9TH ST
10TH ST
11TH ST
12TH ST


Unincorporated Shalimar Evacuation Zones
Parcel Lines
Evac Zone A
Evac Zone B
Evac Zone C
Evac Zone D
Evac Zone E
Unincorporated
ZONE A = HURRICANE CAT 1
ZONE B = HURRICANE CAT 2
ZONE C = HURRICANE CAT 3
ZONE D = HURRICANE CAT 4
ZONE E = HURRICANE CAT 5
Source: Okaloosa County Public Safety, 2025
MAP PROJECTION:
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Stateplane: Florida North (0903)
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N
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Department of Growth Management
3/23/2026
NORTH DR
BAYVIEW DR
LONGWOOD DR
HILL CREST DR
HAWTHORN HOUSE DR
SUNSET LN
BLENHEIM RD
MARLBOROUGH RD
WARWICK DR
HOLLY AVE
MAGNOLIA AVE
POPLAR AVE
MAPLE AVE
BIRCH AVE
WALNUT AVE
HICKORY AVE
BAY ST
POQUITO RD
RICHBOURG AVE
12TH AVE
11TH AVE
10TH AVE
9TH AVE
8TH AVE
7TH AVE
6TH AVE
5TH AVE
4TH AVE
3RD AVE
2ND AVE
1ST AVE
ET RD
2ND ST
3RD ST
4TH ST
5TH ST
6TH ST
7TH ST
8TH ST
9TH ST
10TH ST
11TH ST
12TH ST
BERWICK CIR
WINWARD LN
COUNTRY CLUB RD
PEBBLE BEACH DR
DORAL DR
SHALIMAR POINTE DR
THE MASTERS BLVD
OLD FERRY RD
BAYSHORE DR
UNNAMED
MEIGS DR
CHOCTAW LN


Unincorporated
Shalimar
Flood Zones
Parcel Lines
X 500 Year Flood Plain
A 100 Year Flood Plain
AE 100 Year Flood Plain
VE 100 Year Flood Plain
Unincorporated
Source: FEMA Map Service Center, March 9 2021
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
NAD 1983(90), NAVD 1988.
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N
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Department of
Growth Management
3/23/2026
LEWIS TURNER BLVD
NORTH DR
CONNIE DR
SUNSET LN
BAYVIEW DR
SHARILYN DR
JAMES DR
HILL CREST DR
HAWTHORN HOUSE DR
POQUITO RD N
LONGWOOD DR
BLENHEIM RD
MARLBOROUGH RD
WARWICK DR
SHERWOOD DR
POQUITO RD
HOLLY AVE
MAGNOLIA AVE
POPLAR AVE
MAPLE AVE
BIRCH AVE
WALNUT AVE
HICKORY AVE
JAPONICA LN
BAY ST
PARADISE POINT RD
EARL BRANDT DR
RICHBOURG AVE
JOE MARTIN CIR
FARQUAR LN
CUTTER LN
SCHOONER LN
MOORING LN
WINWARD LN
EGLIN DR
COUNTRY CLUB RD
DAVIS CT
GRANDVIEW DR
SHALIMAR POINTE DR
PEBBLE BEACH DR
DORAL DR
PINEHURST DR
LORRAINE CIR
LAKE LORRAINE CIR
THE MASTERS BLVD
ELKWOOD CT
ROSE DR
CHOCTAW LN
JACK NICKLAUS WAY
DOGWOOD DR
MEIGS DR
BOYCE DR
AGREE LN
BERWICK CIR
OAK LN
FAWN LN
JUNIOR DR
MAE WINN AVE
CHAZ AVE
10TH AVE
11TH AVE
12TH AVE
9TH AVE
8TH AVE
7TH AVE
6TH AVE
5TH AVE
4TH AVE
3RD AVE
2ND AVE
1ST AVE
3RD ST
4TH ST
5TH ST
6TH ST
7TH ST
8TH ST
9TH ST
10TH ST
11TH ST
12TH ST
OLD FERRY RD
SUGAR PLUM LN
SHORELINE DR
SNUG HARBOUR DR
X
AE 9
VE 12
AE 8
AE 9
AE 8
AE 1


Unincorporated Shalimar Repetitive Loss Properties
Parcel Lines
X 500 Year Flood Plain
A 100 Year Flood Plain
AE 100 Year Flood Plain
VE 100 Year Flood Plain
Base Flood Elevation
in a Floodway
Unincorporated
Repetitive Loss
Properties
Source: FEMA Map Service Center, March 9 2021
MAP PROJECTION:
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Stateplane: Florida North (0903)
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N
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Department of Growth Management
3/23/2026
LEWIS TURNER BLVD
NORTH DR
CONNIE DR
SUNSET LN
BAYVIEW DR
SHARILYN DR
JAMES DR
HILL CREST DR
HAWTHORN HOUSE DR
POQUITO RD N
LONGWOOD DR
BLENHEIM RD
MARLBOROUGH RD
WARWICK DR
SHERWOOD DR
POQUITO RD
HOLLY AVE
MAGNOLIA AVE
POPLAR AVE
MAPLE AVE
BIRCH AVE
WALNUT AVE
HICKORY AVE
JAPONICA LN
PARK ST
PARK POINT RD
CARL BRANDT DR
RICHBOURG AVE
JOE MARTIN CIR
FARQUAR LN
CUTTER LN
SCHOONER LN
MOORING LN
BERWICK CIR
WINWARD LN
EGLIN DR
COUNTRY CLUB RD
DAVIS CT
GRANDVIEW DR
SHALIMAR POINTE DR
PEBBLE BEACH DR
DORAL DR
PINEHURST DR
LORRAINE DR
LAKE LORRAINE DR
THE MASTERS BLVD
ELKWOOD CT
DOGWOOD DR
CHOCTAW LN
JACK NICKLAUS WAY
MEIGS DR
BOYCE DR
ACREE LN
OLD FERRY RD
SUGAR PLUM LN
MUG HARBOUR
12TH AVE
11TH AVE
10TH AVE
9TH AVE
8TH AVE
7TH AVE
6TH AVE
5TH AVE
4TH AVE
3RD AVE
2ND AVE
1ST AVE
MAE WINN AVE
CHAZ AVE
FAWN LN
OAK LN
JUNIOR DR
3RD ST
4TH ST
5TH ST
6TH ST
7TH ST
8TH ST
9TH ST
10TH ST
11TH ST
12TH ST
X
AE 9
VE 12
AE 8
AE 9
AE 8
AE 1
VE 12


Unincorporated
Shalimar
Surge Zones
Parcel Lines
Category 1
Category 2
Category 3
Category 4
Category 5
Unincorporated
Source: West Florida Regional Planning Council, 2025
MAP PROJECTION:
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Stateplane: Florida North (0903)
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N
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Department of
Growth Management
3/23/2026
NORTH DR
CONNIE DR
SUNSET LN
HAWTHORN HOUSE DR
POGO TO RD N
HOLLY AVE
MAGNOLIA AVE
POPLAR AVE
MAPLE AVE
BIRCH AVE
WALNUT AVE
HICKORY AVE
JAPONICA LN
BAY ST
POGO TO RD
GLENHEIM RD
MARLBOROUGH RD
WARWICK DR
PARADISE POINT RD
LISA MARIE PL
PLAYVIEW DR
SHARILYN DR
HILLCREST DR
LANTANA LN
CARL BRANDT DR
RICHBOURG AVE
CHAZ AVE
MAE WINN AVE
12TH AVE
11TH AVE
10TH AVE
9TH AVE
8TH AVE
7TH AVE
6TH AVE
5TH AVE
4TH AVE
3RD AVE
2ND AVE
1ST AVE
7TH ST
8TH ST
9TH ST
10TH ST
11TH ST
12TH ST
CUTTER LN
MOORING LN
BERWICK CIR
WINWARD LN
JUNIOR DR
EGLIN DR
COUNTRY CLUB RD
DAVIS CT
GRANDVIEW DR
PEBBLE BEACH DR
DONAL DR
LAKE LORRAINE CIR
THE MASTERS BLVD
ELKWOOD CT
AGREE LN
BOYCE DR
ROSEWOOD DR
MEIOS PL
CAROLYN CT
JACK NICKLAUS WAY
OLD FERRY RD
SUGAR PLUM LN
BAYSHORE DR
UNNAMED
KAWAI LN
OAK ST


Unincorporated Shalimar Wildfire Level of Concern
Parcel Lines
Level of Concern
0
1
2
3
4
5
6
7
8
9
Unincorporated
Source: Florida Division of Forestry, 2025
NORTH DR
CONNIE DR
SUNSET LN
LONGWOOD DR
RAYVIEW DR
SHARILYN DR
HILLCREST DR
HAWTHORN HOUSE DR
POQUITO ROAN
BLENHEIM RD
MARLBOROUGH RD
POQUITO RD
LISA MARIE PL
WARWICK DR
PARADISE POINT RD
BAY ST
HOLLY AVE
MAGNOLIA AVE
POPLAR AVE
MAPLE AVE
BIRCH AVE
WALNUT AVE
HICKORY AVE
JAPONICA LN
CARL BRANDT DR
RICHBOURG AVE
12TH AVE
11TH AVE
10TH AVE
9TH AVE
8TH AVE
7TH AVE
6TH AVE
5TH AVE
4TH AVE
3RD AVE
2ND AVE
1ST AVE
CUTLER LN
7TH ST
HOORING LN
BERWICK CIR
WINWARD LN
EGLIN DR
COUNTRY CLUB RD
DAVIS CT
GRANDVIEW DR
PEBBLE BEACH DR
DORAL DR
LAKE LORRAINE CIR
THE MASTERS BLVD
ELKWOOD CT
CHOCTAW LN
JACK NICKLAUS WAY
DOGWOOD DR
MEIGS DR
BOYCE DR
ACREE LN
FAWN LN
OAK LN
JUNIOR DR
12TH ST
11TH ST
10TH ST
9TH ST
8TH ST
6TH ST
5TH ST
4TH ST
3RD ST
2ND ST
SUGAR PLUM LN
OLD FERRY RD
BAYSHORE DR
UNNAMED
MAE WINN AVE
CHAZ AVE
Department of Growth Management
3/23/2026

Unincorporated Okaloosa County

Section 5.10.06 Post Disaster Redevelopment Plan

This section provides the post disaster redevelopment plan adopted by Okaloosa County. This plan is still in effect and, in addition to Okaloosa County, is enforced in all jurisdictions that do not have a post disaster redevelopment plan of their own.

Section 5.10.06 Post Disaster Redevelopment Plan

To provide for the health, safety, and welfare of the public through sound pre-disaster and post-disaster redevelopment policies intended to reduce the potential for loss of life and property.

The Post-Disaster Redevelopment Plan for Okaloosa County, Florida, is adopted by the Board of County Commissioners in accordance with the Comprehensive Plan.

Goal 1 Re-establish the economic vitality and social order of Okaloosa County in a timely and orderly manner consistent with the other goals of this plan.

Objective 1.1 ***Create and appoint a Disaster Recovery Advisory Committee, hereinafter referred to as the Committee, to guide implementation of this Plan after a disaster.***

Policy 1.1.1 The Committee shall meet once a quarter or more often if deemed necessary by the County Administrator, regardless of a disaster occurrence, to discuss development rules that may be adopted or changed to mitigate the loss of life and property from potential disasters. The committee shall make a report annually to the Board of County Commissioners on its findings and recommendations. After a disaster, the Committee shall meet within 72 hours of the onset of damages, and as often as needed thereafter, to discuss and formulate recommendations for the execution of this Plan.

Policy 1.1.2 The Committee shall include those personnel as the County Administrator deems necessary, but as a minimum shall include representatives from the following departments and agencies:

Public Safety
Growth Management
Clerk of Courts
Finance
Public Works
Water and Sewer
Public Health
Property Appraisers Office

Policy 1.1.3 The Committee shall, as necessary, seek input from, and coordinate with, municipalities, chambers of commerce, constitutional officers, and subject matter experts to develop policy recommendations for implementing disaster recovery plans and objectives. The County Administrator shall be the chair or spokesperson for the Committee, and shall task the members to perform such work as may be necessary to accomplish the Committee's purposes as outlined in this plan.

Policy 1.1.4 The Committee shall prepare and maintain a list of critical facilities, both public and private, threatened by hurricane or other disasters, and shall make recommendations to reduce the vulnerability of those facilities. The Committee shall evaluate the undeveloped areas of the

County that are in the Hurricane Vulnerability Zone and the V, VE, A, and AE zones on the Federal Emergency Management Agency's Flood Insurance Rate Maps, and make recommendations on mitigation and development strategies to reduce the potential for loss of life and property from natural hazards.

Policy 1.1.5 The Committee shall make recommendations on other pre-disaster zoning, building and related construction codes, or land use changes that are prudent and feasible, and which will reduce the loss of life or property resulting from hurricanes, floods, or other disasters. All recommendations for changes to existing zoning, building, and related construction codes shall be presented in writing for consideration by the Board of County Commissioners.

Objective 1.2 ***Conduct a post-disaster assessment of the impact on essential services, followed by a detailed assessment of damage to infrastructure, housing, and economic interests according to the State and County Comprehensive Emergency Management Plans in effect.***

Policy 1.2.1 The Director of Public Safety, Chief of Emergency Management or designee shall ensure that a generalized impact assessment is conducted as soon as conditions allow following the disaster event. Each municipality shall also conduct an assessment of the disaster's impact to its residents and report the information to the County Emergency Operations Center (EOC) via whatever communications, including courier, that is available. The County EOC shall correlate the data from municipalities and unincorporated areas and relay the information to the State EOC via whatever communications available. The impact assessments will concentrate on immediate human needs, such as food, water supply, electrical power needs, temporary housing needs, emergency, medical needs and security. The report will be in the format specified by the Florida Division of Emergency Management, and shall be provided within 12 hours of cessation of 40 mph winds (in the case of hurricanes), or daily in the case of floods or other disasters. The Department of Public Safety shall attempt to obtain such aid as is reasonably necessary to reduce suffering, restore public safety and order, restore communications, and clear transportation routes. All county departments and officers will render such aid as is available to meet these needs.

Policy 1.2.2 The Director of Public Safety, Chief of Emergency Management, or designee shall ensure that a more detailed Preliminary Damage Assessment is conducted in the unincorporated area of the County. The reports will be in a format specified by the Florida Division of Emergency Management, and will be provided within 36 hours if conditions allow.

Policy 1.2.3 Municipalities shall perform Preliminary Damage Assessments within their jurisdictions and report findings to the County EOC within 12 hours of cessation of 40 mph winds (for hurricanes), or 24 hours for other types of disaster if conditions allow. The County EOC shall collect and collate damage information provided by the municipalities and report this information to the State EOC in the manner specified by the Florida Division of Emergency Management. The Okaloosa County Property Appraiser shall implement the procedures necessary to provide valuation information in support of this policy.

a. **Policy 1.2.4** Preliminary Damage Assessments will provide, insofar as possible, information on the numbers of homes, businesses, public facilities, public beaches, parks, and roads that are destroyed, suffered major damage, and sustained minor damage. Reports will include the estimated value of the destroyed structure or costs of repair for damages, the estimated number of employees or residents displaced and other information as may be required by state or federal agencies. The level of damage shall be assigned in accordance with the Preliminary Damage Assessment Guide promulgated by the Federal Emergency Management Agency in effect at the time of the disaster

Policy 1.2.5 The Department of Public Safety shall coordinate with municipal, county, state, and federal agencies to accomplish additional damage assessments and verifications as may be necessary.

Policy 1.2.6 Each county department head shall ensure that estimates for damage, repair or debris removal within their area of responsibility is conducted as soon as practical after the disaster event. They will prepare and maintain a detailed list of labor, materials, and contract expenditures for work performed to make formal preparations for the recovery from the disaster. Each department head shall designate a knowledgeable person from middle or upper management who will work with state and federal representatives to prepare damage survey reports for assistance or reimbursement claims within the department's area of responsibility.

Policy 1.2.7 The County Administrator shall coordinate with the Clerk of Courts to evaluate immediate revenue sources needed for emergency repairs or relief of suffering. They will consider various options for funding the county's share of costs if state and federal aid will be available, or the entire amount if such aid is not made available.

Policy 1.2.8 The County Administrator or designee shall apply for state and federal disaster relief grant and loan programs when necessary to relieve suffering or repair infrastructure.

Policy 1.2.9 The Department of Public Safety shall cooperate with state and federal agencies to make available to them such facilities as may be needed to establish disaster Application Centers, staging areas, or other support facilities within Okaloosa County. All county employees and officers shall render to the Department of Public Safety such aid and support as may be necessary to accomplish this task.

Policy 1.2.10 The Clerk of Courts shall appoint personnel within his/her department who will be responsible for the necessary accounting and fiscal reporting procedures mandated by state and federal grant and loan agreements. The Clerk of Courts, or his/her designee, will coordinate payment schedules and procedures with the Disaster Field Office established by state and federal authorities.

Policy 1.2.11 The Growth Management Department shall advise the Board of County Commissioners on the need or advisability of revising policies on building permits, zoning, construction and related codes, and business licensure to promote mitigation and economic redevelopment.

Unincorporated Okaloosa County

The County Administrator or his designee will be the liaison to the State and Federal Mitigation Officers, and shall participate in the implementation of the Local Mitigation Strategy Plan following a disaster. The Committee and the County Administrator will make such recommendations as necessary to the Board of County Commissioners.

Policy 1.2.12 The Building Official shall, within the limits of access, time and staffing, condemn and visibly placard structures that were destroyed (per Policy 1.2.4) or which are unsafe for occupancy or use.

Objective 1.3 ***Establish the necessary staff structure and planning procedures to accommodate the emergency nature of redevelopment.***

Policy 1.3.1 The Committee shall evaluate the projected workload for managing the recovery and reconstruction process and recommend the hiring of temporary workers or contracting portions of the workload to specialists. The Board of County Commissioners shall approve or disapprove such recommendations.

Policy 1.3.2 The County shall evaluate the long-term needs for capital facilities planning and LMS project list immediately after meeting the human needs following a hurricane or other disaster.

Policy 1.3.3 If necessary, the County shall prepare and forward to the Florida Department of Commerce (aka “Florida Commerce”) an amendment to the Capital Improvements Element of the Comprehensive Plan and revisions to the LMS project list to obtain a Statement of Consistency if necessary. This will be accomplished as soon as practical.

Policy 1.3.4 County department heads and staff shall initiate coordination and cooperation with State and Federal agencies to obtain assistance in mitigation planning, relocation, or repair-in-place of public facilities.

Policy 1.3.5 The Committee may identify and designate areas that can be used for relocation of residential housing and public facilities outside of the Hurricane Vulnerability Zone.

Objective 1.4 ***Effective immediately upon the Declaration of a State of Local Emergency within Okaloosa County by the Board of County Commissioners or Governor of Florida, a meeting of the committee shall be called to discuss the need of moratoria for approved development orders, building permits, and review procedures in progress for the affected areas of the county. The committee shall make its recommendation to the Board of County Commissioners which may enact such a moratorium in its sole discretion. If enacted, this initial moratorium will be in effect during the State of Emergency (including any extension) and for 48 hours after the storm or disaster event. If moratoria are enacted they will be lifted or extended according to the schedule below. Nothing in this policy should be construed to delay or prevent short-term, temporary measures of an emergency nature intended to improve safety or limit further damage or deterioration. For example, temporary repairs to cover roof openings, repair steps, or shore up structures may be conducted without permits.***

Unincorporated Okaloosa County

Policy 1.4.1 The moratorium will be lifted immediately upon expiration of the initial moratorium, if the Governor of Florida did not declare the county a disaster area or did not request a Presidential Disaster Declaration which included Okaloosa County.

Policy 1.4.2 If Okaloosa County is included in a disaster declaration, the moratorium will be lifted in phases, as specified below.

a. As soon as practical, after the initial moratorium, private or public facilities and infrastructure that suffered major damage and which create or aggravate a threat to the public's health, safety, or welfare shall be able to apply for building permits and associated construction and development orders for repair or demolition. Destroyed public or private structures that pose an immediate threat to the public or occupants by risk of collapse, should be assessed for insurance purposes and demolished as soon as practical. The review of such permits is subject to the policies listed under Goals 2 and 3, below.

b. Private or public facilities that suffered major damage but do not constitute a threat as specified above, may apply for necessary permits and development after the initial moratorium has been lifted.

c. After the initial moratorium has been lifted, private or public facilities, which were destroyed, may apply for building permits and associated construction and development orders. The review process is subject to the policies listed under Goals 2 and 3, below.

d. All building permits and development orders issued for the impacted area prior to the disaster will be reviewed and reevaluated by the building official and planning staff after the initial moratorium has been lifted. As soon as possible after the initial moratorium, previously approved building permits, development orders, and review procedures will revert to the pre-disaster status. It will not be necessary to repeat previous applications, but the applicants must notify Growth Management in writing that they intend to continue with or cancel the development plans

Policy 1.4.3 The Committee may, by consensus of the members, recommend extending or reducing the duration of the time frames listed in Policy 1.4.2 if necessary to meet local conditions

Goal 2 Reduce the loss of life and property in any future hurricane, flood, or other disaster.

Objective 2.*1 Permitting and certification of structures will continue to be required to ensure compliance with applicable building, FEMA, CRS and related codes, zoning, and redevelopment policies to limit the potential for future loss of life and property.*

Policy 2.1.1 Except for facilities requiring access to the waterfront, water wells and towers, recreation facilities, or those which provide essential services, safety and evacuation functions, all public structures in the Coastal High Hazard Area that were destroyed will be relocated out of such zone.

Policy 2.1.2 When feasible, destroyed bulkheads and seawalls will be replaced with nonstructural forms of shoreline stabilization in accordance with all Federal, State, Regional and Local jurisdictional rules and regulation including emergency orders, except where such replacement would endanger essential transportation routes, critical facilities, or the public safety.

Policy 2.1.3 The County and private developers will be required to coordinate with the necessary Federal, State, Regional and Local jurisdictional agencies as required by law or regulation for the permitting of reconstruction or redevelopment in order to ensure safety and protect the environment.

Policy 2.1.4 Coordinate with public and private utilities to flood proof facilities and utility services through incentives or regulations consistent with the local mitigation strategy.

Objective 2.2 ***Establish a procedure to review proposals for redevelopment of public and private structures and develop policies to guide redevelopment decisions, consistent with the local mitigation strategy.***

Policy 2.2.1 The timing of redevelopment reviews is set forth in Goal 1. The review of redevelopment permits for destroyed structures shall be guided by the following priorities:

a. Reduce the pre-disaster density of residential development in the Coastal High Hazard Area (CHHA) or flood inundation areas through relocation assistance, zoning incentives, or acquisition of property for open space.

b. Encourage the relocation of all non-residential structures destroyed in the CHHA or flood inundation areas to areas outside such zones by using relocation assistance or zoning incentives, or acquisition of property for open space.

c. Structures in the CHHA or V, VE, A, or AE flood zones that were destroyed, and where the owner decides to rebuild in the same zone, will be designed and constructed consistent with the adopted Comprehensive Plan, Future Land Use Maps, Land Development Code including zoning maps, Local Mitigation Strategy, FEMA flood insurance rate maps, Community Rating System and Florida building codes. They will be prohibited from purchasing flood insurance underwritten by the Federal and State Government unless they meet all additional requirements as may be imposed by the Federal, State, and Local Government for elevation, flood proofing, etc.

d. Prior to issuance of a building permit, the applicant must submit a post disaster survey, (pre-disaster if available) and/or site plan, as applicable, of the lot and structure and cost estimate for reconstruction. The construction plan must provide for direct, unimpeded, approved vehicle ingress and egress to the parcel.

e. Destroyed structures outside the Coastal High Hazard Area (CHHA), but within the Hurricane Vulnerability Zone (HVZ) and rebuilt in the HVZ shall be designed and constructed consistent with the adopted Comprehensive Plan, Future Land Use Map,

Land Development Code, National Flood Insurance Program, FEMA Flood Insurance Rate Maps, Florida Building Code and CRS.

f. All destroyed structures, if rebuilt within the HVZ, will be required to be inspected prior to issuance of a Certificate of Occupancy to ensure conformance with Florida Building Codes and related codes or regulations.

g. Coordinate the redevelopment of shoreline areas with the Florida Department of Environmental Protection, U.S. Army Corps of Engineers, and/or other Local, State and Federal agencies which may have regulatory jurisdiction over these areas.

h. Certificates of Occupancy for private structures which were destroyed shall be contingent upon the immediate provision of services necessary for health and safety to the structure, e.g., sewer or septic service, electrical power, disaster debris removal and potable water.

i. The Committee may make recommendations for increasing building standards or rezoning that would reduce the potential for damage or loss of life from future disasters. The Board of County Commissioners may adopt such recommendations as deemed prudent and necessary, and all redevelopment efforts after enactment will be required to comply with such stricter standards.

Policy 2.2.2 The review of redevelopment permits for structures experiencing major damage, or which propose addition or changes exceeding 50-percent of the pre-disaster value of the structure, shall be guided by the following redevelopment policies.

a. Where feasible, reduce the pre-disaster density of residential development which experienced major damage.

a. b. Encourage the relocation of structures experiencing major damage in the CHHA to outside the CHHA.

b. Structures experiencing major damage in the CHHA and redeveloped in the CHHA shall be designed and reconstructed consistent with the adopted Comprehensive Plan, Future Land Use Map, Land Development Code, National Flood Insurance Program, FEMA FIRM, CRS and Florida Building and related codes.

c. Prior to issuance of a development or building permit on the same parcel, the applicant must submit a post-disaster survey (pre-disaster survey if available) and estimate of construction, and site plan as applicable, of the parcel and structure if there is a proposed increase in the building footprint or if any portion of the parcel or parcels was eroded away by wave action, storm surge, or flood water. The construction plan must provide for direct, unimpeded, approved vehicle ingress and egress to the parcel.

d. Structures experiencing major damage and redeveloped outside the CHHA, but within the INZ, shall be designed and constructed consistent with the adopted Comprehensive Plan,

Future Land Use Map, Land Development Code, National Flood Insurance Program, FEMA FIRM, CRS and Florida Building and related codes.

e. All structures experiencing major damage and redeveloped will be required to be inspected prior to issuance of a Certificate of Occupancy to ensure conformance with building codes and related regulations.

f. Nonconforming uses (as defined in the adopted Comprehensive Plan, and Land Development Code) damaged outside the CHHA but within the HVZ, shall be designed and rebuilt consistent with the adopted Comprehensive Plan, Future Land Use Map, Land Development Code, FEMA FIRM, CRS, Florida Building and related codes.

g. Certificates of Occupancy and permitting for redevelopment of private structures which suffered major damage shall be contingent upon the immediate provision of services necessary for health and safety to that structure, e.g., sewer or septic service, electrical power, and potable water, and comply with the FEMA 50% rule.

h. The Committee may make recommendations for increasing building standards consistent with the Florida Building Codes or rezoning that would reduce the potential for damage or loss of life from future disasters. The Board of County Commissioners may adopt such recommendations as deemed prudent and necessary, and all redevelopment efforts after enactment would be required to comply with such stricter standards.

Policy 2.2.3 The review of building permits for structures experiencing minor damage shall be guided by the following redevelopment priorities.

a. Structures experiencing minor damage in the HVZ, including the CHHA, shall be allowed to rebuild to pre-disaster square footage consistent with the adopted Comprehensive Plan, Future Land Use Map, Land Development Code, National Flood Insurance Program, FEMA FIRM, CRS, Florida Building and related codes.

b. Prior to issuance of a building permit on the same parcel, the applicant must submit a post-disaster survey (pre-disaster if available) and/or site plan as applicable, of the lot and structure if there is a proposed increase in building footprint or if any portion of the lot or lots was eroded away by wave action, storm surge, or flood waters. The site plan must provide for direct, unimpeded, approved vehicle egress and ingress to each lot.

c. Certificates of Occupancy and permitting for redevelopment to pre-disaster square footage of private structures which suffered minor damage shall be contingent upon the immediate provisions of services necessary for health and safety to that structure, e.g., sewer or septic service, electrical power, waste disposal and potable water.

d. Eligibility for flood insurance underwritten by the Federal Government will be contingent on program rules regarding the specific case.

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Policy 2.2.4 All private development which was destroyed or suffered major damage shall be guided by the following redevelopment priorities:

a. Develop new street patterns in hardest hit areas to accommodate clustering of structures away from the CHHA and attempt to remove structural and physical patterns which increase the susceptibility of development to the hazards of hurricane, flood, or other natural disasters.

b. Residential redevelopment densities shall not exceed pre-disaster development without providing enhanced evacuation methods and routes in order to reduce evacuation times.

c. In order to reduce potential future property damage, redevelopment floor area ratios for commercial and office development in the HVZ shall not exceed those established in the adopted Comprehensive Plan and Future Land Use Map.

d. Discourage the rebuilding and relocation of mobile homes and manufactured housing in the CHHA and HVZ unless they are proven to be able to withstand wind load requirements and structural safety rules established for other structures in the CHHA and HVZ by local, state, and federal building and related codes. This provision shall not be construed to limit the establishment of short-term housing areas to provide immediate and emergency relief to victims of the disaster.

e. The Building Official shall, after consultation with the Growth Management Director, Planning Manager, Public Works Director/County Engineer and Chief of Emergency Management or in his/her absence Emergency Management Coordinator, condemn land parcels or lots that are destroyed and replaced by tidal waters.

f. The replacement or repair of private beach or beach stabilization structures shall be the sole responsibility of the property owner, and shall conform to the rules and regulations of Local, State, Regional and Federal jurisdictional agencies.

g. If a structure listed on the National Register of Historic Places, the State Inventory of Historic Places, or the State of Florida Master File suffers major or minor damage, it will not be required to redevelop in such a way as to cause it to lose its historic designation if the Building Official approves such exemption.

Policy 2.2.5 Provision of water and sewer service at private expense to existing parcels of record in the CHHA will be permitted, provided that such service does not conflict with existing policies for determining when structures can be rebuilt, land development regulations, building and related codes, and state and federal policies regarding development and construction in the CHHA and environmental regulations. New sanitary sewer and potable water facilities in the CHHA will be flood proofed.

Policy 2.2.6 It shall be the policy of Okaloosa County not to expend public funds for the repair of damaged private roads or easements, except in conjunction with the repair and maintenance of the county's water and sewer system or public easements. In cases where a declared disaster

has resulted in a private road being rendered impassable to emergency vehicles, and therefore renders it impossible to conduct fire/rescue or law enforcement activities for a populated area, the county may make temporary, emergency repairs sufficient to allow passage of emergency vehicles. These repairs will be temporary in nature, such as filling holes or gaps in the roadway with dirt or sand, and will be done only once. Thereafter, it will be the responsibility of the owners to make any repairs and perform necessary maintenance. Real estate developers or sellers shall inform all future potential buyers in writing if the property is located on a private road that is not maintained by the county.

Policy 2.2.7 The Committee will review mitigation alternatives and make recommendations for consideration by the Board of County Commissioners. The Committee will review the nature and extent of damages, the causal relationships between the damage and land use policies, and ways to reduce damage in future disasters. Among those policies and programs that will be considered are:

a. Changes from residential to commercial zoning to reduce evacuation times;

b. Reduction in residential density by increasing the minimum lot size or reducing the number of dwelling units allowed per acre;

c. Awarding bonus or incentive points that would allow increased density if developers incorporate hazard-reduction features;

d. Clustering development on the most protected portions of parcels;

e. Requests for Special Exemptions will be reviewed and considered based on the impact on population density (which effects evacuation clearance times and search/rescue needs) and potential for suffering or aggravating damage to other structures in the area;

f. Reconstruction must comply with the Comprehensive Plan, Land Development Code, National Flood Insurance Program, FEMA FIRM, CRS, Florida Building and related codes.

Policy 2.2.8 The County will seek opportunities through grants or other means to acquire land in the CHHA. The land acquisition will be designed to reduce development in the CHHA, increase open space ratings, and thereby mitigating potential loss of life or property in future disasters.

<u>Goal 3</u> Provide public facilities and services which guarantee to the extent possible the health, safety, and welfare of the citizens of Okaloosa County and which reduce future expenditure for public infrastructure in the CHHA.

Objective 3.1 ***Based upon the extent of damage, the review of permits for relocation or repair shall be guided by the following policies:***

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Policy 3.1.1 Those facilities that are essential to the immediate health, safety, and welfare of citizens will be assigned high priority. If this is not feasible, every effort will be made to provide the service through alternative means.

Policy 3.1.2 Public buildings in the CHHA that were destroyed or suffered major damage shall be relocated out of the CHHA consistent with the adopted Comprehensive Plan, Future Land Use Map, Land Development Code, National Flood Insurance Program, FEMA FIRM, and CRS and will be rebuilt to current local, state, and federal standards. Facilities for access to the waterfront, recreational facilities, water and sewer, and facilities that are needed for evacuation may be allowed in the CHHA.

Policy 3.1.3 Public buildings that must function during a hurricane or other disaster, such as hospitals, blood banks, police and fire stations, emergency operations centers, communication centers and facilities, electrical power-generating substations and plants, and water treatment plants shall be relocated to the extent feasible away from the CHHA if they were destroyed or suffered major damage. If an entire fire district is in the CHHA, then that fire district's fire station may be rebuilt in the CHHA.

Policy 3.1.4 Public facilities which experienced minor damage in the CHHA shall be rebuilt in place to current local, state, and federal standards.

Policy 3.1.5 Public facilities outside the CHHA, but within the HVZ, and are destroyed or suffer major damage will be rebuilt in place or relocated consistent with the adopted Comprehensive Plan, Future Land Use Map, and Land Development Code. Their construction will be consistent with Local, State, National Flood Insurance Program, FEMA, and CRS standards.

Policy 3.1.6 Public facilities currently located in the CHHA that must function during a hurricane or other disaster, such as police and fire stations, emergency operations center, and communication centers shall be considered for relocation outside the CHHA in order to mitigate possible disruption of service due to their location in a surge zone or possible high velocity wave action from storms.

Policy 3.1.7 Prior to repair or reconstruction of county roads and bridges, except when deemed a crucial transportation route or corridor or crucial to the public health, safety and welfare, which were destroyed or damaged by a disaster, the County shall consider alternative solutions, including, but not limited to, abandonment procedures, special assessment and condemnation, and construction practices to mitigate damage from future disasters. This shall not prevent the temporary repair of roads and bridges during or after the disaster event.

Goal 4. Provide public facilities and services which guarantee to the extent possible the health, safety, and welfare of the citizens of Okaloosa County and which reduce future expenditure for public infrastructure in the 100-Year Floodplain.

Objective 4.1 ***Based upon the extent of damage, the review of permits for relocation or repair shall be guided by the following policies:***

Policy 4.1.1 Those facilities that are essential to the immediate health, safety, and welfare of citizens will be assigned high priority. If this is not feasible, every effort will be made to provide the service through alternative means.

Policy 4.1.2 Public buildings in the 100-Year Floodplain that are destroyed or suffer major damage, and for which the County has an alternative location available, shall be relocated out of the 100-Year Floodplain consistent with the adopted Comprehensive Plan, Future Land Use Map, Land Development Code, National Flood Insurance Program, FEMA FIRM, and CRS and will be rebuilt to current local, state, and federal standards. However, facilities for access to the waterfront, recreational facilities, water and sewer, and facilities that are needed for evacuation and emergency response may be allowed in the 100-Year Floodplain, when built with flood proof or flood resistant materials.

Policy 4.1.3 Repairs to public facilities which experience minor damage in the 100-Year Floodplain shall be in accordance with current local, state, and federal standards.

Glossary of Terms

Coastal High Hazard Area (CHHA) –The area of the hurricane vulnerability zone defined as the land falling Category 1 evacuation zone as delineated by the West Florida Regional Planning Council.

Community Rating System (CRS) – A program encouraging flood plain management above the requirements of the National Flood Insurance Program (NFIP) requirements.

Hurricane Vulnerability Zone (HVZ)- The area delineated by a regional hurricane evacuation study requiring evacuation in the event of a land falling Category 3 hurricane event conducted by the Army Corps of Engineers.

Local Mitigation Strategy (LMS) - a local document which identifies natural hazards and vulnerabilities to the jurisdiction.

Un-numbered A Zone – Where the base flood elevation has not been determined.

AE Zone – Where the base flood elevation has been determined by a hydrological analysis.

V Zone – A coastal zone with velocity hazards and wave action, and where the base flood elevation has not been determined.

VE Zone - A coastal zone with velocity hazards and wave action, and where the base flood elevation has been determined by a hydrological analysis.

Unincorporated Okaloosa County

X Zone – Areas of 500 year flooding; areas of 100 year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from the 100 year flood.

Section 5.11

Eglin Air Force Base



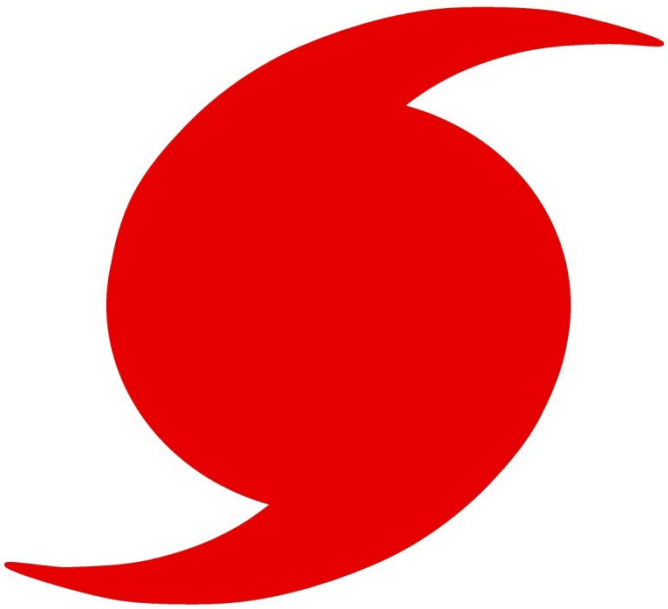
U.S. AIR FORCE

5.11.01 Risk Assessment and Vulnerabilities

A significant portion of Okaloosa County is owned by the federal government and currently utilized for military purposes, hosting Eglin Air Force Base, Hurlburt Field, numerous tenant and commands occupying the Eglin Reservation which occupy about 45% of Okaloosa County. These lands extend from the south end of the County, bordering the City of Valparaiso, City of Niceville, City of Fort Walton Beach, City of Mary Esther, and Town of Shalimar, to the unincorporated area in the north end of the county just south of the City of Crestview. All utilities and public infrastructure, housing, research facilities, aircraft operations, and other components that are located on the base are federally controlled.

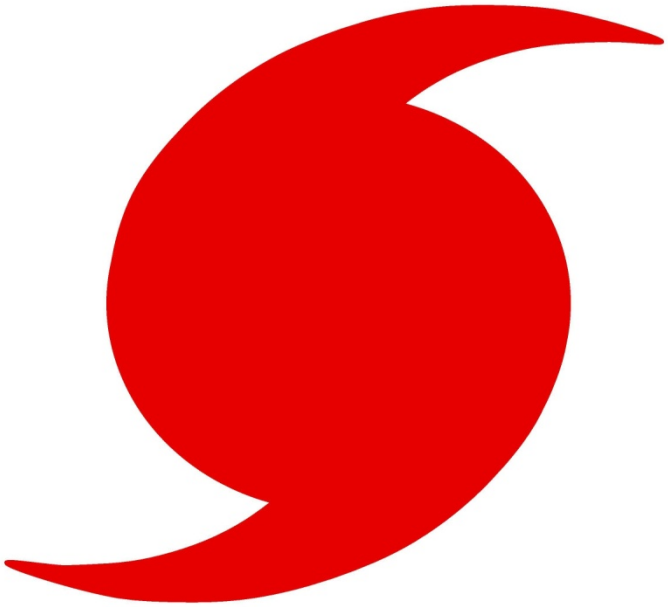
These military commands and their associated infrastructure and population are susceptible to all of the hazards to which the rest of the County is subject. However, because the County does not control mitigation activities in military areas, and for reasons of national security, the military installations and their emergency plans are not included in this LMS. Notwithstanding, County staff as well as staff from the various municipalities communicate regularly with the military installations, including both leadership as well as the personnel of the installations' community planning offices. The installations have stated their interest in offering data and sharing mitigation strategies with County and municipal staff and often act in coordination with civilian authorities not only in times of emergency but also in matters such as capital projects planning, interagency services, and similar initiatives. Regarding participation in this LMS effort, it is understood that the military installations activities would not be analyzed nor would Eglin Air Force Base (used cumulatively to refer to Eglin Main, Hurlburt, and all the commands) be included as a jurisdiction.

Appendix



Appendix A

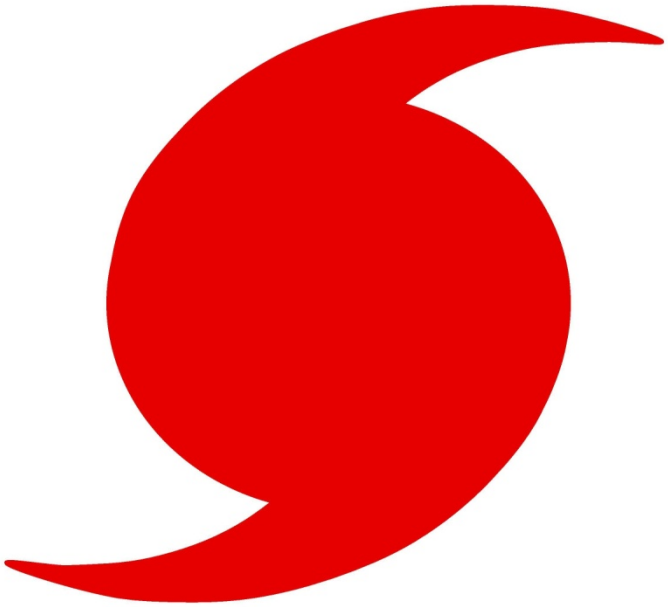
Member List



DEPARTMENT	MEMBER	STREET ADDRESS	CITY	STATE	ZIP CODE	E-MAIL ADDRESS	PHONE NUMBER
County Strategic Planning & Projects Manager	Elliot Kampert	Brackin Building	Crestview	FL	32539	ekampert@myokaloosa.com	850-651-7524
Growth Management- Director	Kristen Shell	1250 N. Eglin Pkwy	Shalimar	FL	32578	kshell@myokaloosa.com	850-689-5080
Growth Management - Planning Coordinator (**VICE-CHAIRMA**	Sherry Cadenhead	402 Brookmeade Drive	Crestview	FL	32539	scadenhead@myokaloosa.com	850-689-7917
Growth Management - Deputy Director	Randy Woodruff	402 Brookmeade Drive	Crestview	FL	32539	rwoodruff@myokaloosa.com	850-689-5080
Growth Management - Planner	Leslie Adams	402 Brookmeade Drive	Crestview	FL	32539	ladams@myokaloosa.com	850-689-5080
Deputy County Administrator	Jason Autrey	1759 S Ferdon Blvd	Crestview	FL	32536	jautrey@myokaloosa.com	850-689-5772
Public Works - Director	Scott Bitterman	1759 S Ferdon Blvd	Crestview	FL	32536	sbitterman@myokaloosa.com	850-689-5772
Public Safety -Emergency Manager	Ryan Prince	90 College Blvd. East	Niceville	FL	32578	rprince@myokaloosa.com	850-651-7150
Public Safety -Planner	Destiney Nunez	90 College Blvd. East	Niceville	FL	32578	dnunez@myokaoosa.com	850-651-7150
Public Safety- -	Owen Betts	90 College Blvd. East	Niceville	FL	32578	obetts@myokaloosa.com	850-651-7150
Public Safety - Director	Patrick Mattox	6 11th Ave Suite G-1	Shalimar	FL	32579	pmattox@myokaloosa.com	850-651-7150
Water & Sewer - Engineering Manager	Cory Lewis	1804 Lewis Turner Blvd.	Fort Walton Beach	FL	32547	clewis@myokaloosa.com	850-651-7171
Water & Sewer - Deputy Director	Mark Wise	1804 Lewis Turner Blvd.	Fort Walton Beach	FL	32547	mwise@myokaloosa.com	850-651-7171
City of Crestview -Planning	Jayce Vanderford	P.O. Drawer 1209	Crestview	FL	32536	jaycevanderford@cityofcrestview.org	850-689-1618
City of Crestview -Planning	Nick Schwendt	P.O. Drawer 1209	Crestview	FL	32536	nicholasschwendt@cityofcrestview.org	850-689-1618
City of Destin- Public Services Director	Michael Burgess	4200 Indian Bayou Trail	Destin	FL	32541	mburgess@cityofdestin.com	850-837-4242
City of Fort Walton Beach- Director	Tim Gibson	107 Miracle Strip Pkwy SW	Fort Walton Beach	FL	32548	tgibson@fwb.org	850-833-9604
City of Fort Walton Beach- Plan Reviewer & Floodplain	Jesica McGowin	107 Miracle Strip Pkwy SW	Fort Walton Beach	FL	32548	jmcgowin@fwb.org	850-833-9604
City of Fort Walton Beach- Planning Supervisor	Amie Nelson-Wolfe	107 Miracle Strip Pkwy SW	Fort Walton Beach	FL	32548	anelson-wolf@fwb.org	850-833-9604
Town of Laurel Hill- City Clerk	Anita Miller	P.O. Box 158	Laurel Hill	FL	32567	clhclerk@fairpoint.net	850-652-4441
City of Mary Esther- Code Enforcement	Kelvin Cherry	195 Christobal Rd. N	Mary Esther	FL	32569	code@cityofmaryesther.com	850-243-3566
City of Niceville- Planning	Christopher Frassetti	208 N. Partin Drive	Niceville	FL	32578	cfrassetti@nicevillefl.gov	850-279-6436
City of Niceville- Grants	Philip Schultz	208 N. Partin Drive	Niceville	FL	32578	pschultz@niceville.org	850-279-6436
City of Valparaiso- City Administrator	Carl Scott	465 Valparaiso Pkwy.	Valparaiso	FL	32580	cityadministrator@valp.org	850-729-5402
Town of Cinco Bayou- Town Manager/Clerk	Keith Williams	10 Yacht Club Dr.	Cinco Bayou	FL	32548	keith@cincobayou.com	850-833-3405
Town of Shalimar	Jessica Rehr	2 Cherokee Rd.	Shalimar	FL	32579	jessica.rehr@shalimarflorida.org	850-651-5723
Town of Shalimar- Town Manager	Tom Burns	2 Cherokee Rd.	Shalimar	FL	32579	shalimartom@yahoo.com	850-651-5723
Eglin AFB Representative	Jack Kiger	501 DeLeon St., Bldg 696	Eglin AFB	FL	32542	johnkiger@us.af.mil	850-822-8054
NWFLSC	Mel Ponder	100 College Blvd. E	Niceville	FL	32578		850-729-5360
Senior Forester	Maria Wilson	7050 Hwy 189 N	Baker	FL	32531	wilsonm@doacs.state.fl.us	850-689-7838
Okaloosa Gas	Tucker Tracy	P.O. Box 548	Valparaiso	FL	32580	TuckerTracy@okaloosagas.com	850-428-1286
Okaloosa Gas	Robbie Overly	P.O. Box 548	Valparaiso	FL	32580	RobbieOverly@okaloosagas.com	850-978-1041
Oakloosa Gas	Lars Sullivan	P.O. Box 548	Valparaiso	FL	32580	LarsSullivan@okaloosagas.com	850-974-7015
Red Cross	George Legge	208 R. Partin Drive				gelegge@gmail.com	850-635-2406
Red Cross	Kelly Banks	208 R. Partin Drive				kelly.banks@redcross.org	850-432-7601
Emerald Coast Regional Planning Council	Austin Mount	P.O. Box 11399	Pensacola	FL	32524	Austin.Mount@ecrc.org	850-332-7976 x222
NWFLWMD	John Crowe	81 Water Management Drive	Havana	FL	32333		850-539-5999
Gulf Power Company	B H Johnson	208 P. Partin Drive					
Choctawhatchee Electric Co-op	Chris Eddy	655 US Hwy 331	DeFuniak Springs	FL	32433	ceddy@chelco.com	800-342-0990
Citizen	Jason Carducci			FL	32536	Jason Carducci <jpcarducci@gmail.com>	
Fort Walton Beach Fire Dept	Dustin Stewart	5 Hollywood Blvd.	Fort Walton Beach	FL	32544	dstewart@fwb.org	
Almarante Volenteer Fire Dept	Scott Moneypenny	208 F. Partin Drive				smoneypenny@almarantevfd.com	
Almarante Volenteer Fire Dept	Kathleen Moneypenny	208 F. Partin Drive				kathleenmoneypenny@gmail.com	

Appendix B

Project List



PRIORITY	NAME OF PROJECT	YEAR SUBMITTED	PROJECT DESCRIPTION	HAZARDS MITIGATED	MITIGATION GOALS ACHIEVED	FUNDING SOURCE	MATCH (if Applicable)	JURISDICTION	AGENCY RESPONSIBLE FOR IMPLEMENTATION	ESTIMATED COST	PROJECT STATUS				IF DEFERRED WHY	TIMEFRAME FOR COMPLETION	MiTIGATE NEW OR EXISTING?	BENEFICIARY	HMGP ELIGIBLE
											NEW	COMPLETED	DELETED	DEFERRED					
	Stormproof lift stations	2023 Updated 2026	storm proof lift stations 1,2,3,5,6,7,8,9,15, 16,17,18,24,27,28, 31,32,33,36,37,43, 44,45,49,50,52,58, 69,71,72 elevate tops of wet wells, valve boxes, relocation of emergency power supplies, and storm hardening controls. To include bulkheads and/or retaining walls	Flood, Severe Storms, Storm Surge, Hurricane/Tropical Storm	yes	City of Niceville		City of Niceville	City of Niceville - Public Works Dept.	$3,000,000.00						3 years	NEW	City of Niceville	**Y**
1A	Generator, switch, & propane tank	2024	relace generator, install automatic swithch, abd propane tank	Severe Storms, Hurricane/Tropical Stoms, Wildfire	yes	Blackman Fire District		Blackman Fire District	Blackman Fire District	$100,000.00						1 year	NEW	Blackman Fire District	**Y**
1B	Shalimar Drive & Brande Ct. drainage	2023	install pump & drainage pipe to the retention and outflow	Flood, Severe Storms	yes	Town of Shalimar		Town of Shalimar	Town of Shalimar and private utilities	$80,000.00						1 year	NEW	Town of Shalimar	**Y**
2	Development of Master Drainage Plan	1999	Need master plan to mitigate stormwater runoff & flooding	Flood	yes	City of Mary Esther		City of Mary Esther	City of Mary Esther- Public Works	$75,000.00				X	No Funding	240 days	Existing	City of Mary Esther	**Y**
3a	Beach Drive/Scranton Estates Area Drainage Improvements	2005 updated 2024	Retrofit drainage improvements to reduce flooding potential.	Flood. Severe Storms	yes	Okaloosa County		Okaloosa County	Okaloosa County- Public Works	$1,056,000.00				X	Gas Tax and Sur Tax	180 days	Existing	Okaloosa County	**Y**
3c	Relocate all utilities underground	2010	Relocate unilities underground. The town has already committed to a very small portion of Eglin Pkwy (SR 85) but will need new grant/funding source to continue to the Cinco Bayou bridge.	Hurricane/Tropical Storm	yes	Town of Cinco Bayou		Town of Cinco Bayou	Town of Cinco Bayou and private utilities	$1,000,000.00				X	No Funding	1 year	Existing	Town of Cinco Bayou	**Y**
3d	Generators for lift stations, wells, booster stations and wstewater treatment plants	2010	During emergencies with power outages, such as hurricanes, generators are needed to keep lift stations, wells, booster stations, and wastewater treatment plants in working order.	Hurricane & Tropical Storm; and Severe Storms	yes	Okaloosa County		Okaloosa County	OkaloosaCounty - Water & Sewer Dept.	$1,200,000.00				X	No Funding	1 year	Existing	Unincorporated Okaloosa County within the Okaloosa County Water & Sewer Service Area	**Y**
3f	Flood Proofing Lift Stations	2010	Storm proof lift stations 4,8,9,10,14,15, & 17. elevate tops of wet wells, valve boxes, relocation of emergency power supplies, and storm hardening controls. To include bulkheads and/or retaining walls	Hurricane & Tropical Storm; Flood; Land Erosion; Severe Storms; and Beach Erosion	yes	City of Valparaiso		City of Valparaiso	City of Valparaiso - Water & Sewer Dept.	$600,000.00				X	No Funding	3 months	Existing	City of Valparaiso	**Y**
3g	Restoration of wetlands in Glenwood Park and upgrade the drainage system	2010	Restoration of wetlands in Glenwood Park and upgrade the park's drainage system	Hurricane & Tropical Storm: Flood; Storm Surge	yes	Town of Cinco Bayou		Town of Cinco Bayou	Town of Cinco Bayou - Public Works	$15,000.00				X	No Funding	1 year	Existing	Town of Cinco Bayou	**Y**

3h	Disaster Resistant Police, Emergency Operations, and Administrative Office Building	2026	Two-story, 42,500 sq. ft. building rated for Cat 5+ Conditions for Police, Emergency Operations, and Administrative Offices	Hurricane & Tropical Storm: Flood; any disaster	Yes	City of Niceville	Tracked in CIP beginning in FY28	City of Niceville	City of Niceville	$20,900,000.00	**X**					18 months	Existing - replaces existing facilities	Primarily City of Niceville, but project will enable better cooperatio during disasters and recovery.	**Y**
4a	Undergrounding of Utilities	1999		Hurricane/Tropical Storms		Okaloosa County/Developer		Okaloosa County	Okaloosa County and Developers	$158,000.00 per mile				X	On going	Required for new developments with a density of 4 dwelling units per acre and new road construction. Per Ord 91-1 as amended Section 6.01.052 3	Existing	Unincorporated Okaloosa	**Y**
5a	Stormwater swales and retention for Maltozos Street area	2014	Provide a stormwater management system for this neighborhood by constructing swales and exfiltration systems.	Flood; Hurricane & Tropical Storm; and Severe Storms	yes	City of Destin		City of Destin	City of Destin- Public Works	$460,000.00				X	No Funding	1 year	Existing	City of Destin	**Y**
	Installation of deed pump discharge for Four Prong Lake	2026	Ameliroate flood potential for oastal dune lake and improve water quality through exfitration system	Flood; Hurricane & Tropical Storm; and Severe Storms	Yes	City of Destin	Project has received $1.6M state allocation	City of Destin	City of Destin - Public Worhs Dept.	$2,000,000.00	**X**					1 year	Existing	City of Destin	**Y**
	Deer Moss Creek Range Fire Station	2026	New fire station to enhance emergency response in city's eastern area and to accommodate new growth area	Flood; Hurricane & Tropical Storm; Severe Storms, Fire	Yes	City of Niceville	$396,800 tracked into City CIP, full funding nu FY28	City of Niceville	City of Niceville	$8,223.59	X					≤1 year	New	City of Niceville	**Y**
6b	Repetitive Loss Relocation and/or Acquisition	1999	There are several properties, including concrete masonry unit houses built with slab on grade, which flood during storm events. Due to this type of construction, elevation is not an alternative. The structures should be relocated or acquired by the City to prevent future losses.	Flood; Hurricane & Tropical Storm; Severe Storms and Storm Surge	Existing Building Mitigation in Flood-prone locations	City of Fort Walton Beach		City of Fort Walton Beach	City of Fort Walton Beach	$2,000,000.00 +				X	No Funding	18 months	Existing	City of Fort Walton Beach	**Y**
7a	High efficiency .2 million gal/day lift at ation	2011	Installation of new high efficency .2 million gallon/day lift station. Current lift at ation handles 50% of all sewage, is located in the flood zone, and is obsolete	Flood; Hurricane & Tropical Storm; Severe Storms and Storm Surge	yes	City of Valparaiso		City of Valparaiso	City of Valparaiso - Public Works Dept	$700,000.00				X	No Funding	1 year	Existing	City of Valparaiso	**Y**
	Generator for Niceville Well #4	2026	Installation of 180 KW generator at Niceville potable water well #4 to ensure supply during power outage	Flood; Hurricane & Tropical Storm; Severe Storms	Yes	City of Niceville	$185,000 tracked in CIP	City of Niceville	City of Niceville	$185,000.00	**X**					6 months	Existing	City of Niceville	**Y**

8a	Arena Road Drainage Improvements	2010	A portion of Arena Road, an unimproved roadway, holds water during wet periods and floods during high rainfall events. This project would pipe water from the road and direct it to a retention pond.	Hurricane & Tropical Storm; Flood; and Severe Storms	yes	City of Crestview		City of Crestview	City of Crestview - Public Works Dept.	$51,000.00				X	No Funding	90 days	Existing	City of Crestview	**Y**
	Main Street at 98 Palms Drainage	2026	Install Exfiltration to alleviate road ponding anf percolate stormwater	Hurricane & Tropical Storm; Flood; and Severe Storms	Yes	City of Destin		City of Destin	City of Destin Public Works	$135,000.00	**X**					4-6 months	New solution to exiting problem	City of Destin	**Y**
9	Retaining Walls for Lift Stations #11, #20, and #21	2010	Lift stations 11, 20, and 21 are subject to occasional flooding but can be protected by the installation of retaining walls.	Hurricane and Tropical Storm; Flood; and Severe Storms	yes	City of Crestview		City of Crestview	City of Crestview - Water & Sewer Dept.	$18,000.00				X	No Funding	60 days	Existing	City of Crestview	**Y**
10a	Resurfacing of secondary/residential streets	2010	Resurface the streets maintained by the Town of Cinco Bayou	Hurricane/Tropical Storm and Flooding	yes	Town of Cinco Bayou		Town of Cinco Bayou	Town of Cinco Bayou - Public Works Dept.	$500,000.00				X	No Funding	1 year	Existing	Town of Cinco Bayou	**Y**
	First and Second Street Bridge	2026	Replace 2 cross drains with an open-bottom bridge structure	Hurricane & Tropical Storm; Flood; and Severe Storm	Yes	City of Destin	$1.2M state allocation	City of Destin	City of Destin Public Works	$575.00	**X**					1 Year	Existing	City of Destin	**Y**
10b	South Avenue/Thornhill Road Area Drainage Improvements	2010 updated 2024	Regional stormwater management and drainage improvements.	Hurricane & Tropical Storm; Flood; and Severe Storms	yes	Okaloosa County		Okaloosa County	Okaloosa County - Public Works Dept.	$5,000,000.00				X	No Funding	770 days	Existing	Unincorporated Okaloosa County within the Thornhill Road Area	**Y**
10c	Shady Lane/Woodlawn Drainage Problems	2010	Persistent drainage problems causing flooding and road closures	Hurricane & Tropical Storm; Flood; and Severe Storms	yes	City of Crestview		City of Crestview	City of Crestview - Public Works Dept.	$412,000.00				X	No Funding	150 days	Existing	City of Crestview	**Y**
10d	Racetrack Road Sanitary Sewer Rehab	2010	Rehab on 18" gravity sewer line made of vitrified clay. It is crumbling and allowing infiltration into the sewer system.	Hurriance/Tropical Storm and Flood	yes	Okaloosa County		Okaloosa County	Okaloosa County - Water & Sewer Dept.	$1,800,000.00				X	No Funding	6 months	Existing	Unincorporated Okaloosa County within the Racetrack Road area	**Y**
10e	Force main upgrade, Lift Station #10	2010	Increased flows during heavy rains and hurricane conditions overwhelm the force main at Lift Station #10 that serves the county jail and surrounding area.	Hurricane & Tropical Storms; Flood; and Severe Storms	yes	City of Crestview		City of Crestview	City of Crestview - Water & Sewer Dept.	$300,000.00				X	No Funding	90 days	Existing	City of Crestview	**Y**
10f	Elevation of Repetitive Loss Structures	1999	Several wood frame houses with a crawl space underneath are in need of elevation or acquisition due to frequent flooding during storm events.	Flood, Hurricane/Tropical Storm, Storm Surge	Existing Building Mitigation in Flood-prone locations	City of Fort Walton Beach		City of Fort Walton Beach	City of Fort Walton Beach - Building Dept.	$540,000.00				X	No Funding	1 year	Existing	City of Fort Walton Beach	**Y**
	Burning Tree Drainage	2026	Obtain easements to install infratructure to relieve nuisance flooding and improve water quality	Hurricane & Tropical Storms; Flood; and Severe Storms	Yes	City of Destin		City of Destin	City of Destin - Public Works Dept.	$268,000.00	**X**					1 Year	Existing	City of Destin	**Y**
	New EOC/COOP Offices	2026	Construct 2,500 sq. ft. building hardened to Cat 3 + standard	Hurricane & Tropical Storms; Flood; and Severe Storms	Yes	City of Destin		City of Destin	City of Destin Public Works Dept.	$1,800,000.00	**X**					18 months	Existing	City of Dstin	**Y**

	Heritage Run Drainage Improvements	2026	Regrade and reshape ditches to convey water from existing 500 gpm pump	Hurricane & Tropical Storms; Flood; and Severe Storms	Yes	City of Destin		City of Destin	City of Destin Public Works Dept.	$68,000.00	**X**					1 Year	Existing	City of Destin	**Y**
	Undergrounding of Electric Service on Highway 85	2026	Relocating electrical servce underground	Hurricane & Tropical Storms; Flood; and Severe Storms	Yes	Town of Shalimar		Town of Shalimar	Town of Shalimar and private utilities	$1,600,000.00	**X**					18 months	Existing	Town of Shalimar	**Y**
	Reddin Brunson Retention Pond	2026	Regional Retention Basin	Hurricane & Tropical Storms; Flood; and Severe Storms	Yes	City of Destin		City of Destin	City of Destin - Public Works Dept.	$462,000.00	**X**					1 Year	Existing	City of Destin	**Y**
11b	Elevated Potable Water Storage Tank-Kennedy Lakes Area	2010	Only a few traffic signals in Crestview have been upgraded to mast arms. Because the major highways in Crestview are hurricane evacuation routes the mast arms are needed to resist damage by high winds	Wildfire	yes	City of Crestview		City of Crestview	City of Crestview - Water & Sewer Dept.	$1,000,000.00				X	No Funding	270 days	Existing	City of Crestview	**Y**
11c	Port Dixie Stormwater System Repair	2010	Stormwater drainage analysis and infrastructure repair/replacement for the Port Dixie drainage area to resolve regional flooding and stormwater problems.	Hurricane & Tropical Storm; Flood; and Severe Storms	yes	Okaloosa County		Okaloosa County	Okaloosa County - Public Works Dept.	$5,000,000.00				X	No Funding	770 days	Existing	Unincorporated Okaloosa County within the Port Dixie Area	**Y**
11e	Bluewater Bay MSBU 350 acres stormwater basin repair	2014	stormwater darinage system repairs	Hurricane & Tropical Storm; Flood; and severe storms	yes	Okaloosa County/Bluewater Bay MSBU		Okaloosa County	Okaloosa County/Bluewater Bay MSBU	$400,000.00				X		2 Years	Existing	Unincorporated Okaloosa county within the Bluewater Bay area	**Y**
11f	Northern Pines - Forest Heights Drainage Improvements	2010	Regional stormwater management and drainage improvements.	Hurricane & Tropical Storm; Flood; and Severe Storms	yes	Okaloosa County		Okaloosa County	Okaloosa County - Public Works Dept.	$5,000,000.00				X	No Funding	770 days	Existing	Unincorporated Okaloosa County within the Forest Heights Area	**Y**
11g	Bryn Mawr Subdivision Drainage	2010		Flood	yes	City of Mary Esther		City of Mary Esther	City of Mary Esther	$700,000.00				X	No Funding	120 days	Existing	City of Mary Esther	**Y**
	Zerbe Street/Sibert Avenue Flood Mitigation	2026	Improve poor drainage at intersection in regionally low area	Flood, Severe Storms	Yes	City of Destin	$585,000 in FY27 CIP	City of Destin	City of Destin	$83,000.00	X					6 months	Exsting	City of Destin	**Y**
	Master Drainage Plan	2026	Jurisdiction-wide plan to mitigate looding and improve management of stormwater runoff	Flood and severe storms	Yes	City of Laurel Hill		City of Laurel Hill	City of Laurel Hill	$75,000.00	X					1 Year	Existing	City of Laurel Hill	**Y**
	Cross Street Stormwater Improvement	2026	Install 24" RCP pipe to convey stormwater and install water quality BMP	Flood and severe storms	Yes	City of Destin		City of Destin	City of Destin	$125,000.00	X					6 months	Existing	City of Destin	**Y**
	Diamond Lake Drainage	2026	Obtain easement and clear for stormwater conveyance	Flood and severe storms	Yes	City of Destin		City of Destin	City of Destin	$252,000.00	X					18 monhs	Existing	City of Destin	**Y**
	Main Street and Indian Trail Drainage Improvements	2026	Installation of additional infrastructure to collect and convey stormwater to existing outfall	Flood and severe storms	Yrs	City of Destin		City of Destin	City of Destin	$358,000.00	X					18 months	Existing	City of Destin	**Y**

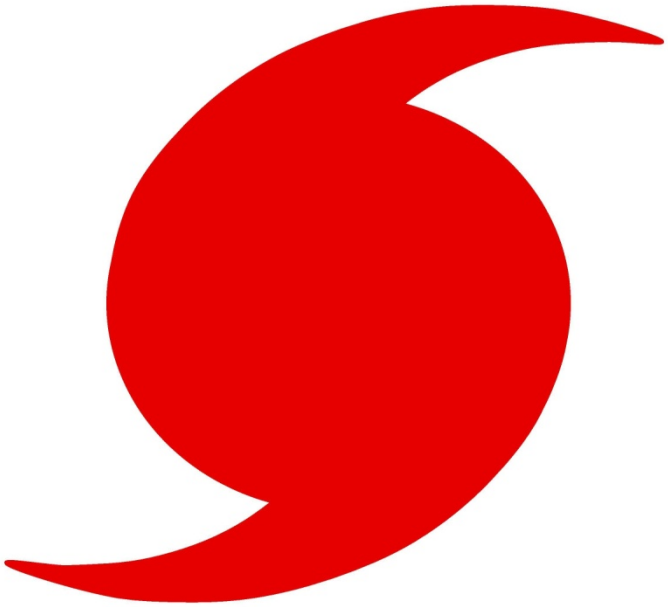
12a	Acquisition of Emergency Generators and Traffic Signal Quick Disconnects		Acquisition of dedicated portable generators and quick disconnects for traffic signals, so that vehicles can safely operate during a loss of electrical power associated with a hurricane or other disaster	All Hazards	yes	City of Crestview		City of Crestview	City of Crestview - Public Works Dept.	$3,300.00				X	No Funding	60 days	Existing	All jurisdictions- Hwy 85 is a hurricane evacuation route	**Y**
12b	Generator for City Hall	2014 Updated 2026	install 250 KW generator for City Hall	All hazards	yes	City of Niceville		City of Niceville	City of Niceville - Public Works Dept.	$500,000.00				X	No Funding	30 days	Existing	City of Niceville	**Y**
12c	Island #2 and #3 Lift Station Retrofit		Replace electrical and control systems at 3 coastal lift stations that have damaged by wind and salt.	Hurricane & Tropical Storm; Flood; and Storm Surge	yes	Okaloosa County		Okaloosa County	Okaloosa County - Water & Sewer Dept.	$225,000.00				X	No Funding	1 year	Existing	Unincorporated Okaloosa County within the Okaloosa Island area and tourist	**Y**
12d	Stormwater drainage system at Edwin's Elementery School	2014	Install new stormwater drainage system at Edwin's Elementery School	Hurricane & Tropical Storm; and Flood	yes	Okaloosa County School Board		Okaloosa County School Board	Okaloosa County School Board - Facilities Dept.	$700,000.00				X	No Funding	1 year	Existing		**Y**
12e	Stormwater drainage system at Florosa Elementery School	2014	Install new stormwater drainage system at Florosa Elementery School	Hurricane & Tropical Storm; and Flood	yes	Okaloosa County School Board		Okaloosa County School Board	Okaloosa County School Board - Facilities Dept.	$450,000.00				X	No Funding	1 year	Existing		**Y**
	Niceville Public Works Facility Relocation	2026	Construction of new public works complex outside of flood prone areas to replace obsolete facility	Hurricanes, Tropical Storms, Severe storms, flooding, fire	Yes	City of Niceille	Not in CIP, but budget submitted with application shows funding starting in FY28	City of Niceville	City of Niceville	$28,000,000.00	**X**					18 months	Existing	Primarily Niceville, but all response partners	**Y**
	Matthew Blvd and Scenic 98 drainage	2026	Install exfiltration system to percolate water from intersection ponds	Flood and severe storms	Yes	City of Destin		City of Destin	City of Destin Public Works Dept.	$64,000.00	**X**					6 months	Existing	City of Destin	**Y**
13a	8 Traffic Signals-Quick Disconnect for Highway 98		Provide hardward to interface post-storm power sources to aid in efficient traffic control and to free up emergency personnel for other efforts	All hazards	yes	City of Destin		City of Destin	City of Destin - Public Works Dept.	$40,000.00				X	No Funding	6 months	Existing	All jurisdictions - Hwy 98 is an evacuation route	**Y**
13b	Stormwater drainage systen at City of Mary Esther City Hall	2014	Repair and replace the underground stormwater system	Hurricane & Tropical Storm; and Flood	yes	City of Mary Esther		City of Mary Esther	City of Mary Esther- Public Works	$45,150.00				X	No Funding	6 months	Existing	City of Mary Esther	**Y**
13c	Repair and replace bridge on Christobal Rd.	2014	Repair and replace underground stormwater infrastructure	Hurricane & Tropical Storm; and Flood	yes	City of Mary Esther		City of Mary Esther	City of Mary Esther - Public Works	$482,150.00				X	No Funding	1 year	Existing	City of Mary Esther	**Y**
13d	Sylvania Heights Drainage Improvements Phase 2	updated 2024	Retrofit drainage improvements to reduce flooding potential.	Hurricane & Tropical Storm; and Flood	yes	Okaloosa County		Okaloosa County	Okaloosa County - Public Works Dept.	$5,000,000.00				X	al Funding Sur	770 days	Existing	Unincorporated Okaloosa County within the Sylvania Heights area	**Y**
13e	Stormwater drainage repair on Byyn Mawr Blvd.	2014	Repair and replace underground stormwater infrastructure	Hurricane & Tropical Storm; Severe Storms and Flood	yes	City of Mary Esther		City of Mary Esther	City of Mary Esther - Public Works	$159,710.00				X	No Funding	1 year	Existing	City of Mary Esther	**Y**
13f	Shoal River Dr. dam	2010	replace old piping in existing on golf course lake (Shoal River Drive is located on top of this dam)	Dam Safety	yes	Okaloosa County		Okaloosa County/NWFLWMD	Okaloosa County/NWFLWMD	$300,000.00				X	No Funding	90 days	Existing	Unincorporated Okaloosa County within the Shoal River area	**Y**
13g	Stormwater drainage repair on Shrewsbury Blvd.	2014	Repair & replace underground stormwater infrastructure and right-of-way erosion	Hurricane & Tropical Storm; Severe Storms and Flood	yes	City of Mary Esther		City of Mary Esther	City of Mary Esther - Public Works	$12,850.00				X	No Funding	60 days	Existing	City of Mary Esther	**Y**

13h	Stormwater drainage repairs on North Street	2014	Repair and replace stormwater inlets and fence encompassing the stormwater detention pond on North Street	Hurricane & Tropical Storm; Severe Storms and Flood	yes	City of Mary Esther		City of Mary Esther	City of Mary Esther - Public Works	$33,680.00				X	No Funding	90 days	Existing	City of Mary Esther	**Y**
13i	Stormwater drainage repairs on Caswell Circle	2014	Repair & replace underground stormwater infrastructure and right-of-way erosion	Hurricane & Tropical Storm; Severe Storms and Flood	yes	City of Mary Esther		City of Mary Esther	City of Mary Esther - Public Works	$31,050.00				X	No Funding	1 year	Existing	City of Mary Esther	**Y**
13j	Right-of-way erosion repair on N. Lorraine Drive	2014	Repair right-of-way due to erosion	Hurricane & Tropical Storm; Severe Storms and Flood	yes	City of Mary Esther		City of Mary Esther	City of Mary Esther - Public Works	$8,725.00				X	No Funding	6 months	Existing	City of Mary Esther	**Y**
13k	Stormwater drainage repairs on S. Lorraine Drive	2014	Repair & replace underground stormwater pipes & inlets at intersections along S. Lorraine Drive	Hurricane & Tropical Storm; Severe Storms and Flood	yes	City of Mary Esther		City of Mary Esther	City of Mary Esther - Public Works	$387,300.00				X	No Funding	1 year	Existing	City of Mary Esther	**Y**
13l	Stormwater drainage repairs on Sussex Road	2014	Repair & replace underground stormwater infrastructure and grade ditch on Sussex Road	Hurricane & Tropical Storm; Severe Storms and Flood	yes	City of Mary Esther		City of Mary Esther	City of Mary Esther - Public Works	$50,250.00				X	No Funding	6 months	Existing	City of Mary Esther	**Y**
13m	Stormwater drainage repairs at Page Bacon & Joann Lane	2014	Repair & replace underground stormwater infrastructure	Hurricane & Tropical Storm; Severe Storms and Flood	yes	City of Mary Esther		City of Mary Esther	City of Mary Esther - Public Works	$81,200.00				X	No Funding	6 months	Existing	City of Mary Esther	**Y**
13n	Stormwater drainage repairs at Dawn Lane & Emory Drive	2014	Repair & replace underground stormwater pipes & inlets at intersection of Dawn Lane and Emory Drive	Hurricane & Tropical Storm; Severe Storms and Flood	yes	City of Mary Esther		City of Mary Esther	City of Mary Esther - Public Works	$236,653.00				X	No Funding	1 year	Existing	City of Mary Esther	**Y**
	Eagles Landing Drainage	2026	Improved drainage infrastructure on property nesr Destin Executive Airport	Hurricane & Tropical Storm; Severe Storms and Flood	Yes	City of Destin		City of Destin	City of Destin	$306,000.00	**X**					1 year	Existing	City of Destin	**Y**
14a	Portable Generators for Traffic Signals	2010	Provide a post-storm power source for traffic signals to move traffic and free up emergency personnel for other efforts	All hazards	yes	City of Destin		City of Destin	City of Destin - Public Works Dept.	$35,000.00				X	No Funding	6 months	Existing	All Jurisdictions - Hwy 98 is an evacuation route	**Y**
14b	Traffic Signal Upgrade to Mast Arm	2010	Only a few traffic signals in Crestview have been upgraded to mast arms. Because the major highways in Crestview are hurricane evacuation routes the mast arms are needed to resist damage by high winds	All hazards	yes	City of Crestview		City of Crestview	City of Crestview - Public Works Dept.	$3,000,000.00				X	No Funding	6 months	Existing	City of Crestview and All Okaloosa County- Hwy 85 is a hurricane evacuation route	**Y**
14c	Armoring Critical Facilities	1999	Fred Hedrick and Chester Pruitt Recreation Centers are utilized as storm shelters and should be retrofitted for 140 mph wind resistance.	Hurricane & Tropical Storm; and Severe Storms	Structural Soundness of Existing Local Government Centers; Availability of Public Sheltering	City of Fort Walton Beach		City of Fort Walton Beach	City of Fort Walton Beach - Public Works Dept.	$138,000.00				X	No Funding	6 months	Existing	City of Fort Walton Beach	**Y**
16a	Water distribution isolation valves	2011	Installation of water distribution isolation valves to preserve water quality and losses in the event of system depresurization for any reason	Hurricane & Tropical Storms; Flood; Severe Storms: Erosion and storm Surge	yes	City of Valparaiso		City of Valparaiso	City of Valparaiso - Public Works Dept	$150,000.00				**X**	No Funding	1 year	Existing	City of Valparaiso	**Y**

16b	Relocation, elevation, or acquisition	2014	various locations throughout unincorporated Okaloosa county which frequently flood.	Hurricane & Tropical Storms; Flood; Severe Storms: Erosion and Storm Surge	yes	Okaloosa County		Okaloosa County	Okaloosa County	$ 2,000,000.00 +				**X**	No Funding	1 year	Existing	Okaloosa County	**Y**
17a	New Public Works Maintenance Yard	2010	Construct new public works maintenance garage in accordance with Florida Building Codes	Hurricane & Tropical Storms; Flood; and Severe Storms	yes	City of Valparaiso		City of Valparaiso	City of Valparaiso - Public Works Dept	$750,000.00				X	No Funding	18 months	New	City of Valparaiso	**Y**
17b	Wind Retrofit of Golf Course Clubhouse & Develop Backup Emergency Operation Center	1999	The Golf Course Clubhouse does not currently meet the 140 mph wind code for building construction.	Hurricane & Tropical Storm; Flood; and Severe Storms	Structural Soundness of Existing Local Government Centers	City of Fort Walton Beach		City of Fort Walton Beach	City of Fort Walton Beach - Public Works Dept.	$100,000.00				X	No Funding	6 months	Existing	City of Fort Walton Beach	**Y**
18a	Redesign of stormwater culvert on Brewer Circle	2014	Redesign and replace stormwater culvert behind 142 - 162 Brewer Circle	Hurricane & Tropical Storm; Flood; and Severe Storms	yes	City of Mary Esther		City of Mary Esther	City of Mary Esther - Public Works	$300,000.00				X	No Funding	6 months	Existing	City of Mary Esther	**Y**
18b	Brewer Circle Concrete Culvert	2013	Redesign and replace stormwater culvert	Flood, Hurricane/Tropical Storm	no	City of Mary Esther		City of Mary Esther	City of Mary Esther	$350,000.00				X	No Funding	120 days	Existing	City of Mary Esther	
	1st Street Culvert Replacement	2026	Replacement of under-sized culvert to improve drainage	Flood, severe storm	Yes	City of Laurel Hill		City of Laurel Hill	City of Laurel Hill	$150,000.00	**X**					120 days	Existing	City of Laurel Hill	**Y**
	2nd Avenue Culvert Replacement	2026	Replacement of under-sized culvert to improve drainage	Flood, severe storm	Yes	City of Laurel Hill		City of Laurel Hill	City of Laurel Hill	$100,000.00	**X**					120 days	Existing	City of Laurel Hill	**Y**
19b	County Wide Wind Retrofit	2011	Hardening of conventional single famile detached homesteaded dwellings to meet current FBC wind requirements	All Hazards	yes	ALL Jurisdictions	25% Private	All Jurisdictions	All Jurisdictions	$3,000,000.00				X	No Funding	1 year	Existing	All Jurisdictions	**Y**
20	Roof replacement Carvier Hill Administration	2014	replacing the roof over the meeting room and freexer at Carver Hill Administration Complex	All hazards	yes	Okaloosa County School Board		Okaloosa County School Board	Okaloosa County School Board - Facilities Dept.	$500,000.00				X	No Funding	6 months	Existing	All Jurisdictions	**Y**

Appendix C

Agendas & Minutes



AGENDA
Okaloosa County
Local Mitigation Strategy Committee
April 2, 2026

LOCATION:
1250 N. Eglin Pkwy.
Shalimar, FL

TIME: 10:30 A.M.

I. UNFINISHED BUSINESS

A. Review of the proposed 2026 LMS update for transmittal to the State of Florida
B. Renewal of projects on the project list.
C. Discussion of NFIP CRS program

ADJOURN

AGENDA
Okaloosa County
Local Mitigation Strategy Committee
January 30, 2025

LOCATION:
1250 N. Eglin Pkwy., Shalimar, FL

TIME: 10:30 AM

I. CALL MEETING TO ORDER

II. ROLL CALL/QUORUM

III. APPROVAL OF MINUTES

A. 11-13-2024 minutes

IV. NEW BUSINESS

A. Letter of Support for the City of Niceville HMGP Grant

V. UNFINISHED BUSINESS

A. Renewal of projects on the project list. REMINDER

IV. PUBLIC COMMENTS

VI. ADJOURN

Summary of Minutes
Okaloosa County
Local Mitigation Strategy Committee
January 30, 2025

LOCATION:
1250 N. Eglin Pkwy., Shalimar, FL

TIME: 10:30 AM

I. CALL MEETING TO ORDER

Mr. Kampert called the meeting to Order.

II. ROLL CALL/QUORUM

Mr. Kampert called roll of those present:

Nick Schwendt – City of Crestview
Carl Scott- City of Valparaiso
Tim Gibson – City of Fort Walton Beach
Keith Williams – Town of Cinco Bayou
Tom Burns – Town of Shalimar
Kristen Shell- City of Niceville
Elliot Kampert- Okaloosa County Growth Management
Randy Woodruff- Okaloosa County Growth Management
Sherry Cadenhead- Okaloosa County Growth Management
Leslie Adams- Okaloosa County Growth Management
Ryan Prince- Okaloosa County Public Safety

III. APPROVAL OF MINUTES

A. 11-13-2024 minutes

Motion by Carl Scott; 2nd by Tim Gibson; approved all ayes.

IV. NEW BUSINESS

A. Letter of Support for the City of Niceville HMGP Grant

Mr. Kampert stated that the letter being requested differed from previous ones in that it only required a letter of approval from the LMS Committee and did not require placement on the project list.

Mrs. Shell came forward to present the requirements of the Hazard Mitigation Grant Program (HMGP) for FEMA HMGP DR-4673 Ian grant.

Discussion ensued

Motion by Tim Gibson; 2nd by Tom Burns, approved the letter, all ayes.

V. UNFINISHED BUSINESS

A. Renewal of projects on the project list. REMINDER

Mrs. Cadenhead reminded all member to review the project list and update any projects on the list with a new project sheet.

B. Mrs. Cadenhead asked members if they could cancel the 2-13-2025 meeting since this meeting would count as 1 of the required 4 meeting per the LMS.

Motion by Tim Gibson, 2nd by Carl Scott; approved to cancel the 2-12-2025 meeting all ayes.

IV. PUBLIC COMMENTS

Mr. Ryan Prince polled the members as to when they would like the Required Flood Exercise to be held.

Discussion ensued.

An agreement of the member resulted in holding the Flood exercise in March of 2025. Mr. Prince will notify everyone of the date.

VI. ADJOURN

Mr. Kampert adjourned the meeting at 10:35 AM.

AGENDA
Okaloosa County
Local Mitigation Strategy Committee
February 14, 2024

LOCATION:
1250 N. Eglin Pkwy., Shalimar, FL

TIME: 10:00 AM

I. CALL MEETING TO ORDER

II. ROLL CALL/QUORUM

III. APPROVAL OF MINUTES

A. 12-13-2023 minutes

IV. NEW BUSINESS

A. Flood Resiliency Grant update

V. UNFINISHED BUSINESS

A. Renewal of projects on the project list. REMINDER

IV. PUBLIC COMMENTS

VI. ADJOURN

Summary Minutes

February 14, 2024

Okaloosa County Comprehensive Plan/ Local Mitigation Strategy Committee

The meeting was held in the Board of County Commissioners chambers located at the Okaloosa County Administrative Building located at 1250 N. Eglin Pkwy., Shalimar, Florida.

Members present:

Sherry Cadenhead	Okaloosa County Growth Management
Scott Bitterman	Okaloosa County Public Works
Keith Williams	Town of Cinco Bayou
Robert Jenkins	City of Niceville
Kelvin Cherry	City of Mary Esther

Vice-Chairman Cadenhead called the meeting to order at 10:05 AM.

I. APPROVAL OF MINUTES

10-11-2023 Minutes

Due to the lack of a quorum; the minutes will be voted on at the 5-8-2024 meeting.

II. NEW BUSINESS

A. Flood Resiliency Grant update

Mr. Ryan Prince was not able to attend the meeting, therefore the update will be given on 5-8-2024.

III. UNFINISHED BUSINESS

A. Renewal of projects on the project list. REMINDER.

Mrs. Cadenhead has received the updated project list from Town of Shalimar; City of Niceville; Okaloosa County Public Works; City of Laurel Hill; and the City of Destin.

Discussion ensued.

There being no further business, the Committee adjourned at 10:15 AM.

Prepared by: Sherry Cadenhead, Recording Secretary
Date: Febuary 14, 2024

AGENDA
Okaloosa County
Local Mitigation Strategy Committee
March 8, 2023

LOCATION:
1250 N. Eglin Pkwy., Shalimar, FL

TIME: 10:00 AM

I. CALL MEETING TO ORDER

II. ROLL CALL/QUORUM

III. APPROVAL OF MINUTES

A. 10-27-2022 minutes

IV. NEW BUSINESS

A. Committee update.

V. UNFINISHED BUSINESS

A. Renewal of projects on the project list. REMINDER

IV. PUBLIC COMMENTS

VI. ADJOURN

Summary Minutes

March 8, 2023

Okaloosa County Comprehensive Plan/ Local Mitigation Strategy Committee

The meeting was held in the Board of County Commissioners chambers located at the Okaloosa County Administrative Building located at 1250 N. Eglin Pkwy., Shalimar, Florida.

Members present:

Sherry Cadenhead	Okaloosa County Growth Management
Elliot Kampert	Okaloosa County Growth Management
Randy Woodruff	Okaloosa County Growth Management
Leslie Adams	Okaloosa County Growth Management
Nicholas Schmedt	City of Crestview
Keith Williams	Town of Cinco Bayou
Ammy Hanson	City of Niceville
Robert Jenkins	City of Niceville
Carl Scott	City of Valparaiso
Tom Burns	Town of Shalimar
Katie Scott	Okaloosa County Health Department

Guest Present:

Jace Vanderford, City of Crestview, Operations.

Chairman Kampert called the meeting to order at 10:00 AM.

I. APPROVAL OF MINUTES

10-27-2022 Minutes

Motion by Ammy Hanson to approve; 2nd by Carl Scott; all ayes.

II. NEW BUSINESS

A. Committee Update

Mrs. Cadenhead asked those present to make sure that the member list was current as well as to please update the projects on the list that belonged to each jurisdiction.

Mr. Kampert gave a brief overview of the Resiliency Grant from DEP for vulnerability, that has been awarded to Okaloosa County. More information would be forth coming as it is available.

III. UNFINISHED BUSINESS

A. Renewal of projects on the project list.

Mrs. Cadenhead requested that each municipality to please review their respective projects that are on project list and complete a new revised/updated Project Summary Sheet for each project since some projects have been on the list since 2010.

Discussion ensued.

There being no further business, the Committee adjourned at 10:15 AM.

Prepared by: _____
Sherry Cadenhead, Recording Secretary
Date: March 8, 2023

AGENDA
Okaloosa County
Local Mitigation Strategy Committee
March 20, 2024

LOCATION:
1250 N. Eglin Pkwy., Shalimar, FL

TIME: 10:00 AM

I. CALL MEETING TO ORDER

II. ROLL CALL/QUORUM

III. APPROVAL OF MINUTES

A. 12-13-2023 minutes

IV. NEW BUSINESS

A. Flood Resiliency Grant update

V. UNFINISHED BUSINESS

A. Renewal of projects on the project list. REMINDER

IV. PUBLIC COMMENTS

VI. ADJOURN

REMINDER!

The Okaloosa County Flood Exercise will be held 3-18-2024 at the EOC located at 90 College Blvd., Niceville FL from 9:00 AM to 12:00 PM.

Please note that attendance is required for your CRS Rating.

SUMMARY OF MINUTES
Okaloosa County
Local Mitigation Strategy Committee
March 20, 2024

LOCATION:
1250 N. Eglin Pkwy., Shalimar, FL

TIME: 10:00 AM

I. CALL MEETING TO ORDER

Mrs. Cadenhead called the meeting to order at 10:05 AM.

II. ROLL CALL/QUORUM

Members present:
Sherry Cadenhead, Okaloosa County Growth Management
Leslie Adams, Okaloosa County Growth Management
Ryan Prince, Okaloosa County Public Safety
Michael Burgess, City of Destin
Tim Gibson, City of Fort Walton Beach
Amy Nelson-Wolf, City of Fort Walton Beach
Robert Jenkins, City of Niceville
Ammy Hanson, City of Niceville
Nick Schwendt, City of Crestview
Kelvin Cherry, City of Mary Esther
Tom Burns, Town of Shalimar
Keith Williams, Town of Cinco Bayou

A quorum was present.

III. APPROVAL OF MINUTES

A. 12-13-2023 minutes

Motion by Ammy Hanson to approve the minutes as written; seconded by Tim Gibson; all ayes.

IV. NEW BUSINESS

A. Flood Resiliency Grant update

Mr. Ryan Prince updated the Committee. March 20, 2024 formally starts the grant/study. The LMS Committee will be part of the steering committee. A member from Jacobs will be contacting the municipalities with flood questions. Once the study is complete, an abatement plan will be created and will open up more grant opportunities.

V. UNFINISHED BUSINESS

A. Renewal of projects on the project list. REMINDER
Mrs. Cadenhead state she had received update project information from the following municipalities:

Town of Shalimar
City of Niceville
Okaloosa county Public Works
City of Laurel Hill
City of Destin

The following municipalities need to update their projects:
City of Valparaiso
Town of Cinco Bayou
City of Crestview
City of Fort Walton Beach
City of Mary Esther
Okaloosa County School Board
Okaloosa County Water 7 Sewer

IV. PUBLIC COMMENTS

Mr. Prince took this time to update the committee on how the county would be responding to Florida Power and Light (FPL) in the event of a severe storm/hurricane/tropical storm. FPL will request from the county only the Critical Facility list and the Critical Infrastructure list. The Critical Structure list is a part of the LMS, however the Critical Infrastructure list is protected and limited to 12 sites.

Mr. Prince updated the committee on the recent Flood Exercise that was held 3-18-2024. Attendance was good and he will be sending each municipality a copy of the sign-in sheet and the presentation for the upcoming CRS reviews.

Mr. Prince also stated that he was currently working on getting Okaloosa County listed as “Tsunami Ready” and “Storm Ready” which could possibly earn each community participating in the CRS program an additional 55 points.

He also stated that the Emergency Operations Center was updating to a new system which will allow EOC member to access the new program via smart phone. The new system should be more user friendly.

VI. ADJOURN

Motion by Michael Burgess to adjourn; seconded by Ammy Hanson; all ayes.

AGENDA
Okaloosa County
Local Mitigation Strategy Committee
April 2, 2026

LOCATION:
1250 N. Eglin Pkwy.
Shalimar, FL

TIME: 10:30 A.M.

I. CALL MEETING TO ORDER

II. ROLL CALL/QUORUM

III. APPROVAL OF MINUTES

A. 7-9-2025 minutes

IV. UNFINISHED BUSINESS

A. Review of the proposed 2026 LMS update for transmittal to the State of Florida
B. Renewal of projects on the project list.
C. Discussion of NFIP CRS program

ADJOURN

Summary of Minutes
Okaloosa County
Local Mitigation Strategy Committee
April 2, 2026

LOCATION:
1250 N. Eglin Pkwy.
Shalimar, FL

TIME: 10:30 A.M.

I. CALL MEETING TO ORDER

Mr. Elliot Kampert called the meeting to order at 10:50 A.M.

II. ROLL CALL/ QUORUM

Mr. Kampert called roll of those present:

Amie Nelson-Wolf- City of Niceville
Jessica McGowin- City of Fort Walton Beach
Kelsea Roberts- City of Fort Walton Beach
Keith Williams – Town of Cinco Bayou
Nicholas Schwendt – City of Crestview
Kelvin Cherry-City of Mary Esther
Elliot Kampert-Okaloosa County Strategic Planning and Projects Manager
Randy Woodruff-Okaloosa County Growth Management
Sherry Cadenhead-Okaloosa County Growth Management
Ryan Prince-Okaloosa County Public Safety
Chris Frassetti -City of Niceville
Tom Burns – Town of Shalimar
Stuart Campbell- Okaloosa County Growth Management
Jason Carducci- Citizen
Joe Zwierzchowski- FDACS
Beth Shrader – City of Valparaiso

III. APPROVAL OF MINUTES

A. 11-12-2025 minutes

Motion by Keith Williams to approved the 11-12-2025 minutes; Seconded by Amie Nelson-Wolfe; all ayes.

IV. UNFINISHED BUSINESS

A. Review of the proposed 2026 LMS update for transmittal to the State of Florida

Mr. Kampert explained that all the updates had been collected and placed in the proposed update to include any new projects to be added to the project list.

Discussion ensued.

Motion by Amie Nelson-Wolfe to approve the proposed draft with all appendices as proposed for transmittal to the State of Florida Department of Emergency Management; seconded by Tom Burns; all ayes.

B. Renewal of projects on the project list.

Included in the discussion above and accepted in the motion.

C. Discussion of NFIP CRS program

Mr. Michael Burgess was out of town at a conference. This will be addressed at the next meeting.

ADJOURN

Mr. Kampert adjourned the meeting at 11:15 AM

AGENDA
Okaloosa County
Local Mitigation Strategy Committee
May 8, 2024

LOCATION:
1250 N. Eglin Pkwy., Shalimar, FL

TIME: 10:00 AM

I. CALL MEETING TO ORDER

II. ROLL CALL/QUORUM

III. APPROVAL OF MINUTES

A. 3-20-2024 minutes

IV. NEW BUSINESS

A. Flood Resiliency Grant update

V. UNFINISHED BUSINESS

A. Renewal of projects on the project list. REMINDER

IV. PUBLIC COMMENTS

VI. ADJOURN

SUMMARY OF MINUTES
Okaloosa County
Local Mitigation Strategy Committee
May 8, 2024

LOCATION:
1250 N. Eglin Pkwy., Shalimar, FL

TIME: 10:00 AM

I. CALL MEETING TO ORDER

Mr. Woodruff called the meeting to order at 10:12 AM.

II. ROLL CALL/QUORUM

Members present:
Sherry Cadenhead, Okaloosa County Growth Management
Randy Woodruff, Okaloosa county Growth Management
Leslie Adams, Okaloosa County Growth Management
Scott Bitterman, Okaloosa County Public Works
Ryan Prince, Okaloosa County Public Safety
Ammy Hanson, City of Niceville
Nick Schwendt, City of Crestview
Kelvin Cherry, City of Mary Esther
Tom Burns, Town of Shalimar
Keith Williams, Town of Cinco Bayou
Tyler Reed, City of Mary Esther
Jayce Vanderford, City of Crestview

A quorum was present.

III. APPROVAL OF MINUTES

A. 3-20-2024 Minutes

Motion by Ammy Hanson to approve the minutes as written; seconded by Kelvin Cherry; all ayes.

IV. NEW BUSINESS

A. Flood Resiliency Grant update

Mr. Ryan Prince updated the Committee. March 20, 2024 formally starts the grant/study. Jacobs was awarded the bid and a kickoff meeting is scheduled for 5-29-2024 via a virtual meeting. Jacobs will not only be reviewing floods but additional vulnerabilities related to flood.

Discussion ensued.

V. UNFINISHED BUSINESS

A. Renewal of projects on the project list. REMINDER
Mrs. Cadenhead state she had received update project information from the following municipalities:

Town of Shalimar
City of Niceville
Okaloosa County Public Works
City of Laurel Hill
City of Destin

The following municipalities need to update their projects:
City of Valparaiso
Town of Cinco Bayou
City of Crestview
City of Fort Walton Beach
City of Mary Esther
Okaloosa County School Board
Okaloosa County Water & Sewer

IV. PUBLIC COMMENTS

VI. ADJOURN

Motion by Kelvin Cherry to adjourn; seconded by Keith Williams; all ayes.

AGENDA
Okaloosa County
Local Mitigation Strategy Committee
May 14, 2025

LOCATION:
1250 N. Eglin Pkwy., Shalimar, FL

TIME: 10:30 AM

I. CALL MEETING TO ORDER

II. ROLL CALL/QUORUM

III. APPROVAL OF MINUTES

A. 1-30-2025 minutes

IV. NEW BUSINESS

A. Presentation by Jacobs Engineering for the Flood Vulnerability Assessment project.
B. Discussion of possible CRS Program for Public Information (PPI)

V. UNFINISHED BUSINESS

A. Renewal of projects on the project list. REMINDER

IV. PUBLIC COMMENTS

VI. ADJOURN

Summary of Minutes
Okaloosa County
Local Mitigation Strategy Committee
May 14, 2025

LOCATION:
1250 N. Eglin Pkwy., Shalimar, FL

TIME: 10:30 AM

I. CALL MEETING TO ORDER

Mr. Kampert called the meeting to Order.

II. ROLL CALL/QUORUM

Mr. Kampert called roll of those present:

Michael Burgess- City of Destin
Joshua Stevens – City of Fort Walton Beach
Keith Williams – Town of Cinco Bayou
Tom Burns – Town of Shalimar
Jayce Vanderford – City of Crestview
Kelvin Cherry- City of Mary Esther
Elliot Kampert- Okaloosa County Growth Management
Randy Woodruff- Okaloosa County Growth Management
Sherry Cadenhead- Okaloosa County Growth Management
Leslie Adams- Okaloosa County Growth Management
Ryan Prince- Okaloosa County Public Safety
Owen Betts- Okaloosa County Public Safety

III. APPROVAL OF MINUTES

A. 1-30-2025 minutes

Motion by Kelvin Cherry; 2nd by Michael Burgess; approved all ayes.

IV. NEW BUSINESS

A. Presentation by Jacobs Engineering for the Flood Vulnerability Assessment project.

See attached presentation presented by Blaine Beck & Charley Golden of Jacobs Engineering.

Discussion ensued with the presenters.

B. Discussion of possible CRS Program for Public Information (PPI)

Mr. Ryan Prince stated that a whole county PPI

Motion by Tim Gibson; 2nd by Tom Burns, approved the letter, all ayes.

V. UNFINISHED BUSINESS

A. Renewal of projects on the project list. REMINDER

Mrs. Cadenhead reminded all member to review the project list and update any projects on the list with a new project sheet.

B. Discussion of possible CRS Program for Public Information (PPI)

Mr. Ryan Prince presented the following document titled "Developing Okaloosa County CRS Program for Public Information":

Developing Okaloosa County CRS
Program for Public Information

Executive Summary:

Okaloosa County received a draft verification of the community rating system (CRS) of 2735 points that resulted in a rating of 5. This correlates to a discount on flood insurance premiums of 25% or an average of $200 per year savings for individuals requiring flood insurance. By developing a Program for Public Information within the structure of CRS the rating will reach a sustainable 4. That rating would equate to a 30% discount on premiums or up to an average of $280 in per year savings for individuals. This would equate to an estimated total of $4.2M back in the citizens' pocket.

Introduction:

The Community Rating System (CRS) is a voluntary incentive program that recognizes and encourages community floodplain management practices that exceed the minimum requirements of the National Flood Insurance Program (NFIP). Over 1,500 communities participate nationwide.

Okaloosa County through its growth management department and certified floodplain managers submits documentation annually in relation to the National Flood Insurance Program (NFIP) Community Rating System (CRS). This documentation is then compiled and awards points towards activities identified in the CRS program. Every three (3) years the rating is recalculated. The last calculation was conducted in 2024 receiving a rating of five (5), with the next major review set for 2027.

Justification:

After thoroughly reviewing the credit calculations it was identified that there were credits that were easily attainable and sustainable. One such way to have maximum impact across the spectrum of activities was identified as a Program for Public Information (PPI). The majority of the requirements were met and are already being accomplished but were simply not codified under a specific program. The PPI gives an average of 40% bonus to credits across activities and has the capability to stack with other bonuses such as the 30% stakeholder bonus (projects highlighted by community stakeholders). Through just this one line of effort the county can easily attain a 4 rating.

Additionally, the PPI would have impacts outside of just CRS ratings. Certain grants (IE EMPG, HMGP, BRC) require active engagement and education of the public with strong stakeholder engagement. Key portions of being a Storm Ready community are also included in the requirements of the PPI and would increase the number of Municipalities that are storm ready. Being a Storm Ready community adds an additional 25 credits towards their CRS rating. The PPI would directly meet EMPA and EMPG requirements of stakeholder engagement as well as possibly improve public engagement in the Local Mitigation Strategy (LMS) Committee.

The PPI would not only impact unincorporated Okaloosa but will also impact municipalities if they are active members in the PPI process. Strengthening municipal and county relationships already exist in LMS and improving the CRS ratings of all participating municipalities.

Activities Impacted by the PPI:

CRS Elements with a Public Information Component			
Activity	**Element**	**OP Credit?**	**PPI Bonus?**
320 (Map Information Service)	Publicizing the service	*	*
330 (Outreach Projects)	Outreach projects (OP)	Yes	Yes
	Flood response preparations (FRP)	No	Yes
	Program for public information (PPI)	–	–
	Stakeholder delivery (STK)	–	–
340 (Hazard Disclosure)	Disclosure of the flood hazard (DFH)	No	Yes
	Real estate agents' brochure (REB)	No	Yes
350 (Flood Protection Information)	Website (WEB1)	No	Yes
360 (Flood Protection Assistance)	Property protection assistance (PPA)	No	Yes
	PPA site visits (PPV)	No	Yes
	Financial assistance advice (FAA)	No	Yes
	Publicity for PPA, PPV, and/or FAA	*	*
370 (Flood Insurance Promotion)	Coverage plan implementation (CPI)	No	Yes
Section 504 (Repetitive Loss Area Outreach Project)	Repetitive loss area outreach project	*	*
540 (Drainage System Maintenance)	Stream dumping regulations (SDR)	No	Yes
610 (Flood Warning and Response)	Annual outreach project prerequisite	*	*
620 (Levees)	Annual outreach project prerequisite	*	*
630 (Dams)	Annual outreach project prerequisite	*	*

* *OP credit can be provided for the publicity or outreach project prerequisite for this element. The OP credit can also receive the PPI and STK bonus credit if the project is in the PPI.*

The way forward:

To receive credit for the PPI a seven (7) step planning and public involvement process.

1) Establish a committee for public information. For PPI credit the committee must meet at least twice a year and consist of members inside and outside local government.

A proposed Committee would consist of:

Okaloosa County	-Emergency Management -Floodplain Manager -Growth Management -County PIO	**
City of Crestview	-Planning	
City of Destin	-Public Works Director	
City of Fort Walton Beach	-Planning	
City of Mary Esther	-Code Enforcement	
City of Niceville	-Deputy City Manager	
City of Valparaiso	-City Administrator	
Town of Shalimar	-City Manager	
Town of Cinco Bayou	-City Manager	
City of Laurel Hill	-City Clerk	

** Each community government entity would be required to propose 1 or more local stakeholders.

2) Assess the community's public information needs.
    a. Identify Priority Areas
    b. Assess Flood Insurance Coverage
    c. Determine Priority Audiences
    d. Inventory Other Public Information Efforts
3) Formulate Messages
4) Identify Outreach Projects to Convey Message
5) Examine other public information initiatives
6) Prepare and adopt the public information program
7) Implement, Monitor, and Evaluate.

Completing these steps in coordination with the existing LMS committee would have a significant impact on credits received during the CRS Calculation Review Process. 10 of the 11 impacted activities during the last calculation would have improvements in credits. This is reflected even more so that PPI credits and bonuses are available in 9 of the 13 scored activities of 2024. An addition of 2 more scored areas would be added that were not previously credited at all.

The above program is supported by the NFIP/CRS publication "Developing a Program for Public Information", 2021 edition.

Discussion ensued with the committee to move forward with this program.

IV. PUBLIC COMMENTS

Mr. Ryan Prince reminded the members that the annual hurricane exercise will be held May 29, 2025 at the County Emergency Operations Center from 9:00 AM to 12:00 PM.

VI. ADJOURN

Mr. Kampert adjourned the meeting at 11:35 AM.

AGENDA
Okaloosa County
Local Mitigation Strategy Committee
May 23, 2024

LOCATION:
1250 N. Eglin Pkwy., Shalimar, FL

TIME: 10:00 AM

I. CALL MEETING TO ORDER

II. ROLL CALL/QUORUM

III. APPROVAL OF MINUTES

A. 5-8-2024 minutes

IV. NEW BUSINESS

A. Blackman Fire District – new project for generator
B. Blackman Fire District – Letter for the grant application

V. UNFINISHED BUSINESS

A. Renewal of projects on the project list. REMINDER

IV. PUBLIC COMMENTS

VI. ADJOURN

SUMMARY OF MINUTES
Okaloosa County
Local Mitigation Strategy Committee
May 23, 2024

LOCATION:
1250 N. Eglin Pkwy., Shalimar, FL

TIME: 10:30 AM

I. CALL MEETING TO ORDER

Mrs. Cadenhead called the meeting to order at 10:30 AM.

II. ROLL CALL/QUORUM

Members present:
Sherry Cadenhead, Okaloosa County Growth Management
Leslie Adams, Okaloosa County Growth Management
Ryan Prince, Okaloosa County Public Safety
Ammy Hanson, City of Niceville
Kelvin Cherry, City of Mary Esther
Tom Burns, Town of Shalimar
Keith Williams, Town of Cinco Bayou
Jayce Vanderford, City of Crestview
Bill Smith, Okaloosa County Schools
Tim Gibson, City of Fort Walton Beach

A quorum was present.

III. APPROVAL OF MINUTES

A. 5-8-2024 Minutes

Motion by Ammy Hanson to approve the minutes as written; seconded by Keith Williams; all ayes.

IV. NEW BUSINESS

A. Blackman Fire District – new project for generator

Lieutenant Miranda Sargent of the Blackman Fire District came forward to present the fire districts proposed project.
The Blackman Fire district infrastructure consists of a 1986 diesel Generator for backup electrical power. This older system was passed down from the Air Force to Florida Forestry and then along to the Blackman Fire District. The unit has a manual transfer switch and must be cranked manually when electricity is lost. It is the concern of the fire district that this piece of equipment is inadequate and will not generate the power necessary to run station equipment in order to allow for normal operations. This unit would supply the main electrical power that is needed to fill air bottles that are necessary to support fire operations. It is our goal to update this generator to a larger capacity and to include an automatic transfer switch for operational periods where power is out within our fire district.

Discussion ensued.

Motion by Keith Williams to add the project to the LMS Project list; seconded by Ammy Hanson; all ayes.

B. Blackman Fire District – Letter for the grant application

Lt. Sargent requested the committee to write a letter of support to go along with the grant application.

Mr. Ryan Prince asked is the Fire District was prepared to pay the 25% as required of the grant and also the environmental study that would ultimately be required for the grant.

Lt. Sargent stated that the Fire district was prepared and had already set aside funds that would equal the 25% requirement of the grant.

Discussion ensued.

Motion by Tim Gibson to issue the letter of support; seconded by Ammy Hanson; all ayes.

V. UNFINISHED BUSINESS

A. Renewal of projects on the project list. REMINDER
Mrs. Cadenhead state she had received some update project information from the municipalities and some are still outstanding.

City of Destin

The following municipalities need to update their projects:
City of Valparaiso

IV. PUBLIC COMMENTS

VI. ADJOURN

Motion by Ammy Hanson to adjourn; seconded by Keith Williams; all ayes.

AGENDA
Okaloosa County
Local Mitigation Strategy Committee
June 14, 2023

LOCATION:
1250 N. Eglin Pkwy., Shalimar, FL

TIME: 10:00 AM

I. CALL MEETING TO ORDER

II. ROLL CALL/QUORUM

III. APPROVAL OF MINUTES

A. 3-8-2023 minutes

IV. NEW BUSINESS

A. Flood Resiliency Grant update
   1. Michael Norberg – Project overview including goals, deliverables, and timelines as are currently anticipated
   2. Michael Norberg/Elliot Kampert - Role of LMS Committee as Steering Committee

B. Choctawhatchee Bay Estuary Program– Melinda Gates

V. UNFINISHED BUSINESS

A. Renewal of projects on the project list. REMINDER
B. CRS

IV. PUBLIC COMMENTS

VI. ADJOURN

Summary Minutes

June 14, 2023

Okaloosa County Comprehensive Plan/ Local Mitigation Strategy Committee

The meeting was held in the Board of County Commissioners chambers located at the Okaloosa County Administrative Building located at 1250 N. Eglin Pkwy., Shalimar, Florida.

Members present:

Sherry Cadenhead	Okaloosa County Growth Management
Elliot Kampert	Okaloosa County Growth Management
Randy Woodruff	Okaloosa County Growth Management
Leslie Adams	Okaloosa County Growth Management
Nicholas Schmedt	City of Crestview
Timothy Gibson	City of Fort Walton Beach
Keith Williams	Town of Cinco Bayou
Samantha Hanson	City of Niceville
Robert Jenkins	City of Niceville
Carl Scott	City of Valparaiso
Katie Scott	Okaloosa County Health Department

Guest Present:

Melinda Gates Choctawhatchee Bay Estuary Program
Michael Norberg, Okaloosa County Coastal Resources

Chairman Kampert called the meeting to order at 10:35 AM.

I. APPROVAL OF MINUTES

3-8-2023 Minutes

Motion by Carl Scott to approve; 2nd by Keith Williams; all ayes.

II. NEW BUSINESS

A. Choctawhatchee Bay Estuary Program

Ms. Melinda Gates, interim Director of the Choctawhatchee Bay Estuary Program gave an overview of the program. The program area covers 4 Florida counties, Eglin Air Force Base, and 8 Alabama counties for fresh, salt and brackish water qualities. The program is a community wide conservation program which may assist with grants for, sea level rise, compound flooding and flooding county wide.

Discussion ensued with the committee about the program and how the program could assist the committee or individual municipalities.

B. Flood Resiliency Grant update

Mr. Michael Norberg, Okaloosa County Coastal Resources, presented to the committee an overview of the Flood Resiliency Grant including goals, deliverables, and time lines. The grant will look at sea level rise, compound flooding and flooding county wide. A draft agreement would be prepared nest week. Kick off of the grant would involve several meetings in both the North and South areas of the county.

Discussion about consultants and steering committee ensued.

Mr. Kampert asked the committee if they saw the LMS committee as a steering committee for this grant.

Discussion ensued.

Mr. Norberg state he would report back to the LMS committee with updates and coordinate with the LMS for any needed data etc.

C. New Shalimar project

Mr. Kampert presented a new project for the Town of Shalimar. The project consists of Stormwater drainage piping on Brandee Ct. & Shalimar Drive, Shalimar, FL

Discussion ensued.

Motion by Scott Bitterman; to score, list and approve a letter for a possible grant for the project; 2nd by Carl Scott; all ayes.

III. UNFINISHED BUSINESS

A. Renewal of projects on the project list.

Mrs. Cadenhead requested that each municipality to please review their respective projects that are on project list and complete a new revised/updated Project Summary Sheet for each project since some projects have been on the list since 2010.

Discussion ensued.

There being no further business, the Committee adjourned at 11:00 AM.

Prepared by: Sherry Cadenhead, Recording Secretary
Date: June 14, 2023

AGENDA
Okaloosa County
Local Mitigation Strategy Committee
June 29, 2022

LOCATION:
1250 North Eglin Pkwy., Shalimar, FL

TIME: 10:00 AM

I. CALL MEETING TO ORDER

II. ROLL CALL/QUORUM

III. APPROVAL OF MINUTES

A. none

IV. NEW BUSINESS

A. Letters for Grants
B. Renewal of projects on the project list.

V. UNFINISHED BUSINESS

A. None

IV. PUBLIC COMMENTS

VI. ADJOURN

Summary Minutes

June 26, 2022

Okaloosa County Comprehensive Plan/ Local Mitigation Strategy Committee

The meeting was held in the Board of County Commissioners chambers located in the Commission meeting room of the Okaloosa County Administration Building located at 1250 North Eglin Pkwy, Shalimar, Florida.

Members present:

Sherry Cadenhead	Okaloosa County Growth Management
Elliot Kampert	Okaloosa County Growth Management
Scott Bitterman	Okaloosa County Engineering
Tom Burns	Town of Shalimar
Michael Burgess	City of Destin
Ammy Hanson	City of Valparaiso
Robert Jenkins	City of Niceville
Anita Miller	City of Laurel Hill
Katie Scott	Okaloosa County Health Department

Chairman Kampert called the meeting to order at 10:05 AM.

I. APPROVAL OF MINUTES

None

II. NEW BUSINESS

A. Letters for Grants

Chairman Kampert explained the purpose for the requested letters and their connection to the LMS Committee and associated project list. He presented the 2 projects that are on the project list and the associated entity which was applying for the federal HMGP Grant.

Discussion ensued.

Motion to approve both the City of Niceville and Okaloosa County letters for a Master Stormwater Plan for each by Michael Burgess. Seconded by Ammy Hanson. All Ayes.

B. Renewal of projects on the project list.

Mrs. Cadenhead requested that each municipality to please review their respective projects that are on project list and complete a new revised/updated Project Summary Sheet for each project since some projects have been on the list since 2010.

Discussion ensued.

III. UNFINISHED BUSINESS

None.

There being no further business, the Committee adjourned at 10:30 AM.

Prepared by: _____
Sherry Cadenhead, Recording Secretary
Date: June 26, 2022

AGENDA
Okaloosa County
Local Mitigation Strategy Committee
July 8, 2026

LOCATION:
1250 N. Eglin Pkwy.
Shalimar, FL

TIME: 1:30 P.M.

I. CALL MEETING TO ORDER

II. ROLL CALL/QUORUM

III. APPROVAL OF MINUTES

A. 4-2-2026 minutes

IV. UNFINISHED BUSINESS

A. Review revisions requested by the State of Florida of the proposed 2026 LMS update for transmittal to the State of Florida – Elliot Kampert
B. NFIP CRS- update – Michael Burgess

ADJOURN

Summary of Minutes
Okaloosa County
Local Mitigation Strategy Committee
July 8, 2026

LOCATION:
1250 N. Eglin Pkwy.
Shalimar, FL

TIME: 1:30 P.M.

I. CALL MEETING TO ORDER

Mr. Elliot Kampert called the meeting to order at 1:34 P.M.

II. ROLL CALL/ QUORUM

Mr. Kampert called roll of those present:

Jessica McGowin- City of Fort Walton Beach
Kelsea Roberts- City of Fort Walton Beach
Keith Williams – Town of Cinco Bayou
Nicholas Schwendt – City of Crestview
Jayce Vanderford – City of Crestview
Elliot Kampert-Okaloosa County Strategic Planning and Projects Manager
Sherry Cadenhead-Okaloosa County Growth Management
Ryan Prince-Okaloosa County Public Safety
Tom Burns – Town of Shalimar
Jason Carducci- Citizen
Scott Moneypenny- Almarante Fire
Karen Moneypenny – Almarante Fire
Michael Burgess – City of Destin

Quorum present.

III. APPROVAL OF MINUTES

A. 4-2-2026 minutes

Motion by Jason Carducci to approved the 4-2-2026 minutes; Seconded by Keith Williams; all ayes.

IV. UNFINISHED BUSINESS

A. Review revisions requested by the State of Florida of the proposed 2026 LMS update for transmittal to the State of Florida

Mr. Kampert explained that the state FDEM had received our proposed LMS and had sent back comments. He stated that the County had received the municipalities' responses to FDEM's comments and their sections of the LMS have been updated accordingly. He further stated that, since the LMS Committee had previously voted to transmit the LMS to the State for review, that a vote was not necessary to send the revised LMS back to the state and could instead be done by consensus without objection. Discussion ensued.

Mr. Kampert then asked whether any members had any objections to sending the updated LMS back to the state and, hearing none, advised that it will be sent back to them by next week.

B. Discussion of NFIP CRS program

Mr. Michael Burgess updated the group about the condition of the CRS program and the possible changes being made in FEMA and the Florida Floodplain Managers Association. The Committee members discussed the information shared by Mr. Burgess, but there were no actions or motions.

ADJOURN

There being no further business, Mr. Kampert adjourned the meeting at 2:00 P.M.

AGENDA
Okaloosa County
Local Mitigation Strategy Committee
July 9, 2025

LOCATION:
1250 N. Eglin Pkwy., Shalimar, FL

TIME: 10:30 AM

I. CALL MEETING TO ORDER

II. ROLL CALL/QUORUM

III. APPROVAL OF MINUTES

A. 5-14-2025 minutes

IV. NEW BUSINESS

A. Kickoff of the revised Okaloosa County Local Mitigation Strategy

V. UNFINISHED BUSINESS

A. Renewal of projects on the project list. MUST

IV. PUBLIC COMMENTS

VI. ADJOURN

Summary of Minutes
Okaloosa County
Local Mitigation Strategy Committee
July 9, 2025

LOCATION:
1250 N. Eglin Pkwy., Shalimar, FL

TIME: 10:30 AM

I. CALL MEETING TO ORDER

Mr. Kampert Called the meeting to Order.

II. ROLL CALL/QUORUM

Mr. Kampert called roll of those present:

Michael Burgess- City of Destin
Tim Gibson – City of Fort Walton Beach
Keith Williams – Town of Cinco Bayou
Tom Burns – Town of Shalimar
Nicholas Schwendt – City of Crestview
Kelvin Cherry- City of Mary Esther
Carl Scott – City of Valparaiso
Bobby McElroy- City of Valparaiso
Anita Miller- City of Laurel Hill
Elliot Kampert- Okaloosa County Growth Management
Randy Woodruff- Okaloosa County Growth Management
Sherry Cadenhead- Okaloosa County Growth Management
Leslie Adams- Okaloosa County Growth Management
Ryan Prince- Okaloosa County Public Safety
Jason Carducci- Citizen

III. APPROVAL OF MINUTES

A. 5-14-2025 minutes

Motion by Carl Scott to approve the minutes as written; seconded by Michael Burgess; all ayes.

IV. NEW BUSINESS

A. Kickoff of the revised Okaloosa County Local Mitigation Strategy

Mr. Kampert explained that the Local Mitigation Strategy has to be fully updated every 5 years. The State of Florida Division of Emergency Management has sent our Eighteen Month Expiration Notification on May 22, 2025. The LMS revision must be submitted to the state a minimum of 6 months prior to the expiration date of November 22, 2026. Therefore, each municipality will be sent their portion of the LMS for updating along with the project sheet to verify existing projects on the project sheet and update as needed.

Discussion ensued.

Questions were asked if the committee workshops on the update since there would be no voting could be done via Zoom or Teams Meeting.

Mr. Kampert stated that that could be arranged.

Mr. Kampert also updated the committee about the recently signed Florida Senate Bill 180 and encouraged all members to read the bill as it pertained to several items of interest to the municipalities.

Discussion ensued.

V. UNFINISHED BUSINESS

A. Renewal of projects on the project list. MUST

Mrs. Cadenhead reminded committee members to take a close look at the projects and the date it was submitted. If the project is over several years old and still a valid project, please send in an updated project sheet.

IV. PUBLIC COMMENTS

None

VI. ADJOURN

With no other business, Mr. Kampert adjourned the meeting at 11:00.

AGENDA
Okaloosa County
Local Mitigation Strategy Committee
August 9, 2022

LOCATION:
1250 North Eglin Pkwy., Shalimar, FL

TIME: 10:00 AM

I. CALL MEETING TO ORDER

II. ROLL CALL/QUORUM

III. APPROVAL OF MINUTES

A. 6-29-2022 minutes

IV. NEW BUSINESS

A. Amended Letters for Grants

V. UNFINISHED BUSINESS

A. Renewal of projects on the project list.

IV. PUBLIC COMMENTS

VI. ADJOURN

Summary Minutes

August 9, 2022

Okaloosa County Comprehensive Plan/ Local Mitigation Strategy Committee

The meeting was held in the Board of County Commissioners chambers located in the Commission meeting room of the Okaloosa County Administration Building located at 1250 North Eglin Pkwy, Shalimar, Florida.

Members present:

Sherry Cadenhead	Okaloosa County Growth Management
Elliot Kampert	Okaloosa County Growth Management
Randy Woodruff	Okaloosa County Growth Management
Ken Wolfe	Okaloosa County Public Safety
Tom Burns	Town of Shalimar
Keith Williams	Town of Cinco Bayou
Michael Burgess	City of Destin
Ammy Hanson	City of Niceville
Robert Jenkins	City of Niceville
Carl Scott	City of Valparaiso
Tim Gibson	City of Fort Walton Beach
Kelvin Cherry	City of Mary Esther
Katie Scott	Okaloosa County Health Department

Chairman Kampert called the meeting to order at 10:05 AM.

I. APPROVAL OF MINUTES

6-26-2022 Minutes

Motion by Ammy Hanson to approve; 2nd by Michael Burgess; all ayes.

II. NEW BUSINESS

A. Amended Letters for Grants

Chairman Kampert explained the purpose for the requested letters and their connection to the LMS Committee and associated project list.

He presented the 2 letters, on Sunset, Fort Walton Beach and Radiant Circle, Mary Esther; to the committee for 2 projects that are on the project list and the associated entity which was applying for the federal HMGP Grant. The requested letters are in conjunction with new Federal guidelines changing the proportions to 90% federal grant and 10% local in-kind match.

Discussion ensued.

Motion to approve both the revised letters for existing projects by Amy Hanson. Seconded by Michael Burgess. All Ayes.

III. UNFINISHED BUSINESS

A. Renewal of projects on the project list.

Mrs. Cadenhead requested that each municipality to please review their respective projects that are on project list and complete a new revised/updated Project Summary Sheet for each project since some projects have been on the list since 2010. Discussion ensued.

There being no further business, the Committee adjourned at 10:15 AM.

Prepared by: _____
Sherry Cadenhead, Recording Secretary
Date: August 12, 2022

WORKSHOP
Summary of Minutes
Okaloosa County
Local Mitigation Strategy Committee
August 13, 2025

LOCATION:
Zoom meeting

TIME: 10:30 AM

I. CALL MEETING TO ORDER

Mr. Kampert Called the meeting to Order. No voting could be done via a Zoom or a Teams Meeting.

II. ROLL CALL/QUORUM

Mr. Kampert acknowledged those present:

Michael Burgess- City of Destin
Nicholas Schwendt – City of Crestview
Kelvin Cherry- City of Mary Esther
Anita Miller- City of Laurel Hill
Elliot Kampert- Okaloosa County Growth Management
Sherry Cadenhead- Okaloosa County Growth Management
Leslie Adams- Okaloosa County Growth Management
Owen Betts- Okaloosa County Public Safety
Kristen Shell- Okaloosa County Growth Management

III. NEW BUSINESS

Mrs. Cadenhead stated that this was just a check -in to see how everyone was progressing along with their edits and revisions of their respective portions of the LMS and associated projects.

Discussion ensured.

Mrs. Cadenhead stat e that she had received 3 new projects and the updated sections from the City of Laurel Hill.

Mrs. Cadenhead requested Mrs. Miller to send in the project worksheets for each project so they can be ranked and scored.

Mr. Kampert also updated the committee about the recently signed Florida Senate Bill 180 and encouraged all members to read the bill as it pertained to several items of interest to the municipalities.

Discussion ensued.

IV. UNFINISHED BUSINESS

Mr. Kampert stated he had received a letter of request from the engineer for Destin's Vulnerability assessment requesting the inclusion of their report into the LMS as an addendum.

Discussion ensued.

All members present recommended for Mr. Kampert to write the letter to them.

IV. PUBLIC COMMENTS

None

V. ADJOURN

With no other business, Mr. Kampert adjourned the meeting at 11:00.

AGENDA
Okaloosa County
Local Mitigation Strategy Committee
August 14, 2024

LOCATION:
1250 N. Eglin Pkwy., Shalimar, FL

TIME: 10:00 AM

I. CALL MEETING TO ORDER

II. ROLL CALL/QUORUM

III. APPROVAL OF MINUTES

A. 5-23-2024 minutes

IV. NEW BUSINESS

A. Blackman Fire District – membership

V. UNFINISHED BUSINESS

A. Renewal of projects on the project list. REMINDER

IV. PUBLIC COMMENTS

VI. ADJOURN

SUMMARY OF MINUTES
Okaloosa County
Local Mitigation Strategy Committee
August 14, 2024

LOCATION:
1250 N. Eglin Pkwy., Shalimar, FL

TIME: 10:00 AM

I. CALL MEETING TO ORDER

Mr. Kampert called the meeting to order at 10:10 AM.

II. ROLL CALL/QUORUM

Members present:
Elliot Kampert, Okaloosa County Growth Management
Randy Woodruff, Okaloosa County Growth Management
Sherry Cadenhead, Okaloosa County Growth Management
Leslie Adams, Okaloosa County Growth Management
Ryan Prince, Okaloosa County Public Safety
Scott Bitterman, Okaloosa County Public Works
Robert Jenkins, City of Niceville
Kelvin Cherry, City of Mary Esther
Tom Burns, Town of Shalimar
Keith Williams, Town of Cinco Bayou
Nick Schwendt, City of Crestview
Carl Scott, City of Valparaiso
Tim Gibson, City of Fort Walton Beach

A quorum was present.

III. APPROVAL OF MINUTES

A. 5-23-2024 Minutes

Motion by Kelvin Cherry to approve the minutes as written; seconded by Tom Burns; all ayes.

IV. NEW BUSINESS

A. Blackman Fire District – membership

Mr. Kampert explained that after he sent the requested letter of support from the 5-23-2024 meeting adding the Blackman Fire District generator project to the list and support by the committee, he had been asked by Florida Department of Emergency Management (FDEM) if the Blackman fire District was a voting or non-voting member of the Committee. He further explained that this request was not from a “citizen” like home elevations in the past, but from a “Special Taxing District”. As such, it is required that the District adopt the LMS, which it has done in their meeting.

Discussion ensued among the committee members about the Special Taxing Districts and how they are overlapping with the municipalities and County.

Discussion turned to how these districts would be address in the upcoming revision to the LMS.

End results were to wait and see if any additional grant applications called for the applicant to be a member of the LMS.

V. UNFINISHED BUSINESS

A. Renewal of projects on the project list. REMINDER
Mrs. Cadenhead state she had received some update project information from the municipalities and some are still outstanding.

IV. PUBLIC COMMENTS

Mr. Ryan Prince stated that Okaloosa County did not receive a declaration for Hurricane Debby.

The HMGP Grant money is awarded in tiers. The counties that were affected by Debby, are small and could possibly not have the “match” monies within there coffers, therefore, there is a good possibility that Tier 3 monies would be available for HMGP Grants in the near future.

VI. ADJOURN

Mr. Kampert adjourned the meeting at 10:45.

WORKSHOP AGENDA

Okaloosa County
Local Mitigation Strategy Committee
September 10, 2025

LOCATION:
1250 N. Eglin Pkwy., Shalimar, FL

TIME: 10:30 AM

I. CALL MEETING TO ORDER

II. NEW BUSINESS

A. Revisions to the Okaloosa County 2021 LMS
B. Renewal of projects on the project list. MUST HAVE NEW PROJECT SHEET for old projects

III. UNFINISHED BUSINESS

A. None.

IV. COMMENTS

IV. ADJOURN

AGENDA
Okaloosa County
Local Mitigation Strategy Committee
October 11, 2023

LOCATION:
1250 N. Eglin Pkwy., Shalimar, FL

TIME: 10:00 AM

I. CALL MEETING TO ORDER

II. ROLL CALL/QUORUM

III. APPROVAL OF MINUTES

A. 6-14-2023 minutes

IV. NEW BUSINESS

A. Flood Resiliency Grant update

V. UNFINISHED BUSINESS

A. Renewal of projects on the project list. REMINDER

IV. PUBLIC COMMENTS

VI. ADJOURN

Summary Minutes

October 11, 2023

Okaloosa County Comprehensive Plan/ Local Mitigation Strategy Committee

The meeting was held in the Board of County Commissioners chambers located at the Okaloosa County Administrative Building located at 1250 N. Eglin Pkwy., Shalimar, Florida.

Members present:

Sherry Cadenhead	Okaloosa County Growth Management
Randy Woodruff	Okaloosa County Growth Management
Leslie Adams	Okaloosa County Growth Management
Nicholas Schwendt	City of Crestview
Keith Williams	Town of Cinco Bayou
Ammy Hanson	City of Niceville
Robert Jenkins	City of Niceville
Tom Burns	Town of Shalimar
Ryan Prince	Okaloosa County Public Safety
Michael Burgess	City of Destin
Kelvin Cherry	City of Mary Esther
Melinda Gates	Choctawhatchee Bay Estuary Program

Vice-Chairman Cadenhead called the meeting to order at 10:10 AM.

I. APPROVAL OF MINUTES

6-14-2023 Minutes

Motion by Ammy Hanson to approve; 2nd by Keith Williams; all ayes.

II. NEW BUSINESS

A. Flood Resiliency Grant update

Mrs. Cadenhead, stated that the consult had been chosen and the grant committee had meet via Zoom with the consultant.

III. UNFINISHED BUSINESS

A. Renewal of projects on the project list.

Mrs. Cadenhead requested that each municipality review their respective projects listed on the 2023 LMS Project Priority List and complete a new revised/updated Project Summary Sheet for each project since some projects have been on the list since 2010.

Discussion ensued.

Mrs. Cadenhead stated she had received two (2) emails to remove projects on the list.

Mr. Nicholas Schwendt came forward and requested the committee to write a letter of support for an existing project, 10-C, Shady Lane Drainage. The City of Crestview is seeking State of Florida appropriation funds for said project.

Discussion ensued.

Motion by Ammy Hanson to approve; 2nd by Keith Williams; all ayes.

There being no further business, the Committee adjourned at 10:30 AM.

Prepared by: Sherry Cadenhead, Recording Secretary
Date: October 11, 2023

AGENDA
Okaloosa County
Local Mitigation Strategy Committee
October 27, 2022

LOCATION:
1804 Lewis Turner Blvd., Fort Walton Beach, FL

TIME: 10:00 AM

I. CALL MEETING TO ORDER

II. ROLL CALL/QUORUM

III. APPROVAL OF MINUTES

A. 8-9-2022 minutes

IV. NEW BUSINESS

A. New project for Destin- Undergrounding of Utilities Ph I
B. Letter for grant application for Destin - Undergrounding of Utilities Ph I

V. UNFINISHED BUSINESS

A. Renewal of projects on the project list. REMINDER

IV. PUBLIC COMMENTS

VI. ADJOURN

Summary Minutes

October 27, 2022

Okaloosa County Comprehensive Plan/ Local Mitigation Strategy Committee

The meeting was held in the Board of County Commissioners chambers located in the 3rd floor meeting room of the Okaloosa County Water & Sewer Administrative Building located at 1804 Lewis Turner Blvd., Fort Walton Beach, Florida.

Members present:

Sherry Cadenhead	Okaloosa County Growth Management
Elliot Kampert	Okaloosa County Growth Management
Randy Woodruff	Okaloosa County Growth Management
Leslie Adams	Okaloosa County Growth Management
Scott Bitterman	Okaloosa County Public Works
Nicholas Schmedt	City of Crestview
Keith Williams	Town of Cinco Bayou
Michael Burgess	City of Destin
Jeff Cozadd	City of Destin
Ammy Hanson	City of Niceville
Robert Jenkins	City of Niceville
Carl Scott	City of Valparaiso

Guest Present:

Stephanie Lindsay with Utility Consultants of Florida.

Chairman Kampert called the meeting to order at 10:15 AM.

I. APPROVAL OF MINUTES

6-26-2022 Minutes

Motion by Scott Bitterman to approve; 2nd by Keith Williams; all ayes.

II. NEW BUSINESS

A. New project for Destin- Undergrounding of Utilities Ph I
B. Letter for grant application for Destin - Undergrounding of Utilities Ph I

Mr. Jeff Cozadd, City of Destin, presented a new project to be added to the project list for the undergrounding of electrical and media lines along U.S. 98 and associated streets within the City of Destin. This project will be a 7 phase project. The first phase will be along U.S. 98 from Marler Bridge to Airport Road: being approximately 3 miles.

Ms. Stephanie Lindsay with Utility Consultants of Florida came forward and stated that the project would be a sub-surface boring with placement of utility boxes for electrical and media lines along with pole removal.

Discussion ensued.

Mr. Kampert closed the discussion.

Mr. Kampert called for a vote to add the project to the project list.

Motion by Scott Bitterman, to approve placing the project on the project list; 2nd by Nicholas Schmedt; all ayes.

Mr. Kampert called for a vote to write the requested letter for the grant application.

Motion to approve both the revised letters for existing projects by Amy Hanson. Seconded by Michael Burgess. All Ayes.

III. UNFINISHED BUSINESS

A. Renewal of projects on the project list.

Mrs. Cadenhead requested that each municipality to please review their respective projects that are on project list and complete a new revised/updated Project Summary Sheet for each project since some projects have been on the list since 2010.

Discussion ensued.

There being no further business, the Committee adjourned at 10:35 AM.

Prepared by: _____
Sherry Cadenhead, Recording Secretary
Date: October 27, 2022

AGENDA
Okaloosa County
Local Mitigation Strategy Committee
November 12, 2025

LOCATION:
1250 N. Eglin Pkwy., Shalimar, FL

TIME: 10:30 AM

I. CALL MEETING TO ORDER

II. ROLL CALL/QUORUM

III. APPROVAL OF MINUTES

A. 7-9-2025 minutes

IV. NEW BUSINESS

A. Review of Goals and objectives
B. PPI Working Group for approval by Ryan Prince
C. Chapter 4 information updates by Ryan Prince

V. UNFINISHED BUSINESS

A. Renewal of projects on the project list. MUST
B. Chapter 5 updates by municipality
C. Update by Ryan for the Flood Vulnerability Study

IV. PUBLIC COMMENTS

VI. ADJOURN

Summary of Minutes
Okaloosa County
Local Mitigation Strategy Committee
November 12, 2025

LOCATION:
1250 N. Eglin Pkwy., Shalimar, FL

TIME: 10:30 AM

I. CALL MEETING TO ORDER

Mr. Elliot Kampert called the meeting to order at 10:34 A.M.

II. ROLL CALL/QUORUM

Mr. Kampert called roll of those present:

Michael Burgess-City of Destin
Tim Gibson – City of Fort Walton Beach
Amie Nelson-Wolf- City of Fort Walton Beach
Jessica McGowin- City of Fort Walton Beach
Keith Williams – Town of Cinco Bayou
Nicholas Schwendt – City of Crestview
Kelvin Cherry-City of Mary Esther
Elliot Kampert-Okaloosa County Strategic Planning and Projects Manager
Randy Woodruff-Okaloosa County Growth Management
Sherry Cadenhead-Okaloosa County Growth Management
Leslie Adams-Okaloosa County Growth Management
Ryan Prince-Okaloosa County Public Safety
Destiny Nunez- Okaloosa County Public Safety

III. APPROVAL OF MINUTES

A. 7-9-2025 minutes

Motion by Kelvin Cherry to approve the 7-9-2025 Minutes; Seconded by Tim Gibson; all ayes.

IV. NEW BUSINESS

A. Review of Goals and objectives

Mr. Kampert gave an overview of the new goals and objectives. The new goals and Objectives are more in line with the grant application currently being processed.

B. PPI Working Group for approval by Ryan Prince

Mr. Prince asked for a motion to create a plan for public information workgroup under the LMS in accordance with 06-61Article VII , in support of 04-40 Section 4 Goal 1 objective 1.01 policy 1.01.01 through policy 1.01.02. The goal of this working group is to develop a Plan for public information to be presented and approved by the LMS committee to be included into the greater LMS Plan. The plan will identify priority areas/audiences and develop topics of information, take inventory of existing public information efforts, identify outreach projects to convey message, examine other public information initiatives, and identify messaging

This working group will follow the guidelines established in the 2021 NFIP/CRS guide for Developing a Program for Public Information (Attachment 1) There must be at least five people in the working group, there must be representation from the county's flood plain management office, there must be a representative from the public information office, at least half of the members must be from outside the local government, there must be a representative from the local insurance agencies. Each local government body ie participating must send at least 2 representatives, one of which being a stakeholder. At least half of the representatives must attend all meetings. Remote attendance will be permissible and ensure that this requirement is met.

Simply put, the above will require each governmental representative to also have a stakeholder counterpart.

Motion to approve the PPI Working Group by Mr. Ryan Prince; seconded by Mr. Michael Burgess; all ayes.

Discussion ensued.

C. Chapter 4 information updates by Ryan Prince

Ms. Destiny Nuez, of Public Safety has recently been given the task of updating Chapter 4. Due to the short time that was given her to update this critical chapter, staff has not had time to fully review, and it will be sent out to the members for review also.

V. UNFINISHED BUSINESS

A. Renewal of projects on the project list. MUST

Mrs. Cadenhead reminded the committee that all projects on the Project List needed to be updated as soon as possible.

B. Chapter 5 updates by municipality

Discussion ensued about updating specific sections in the LMS.

C. Update by Ryan for the Flood Vulnerability Study

Mr. Prince gave an update as to the Vulnerability Assessment grant currently under way. The documents are currently in review by the Florida Department of Emergency management (FDEM).

IV. PUBLIC COMMENTS

None.

VI. ADJOURN

Motion to adjourn by Kelvin Cherry; Seconded by Michael Burgess; all ayes

AGENDA
Okaloosa County
Local Mitigation Strategy Committee
November 13, 2024

LOCATION:
1250 N. Eglin Pkwy., Shalimar, FL

TIME: 10:00 AM

I. CALL MEETING TO ORDER

II. ROLL CALL/QUORUM

III. APPROVAL OF MINUTES

A. 8-14-2024 minutes

IV. NEW BUSINESS

A. Possible increase to a 2 foot freeboard requirement
B. Getting ready for the 5 year update
C. Guest Speaker- Jessica Chase- with National Weather Service – Storm Ready Community (for CRS points)

V. UNFINISHED BUSINESS

A. Update of Vulnerability study – Ryan Prince
B. Renewal of projects on the project list. REMINDER

IV. PUBLIC COMMENTS

VI. ADJOURN

SUMMARY OF MINUTES
Okaloosa County
Local Mitigation Strategy Committee
November 13, 2024

LOCATION:
1250 N. Eglin Pkwy., Shalimar, FL

TIME: 10:00 AM

I. CALL MEETING TO ORDER

Mr. Kampert called the meeting to order at 10:00 AM.

II. ROLL CALL/QUORUM

Members present:
Elliot Kampert, Okaloosa County Growth Management
Randy Woodruff, Okaloosa County Growth Management
Sherry Cadenhead, Okaloosa County Growth Management
Leslie Adams, Okaloosa County Growth Management
Ryan Prince, Okaloosa County Public Safety
Scott Bitterman, Okaloosa County Public Works
Ammy Hanson, City of Niceville
Kelvin Cherry, City of Mary Esther
Tom Burns, Town of Shalimar
Nick Schwendt, City of Crestview
Michael Burgess, City of Destin

A quorum was present.

III. APPROVAL OF MINUTES

A. 5-23-2024 Minutes

Motion by Scott Bitterman to approve the minutes as written; seconded by Ammy Hanson; all ayes.

IV. NEW BUSINESS

A. Possible increase to a 2 foot freeboard requirement

Mrs. Cadenhead informed the group of the HUD requirement of 2' of freeboard for new homes being built in the Flood Zone, and other federally associated funding starting to follow suite to the practice.

Mr. Burgess stated that the City of Destin currently required 3' of freeboard in their ordinance.

Discussion ensued with the other municipalities present as to possibly increasing their freeboard requirement.

B. Getting ready for the 5 year update

Mrs. Cadenhead reminded the group to review their sections of the LMS and be prepared to update their section as well as their project list.

Mr. Kampert also state for the group to look at revisions to the ranking criteria and policies in the LMS in order for the LMS to better coincide with the new grant requirements.

C. Guest Speaker- Jessica Chase- with National Weather Service – Storm Ready Community (for CRS points)

Ms. Jessica Chase with the National Weather Service presented the Storm Ready requirements for CRS. She state once the requirements are submitted they are good for 4 years, and the maintenance for the certification were easy to acquire by attending both the Flood and Hurricane Exercises presented by the County and some simple attendance with the National Weather Service and our local Emergency Management meetings. Only communities with a population of over 15,000 can receive accreditation.

Discussion ensued with Ms. Chase.

V. UNFINISHED BUSINESS

A. Update of Vulnerability Study- Ryan Prince

Ryan Prince stated that the next scheduled meeting of the study is scheduled for 11-20-2024.

IV. PUBLIC COMMENTS

None

VI. ADJOURN

Mr. Kampert adjourned the meeting at 11:00.

AGENDA
Okaloosa County
Local Mitigation Strategy Committee
December 13, 2023

LOCATION:
1250 N. Eglin Pkwy., Shalimar, FL

TIME: 10:00 AM

I. CALL MEETING TO ORDER

II. ROLL CALL/QUORUM

III. APPROVAL OF MINUTES

A. 10-11-2023 minutes

IV. NEW BUSINESS

A. Flood Resiliency Grant update

V. UNFINISHED BUSINESS

A. Renewal of projects on the project list. REMINDER

IV. PUBLIC COMMENTS

VI. ADJOURN

Summary Minutes

December 13, 2023

Okaloosa County Comprehensive Plan/ Local Mitigation Strategy Committee

The meeting was held in the Board of County Commissioners chambers located at the Okaloosa County Administrative Building located at 1250 N. Eglin Pkwy., Shalimar, Florida.

Members present:

Sherry Cadenhead	Okaloosa County Growth Management
Randy Woodruff	Okaloosa County Growth Management
Leslie Adams	Okaloosa County Growth Management
Nicholas Schwendt	City of Crestview
Keith Williams	Town of Cinco Bayou
Ammy Hanson	City of Niceville
Robert Jenkins	City of Niceville
Ryan Prince	Okaloosa County Public Safety
Kelvin Cherry	City of Mary Esther
Ashley Sukalski	City of Fort Walton Beach

Vice-Chairman Cadenhead called the meeting to order at 10:05 AM.

I. APPROVAL OF MINUTES

10-11-2023 Minutes

Motion by Ammy Hanson to approve; 2nd by Keith Williams; all ayes.

II. NEW BUSINESS

A. Flood Resiliency Grant update

Mr. Ryan Prince state that the applicants would be scored and ranked 12-14-2023 and possibly the bid would be awarded in January 2024.

III. UNFINISHED BUSINESS

A. New project submittal – City of Niceville

Mrs. Ammy Hanson came forward to present the City of Niceville's newest project for proposed adding to the LMS Project List.

The project consists of storm proofing of 30 lift stations elevate tops of wet wells, valve boxes, relocation of emergency power supplies, and storm hardening controls. To include bulkheads and/or retaining walls.

Discussion ensued.

Motion by Keith Williams to have the project ranked and added to the LMS Project List, 2nd by Kelvin Cherry; all ayes.

B. Renewal of projects on the project list.

Mrs. Cadenhead requested that each municipality review their respective projects listed on the 2023 LMS Project Priority List and complete a new revised/updated Project Summary Sheet for each project since some projects have been on the list since 2010.

Discussion ensued.

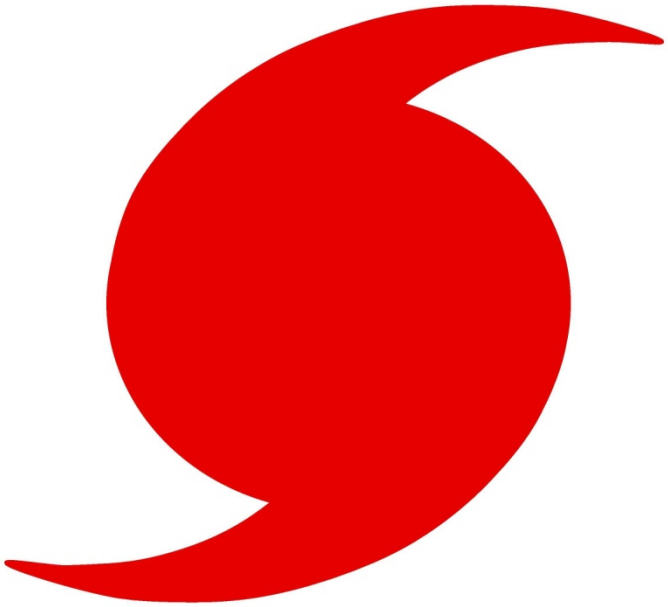
Motion by Ammy Hanson to approve; 2nd by Kelvin Cherry; all ayes.

There being no further business, the Committee adjourned at 10:15 AM.

Prepared by: Sherry Cadenhead, Recording Secretary
Date: December 13, 2023

Appendix D

Crosswalk



FL REVIEW TOOL AND CROSSWALK OVERVIEW:

The FL Review Tool is required to be filled out when completing the five-year update of an LMS plan. The Florida Local Mitigation Strategy (LMS) Crosswalk is informed by the FEMA Local Mitigation Planning Policy Guide (effective April 19, 2023). Each requirement listed is a required Element of the FEMA Policy Guide. There is a difference in formatting when comparing the FL Crosswalk with FEMA's Policy Guide Elements. This is to prevent the possibility of skipping various components of each FEMA requirement. You will notice the specific FEMA requirement is listed in parenthesis next to each FL Crosswalk Element (e.g., P1 in the Florida Crosswalk is equivalent to FEMA Element A1-a). As such, multiple FL Crosswalk Elements may correspond to the same FEMA Element.

CROSSWALK INSTRUCTIONS:

When LMS Plans are submitted for approval, this document is also required to be submitted. There are multiple tabs within the Review Tool. Please fill out the required sections within the FL Crosswalk and Jurisdiction Checklist tabs (shaded green). You do not need to populate tabs shaded red. Additionally, tabs shaded blue are helpful resources, including a Tool Overview, Project List Template, and CRS Crosswalk.

Enter the requested information in each field below:

1) In the FL Crosswalk Tab, please identify the "Location in Plan" using the corresponding page numbers for each requirement.

*Please do not edit the following sections: Met, Not Met, Reviewer Comments. If revisions are required, the State reviewer will put comments in the Required Revisions section. As revisions are made, please feel free to add comments about the revisions in the same section. Do not remove any State comments.

2) In the Jurisdiction Checklist Tab, please add each of the "participating" jurisdictions.

REVIEW TOOL TABS EXPLAINED:

The **FL Crosswalk** tab contains the tool used by Florida LMS Working Groups and FDEM to develop, update, and review LMS Plans.

The **Jurisdiction Checklist** tab lists the participating jurisdictions, identified the type of jurisdictions, and outlines whether each jurisdiction has met all requirements. Simply fill in the names and type of each jurisdiction (Columns B and C) participating in the Plan.

The **Project List Template** tab is an example of how counties can present their project list in their LMS. Using this tab will help communities meet the mitigation strategy requirements. A county can fill out this table and include it in their LMS if they choose, but it is not required. FDEM will not use this tab during the review of your LMS Plan.

The **CRS Crosswalk** tab has the crosswalk that is used for reviewing Section 510 plan components of the CRS. It is not required for the LMS review but can be utilized as a resource for CRS requirements.

The **Hazard Review Checklist** tab contains the tool that will be used by FDEM Plan Reviewers when evaluating the plan's hazard risk assessment information. This tool can be used as an aid when counties are updating/evaluating their LMS plans.

The **FEMA Review Tool** tab will be filled out automatically based on the information entered into the **FL Crosswalk** tab. FDEM will submit the FEMA Review Tool to FEMA upon FDEM approval, along with a final copy of the LMS Plan.

2023 Florida Local Mitigation Strategy (LMS) Crosswalk

DESCRIPTION:

The Florida Local Mitigation Strategy (LMS) Crosswalk is informed by the FEMA Local Mitigation Planning Policy Guide (effective April 19, 2023). Each requirement listed below is a required Element of the FEMA Policy Guide. There is a difference in formatting when comparing the FL Crosswalk with FEMA's Policy Guide Elements. This is to prevent the possibility of skipping various components of each FEMA requirement. You will notice the specific FEMA requirement is listed in parenthesis next to each FL Crosswalk Element (e.g., P1 in the FL Crosswalk is equivalent to FEMA Element A1-a). As such, multiple FL Crosswalk Elements may correspond to the same FEMA Element.

INSTRUCTIONS:

Enter the requested information in each field below:
1) In the FL Crosswalk Tab, please identify the "Location in Plan" using the corresponding page numbers for each requirement.
2) In the Jurisdiction Checklist Tab, please add each of the "participating" jurisdictions.

*Please do not edit the following sections: *Met, Not Met, Reviewer Comments* . If revisions are required, the State reviewer will put revisions in the Required Revisions section. As revisions are made, please feel free to add comments about the revisions in the same section. **Do not remove any State comments.**
*Additionally, a Project List Template can be found in a separate tab below.

Jurisdiction:	Okaloosa County	**Title of Plan:**	2026 Okaloosa County Local Mitigation Strategy
Local Point of Contact:	Elliot Kampert / Sherry Cadenhead	**Address:**	402 Brookmeade Drive, Crestview, FL 32539
Title:	Strategic Planner / Planning Coordinator	**Email:**	ekampert@myokaloosa.com scadenhead@myokaloosa.com
Agency:	Okaloosa County	**Phone Number:**	850-651-7524 / 850-689-5080

State Reviewers:	
Date Received by FDEM:	
Date Plan Not Approved:	
Date Plan APA:	
Date Plan Approved:	

Planning Process (FEMA Element A)		Location in Plan	Met	Not Met	Reviewer Comments	Required Revisions
P1 (A1-a)	The plan must document the current planning process.	Section 1.02				
P2 (A1-b)	The plan must list the jurisdiction(s) in the current plan that will seek approval.	Section 1.02.02				
P3 (A1-b)	The plan must list the representative from **each jurisdiction** that will seek approval and how they participated in the planning process. (At a minimum, it must identify the jurisdiction represented and the person's agency and title within the jurisdiction.)	Section 1.02.02 See also Appendix A				
P4 (A2)	The plan must provide documentation of an opportunity for stakeholders to be involved in the current planning process. Documentation of this opportunity must identify how **each of the stakeholders** (see below) were presented with this opportunity, as applicable.	section 1.02.02 see also Appendix C				
P5 (A3)	The plan must document how the public had an opportunity to be involved in the current planning process and what that participation entailed.	Section 1.02.03				
P6 (A4)	The plan must document what existing plans, studies, reports and technical information were reviewed and how they were incorporated, if appropriate, into the development/update of the plan.	Section 1.02.04				
P7 (A4)	For jurisdictions with structures for which National Flood Insurance Program (NFIP) coverage is available, regulatory flood mapping products are required to be incorporated, if applicable. Participants may use other jurisdiction-specific materials, including non-regulatory flood mapping products, that improve upon NFIP regulatory flood mapping products.	Section 1.02.04.01 see also Chapter 5 Sections 5.01 thru 5.10 Flood Vulnerability Discussion				

Reviewer Notes

P2/P3. Ensure the list of participating jurisdictions is consistent throughout the Plan and listed fully on the Jurisdiction Checklist tab. Consider adding special districts, state agencies, WMDs, universities, and other eligible entities - any group that will have a project on the project list and apply for HMA grants. Note that if jurisdictions do not participate in the planning process but want to adopt/apply for grants later on, there are additional steps they will need to complete - it is best for them to be included from the beginning.

P4. The specific entities may be defined by each jurisdiction based on the unique characteristics of the local government, including special districts. The purpose of inviting input is to integrate natural hazard risk reduction across all community systems, as well as encourage implementation of mitigation actions.

Community Lifelines: Safety and Security; Food, Hydration, Shelter; Health and Medical; Energy; Communications; Transportation; Hazardous Materials; Water Systems

P6. Element may be met with a narrative of resources utilized (including bullet list) and citations used throughout or a bibliography. See examples in FEMA Guidance Notes section. Gaps and limitations may be addressed as actions in the mitigation strategy, in particular for items that require additional assistance.

P7. Regulatory flood maps are required to be in the Plan. This may be best located in the Risk Assessment section, however, it must be somewhere in the Plan.

FEMA Guidance Notes:

Document means to provide factual evidence for how the participants developed/updated the plan. Documentation may include narrative descriptions, copies of meeting minutes, sign-in sheets, or newspaper articles. Examples of documentation of public involvement/feedback may include, but are not limited to, narratives, materials from open meetings, screenshots of social media postings and/or interactive websites with drafts for public review and comment, questionnaires or surveys through utility bills, etc.

Involvement means being engaged and actively participating in the development of the plan; providing input and directly providing, affecting or editing plan content as the representative of the participating jurisdiction(s) or organization.

Stakeholders include local and regional agencies involved in hazard mitigation activities; agencies that have the authority to regulate development; neighboring communities; representatives of business, academia, and other private organizations; representatives of nonprofit organizations.

An opportunity to be involved in the planning process means that these stakeholders are invited to be engaged or are asked to provide information or input to inform the plan's content.

Public Participation: The opportunity must occur during the plan's development, meaning prior to the plan's submission for formal review. In addition, the plan must document how public feedback was included throughout the planning process.

Examples for P6: state hazard mitigation plan; local plans (such as comprehensive/master/general land use, economic development, capital improvement, affordable housing, resource management, resilience, etc.); and hazard-specific reports and plans (such as Community Wildfire Protection Plans).

Risk Assessment (FEMA Element B)		Location in Plan	Met	Not Met	Reviewer Comments	Required Revisions
R1 (B1-a)	The plan must include a **description** of all natural hazards that can affect the jurisdiction(s) in the planning area and their assets, such as dams, located outside of the planning area.	see Chapter 4 and Sections 5.01 thru 5.10 as well as Appendix E & F				
R2 (B1-a)	The plan must provide rationale for the omission of any natural hazards that are commonly recognized to affect the jurisdiction(s) in the planning area.	see Chapter 4 and Sections 5.01 thru 5.10 as well as Appendix E & F				
R3 (B1-b)	The plan must include information on **location** for each identified hazard.	see Chapter 4 and Sections 5.01 thru 5.10 as well as				
R4 (B1-c)	The plan must provide the **extent** of the hazards that can affect the planning area.	see Chapter 4 and Sections 5.01 thru 5.10 as well as				
R5 (B1-d)	The plan must include information on **previous occurrences** for each hazard that affects the planning area. At a minimum, this includes any state and federal major disaster declarations for the planning area since the last update.	see Chapter 4 and Sections 5.01 thru 5.10 as well as Appendix E & F				
R6 (B1-e)	The plan must include the **probability** of future events for the identified hazards that can affect the planning area.	see Chapter 4 and Sections 5.01 thru 5.10 as well as				
R7 (B1-f)	For multi-jurisdictional plans, when hazard risks differ across the planning area and between participating jurisdictions, the plan must specify the unique and varied risk information for each applicable jurisdiction and their assets outside the planning area.	see Chapter 4 and Sections 5.01 thru 5.10 as well as Appendix E & F				
R8 (B2-b)	The plan must describe the potential **impacts** on each participating jurisdiction and its identified assets.	see Chapter 4 and Sections 5.01 thru 5.10 as well as Appendix E & F				
R9 (B2-a)	The plan must describe the **overall vulnerability** of each participant to the identified hazards.	see Chapter 4 and Sections 5.01 thru 5.10 as well as				
R10 (B2-a)	For plan updates, the risk assessment must meet Element E1-a (Changes in Development).	see Chapter 4 and Sections 5.01 thru 5.10 as well as				
R11 (B2-c)	The plan must address repetitively flooded NFIP-insured structures by including the estimated numbers and types (residential, commercial, institutional, etc.) of repetitive/severe repetitive loss properties for **each jurisdiction**.	Sections 5.01 thru 5.10				

Reviewer Notes

Jurisdictional risk should be discussed throughout the risk assessment. If variations in extent, probability, impact, vulnerability, etc., are seen throughout the planning area (county and municipalities) then this must be discussed.

R1/R2. Commonly recognized hazards include those found in the State Hazard Mitigation Plan. Identify all the types of hazards that can occur, e.g., the different types of flood hazards (flash, riverine, storm surge, debris flows, ice jams, dam/levee failure, etc.)

R3. Maps may be helpful to meet location, however, provide a more detailed narrative when showing jurisdictional risk. Identify locations/jurisdictions throughout the planning area that are more at risk to the hazard.

R4. Scale or metric must be included in the Plan for each hazard. Look for explanations of how extent differs across jurisdictions as applicable.

R5. If there were no occurrences since the previous update, it must be stated.

R6. General descriptors must have a scale explaining the metrics (e.g., low, medium, high). Probability must include the effects of future conditions, on the type, location, and range of anticipated intensities of identified hazards.

R8. The discussion of impacts should differ or be separate from the vulnerability analysis. Impacts are the consequence of the hazard on the assets found within the planning area (people, property, critical infrastructure, natural resources, etc.).

R9. Vulnerability should explain **why** each participant (jurisdiction) is vulnerable to the hazards. This should include a discussion of current and future assets.

R11. Repetitive loss data should include RL and SRL data and should include the **estimated numbers** and **types** of structure for each jurisdiction.

FEMA Guidance Notes:

Description means to provide a narrative description or definition.

Location is defined as the unique geographic boundaries within the planning area, or assets that may be affected by the identified hazard. If maps are used, provide sufficient detail and scale to clearly identify the hazard locations within and/or affecting assets owned by the participating jurisdiction(s). If narrative descriptions are used, the must contain enough detail to clearly identify the area(s) that will be affected by the hazard.

Extent is defined as the range of anticipated intensities of the identified hazards. Extent is most commonly expressed using various scientific scales. When using scales, the plan must document how the scale applies to each jurisdiction.

Previous Occurrences should include an emphasis on significant events, as determined by the community.

Probability can be defined as historical frequencies, statistical probabilities, hazard probability maps and/or general descriptors. It must include the effects of future conditions on the type, location, and range of anticipated intensities of identified hazards.

Impacts are the consequences of effects of each hazard on the identified assets. The narrative must include changes in population patterns, and changes in land use and development. Gaps and limitations may be addressed as actions in the mitigation strategy, in particular for items that require additional assistance.

Vulnerability is the description of which assets, including structures, systems, populations, and other assets, are at risk from the identified hazards. The description must include current and future assets (including people) and the risk that makes them susceptible to damage from the identified hazards.

Assets are, but not limited to, people, structures (facilities, lifelines, critical infrastructure); systems (networks and capabilities); natural, historic, and cultural resources; activities that have value to the community.

Changes in development means recent development, potential development, or conditions that may affect the risks and vulnerabilities of the jurisdictions local communties. This can also include changes in local policies, standards, codes, regulations, land use regulations and other conditions.

Mitigation Strategy (FEMA Element C)		Location in Plan	Met	Not Met	Reviewer Comments	Required Revisions
S1 (C1-a)	The plan must describe how the existing authorities, policies, programs, funding, and resources of **each participant** are available to support the mitigation strategy. This must include a discussion of the existing building codes and land use and development ordinances or regulations. Capabilities may be described in a table or narrative.	See Sections 5.01 thru 5.10				
S2 (C1-b)	The plan must describe the ability of **each participant** to expand on and improve the capabilities described in the plan (see S1).	See Sections 5.01 thru 5.10				
S3 (C2-a)	The plan must describe participation in the NFIP for **each participant**, as applicable, in accordance with NFIP regulatory requirements (see reviewer notes).	See Sections 5.01 thru 5.10				
S4 (C3-a)	The plan must include **goals** to reduce the risk of the identified hazards.	See Chapter 3				
S5 (C4-a)	The mitigation strategy must include an analysis of a comprehensive range of actions or projects that the participants considered to specifically address vulnerabilities identified in the risk assessment.	See Sections 5.01 thru 5.10				
S6 (C4-b)	**Each plan participant** must identify one or more mitigation actions the participant(s) intends to implement for each hazard addressed in the risk assessment.	See mitigation actions in Sections 5.01 thru 5.10				
S7 (C5-a)	The plan must describe the criteria used for prioritizing the implementation of the actions. The criteria must include an emphasis on the extent to which benefits are maximized, in relation to the associated costs of the action.	See Chapter 3				
S8 (C5-b)	The action plan must identify who is responsible for administering each action, along with the action's potential funding sources and expected time frames for completion.	See Appendix B				

Reviewer Notes

S1. Capabilities must be discussed for each participating jurisdiction. Gaps and lack of capability should be discussed as applicable.

S2. Describe the ability of each participating jurisdiction to expand and improve capability throughout the next planning cycle (5-years).

S3. The following information must be provided for each participant.
1. Adoption of NFIP minimum floodplain management criteria via local regulation.
2. Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable.
3. Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs.
4. Appointment of a designee or agency to implement the addressed commitments and requirements of the NFIP.
5. Description of how participants implement the substantial improvement/substantial damage provisions of their floodplain management regulations after an event.

S5. The range of actions considered must be clearly linked to the vulnerabilities and impacts identified in the risk assessment.

S6. Each participating jurisdiction should have a project on the project list. If this is not possible due to lack of capability, consider adding multi-jurisdictional projects, county-wide projects (such as planning/education), or something similar. If that is not feasible, include a narrative for the lack of capability within the Plan.

S8. Include the **position/office/department/agency** responsible for implementing the projects, potential funding sources, and a timeframe for completion. Generic terms should be avoided or defined (e.g., short-term, medium-term, and long-term).

FEMA Guidance Notes:
Discussion means a narrative or other materials that provide context on a section of the plan. Describing current capabilities provides a rationale for which mitigation projects can be undertaken to address the vulnerabilities identified in the Risk Assessment.
For C1-b: If participants do not have the ability or authority to expand and/or improve their capabilities, the plan must describe the lack of ability or authority.
For C2-a: The following information must be provided for each participant: adoption of NFIP minimum floodplain management criteria via local regulation; adoption of the latest effective Flood Insurance Rate Map (if applicable); Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs; appointment of a designee or agency to implement the addressed commitments and requirements of the NFIP; and description of how participants implement the substantial improvement/substantial damage provisions of their floodplain management regulations after an event. Simply stating "The community will continue to comply with the NFIP" is not sufficient to meet the requirement.
Goals are broad, long-term policy and vision statements that explain what is to be achieved by implementing the mitigation strategy. The goals must be consistent with the hazards identified in the plan. Goals may be presented as general statements applying to more than one hazard, or they may be itemized to each of the identified hazards.
A mitigation action is a measure, project, plan, or activity proposed to reduce current and future vulnerabilities described in the risk assessment. These actions must be achievable and demonstrate how the mitigation activities reduce the risks identified in the risk assessment.
Analyzing a comprehensive range means considering mitigation alternatives spanning all types of solutions. These may include local plan and regulations, structure and infrastructure projects, natural systems protection, and education and awareness programs.
For C4-a: Actions considered must emphasize reducing risk to existing buildings, structures and infrastructure, as well as limiting risk to new development and redevelopment. Actions should also aim to reduce risk to your local population.
For C5-b: The plan must identify applicable potential funding sources, with details beyond generic terms such as "federal," "state" and/or "local." The plan must provide the **position, office, department, or agency** responsible for implementing/administrating the identified mitigation actions.

Plan Maintenance (FEMA Element D)		Location in Plan	Met	Not Met	Reviewer Comments	Required Revisions
M1 (D1-a)	The plan must describe how the participant(s) will continue to seek public participation after the plan has been approved and during the plan's implementation, monitoring, and evaluation.	See Chapters 1 & 2				
M2 (D2-a)	The plan must identify how, when and by whom the plan will be tracked for implementation over its five-year cycle (**monitoring**).	See Chapters 1 & 5				
M3 (D2-b)	The plan must identify how, when and by whom the plan will be assessed for effectiveness at achieving its stated purpose and goals (**evaluating**).	See Chapters 1 & 5				
M4 (D2-c)	The plan must identify how, when and by whom the plan will be reviewed and revised at least once every five years (**updating**).	See Chapters 1 & 5				
M5 (D3-a)	The plan must describe the community's process to **integrate** the plan's data, information, and hazard mitigation goals and actions into other **planning mechanisms**.	See Chapter 1				
M6 (D3-c)	A multi-jurisdictional plan must describe **each participant's** individual process for integrating information from the mitigation strategy into their identified planning mechanisms.	See Chapters 1 & 5				
M7 (D3-b)	The plan must identify the local planning mechanisms where hazard mitigation information/actions may be integrated. The identified list of planning mechanisms must be applicable to the plan participant(s) and not contradict the identified capabilities.	See Chapter 1				

FEMA Guidance Notes:
For D1-a: The plan may contain a narrative description or an itemized list of steps, demonstrating the prescribed method that will be followed to obtain future public participation.
Monitoring means tracking the implementation of the plan over time. For example, monitoring may include a system for tracking the status of the identified hazard mitigation actions.
Evaluating means assessing the effectiveness of the plan at achieving its stated purpose and goals.
Updating means reviewing and revising the plan at least once every five years.
Integrate means to include hazard mitigation principles, vulnerability information and mitigation actions into other existing community planning to leverage activities that have co-benefits, reduce risk and increase resilience.
Planning mechanisms refer to the governance structures used to manage local land use development and community decision-making.
For a multi-jurisdictional integration plan, this element may be met with a general narrative description if the process is applicable to each of the plan participants; however, any participant who cannot apply the same process as other plan participants must include their unique process for integration.

Reviewer Notes

M1. Examples of continued public involvement could include periodic presentations on the plan's progress to elected officials, schools or other community groups, annual questionnaires or surveys, public meetings, postings on social media, and interactive websites.

M2/M3/M4. Discuss **who, when, and how** the plan will be **monitored, evaluated, and updated** (five-year update). Can be narrative or itemized list of steps demonstrating the prescribed method that will be followed to monitor the plan after plan approval and during the plan's implementation.

M5. We are looking for the **process** of how each participating jurisdiction integrates information from the LMS Plan into other planning mechanisms (e.g., CEMP, Comprehensive Plan, codes and regulations, hazard plans, resiliency plans, etc.).

M6. Is the process identified in M5 applicable to all participating jurisdictions? This element may be met with a general narrative description if the process is applicable to each of the plan participants; however, any participant who cannot apply the same process as other plan participants must include their unique process for integration.

M7. Related to M5, what are the planning mechanisms that information from the LMS Plan may be incorporated into? A narrative or bullet list will suffice. List planning mechanisms from each jurisdiction along with county plans.

Plan Update (FEMA Element E)		Location in Plan	Met	Not Met	Reviewer Comments	Required Revisions
U1 (E1-a)	The plan must describe changes in development that have occurred in hazard-prone areas and how they have increased or decreased the vulnerability of **each jurisdiction** since the previous plan was approved.	Chapter 1				
U2 (E2-a)	The plan must describe how it was revised due to a change in priorities for **each jurisdiction**.	Chapter 1				
U3 (E2-b)	The plan must describe the status of all hazard mitigation actions in the previous plan by identifying whether they have been completed or not, for each jurisdiction.	See Sections 5.01 thru 5.10				

Reviewer Notes

U1. This element is also linked to Element R10 in the risk assessment section. Make sure to discuss change in vulnerability (positive, negative, or none) to hazards from changes in development that has occurred over the last five years (planning cycle).

U2. How was the plan revised and was it due to a change in priority? Examples include new leadership, recent hazard events, input from the public, etc. We are usually referencing the goals and objectives, risk assessment, mitigation strategy, project prioritization method, or similar sections of the plan when looking for this information.

U3. Include information about completed, deleted, or deferred projects from the previous version of the plan.

U4 (E2-c)	The updated plan must explain how the jurisdiction(s) integrated information from the mitigation plan into other planning mechanisms, as a demonstration of progress in local hazard mitigation efforts. If information from the previous plan was not integrated into other planning mechanisms, this must be stated.	Chapter 1				

FEMA Guidance Notes:
Changes in development means recent development, potential development, or conditions that may affect the risks and vulnerabilities of the jurisdictions or shifts in the needs of the community. This can also include changes in local policies, standards, codes, regulations, land use regulations and other conditions. If no development changes affected the jurisdiction's overall vulnerability, this must be stated with the plan.
Description of Priorities: A description of priorities is defined by the participant(s). If the participant(s) has no change in priorities since the last approval of the mitigation plan, this must be stated. This can be a narrative or with detailed statements in appropriate sections of the plan.
Actions: For actions that are not complete, the plan must state whether the action is no longer relevant or will be included in the updated action plan.

Reviewer Notes
U4. This element is related to M5 and M7. To meet U4, discuss if any integration of information from the LMS into other planning mechanisms has occurred since the previous update, such as a recent update of the CEMP or in the jurisdictions' codes and ordinances. Think of integration within all participating jurisdictions.

Plan Adoption (FEMA Element F)		Location in Plan	Met	Not Met	Reviewer Comments	
A1 (F1-a)	The jurisdiction must provide documentation of plan adoption, usually a resolution by the governing body or other authority, to receive approval.	See Chapter 1 and Appendix G				
A2 (F2-a)	To receive approval, the participants must adopt the plan and provide documentation that the adoption has occurred.	Will be incorporated into Appendix G				

FEMA Guidance Notes:
Jurisdiction Adoption: **At least one** adoption resolution should be transmitted through the State to FEMA for the LMS Plan to be officially approved. The remaining resolutions may be transmitted as they are completed.
Documentation may be provided in the form of meeting minutes, resolutions, signed letter or any other method to demonstrate that official adoption by the participant has occurred.
Participants that submit their adoption documentation separately from the other multi-jurisdictional plan participants will not receive a new expiration date.
Participating jurisdictions that adopt the plan **more than one year** after Approvable Pending Adoption (APA) status has been issued must either: Validate that their information in the plan remains current with respect to both the risk assessment and their mitigation strategy OR Make the necessary updates before submitting the adoption resolution to FEMA.

Reviewer Notes
Ideally, all jurisidictions will formally adopt the Approved Pending Adoption (APA) plan before the current expiration date. This will depend on State review time and required revisions. Jurisdictions must adopt the LMS Plan within one year of APA status. Beyond one year, jurisdictions will need to validate the accurracy of their information within the Plan in order to receive FEMA approval.

High Hazard Potential Dams (FEMA Element G) **Eligibility Requirement for HHPD Grant Program*		Location in Plan	Met	Not Met	Reviewer Comments	Required Revisions
D1 (HHPD1-a)	The plan must describe how the local government worked with the local dam owners and/or the state dam safety agency (FDEP).	Okaloosa County has no High Hazard Potential Dam, however Dams are				
D2 (HHPD1-b)	The plan incorporates information shared by the state and/or local dam owners.	Okaloosa County has no High Hazard Potential Dam, however Dams are discussed in Chapters 4 & 5				
D3 (HHPD2-a)	The plan describes the **risks and vulnerabilities** to and from HHPDs (included in risk assessment).	Okaloosa County has no High Hazard Potential Dam, however Dams are discussed in Chapters 4 & 5				
D4 (HHPD2-b)	The plan documents the limitations and describes how to address deficiencies (in the risk assessment).	Okaloosa County has no High Hazard Potential Dam, however Dams are				
D5 (HHPD3-a)	The plan addresses how to reduce vulnerabilities to and from HHPDs as part of its own goals or with other long-term strategies. The plan does not need to include a goal specific to HHPDs alone.	Okaloosa County has no High Hazard Potential Dam, however Dams are discussed in				
D6 (HHPD3-b)	The plan links proposed actions to reduce long-term vulnerabilities that are consistent with its goals.	Okaloosa County has no High Hazard Potential Dam				
D7 (HHPD4-a)	The plan must describe **specific actions** to address HHPDs (project list).	Okaloosa County has no High Hazard Potential Dam,				
D8 (HHPD4-b)	The plan describes the criteria used to prioritize actions related to HHPDs.	Okaloosa County has no High Hazard Potential Dam, however Dams are discussed in Chapters 4 & 5				

Reviewer Notes
These elements are optional, but are an eligibility requirement of the Rehabilitation of High Hazard Potential Dam Grant Program. Consider including this information in your LMS Plan if you have **high** hazard or **significant** hazard dams in the planning area. If there are any gaps or limititations, this should be discussed as applicable.

D9 (HHPD4-c)	The plan identifies the position, office, department or agency responsible for implementing and administering the action to mitigate hazards to or from HHPDs.	Okaloosa County has no High Hazard Potential Dam, however Dams are discussed in				

FEMA Guidance Notes:

Note: Ensure sensitive and/or personally identifiable information is protected.

Information shared by the state and/or local dam owners includes: inundation maps, EAP, Floodplain Plans, dam breach modeling software, as well as more detailed studies.

Risk and vulnerabilities can include potential cascading impacts of storms, wildfires, etc. on dams that may affect upstream and downstream flooding; potential significant economic, environmental or social impacts, as well as multi-jurisdictional impacts, from a dam incident; location and size of the population at risk, and potential impacts to institutions and critical infrastructure/facilities/lifelines; and/or methodology and/or assumptions for risk data and inundation modeling.

Specific actions include rehabilitating/removing dams; adopting and enforcing land use ordinances in inundation zones; elevating structures in inundation zones; and/or adding flood protection, such as berms, floodwalls or floodproofing, in inundation zones.

MULTI-JURISDICTION SUMMARY SHEET

INSTRUCTIONS: For multi-jurisdictional plans, this Summary Spreadsheet lists each participating jurisdiction, and outlines whether they met each required Element. As jurisdictions adopt the approved plan, Column H will be filled out. This Summary Sheet does not imply that a jurisdiction-specific mitigation plan be developed for each jurisdiction, instead **simply fill in the names and type of each jurisdiction (columns B and C)** participating in the Plan.

MULTI-JURISDICTIONAL SUMMARY SHEET							
#	Jurisdiction Name	Type of Jurisdiction (school board, non-profit, special district, city, town, etc.)	Requirements Met (Y/N)				
			A. Planning Process	B. Hazard Identification & Risk Assessment	C. Mitigation Strategy	D. Plan Review, Evaluation & Implementation	E. Plan Adoption
1	City of Crestview	City	Y	Y	Y		
2	City of Fort Walton Beach	City	Y	Y	Y		
3	City of Destin	City	Y	Y	Y		
4	City of Laurel Hill	City	Y	Y	Y		
5	City of Mary Esther	City	Y	Y	Y		
6	City of Niceville	City	Y	Y	Y		
7	City of Valparaiso	City	Y	Y	Y		
8	Town of Shalimar	Town	Y	Y	Y		
9	Town of Cinco Bayou	Town	Y	Y	Y		
10	Okaloosa County	County	Y	Y	Y		

PROJECT LIST TEMPLATE

**Red column headings indicate fields necessary to meet FEMA requirements.*

Prioritized Project List												
Priority rank/ score	Name & Description of Project	Jurisdiction (Location of Project)	Agency Responsible for Implementation	Jurisdictions Directly Benefitting from Project	Hazards Mitigated	Mitigation Goals Achieved	Potential Funding Source(s)	Match (if applicable)	Estimated Costs	New, Deferred, Completed or Deleted	If Deleted or Deferred, Why?	Timeframe for Completion
SEE APPENDIX B												

510 FLOODPLAIN MANAGEMENT PLANNING CHECKLIST

Community: **Okaloosa County Florida**

Name of Plan: *2026 Okaloosa County Local Mitigation Strategy*

511.a Floodplain Management Planning (FMP)

Credit Points: *Enter the section or page number of the plan where each credited item can be found.*

CRS Step	Section/Page	Item Score	Step Total
1. Organize to prepare the plan. (max:15)			
a. Involvement of Office Responsible for Community Planning (4)	Chapter 1		
b. Planning committee of department staff (9)	Chapter 1		
c. Process formally created by the community's governing board (2)	Chapter 1		**0**
2. Involve the public. (max: 120)			
a. Planning process conducted through a planning committee (60)	Chapter 1 and Appendix C		
b. Public meetings held at the beginning of the planning process (15)	Chapter 1 and Appendix C		
c. Public meeting held on draft plan (15)	Chapter 1 and Appendix C		
d. Other public information activities to encourage input (Up to 30)	Chapter 1 and Appendix C		**0**
3. Coordinate with other agencies. (max: 35)			
a. Review of existing studies and plans [REQUIRED] (5)	Chapter 1		
b. Coordinating with communities and other agencies (Up to 30)	Chapter 1		**0**
4. Assess the hazard. (max: 35)			
a. Plan includes an assessment of the flood hazard [REQUIRED] with:			
(1) A map of known flood hazards (5)	Chapters 4 & 5		
(2) A description of known flood hazard (5)	Chapters 4 & 5		
(3) A discussion of past floods (5)	Chapters 4 & 5		
b. Plan includes assessment of less frequent floods (10)	Chapters 4 & 5		
c. Plan includes assessment of areas likely to flood (5)	Chapters 4 & 5		
d. The plan describes other natural hazards [REQUIRED FOR DMA] (5)	Chapters 4 & 5		**0**

5. Assess the problem. (max: 52)

a. Summary of each hazard identified in the hazard assessment and their community impact [REQUIRED] (2)	Chapter 5		
b. Description of the impact of the hazards on: (max: 25)			
(1) Life, safety, health, procedures for warning and evacuation (5)	Chapter 5		
(2) Public health including health hazards to floodwaters/mold (5)	Chapter 5		
(3) Critical facilities and infrastructure (5)	Chapter 5		
(4) The community's economy and tax base (5)	Chapter 5		
(5) Number and type of affected buildings (5)	Chapter 5		
c. Review of all damaged buildings/flood insurance claims (5)	Chapter 5		
d. Areas the provide natural floodplain functions (5)	Chapter 5		
e. Development/redevelopment/Population Trends (7)	Chapter 5		
f. Impact of future flooding conditions outline in Step 4, item c (8)	Chapter 5		**0**

6. Set goals. [REQUIRED] (2)			**0**

7. Review possible activities. (max: 35)

a. Preventive activities (5)	Chapter 3 & Chapter 5		
b. Floodplain Management Regulatory/current & future conditions (5)	Chapter 3 & Chapter 5		
c. Property protection activities (5)	Chapter 3 & Chapter 5		
d. Natural resource protection activities (5)	Chapter 3 & Chapter 5		
e. Emergency services activities (5)	Chapter 3 & Chapter 5		
f. Structural projects (5)	Chapter 3 & Chapter 5		
g. Public information activities (5)	Chapter 3 & Chapter 5		**0**

8. Draft an action plan. (max: 60)

a. Actions must be prioritized [REQUIRED]			
(1) Recommendations for activities from two of the six categories (10)	Chapter 5 & Appendix B		
(2) Recommendations for activities from three of the six categories (20)	Chapter 5 & Appendix B		
(3) Recommendations for activities from four of the six categories (30)	Chapter 5 & Appendix B		
(4) Recommendations for activities from five of the six categories (45)	Chapter 5 & Appendix B		
b. Post-disaster mitigation policies and procedures (10)	Chapter 5		
c. Action items for mitigation of other hazards (5)	Chapter 5 & Appendix B		**0**

9. Adopt the plan. (2)	Appendix G to be completed upon each		**0**

10. Implement, evaluate and revise. (max: 26)

a. Procedures to monitor and recommend revisions [REQUIRED] (2)	Chapter 3		
b. Same planning committee or successor committee that qualifies under Section 511.a.2 (a) does the evaluation (24)	Chapter 1 & Chapter 2		**0**

Maximum Credit for 510 FMP = 382

Plan Total:	**0**

Local Mitigation Plan Review Tool

DESCRIPTION:
The Local Mitigation Plan Review Tool demonstrates how the Local Mitigation Plan meets the regulation in 44 CFR §201.6 and offers States and FEMA Mitigation Planners an opportunity to provide feedback to the community. The Regulation Check list provides a summary of FEMA's evaluation of whether the Plan has addressed all requirements. The Plan Assessment identifies the plan's strengths as well as documents areas for future improvement. The Multi-jurisdiction Summary Sheet is an optional work sheet that can be used to document how each jurisdiction met the requirements of the each Element of the Plan (Planning Process; Hazard Identification and Risk Assessment; Mitigation Strategy; Plan Review, Evaluation, and Implementation; and Plan Adoption). The FEMA Mitigation Planner must reference this Local Mitigation Plan Review Guide when completing the Local Mitigation Plan Review Tool.

Jurisdiction:		**Title of Plan:**	
Local Point of Contact:		**Address:**	
Title:		**Email:**	
Agency:		**Phone Number:**	

State Reviewers:	
Date Received by FDEM:	
Date Plan Not Approved:	
Date Plan APA:	
Date Plan Approved:	

SECTION 1:

INSTRUCTIONS: The Regulation Checklist must be completed by FEMA. The purpose of the Checklist is to identify the location of relevant or applicable content in the Plan by Element/sub-element and to determine if each requirement has been 'Met' or 'Not Met.' The 'Required Revisions' summary at the bottom of each Element must be completed by FEMA to provide a clear explanation of the revisions that are required for plan approval. Required revisions must be explained for each plan sub-element that is 'Not Met.' Sub-elements should be referenced in each summary by using the appropriate numbers (A1, B3, etc.), where applicable. Requirements for each Element and sub-element are described in detail in this Plan Review Guide in Section 4, Regulation Checklist.

Plan updates must include information from the current planning process. If some elements of the plan do not require an update, due to minimal or no changes between updates, the plan must document the reasons for that. Multi-jurisdictional elements must cover information unique to all participating jurisdictions.

Element A Requirements		Location in Plan	Met/Not Met
ELEMENT A. PLANNING PROCESS			
A1. Does the plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement 44 CFR § 201.6(c)(1))			
A1-a.	Does the plan document how the plan was prepared, including the schedule or time frame and activities that made up the plan's development, as well as who was involved?	Section 1.02	
A1-b.	Does the plan list the jurisdiction(s) participating in the plan that seek approval, and describe how they participated in the planning process?		
A2. Does the plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development as well as businesses, academia, and other private and non-profit interests to be involved in the planning process? (Requirement 44 CFR § 201.6(b)(2)			
A2-a	Does the plan identify all stakeholders involved or given an opportunity to be involved in the planning process, and how each stakeholder was presented with this opportunity?	section 1.02.02 see also Appendix C	

A2. Does the plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development as well as businesses, academia, and other private and non-profit interests to be involved in the planning process? (Requirement 44 CFR § 201.6(b)(2)			
A3-a.	Does the plan document how the public was given the opportunity to be involved in the planning process and how their feedback was included in the plan?	Section 1.02.03	
A2. Does the plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development as well as businesses, academia, and other private and non-profit interests to be involved in the planning process? (Requirement 44 CFR § 201.6(b)(2)			
A4-a.	Does the plan document what existing plans, studies, reports and technical information were reviewed for the development of the plan, as well as how they were incorporated into the document?		
Required Revision:			

Element B Requirements		Location in Plan	Met/Not Met
ELEMENT B. RISK ASSESSMENT			
B1. Does the plan include a description of the type, location, and extent of all natural hazards that can affect the jurisdiction? Does the plan also include information on previous occurrences of hazard events and on the probability of future hazard events? (Requirement 44 CFR § 201.6(c)(2)(i))			
B1-a.	Does the plan describe all natural hazards that can affect the jurisdiction(s) in the planning area, and does it provide the rationale if omitting any natural hazards that are commonly recognized to affect the jurisdiction(s) in the planning area?		
B1-b.	Does the plan include information on the location of each identified hazard?	see Chapter 4 and Sections 5.01 thru 5.10	
B1-c.	Does the plan describe the extent for each identified hazard?	see Chapter 4 and Sections 5.01 thru 5.10	
B1-d.	Does the plan include the history of previous hazard events for each identified hazard?	see Chapter 4 and Sections 5.01 thru 5.10 as well as Appendix E &	
B1-e.	Does the plan include the probability of future events for each identified hazard? Does the plan describe the effects of future conditions, including climate change (e.g., long-term weather patterns, average temperature and sea levels), on the type, location and range of anticipated intensities of identified hazards?	see Chapter 4 and Sections 5.01 thru 5.10 as well as Appendix E & F	
B1-f.	For participating jurisdictions in a multi-jurisdictional plan, does the plan describe any hazards that are unique to and/or vary from those affecting the overall planning area?	see Chapter 4 and Sections 5.01 thru 5.10 as well as Appendix E & F	

B2. Does the plan include a summary of the jurisdiction's vulnerability and the impacts on the community from the identified hazards? Does this summary also address NFIP-insured structures that have been repetitively damaged by floods? (Requirement 44 CFR § 201.6(c)(2)(ii))			
B2-a.	Does the plan provide an overall summary of each jurisdiction's vulnerability to the identified hazards?		
B2-b.	For each participating jurisdiction, does the plan describe the potential impacts of each of the identified hazards on each participating jurisdiction?	see Chapter 4 and Sections 5.01 thru 5.10 as well as Appendix E & F	
B2-c.	Does the plan address NFIP-insured structures within each jurisdiction that have been repetitively damaged by floods?	Sections 5.01 thru 5.10	
Required Revision:			

Element C Requirements		Location in Plan	Met/Not Met
ELEMENT C. MITIGATION STRATEGY			
C1. Does the plan document each participant's existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement 44 CFR § 201.6(c)(3))			
C1-a.	Does the plan describe how the existing capabilities of each participant are available to support the mitigation strategy? Does this include a discussion of the existing building codes and land use and development ordinances or regulations?	See Sections 5.01 thru 5.10	
C1-b.	Does the plan describe each participant's ability to expand and improve the identified capabilities to achieve mitigation?	#VALUE!	
C2. Does the plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement 44 CFR § 201.6(c)(3)(ii))			
C2-a	Does the plan contain a narrative description or a table/list of their participation activities?	See Sections 5.01 thru 5.10	
C3. Does the plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement 44 CFR § 201.6(c)(3)(i))			
C3-a.	Does the plan include goals to reduce the risk from the hazards identified in the plan?	See Chapter 3	

C4. Does the plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? (Requirement 44 CFR § 201.6(c)(3)(ii))			
C4-a.	Does the plan include an analysis of a comprehensive range of actions/projects that each jurisdiction considered to reduce the impacts of hazards identified in the risk assessment?	See Sections 5.01 thru 5.10	
C4-b.	Does the plan include one or more action(s) per jurisdiction for each of the hazards as identified within the plan's risk assessment?	See mitigation actions in Sections 5.01 thru 5.10	
C5. Does the plan contain an action plan that describes how the actions identified will be prioritized (including a cost-benefit review), implemented, and administered by each jurisdiction? (Requirement 44 CFR § 201.6(c)(3)(iv)); (Requirement §201.6(c)(3)(iii))			
C5-a.	Does the plan describe the criteria used for prioritizing actions?	See Chapter 3	
C5-b.	Does the plan provide the position, office, department or agency responsible for implementing/administrating the identified mitigation actions, as well as potential funding sources and expected time frame?	See Appendix B	
Required Revision:			

Element D Requirements		Location in Plan	Met/Not Met
ELEMENT D. PLAN MAINTENANCE			
D1. Is there discussion of how each community will continue public participation in the plan			
D1-a.	Does the plan describe how communities will continue to seek future public participation after the plan has been approved?	See Chapters 1 & 2	
D2. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a five-year cycle)? (Requirement 44 CFR § 201.6(c)(4)(i))			
D2-a.	Does the plan describe the process that will be followed to track the progress/status of the mitigation actions identified within the Mitigation Strategy, along with when this process will occur and who will be responsible for the process?	See Chapters 1 & 5	
D2-b.	Does the plan describe the process that will be followed to evaluate the plan for effectiveness? This process must identify the criteria that will be used to evaluate the information in the plan, along with when this process will occur and who will be responsible.	See Chapters 1 & 5	
D2-c.	Does the plan describe the process that will be followed to update the plan, along with when this process will occur and who will be responsible for the process?	See Chapters 1 & 5	

D3. Does the plan describe a process by which each community will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement 44 CFR § 201.6(c)(4)(ii))			
D3-a.	Does the plan describe the process the community will follow to integrate the ideas, information and strategy of the mitigation plan into other planning mechanisms?	See Chapter 1	
D3-b.	Does the plan identify the planning mechanisms for each plan participant into which the ideas, information and strategy from the mitigation plan may be integrated?	See Chapter 1	
D3-c.	For multi-jurisdictional plans, does the plan describe each participant's individual process for integrating information from the mitigation strategy into their identified planning mechanisms?	See Chapters 1 & 5	
Required Revision:			

Element E Requirements		Location in Plan	Met/Not Met
ELEMENT E. PLAN UPDATE			
E1. Was the plan revised to reflect changes in development? (Requirement 44 CFR § 201.6(d)(3))			
E1-a.	Does the plan describe the changes in development that have occurred in hazard-prone areas that have increased or decreased each community's vulnerability since the previous plan was approved?	Chapter 1	
D2. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a five-year cycle)? (Requirement 44 CFR § 201.6(c)(4)(i))			
E2-a.	Does the plan describe how it was revised due to changes in community priorities?	Chapter 1	
E2-b.	Does the plan include a status update for all mitigation actions identified in the previous mitigation plan?	See Sections 5.01 thru 5.10	
E2-c.	Does the plan describe how jurisdictions integrated the mitigation plan, when appropriate, into other planning mechanisms?	Chapter 1	
Required Revision:			

Element F Requirements		Location in Plan	Met/Not Met
ELEMENT F. PLAN ADOPTION			
F1. For single-jurisdictional plans, has the governing body of the jurisdiction formally adopted the plan to be eligible for certain FEMA assistance? (Requirement 44 CFR § 201.6(c)(5))			
F1-a.	Does the participant include documentation of adoption?		
F2. For multi-jurisdictional plans, has the governing body of each jurisdiction officially adopted the plan to be eligible for certain FEMA assistance? (Requirement 44 CFR § 201.6(c)(5))			
F2-a.	Did each participant adopt the plan and provide documentation of that adoption?		
Required Revision:			
The plan must include documentation of plan adoption, usually a resolution by the governing body or other authority. If adopted after FEMA review, adoption must take place within one calendar year of receipt of FEMA's "Approvable Pending Adoption." Every jurisdiction that is included in the plan must have its governing body adopt the plan, even when a regional agency has the authority to prepare such plans. Per the 2022 Policy Guide, participating jurisdictions that adopt the plan more than one year after Approvable Pending Adoption (APA) status has been issued must either: Validate that their information in the plan remains current with respect to both the risk assessment and their mitigation strategy OR Make the necessary updates before submitting the adoption resolution to FEMA. (For additional information, please see the "Local Mitigation Planning Policy Guide", effective April 19, 2023, Element F: Plan Adoption, pages 31-32).			

Element G: High Hazard Potential Dams (Optional)		Location in Plan	Met/Not Met
HHPD REQUIREMENTS			
HHPD1. Did the plan describe the incorporation of existing plans, studies, reports and technical information for HHPDs?			
HHPD1-a.	Does the plan describe how the local government worked with local dam owners and/or the state dam safety agency?	Okaloosa County has no High Hazard Potential Dam, however Dams are discussed in Chapters 4 & 5	
HHPD1-b.	Does the plan incorporate information shared by the state and/or local dam owners?	Okaloosa County has no High Hazard Potential Dam, however Dams are discussed in Chapters 4 & 5	
A2. Does the plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development as well as businesses, academia, and other private and non-profit interests to be involved in the planning process? (Requirement 44 CFR § 201.6(b)(2)			
HHPD2-a.	Does the plan describe the risks and vulnerabilities to and from HHPDs?	Okaloosa County has no High Hazard Potential Dam, however Dams are discussed in Chapters 4 & 5	
HHPD2-b.	Does the plan document the limitations and describe how to address deficiencies?	Okaloosa County has no High Hazard Potential Dam, however Dams are discussed in Chapters 4 & 5	
HHPD3. Did the plan include mitigation goals to reduce long-term vulnerabilities from HHPDs?			
HHPD3-a.	Does the plan address how to reduce vulnerabilities to and from HHPDs as part of its own goals or with other long-term strategies?	Okaloosa County has no High Hazard Potential Dam, however Dams are discussed in Chapters 4 & 5	
HHPD3-b.	Does the plan link proposed actions to reducing long-term vulnerabilities that are consistent with its goals?	Okaloosa County has no High Hazard Potential Dam, however Dams are	

HHPD4-a. Did the plan include actions that address HHPDs and prioritize mitigation actions to reduce vulnerabilities from HHPDs?			
HHPD4-a.	Does the plan describe specific actions to address HHPDs?	Okaloosa County has no High Hazard Potential Dam, however Dams are discussed in Chapters 4 & 5	
HHPD4-b.	Does the plan describe the criteria used to prioritize actions related to HHPDs?	Okaloosa County has no High Hazard Potential Dam, however Dams are discussed in Chapters 4 & 5	
HHPD4-c.	Does the plan identify the position, office, department or agency responsible for implementing and administering the action to mitigate hazards to or from HHPDs?	Okaloosa County has no High Hazard Potential Dam, however Dams are discussed in Chapters 4 & 5	
Required Revision:			

Element H: Additional State Requirements		Location in Plan	Met/Not Met
Element H Requirements			
This space is for the State to include additional requirements			
F1.			
F2.			
Required Revision:			

SECTION 2:

INSTRUCTIONS: The purpose of the Plan Assessment is to offer the local community more comprehensive feedback to the community on the quality and utility of the plan in a narrative format. The audience for the Plan Assessment is not only the plan developer/local community planner, but also elected officials, local departments and agencies, and others involved in implementing the Local Mitigation Plan. The Plan Assessment must be completed by FEMA. The Assessment is an opportunity for FEMA to provide feedback and information to the community on: 1) suggested improvements to the Plan; 2) specific sections in the Plan where the community has gone above and beyond minimum requirements; 3) recommendations for plan implementation; and 4) ongoing partnership(s) and information on other FEMA programs, specifically RiskMAP and Hazard Mitigation Assistance programs. The Plan Assessment is divided into two sections:

1. Plan Strengths and Opportunities for Improvement
2. Resources for Implementing Your Approved Plan

Plan Strengths and Opportunities for Improvement is organized according to the plan Elements listed in the Regulation Checklist. Each Element includes a series of italicized bulleted items that are suggested topics for consideration while evaluating plans, but it is not intended to be a comprehensive list. FEMA Mitigation Planners are not required to answer each bullet item, and should use them as a guide to paraphrase their own written assessment (2-3 sentences) of each Element.

The Plan Assessment must not reiterate the required revisions from the Regulation Checklist or be regulatory in nature, and should be open-ended and to provide the community with suggestions for improvements or recommended revisions. The recommended revisions are suggestions for improvement and are not required to be made for the Plan to meet Federal regulatory requirements. The italicized text should be deleted once FEMA has added comments regarding strengths of the plan and potential improvements for future plan revisions. It is recommended that the Plan Assessment be a short synopsis of the overall strengths and weaknesses of the Plan (no longer than two pages), rather than a complete recap section by section.

Resources for Implementing Your Approved Plan provides a place for FEMA to offer information, data sources and general suggestions on the overall plan implementation and maintenance process. Information on other possible sources of assistance including, but not limited to, existing publications, grant funding or training opportunities, can be provided. States may add state and local resources, if available.

A. Plan Strengths and Opportunities for Improvement

This section provides a discussion of the strengths of the plan document and identifies areas where these could be improved beyond minimum requirements.

Element A: Planning Process

Strengths:

Opportunities for Improvement:

Element B: Hazard Identification & Risk Assessment

Strengths:

Opportunities for Improvement:

Element C: Mitigation Strategy

Strengths:

Opportunities for Improvement:

Element D: Plan Maintenance

Strengths:

Opportunities for Improvement:

Element E: Plan Update

Strengths:

Opportunities for Improvement:

Element G: HHPD Requirements (Optional)

Strengths:

Opportunities for Improvement:

Element H: Additional State Requirements (Optional)

Strengths:

Opportunities for Improvement:

B. Resources for Implementing Your Approved Plan

Section 2 B: Resources for Implementing Your Approved Plan

The State of Florida Enhanced Hazard Mitigation Plan lists a number of funding and educational/training resources available to communities (http://www.floridadisaster.org/Mitigation/State/Index.htm). We list a number of federal and state resources here:

- The FEMA Hazard Mitigation Assistance provides funding opportunities for pre- and post-disaster mitigation through:
  - The **Pre-Disaster Mitigation (PDM) Grant Program** which provides funds on an annual basis for mitigation planning and mitigation project implementation prior to a disaster. For additional information on the PDM visit (www.fema.gov/pre-disaster-mitigation-grant-program).
- The **Flood Mitigation Assistance (FMA) Program** which provides funds on an annual basis so that communities can take measures to reduce or eliminate risk of flood damage to buildings insured under the National Flood Insurance Program (NFIP). For additional information on the FMA visit https://floridadisaster.org/dem/mitigation/flood-mitigation-assistance-program/
- Additional tools regarding flood insurance, through the **National Flood Insurance Program (NFIP)** administered by FEMA is available at (https://www.floodsmart.gov/floodsmart/pages/partner/tools_resources.jsp)
  Technical assistance to retrieve flood hazard information specific to your planning area is available through the **FEMA Flood Map Service Center** (http://msc.fema.gov/portal).
- For assistance after a Presidential disaster declaration, consider the **Hazard Mitigation Grant Program (HMGP)** which assists in implementing long-term hazard mitigation measures in accordance with State, Tribal and local priorities. The HMGP is offered to both public and individual assistance. For additional information on the HMGP visit (http://www.floridadisaster.org/Mitigation/Hazard/)
- For assistance during the immediate repair phase following disaster events consider Hazard Mitigation Funding under the **Public Assistance (PA) Grant Program** which funds cost-effective mitigation efforts in repairing disaster-damaged public facilities. Additional information may be found at (https://www.fema.gov/public-assistance-local-state-tribal-and-non-profit)
- For the mitigation, management, and control of fires on publicly or private owned forests or grasslands consider the **Fire Management Assistance Grant (FMAG) Program** which is initiated at the request for assistance to the FEMA Regional Director at the time a "threat of major disaster" exists. The FMAG provides a 75 percent Federal cost share with the State paying the remaining 25 percent of costs. Additional information on the FMAG may be found here (https://www.fema.gov/fire-management-assistance-grant-program)
    - For assistance with how to better integrate the LMS with other plans, see FEMA's Plan Integration document http://www.fema.gov/media-library-data/1440522008134-ddb097cc285bf741986b48fdcef31c6e/R3_Plan_Integration_0812_508.pdf
- State resources are additionally available through
  - **Hurricane Loss Mitigation Program (HLMP)** through the Florida Division of Emergency Management which receives funding from the Florida Hurricane Catastrophe Trust Fund. A significant portion of the funding 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. For additional information on the RCMP visit https://floridadisaster.org/dem/mitigation/hurricane-loss-mitigation-program/
  - Any smaller communities may be eligible for the **Florida Small Cities Community Development Block Grant**. This program provides federal funding for low income housing rehabilitation and community development. For additional information on this program visit (http://www.floridajobs.org/community-planning-and-development/assistance-for-governments-and-organizations/florida-small-cities-community-development-block-grant-program)
  - **Fire Wise Communities** provides information and links to resources for wildfire mitigation (www.firewise.org). The program provides resources on defensible space, construction tools/materials, and preparation for wildfire season.

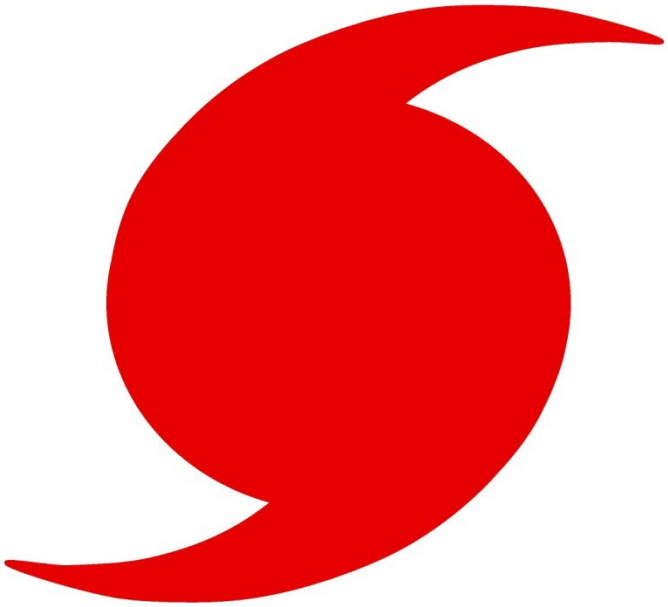
This Hazard Review Checklist will be filled out by the FDEM State Reviewers during their review.

HAZARD REVIEW CHECKLIST

Hazard Name	Description of Hazard	Location	Extent	Previous Occurrences (Updated)	Probability	Impacts	Future Land Use/Population Changes	Overall Vulnerability	Jurisdictional Risk Assessment *(Y/N)*
SEE Chapter 4									

Appendix E

Okaloosa County Vulnerability Assessment and Adaptation Plan



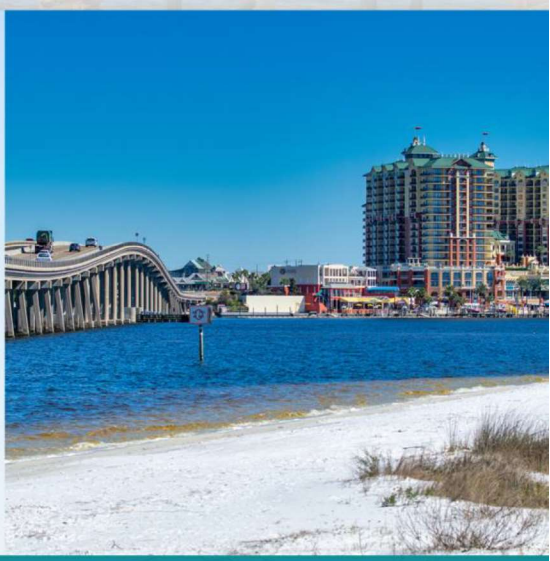
Okaloosa County

Vulnerability Assessment

PREPARED FOR







Jacobs

AUGUST 2025

Florida Department of Environmental Protection

Resilient Florida Program

Vulnerability Assessment Report

Okaloosa County Vulnerability Assessment

DEP Agreement No. 22PLN28

August 2025

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Executive Summary

This Vulnerability Assessment (VA) for Okaloosa County, Florida (hereinafter, "the County") evaluates the flood-related vulnerability of the County and identifies potential impacts to critical community assets and operations associated with selected flood hazards. The goals and objectives of this VA, as developed by the project team consisting of County staff and Jacobs, are to:

- Identify flood-related vulnerabilities to critical assets in the County in the present day and for future conditions in 2040 and 2070.
- Enhance awareness of climate risks to support investment in resilience within the County.
- Strengthen County operational continuity and local collaboration with key stakeholders.
- Facilitate compliance with the requirements of the Resilient Florida Grant Program.
- Provide a document that can support development of an adaptation plan that will be used as a roadmap to support capital investment and policy decisions.

This assessment encompassed the entirety of the County and incorporated assets from the Cities of Crestview, Fort Walton Beach, Laurel Hill, Mary Esther, Niceville, and Valparaiso, and the Towns of Cinco Bayou and Shalimar (Figure ES-1).

Summary of Hazards

This VA reviews primarily two types of flood hazards: tidal flooding and the 1% annual chance flood event (commonly known as the 100-year flood), for present-day and future flood scenarios including sea level rise (SLR). Specifically, Jacobs analyzed the following flood hazard scenarios:

- Scenario 1: Current Tidal Flooding (mean higher high water + 2 feet)
- Scenario 2: Future Tidal Flooding Under Intermediate-Low SLR in 2040
- Scenario 3: Future Tidal Flooding Under Intermediate-High SLR in 2040
- Scenario 4: Future Tidal Flooding Under Intermediate-Low SLR in 2070
- Scenario 5: Future Tidal Flooding Under Intermediate-High SLR in 2070
- Scenario 6: Current 100-Year Flood (Federal Emergency Management Agency effective date 2021)
- Scenario 7: Future 100-Year Flood Under Intermediate-Low SLR in 2040
- Scenario 8: Future 100-Year Flood Under Intermediate-High SLR in 2040
- Scenario 9: Future 100-Year Flood Under Intermediate-Low SLR in 2070
- Scenario 10: Future 100-Year Flood Under Intermediate-High SLR in 2070

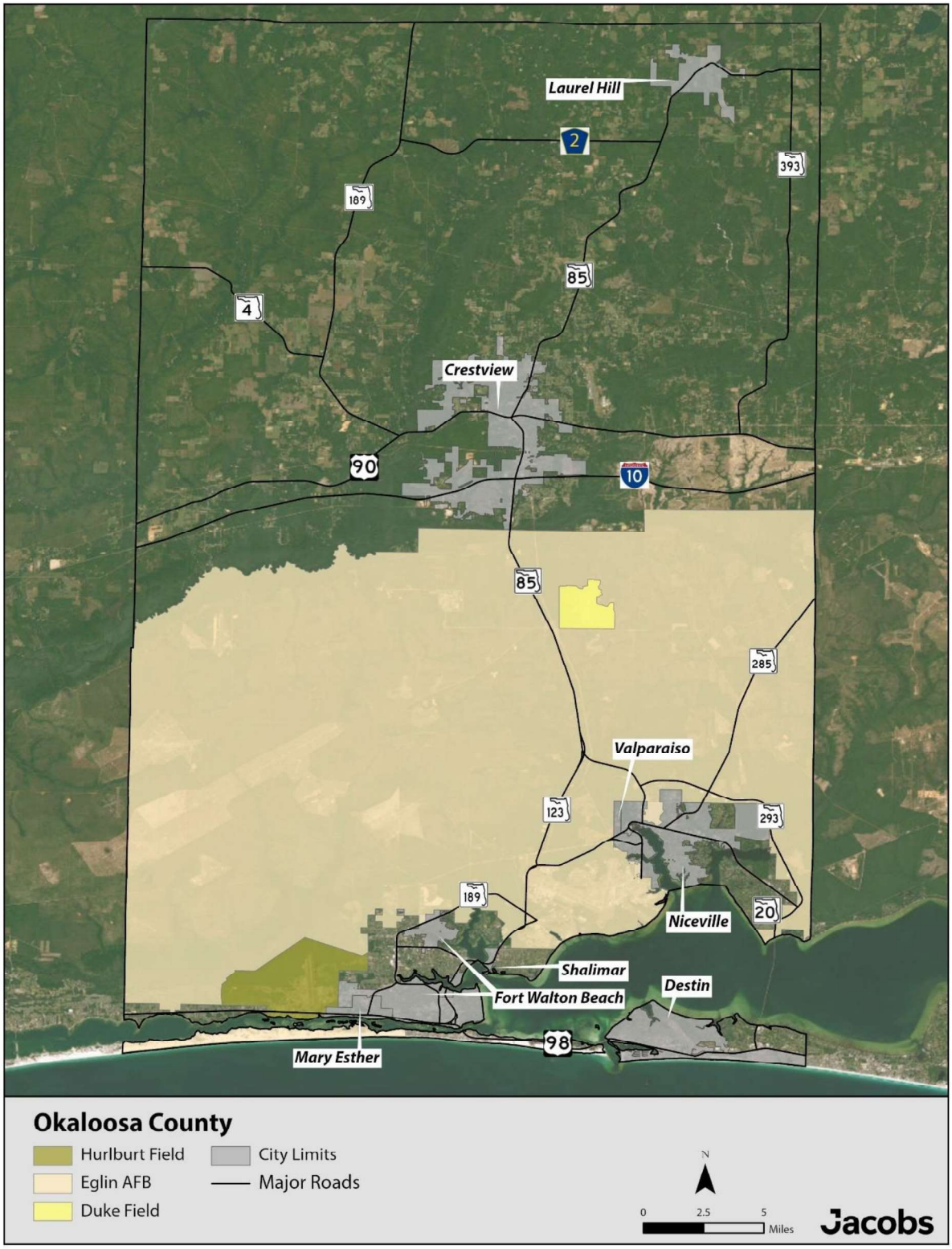
Summary of Assets

In line with State requirements, this VA evaluated more than 130,000 assets across four asset categories:

- **Critical Community and Emergency Facilities**. This category includes community facilities, such as community centers and government buildings, public safety facilities, such as law enforcement and fire departments, and medical facilities, such as hospitals and other healthcare centers and facilities.
- **Critical Infrastructure**. Composed of the systems that support everyday living, this category consists of communications facilities (post offices and cell towers), electric utility infrastructure, water utility assets, wastewater utility assets, stormwater utility assets, and solid and hazardous waste facilities.
- **Transportation and Evacuation Routes**. This asset class includes transportation infrastructure facilities, such as airports and marinas, and roads, bridges and railroads.

- **Natural, Cultural, and Historical Resources**. Natural systems and lands, including conservation lands and wetlands, shorelines, and parks comprise this asset class.

Figure ES-1. Vulnerability Assessment Project Study Area



Vulnerability Assessment Process

This VA follows a standardized, step-by-step approach to evaluate vulnerability using a numerical score, as described in the Florida Department of Environmental Protection's *Standardized Vulnerability Assessment: Scope of Work Guidance* (FDEP 2022). This guidance defines the following key terms used in this analysis:

- **Exposure:** Evaluate proximity of facilities and assets to identify hazards and threats currently and over select future time horizons.
- **Sensitivity:** Evaluate the degree to which a facility or asset would be impaired by hazard and threat exposure.
- **Vulnerability:** The combination of exposure and sensitivity that describes whether an asset will be affected by a hazard to and what degree.
- **Risk:** The combination of vulnerability, asset criticality (proxy for consequence), and likelihood that indicates the potential for flood impacts.

Exposure and sensitivity are then incorporated into the vulnerability equation, given as follows:

Vulnerability = Exposure + Sensitivity

Asset exposure and sensitivity were determined for each flood scenario in a spreadsheet model. Exposure and sensitivity scores were then calculated for each hazard—the higher the score, the more vulnerable the asset is to the hazard or the greater the degree of impairment by the hazard.

Following the VA, Jacobs conducted a risk analysis to incorporate asset criticality (based on the relevance of the asset to public health and safety and County operations) and hazard likelihood of occurrence, which supports asset prioritization for adaptation. Vulnerability, criticality (proxy for consequence), and likelihood were incorporated into the following risk equation:

Risk = Vulnerability x Criticality x Likelihood

Results

Many of the communities in the County are exposed to both present-day and/or future flood hazards. To better understand asset and community flood exposure and related vulnerabilities, Jacobs divided the County into two areas: south and north (as split by Eglin Air Force Base [AFB]).

Parcel Exposure

Jacobs evaluated the flood exposure of all parcels within the County. The parcel exposure analysis revealed that approximately 11% of County parcels are exposed to flooding; this is expected to increase slightly in the 2040s and 2070s.

- In the north part of County, flood-exposed areas are primarily agricultural and conservation lands, with some industrial and commercial parcels included.
- In the south part of County, parcel flood exposure is concentrated in residential and commercial parcels. Flood exposure occurs along coastline, including along bayous and waterways.

Asset Vulnerability

Vulnerable assets are primarily concentrated in the southern portion of the County (communities and areas south of Eglin AFB) because of the presence of coastal flood hazards that are expected to increase in

magnitude during the coming decades. However, there are also vulnerable assets in the portion of the County that lies north of Eglin AFB.

North County. In the north part of the County, vulnerable assets consist of state roads (SR-4, SR-8, Interstate 10 (I-10), and CR-393), County-owned roads in Crestview, Holt, and Baker, three wastewater lift stations, and multiple parks and conservation lands.

South County. In the south part of the County, Elliott Point Elementary School and Okaloosa Island Fire Station 4 are vulnerable to the current 100-year flood today and in the 2070s, respectively. Critical evacuation routes, including U.S. Highway 98 (US-98) and Eglin Parkway, are highly vulnerable to flooding. A little than less than half of the wastewater lift stations in the region display varying degrees of flood vulnerability while many of the region's parks and shorelines are extremely vulnerable to flood hazards and their associated impacts.

Focus Areas

Focus areas for adaptation include Okaloosa Island, southern Mary Esther, southern and eastern Fort Walton Beach, southwestern Valparaiso, southern Niceville, the western shores of Bluewater Bay, Crestview bordering the Yellow River, and critical evacuation routes (including SR-85, SR-4, SR-8, I-10, US-98, and CR-393).

Asset Risk Analysis Results

The majority of assets (89.2%) within the County have no risk of flooding because of the lack of flood exposure. Approximately 8.9%, 1.1%, and 0.8% have low, moderate, and high risk of flooding, respectively. Assets with a relatively high flood risk include wastewater lift stations, select critical roadways (including Miracle Strip Parkway and SR-85) and evacuation routes, wastewater lines, and a water storage tank. Table ES-1 lists the 10 highest-risk, high-criticality assets.

Table ES-1. Assets with the Highest Risk

#	Asset Type	Asset Name	Criticality	Risk Level
1	Wastewater Facilities and Lift Stations	LS-061	High	High
2	Wastewater Facilities and Lift Stations	LS-592	High	High
3	Wastewater Facilities and Lift Stations	LS-562	High	High
4	Wastewater Facilities and Lift Stations	LS-039	High	High
5	Water Utility Conveyances	East Island Tank	High	High
6	Roadways	Miracle Strip Parkway	High	High
7	Wastewater Facilities and Lift Stations	LS-570	High	High
8	Wastewater Facilities and Lift Stations	LS-204	High	High
9	LS-114	LS-114	High	High
10	Wastewater Facilities and Lift Stations	LS-107	High	High

Notes: The remainder are bridges, gravity mains, retention ponds, roads, wastewater treatment facilities and lift stations, and water utility conveyances.

In addition to identifying the need for flood mitigation at these high-risk assets, other findings from the risk analysis include:

- **Flood risk reduction efforts should be spread across both the northern and southern areas of the County.** Critical evacuation routes, such as I-10 and CR-393, experience flood impacts in various stretches that can significantly inhibit community connectivity and evacuation.
- **Major critical evacuation routes pose the highest risk to public safety.** US-98/Miracle Strip Parkway, portions of Eglin Parkway, and portions of I-10 and CR-393 experience flood impacts.
- **Local roads in coastal neighborhoods exposed to flooding have a high risk of road damage and disruption of service.** Select roads in coastal neighborhoods in Cinco Bayou, Fort Walton Beach, Mary Esther, Niceville, Shalimar, Valparaiso, and areas of unincorporated Okaloosa County, such as Bluewater Bay, have a high risk resulting from flooding.
- **Coastal water distribution and wastewater collection pipelines/systems exposed to flooding and SLR result in a moderate risk of system damage or disruption of service.** The collective flood impacts on coastal water and wastewater lines can impact drinking water service reliability if system is damaged and may increase the amount of wastewater entering lift stations and wastewater treatment plants via infiltration and inflow, compromising infrastructure and causing sanitary sewer overflows.
- **Many privately owned facilities that generate solid waste are exposed to flooding, resulting in a moderate risk of transportation of pollutants and health and safety impacts.** The combination of potential contamination of floodwaters from solid waste facilities and their high vulnerability to coastal flood hazards renders these facilities a potential source of public health impacts during floods.
- **Regional stormwater systems exposed to flooding are at risk of impacts to system performance.** Retention pond storage may be affected by tidal flood events, resulting in decreased storage or backflow into the pond or urban drainage systems.

These findings will inform the development, priority, and implementation of adaptation actions, which will be defined within the adaptation plan.

Next Steps

Using the results of this VA, Jacobs will commence development of the flood mitigation actions documented in an adaptation plan. This plan will incorporate the identified focus areas and adaptation actions for assets having a high risk of flooding. The adaptation plan will identify physical infrastructure projects and proposed policies and ordinances that can enhance flood resilience of the County and municipal infrastructure.

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Acronyms and Abbreviations

AEP	annual exceedance probability
AFB	air force base
BFE	base flood elevation
CHELCO	Choctawhatchee Electric Cooperative
CUDEM	Continuously Updated Digital Elevation Model
F.S.	Florida Statutes
FDEP	Florida Department of Environmental Protection
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
GIS	geographic information system
LiDAR	light detection and ranging
LS	lift station
MHHW	mean higher high water
MIRR	military installation resilience review
MSL	mean sea level
NAVD	North Atlantic Vertical Datum
NOAA	National Oceanic and Atmospheric Administration
SERDP	Strategic Environmental Research and Development Program
SLR	sea level rise
VA	Vulnerability Assessment

1. Introduction

This Vulnerability Assessment (VA) evaluates flood hazards and associated vulnerabilities for Okaloosa County (hereinafter, "the County") and the critical assets and facilities within the study area, which is the Okaloosa County boundaries. Section 1 details the project purpose, background, and means and methods used for conducting the VA.

1.1 Purpose

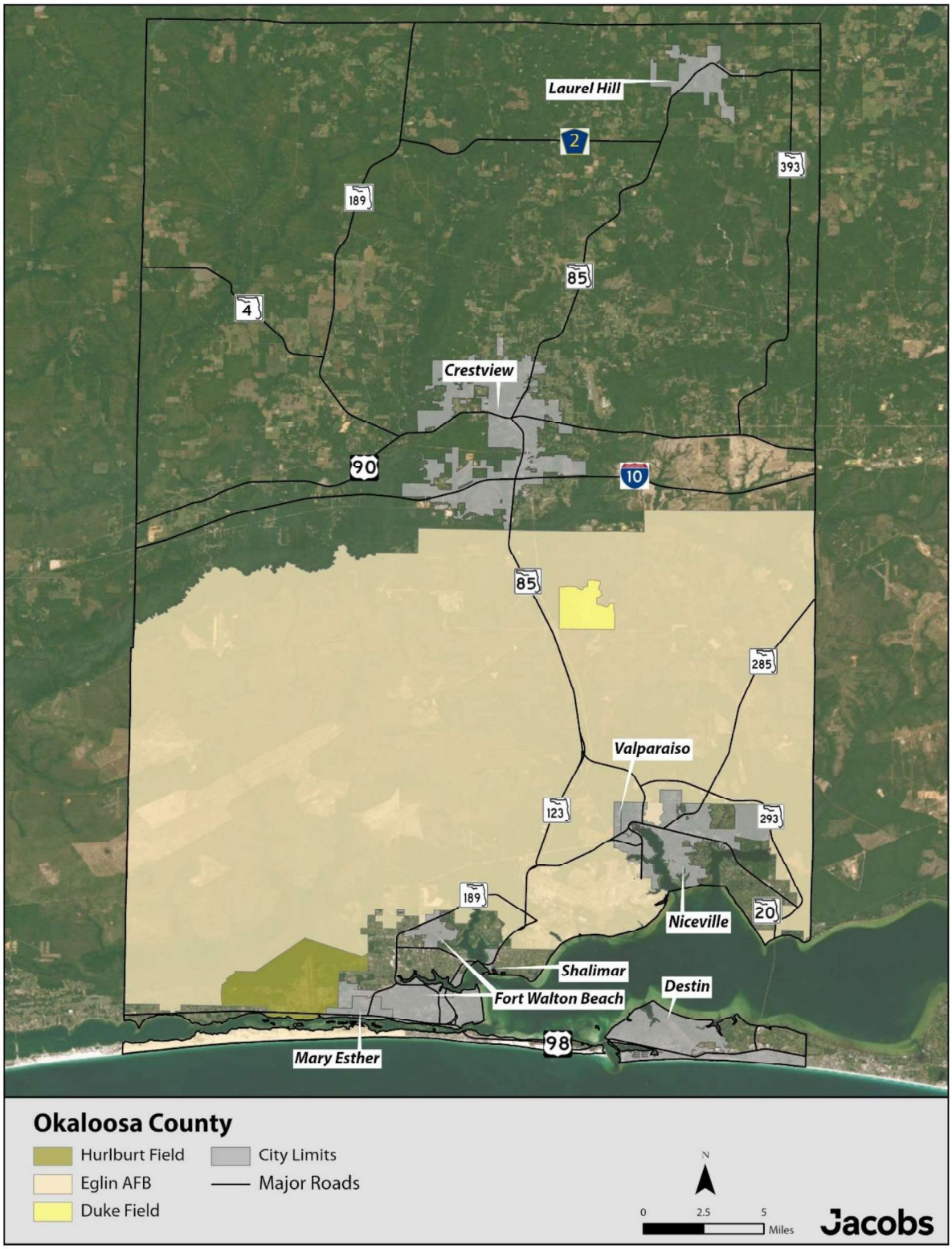
On May 12, 2021, Governor Ron DeSantis signed Senate Bill 1954 into law, establishing the Resilient Florida Program within the Florida Department of Environmental Protection (FDEP). The Resilient Florida Program consists of a variety of grant funding opportunities that can be used by communities to analyze and plan for vulnerabilities, as well as implementation of projects for adaptation and mitigation (FDEP n.d.). In 2023, the County received funding from FDEP's Resilient Florida Program to conduct a state-compliant VA and develop an adaptation plan for Okaloosa County, pursuant to §380.093, Florida Statutes (F.S.) (2024). The County then contracted with Jacobs to conduct the VA, which required coordination with municipalities within the County. Additionally, Jacobs is assisting with adaptation planning by identifying near-term adaptation actions (projects) to help guide capital planning efforts with respective government agencies. Projects submitted by counties and municipalities for a Statewide Flooding and Sea Level Rise Resilience Plan grant must be identified in a VA and meet the standards identified in Section 380.093, F.S. (FDEP 2023a).

1.2 Background

Located in Northwest Florida, the County spans from the Gulf Coast northward to the Alabama state line and is bordered by Santa Rosa County on the west and Walton County on the east (Figure 1-1). The County is urban-populated on the south end and around the Crestview area in the central part of the County. The rest of the County is either rural or part of the Eglin Air Force Base (AFB) reservation. The economic drivers for the County are primarily the military and tourism. Smaller economic drivers that are more prevalent in the rural areas include agricultural activities, such as farming and timberland/forestry.

The military and tourism industries are critical to the economy in Okaloosa County. Over the years as military operations have increased and the tourism industry expanded, the population has continued to grow. The increase in population drives further development of the urban landscape in Okaloosa County in the south and central areas of the County. To support these critical industries and make the County a desirable place to live, the County government has developed and maintained strong working relationships with the various industries. The County continues to strategically make government policy decisions and investment in the community to continue improving the quality of life and provide economic opportunities for businesses to grow. The completion of this VA alights with the County's mission to support these critical industries and the citizens as it provides an opportunity to identify areas within the County that are vulnerable to flooding and to assist the County with understanding areas that may need upgrades and improvements to not only address flooding issues but also to minimize community disruptions that occur because of flooding.

Figure 1-1. Okaloosa County/Study Area



1.3 Scope and Methodology

The areas assessed within the VA include all of the County except for the City of Destin (which conducted its own VA). Cities included in this VA are Crestview, Fort Walton Beach, Laurel Hill, Mary Esther, Niceville, and Valparaiso and the towns of Cinco Bayou and Shalimar. The first step in the VA process was data collection of assets and flood hazard data. Next, several steering committee and public meetings were conducted to understand asset significance, identify flood areas that may have been missed in the analysis, and give citizens an opportunity to provide feedback on the results of the VA. The following subsections further detail the methodology used to develop the VA, which meets or exceeds the requirements set by the State of Florida (hereinafter, "the State") and FDEP.

1.3.1 Data Collection

Utilities and government entities were contacted to request asset information to be included in the VA. In addition to contacting these entities, the Florida Geographic Data Library was researched to identify publicly available asset data to include into the VA (FGDL 2021). Appendix A summarizes assets collected and provides more details of the data collection process. Note that Jacobs had previously completed a similar VA for the military installations of Northwest Florida in the Emerald Coast Military Installation Resiliency Review (MIRR) in 2024 (Jacobs 2024). Jacobs had already established contacts with asset owners within Okaloosa County and was able to use most of the information gathered from the MIRR.

A desktop analysis was first performed using data collected from the U.S. Government, the County, the Cities of Crestview, Fort Walton Beach, Mary Esther, and Niceville, and the State's critical asset database. Efforts were made to include additional data that may have not been included in the State geodatabase from Towns of Cinco Bayou and Shalimar and the City of Laurel Hill. Coordination efforts were also made with the consultant conducting the City of Destin's VA to integrate relevant information. Furthermore, previously collected data from the Emerald Coast MIRR was incorporated to enhance the assessment's depth. Data were compiled to meet FDEP Resilient Florida Geographic Information System (GIS) data and metadata requirements (FDEP 2023b).

Data collected as part of the analysis included critical assets within four state-defined categories and flood hazard data. Flood hazard scenarios were identified and discussed with the County to determine which would be used to evaluate current and future flood exposure. Section 3 provides an in-depth discussion of data collected for this analysis.

An asset inventory assigning criticality to each asset was created from data collected. Flood exposure and sensitivity were calculated for each to determine overall vulnerability. Resulting adaptation solutions were based on findings from the VA and focus on operational continuity for the County's critical public services for its residents, business, and tourists.

1.3.2 Stakeholder Engagement

Engagement with key stakeholders and the public was essential to identify vulnerabilities associated with critical County and community facilities and operations and to build support for the resulting adaptation plans. A project kickoff meeting and a steering committee meeting were held with stakeholders. Two public meetings were held. The first of each of these meetings, respectively, was to explain to the group project administration and logistics, communication protocols, deliverables, schedule, objectives, and preliminary data collection findings. The second of these meetings was to update attendees on the results of the VA and confirm the results included vulnerabilities they expected.

1.3.3 Vulnerability Assessment

The VA was completed in compliance with the 2023 Florida Statute 380.093's statewide flood vulnerability and sea level rise (SLR) dataset and assessment. The assessment methodology consisted of analyses of asset exposure and sensitivity to flood hazards. This VA follows a standardized, step-by-step approach to evaluate flood vulnerability using a numerical score, as described in the FDEP *Standardized Vulnerability Assessment: Scope of Work Guidance* (FDEP 2022) and is based on the following key terms:

- **Exposure**. Exposure is defined as the proximity of facilities and assets to identify hazards and threats currently and over select future time horizons. Asset flood exposure was evaluated for current, 2040, and 2070 flood scenarios. The exposure analysis section and select results are described in Section 6, Flood Exposure Analysis.
- **Sensitivity.** Sensitivity is defined as the degree to which a facility or asset would be impaired by hazard and threat exposure. When an asset is sensitive to a hazard, it may be unable to maintain its intended function because of potential service disruptions or damage. A sensitivity analysis was conducted, where sensitivity scores were assigned to each asset based on the corresponding flood depth and asset characteristics. The criteria used for the sensitivity analysis are documented in Section 7, Sensitivity Analysis.

1.3.3.1 Vulnerability Analysis

Jacobs calculated asset vulnerability using the following equation:

Exposure + Sensitivity = Vulnerability

Vulnerability scores were calculated for both individual hazard scenarios as well as a composite score for all scenarios. Vulnerability scores inform the prioritization of adaptation projects for assets and areas. Section 8 provides a discussion of asset vulnerability.

1.3.4 Risk Analysis

Jacobs conducted a risk analysis to prioritize asset improvements. The risk analysis incorporates vulnerability scores, asset criticality, and hazard scenario likelihood, using the following equation:

Risk = Vulnerability x Criticality x Likelihood

The results of the risk analysis are located in Section 9. This additional step, while not required by the State in the analysis, provides additional understanding of asset vulnerability and assists the County with understanding which assets have the highest degree of vulnerability and require adaptation strategies soonest.

1.3.5 Next Steps

Based on the vulnerabilities identified in the VA and prioritized via risk scores, a list of adaptation strategies will be developed, with the goal of mitigating flood risk for the critical infrastructure owned by the County. These strategies will be developed to align with State requirements to position the County to be eligible for additional future funding.

2. Stakeholder and Community Engagement

Stakeholder and community engagement is an important opportunity to engage with the public for understanding significance of critical assets, identifying vulnerable areas that desktop analyses may have not identified, reviewing project progress with the public, and receiving feedback throughout the project to incorporate into the VA. The meetings held throughout the course of the project are noted in Table 2-1 and the respective meetings are detailed in the subsections that follow.

Table 2-1. VA Meeting Types and Dates

Meeting Type	Date Held
VA Project Kickoff Meeting with the County	April 12, 2024
Steering Committee Meeting #1	May 29, 2024
Public Meeting #1	July 30, 2024
Steering Committee Meeting #2	December 18, 2024
Public Meeting #2	February 10, 2025

2.1 VA Kickoff Meeting with Okaloosa County

A kickoff meeting was held between the County and Jacobs on April 12, 2024, where Jacobs gave a brief overview of Resilient Florida Grant Program, the grant requirements, tasks, timeline, and key milestones for the VA. Using these as the basis of conversation, the County and Jacobs identified the project goals and tasks necessary to complete the VA. Discussion included proposed planning hazards for the County to choose from and potentially add to that influence VA development. Another task that was completed during this meeting was establishing a steering committee. The steering committee was established by selecting contacts from the County and are noted in Section 2.2. Additionally, points of contact for project correspondence and Steering Committee members were selected.

2.2 Steering Committee and Steering Committee Meetings

Jacobs held discussions with County stakeholders to understand the scope of the project and provide essential feedback identifying potential vulnerabilities they may see in their roles. Details of the steering committee meetings are provided in Sections 2.2.1 and 2.2.2. Steering Committee members included personnel from the following County Departments and municipalities:

- Okaloosa County Department of Emergency Management
- Okaloosa County Department of Local Mitigation Strategies
- Okaloosa County Department of Natural Resources
- Okaloosa County Department of Growth Management
- Okaloosa County Public Works Department
- Okaloosa County Water and Sewer Department
- Municipality representatives from Cities of Crestview, Fort Walton Beach, Mary Esther, and Niceville, and the Town of Shalimar

2.2.1 Steering Committee Meeting #1

Steering Committee Meeting #1 was held May 29, 2024, where Jacobs provided updates on the project status and listed asset data gaps. To address asset data gaps, Jacobs requested asset information with specific requests on the data missing from various municipalities. Discussion included which hazards and methodologies stakeholders would like to use to determine asset vulnerability and criticality analysis. In addition, proposed planning hazards such as flood scenarios were provided for the stakeholders to choose from that influence VA development.

2.2.2 Steering Committee Meeting #2

Steering Committee Meeting #2 was held December 18, 2024, where Jacobs provided initial results of the VA and solicited feedback from the stakeholders regarding vulnerabilities included in the VA. Discussion included which projects stakeholders would add to their project prioritization list that informed the asset criticality analysis.

2.3 Public Outreach Meetings

In addition to the feedback for identifying potential vulnerabilities the Steering Committee sees in their local government roles, feedback from the public was also considered significant feedback because community members may have firsthand experience or know more specifics about areas they live whereas stakeholders have a more general perspective of the County overall. Public meeting notices were published and each public meeting was live-streamed online via the County's YouTube page so people had the option to join remotely for their convenience.

2.3.1 Public Meeting #1

Public Meeting #1 was held July 30, 2024, where Jacobs provided an update on the initial stages of data collection, methodologies, evaluation criteria, and analysis techniques. Attendees were asked to provide input on the initial stages of the Vulnerability Assessment project. Jacobs led a mapping activity where participants could mark areas of the map where they experienced flooding or where they knew flooding occurs in different flooding scenarios. Information gathered from this interactive activity was incorporated into this VA report.

2.3.2 Public Meeting #2

Public Meeting #2 was held February 10, 2025, where Jacobs described the VA methodology for the sensitivity and exposure analyses and provided an update on the results of the Countywide VA. Attendees were asked to provide input on results from the exposure and sensitivity analysis. The feedback from the results presented was incorporated into this VA report.

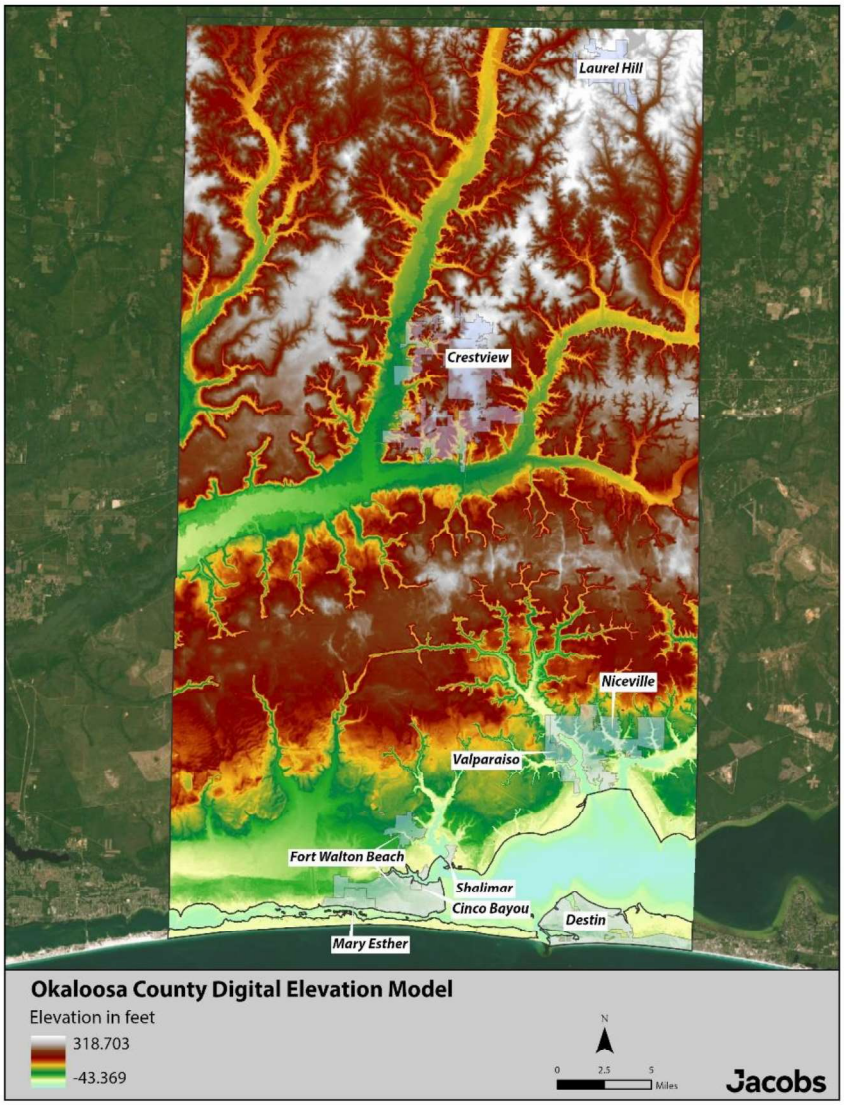
3. Data Collection

The data collection process for this VA involved multiple sources and methods to ensure comprehensive and accurate information.

3.1 Topographic Data

The Project Team integrated Continuously Updated Digital Elevation Model (CUDEM) and light detection and ranging (LiDAR) datasets to create high-resolution elevation models. CUDEM provided broad terrain data while LiDAR scans offered precise topographical details, ensuring accuracy in flood modeling. Together, these datasets provide a Countywide topographic dataset from which asset elevations were obtained (Figure 3-1).

Figure 3-1. Digital Elevation Model for Okaloosa County



3.2 Critical Assets

Asset GIS data were initially downloaded from the statewide database at Florida Geographic Data Library, providing a foundational dataset for analysis. In addition to using the Florida Geographic Data Library, the Project Team directly contacted local governments, including Okaloosa County, the City of Mary Esther, the City of Niceville, the City of Crestview, and the City of Fort Walton Beach, to obtain supplementary local data. Coordination with the consultant conducting the City of Destin's VA also occurred to obtain and integrate relevant information. Beyond governmental sources, the Project Team also contacted to utility providers, such as Choctawhatchee Electric Cooperative (CHELCO), Florida Power and Light, and Power South to gather infrastructure-related data. Furthermore, previously collected data from the Emerald Coast Military Installation Resilience Review, which was conducted by Jacobs in 2022–2024, was incorporated where applicable (Jacobs 2024).

To maintain data integrity and usability, the collected information underwent a rigorous quality control process. This included comparing datasets to identify and remove duplicate data points, performing quality assurance/quality control (QA/QC) checks and standardizing the data for consistency. The refined dataset was then compiled into a web-based mapping platform and shared with local municipalities for review and validation, ensuring accuracy before final analysis. This structured and collaborative approach to data collection helped establish a reliable and robust dataset for assessing asset criticality and vulnerabilities across the region. Appendix A provides a list of the Critical Asset data sources.

3.3 Hazard Data

Hazard data were obtained from federal sources, including the Federal Emergency Management Agency (FEMA) and the National Oceanic and Atmospheric Administration (NOAA). Additional information on collected flood hazard data can be found in Section 5.

4. Critical Assets

The State's *Standardized Vulnerability Assessment: Scope of Work Guidance* (FDEP 2022) defines four asset classes to be used in VAs: Critical Community and Emergency Facilities, Critical Infrastructure, Transportation and Evacuation Routes, and Natural, Cultural, and Historical Resources. Assessing the vulnerability of these assets to flood impacts—such as 100-year storm, tidal flooding, and SLR—is crucial to understanding how disruptions might cascade across critical services. Identifying vulnerable facilities enables targeted interventions to reduce risk, ensuring these essential resources remain operational during and after flood events. Strengthening the flood resilience of these facilities not only protects their functionality but also enhances the community's capacity to recover and adapt in the face of increasing flood risks. The following sections provide a review of the asset types within each of the four main asset classes.

4.1 Critical Community and Emergency Facilities

These assets are essential to the daily functioning and resilience of a community, encompassing entities that support education, public health and safety, and government operations. This asset class includes affordable public housing, colleges and universities, community centers, correctional facilities, disaster recovery centers, emergency medical service facilities, emergency operation centers, fire stations, health care facilities, hospitals, law enforcement facilities, local government facilities, logistic staging areas, risk shelter inventory, schools, and state government facilities.

Table 4-1 contains the list of critical assets, owners, data sources, and examples within these critical asset classes.

Table 4-1. Critical Community and Emergency Facilities Summary

Asset Type	Number of Assets	Data Source	Example(s)
Affordable Public Housing	39	State of Florida Critical Asset Database, City of Niceville GIS Division	Heather Glenn; Wildwood Apts.
Colleges and Universities	11	State of Florida Critical Asset Database, Okaloosa County	Northwest Florida State College, Okaloosa Technical College
Community Centers	16	State of Florida Critical Asset Database	Bickers Family History Library; Crestview Community Center
Correctional Facilities	6	State of Florida Critical Asset Database	FPC Eglin; Okaloosa County Jail
Disaster Recovery Centers	4	State of Florida Critical Asset Database	FWB Senior Community Center; Hedrick Rec Center

Table 4-1. Critical Community and Emergency Facilities Summary

Asset Type	Number of Assets	Data Source	Example(s)
Emergency Medical Service Facilities	2	State of Florida Critical Asset Database, City of Niceville GIS Division	Okaloosa County Emergency Medical Services; Niceville - Urgent Care
Emergency Operation Centers	1	State of Florida Critical Asset Database	Okaloosa County Emergency Operations Center
Fire Stations	34	State of Florida Critical Asset Database	Baker Volunteer Fire Department; Okaloosa Island Fire Station #4
Health Care Facilities	30	State of Florida Critical Asset Database	Bee Hive Homes of Niceville; Shoal Creek Rehabilitation Center
Hospitals	6	State of Florida Critical Asset Database	North Okaloosa Medical Center; Twin Cities Hospital
Law Enforcement Facilities	14	State of Florida Critical Asset Database	FBI - Fort Walton Beach Resident Office; Okaloosa County Sheriff Headquarters
Local Government Facilities	7	State of Florida Critical Asset Database	County Hall/Main Courthouse; Public Works Department
Logistic Staging Areas	4	State of Florida Critical Asset Database	Bob Sikes Airport; City of Niceville Yard
Risk Shelter Inventory	1	State of Florida Critical Asset Database	Davidson MS
Schools	82	State of Florida Critical Asset Database, City of Niceville GIS Division, Okaloosa County GIS Division	Elliot Point Elementary School; Montessori Learning Center

Table 4-1. Critical Community and Emergency Facilities Summary

Asset Type	Number of Assets	Data Source	Example(s)
State Government Facilities	5	State of Florida Critical Asset Database	Armory; Florida Highway Patrol Station Troop A

4.2 Critical Infrastructure

These asset supports community needs, such as water treatment, wastewater treatment, solid waste management, and communication. They support daily life and are critical for maintaining a healthy, functioning community. Asset types in this class include communications facilities, disaster debris management sites, drinking water facilities, electric production and supply facilities, military installations, post offices, solid and hazardous waste facilities, stormwater treatment facilities and pump stations, water utility conveyance systems, and wastewater treatment facilities and lift stations.

Table 4-2 contains the list of critical assets, owners, data sources, and examples within this critical asset classes.

Table 4-2. Critical Infrastructure Assets Summary

Asset Type	Number of Assets	Data Source	Example
Communications Facilities	96	State of Florida Critical Asset Database	Crestview Broadcasting Co. Inc.; Fort Walton Communications Inc., post offices
Disaster Debris Management Sites	9	State of Florida Critical Asset Database, City of Niceville GIS Division	Fairgrounds Staging Area; Keyser Mill Pit
Drinking Water Facilities	185	State of Florida Critical Asset Database, Okaloosa County GIS Division	Island Pump; Longwood Well Plant
Electric Production and Supply Facilities - Points	69	State of Florida Critical Asset Database, CHELCO	Bluewater Bay Substation; Santa Rosa Island East Power Poles
Electric Production and Supply Facilities – Lines	59	State of Florida Critical Asset Database, CHELCO	Shaky Joe Swamp Tap; Sullivan Street
Military Installations	6	State of Florida Critical Asset Database	Eglin Air Force Base; Hurlburt Field

Table 4-2. Critical Infrastructure Assets Summary

Asset Type	Number of Assets	Data Source	Example
Post Offices	11	State of Florida Critical Asset Database	Eglin AFB Post Office; Shalimar Post Office
Solid and Hazardous Waste Facilities	1,626	State of Florida Critical Asset Database	Florida Mining and MAT-Destin; Northrop Grumman Corporation
Stormwater Treatment Facilities and Pump Stations - Points	40	State of Florida Critical Asset Database, Okaloosa County GIS Division, City of Fort Walton Beach GIS Division, City of Crestview GIS Division	Lower Memorial Lake Dam; Youngblood Dam
Stormwater Treatment Facilities and Pump Stations – Polygons	1,382	State of Florida Critical Asset Database, Okaloosa County GIS Division, City of Fort Walton Beach GIS Division, City of Crestview GIS Division	Retention Pond
Wastewater Treatment Facilities and Lift Stations - Points	282	State of Florida Critical Asset Database, Okaloosa County GIS Division, City of Fort Walton Beach GIS Division, City of Crestview GIS Division, City of Mary Esther GIS Division	Arbennie Pritchett Water Reclamation Facility; LS-562 Gap Creek
Water Utility Conveyance Systems – Points	96	State of Florida Critical Asset Database, Okaloosa County GIS Division, City of Niceville GIS Division, City of Fort Walton Beach GIS Division, City of Mary Esther GIS Division	East Island Tank; El Matador Tank
Water Utility Conveyance Systems – Lines	101,841	State of Florida Critical Asset Database, Okaloosa County GIS Division, City of Niceville GIS Division, City of Fort Walton Beach GIS Division, City of Mary Esther GIS Division	Force Main, Gravity Main

4.3 Natural, Cultural, and Historical Resources

These assets consist of natural systems or constructed facilities that are ecologically, culturally, or historically significant to the community. Natural resources are valuable because of their natural benefits, such as the ability to help reduce flood risk, attenuate wave energy, cool an area, or help control erosion, and provide accompanying social and economic benefits, such as recreation. Cultural and historical resources are important to the local community.

Asset types in this class include conservation lands, historical and cultural assets, parks, shorelines, surface waters, and wetlands.

Table 4-3 contains the list of critical assets, owners, data sources, and examples within this critical asset classes.

Table 4-3. Natural, Cultural, and Historical Resource Assets Summary

Asset Type	Number of Assets	Data Source	Example
Conservation Lands	158	State of Florida Critical Asset Database, City of Niceville GIS Division	Blackwater River State Park; The Shore at Crystal Beach
Historical Bridges	32	State of Florida Critical Asset Database	Facility 12215; US-98 (SR-30) / ICWW & Brooks St.
Historical Cemeteries	23	State of Florida Critical Asset Database	Canoe Cemetery, Cox Cemetery
Historical and Cultural Resource Groups	48	State of Florida Critical Asset Database	Marine Operations District; Laurel Hill Historic District
Historical Structures	1,870	State of Florida Critical Asset Database	Camp Pinchot Boathouse; Cunningham House
Parks - Points	223	State of Florida Critical Asset Database, Okaloosa County GIS Division, City of Niceville GIS Division	Florida Park; Kelly Street Duck Pond
Parks - Polygons	33	State of Florida Critical Asset Database, Okaloosa County GIS Division, City of Niceville GIS Division	Fred Gannon Rocky Bayou State Park; Henderson Beach State Park
Shorelines[a]	908	State of Florida Critical Asset Database	Sheltered riprap; Vegetated low banks
Surface Waters – Lines[b]	8,791	State of Florida Critical Asset Database, City of Niceville GIS Division	Titi Creek; Yellow River
Surface Waters – Polygons[b]	952	State of Florida Critical Asset Database, City of Niceville GIS Division	Cinco Bayou; Choctawhatchee Bay
Wetlands[a]	4,666	State of Florida Critical Asset Database	Gum Swamps; Tidal Flats

[a] Shorelines and wetland assets are discrete shapefiles.

[b] Surface Water lines and polygons were not included in total percentages of assets assessed.

4.4 Transportation and Evacuation Routes

These horizontal assets support movement throughout the County and safe evacuation in the event of emergency. Asset types within this class consist of airports, bridges, bus terminals, major roadways, marinas, ports, rail facilities, railroad bridges, and roads.

Table 4-4 contains the list of critical assets, owners, data sources, and examples within these critical asset classes. It is important to note that the County does not have every asset type; for example, there are no

marine ports within County boundaries. However, all asset types are noted for compliance with State regulations.

Table 4-4. Transportation and Evacuation Route Assets Summary

Asset Type	Number of Assets	Data Source	Example
Airports	18	State of Florida Critical Asset Database	Destin – Fort Walton Beach Airport; Northwest Florida Regional Airport/ Eglin AFB
Bridges	151	State of Florida Critical Asset Database	
Bus Terminals	1	State of Florida Critical Asset Database	Greyhound – Fort Walton Beach
Major Roadways	16	State of Florida Critical Asset Database	SR-85; US-98/SR-30/Miracle Strip Pkwy.
Marinas	33	State of Florida Critical Asset Database	Cotton Bridge Park Canoe Access; Lions Park
Ports	0	--	--
Rail Facilities	3	State of Florida Critical Asset Database	CSXT Mainline (K)
Railroad Bridges	4	Okaloosa County	CSXT Mainline (K) at Shoal River
Roads	5,546	State of Florida Critical Asset Database	

Notes:
The number of list road assets is based on the number of line segments for roadways in the GIS database.

4.5 Community Engagement Input

4.5.1 Community Engagement Meeting #1

During the first public meeting (July 30, 2024), the Project Team showed residents maps of different flooding scenarios (SLR, storm surge, and localized flooding). Using these maps as a guide, residents were asked to denote areas they knew experienced or were vulnerable to flooding. Most attendees lived in the southern portion of Okaloosa County; because of proximity to the Gulf, the southern portion experiences more storm surge and SLR flooding effects. Specific areas that were brought up related to storm surge included around the bayous (Cinco Bayou, Rocky Bayou, Tom's Bayou) and along US-98 between the Sound and the Gulf. Specific areas that were brought up for localized flooding included around the bayous (Boggy Bayou, Cinco Bayou, Rocky Bayou, Tom's Bayou), along US-98 between the Sound and the Gulf to Mary Esther, the peninsula of Niceville, Bluewater Bay, throughout the Ocean City area of Fort Walton Beach, on Okaloosa Island itself, Green Acres area, within the Yellow River floodplain, and within the Shoal River floodplain. Specific areas mentioned for SLR included around the bayous (Boggy Bayou, Cinco Bayou), SR-20 near Choctawhatchee Bay, US-98, and the Bluewater Bay area. The Public Meeting #1 notes in Appendix B provide a full list of notable flooding areas.

Additionally, residents were asked if there were any community assets they would like included in the assessment that may not fall under the four critical asset types defined by the state or assets that were seen as most critical. Asset types under the four critical asset types defined by the state that were confirmed to be critical to the community are evacuation routes (SR-293, SR-85, SR-189, CR-393), emergency and medical facilities, military resources, schools, and water/wastewater infrastructure. Asset types not included in the state-defined four critical asset types were agriculture in the northern portion of the County, tourism-related assets, commercial fisheries, water/wastewater infrastructure that has failed or is no longer in use but is still existing, and water quality of Choctawhatchee Bay and Cinco Bayou. This influenced the decision to do an analysis on parcel exposure throughout the County, with parcel types grouped into land use categories. As some of the issues the community cared about were less about actual assets (for example, water quality), this will influence some types of Adaptation Plans and Strategies proposed. The Public Meeting #1 notes in Appendix B provide a full list of community assets.

4.5.2 Community Engagement Meeting #2

Jacobs reviewed the results of the VA with the public as part of the second meeting (February 10, 2025). Residents validated the results of the assessment and provided additional input. Areas noted by the public with flooding issues included the Gap Creek corridor, along Page Bacon Road near the Mary Esther Mall, between I-10 and US-90 at the Shoal and Yellow River crossings, SR-85 at the Shoal River crossing, and CR-393 at Shoal River and Pond Creek crossings. Other input included the filling of intracoastal shipping lanes with sand after severe storm events.

5. Flood Hazards

Okaloosa County contains both inland and coastal communities; as a result, there are a variety of hazards that threaten the County and its residents. This assessment focuses on flood hazards and uses prior existing publicly available data to analyze existing flood hazards related to SLR, tidal flooding, and the 1% annual exceedance probability (AEP) (commonly known as the 100-year flood event). Hazard data were obtained from federal sources, including the Federal Emergency Management Agency (FEMA) and the National Oceanic and Atmospheric Administration (NOAA). Data sources for the selected flood scenarios are described in Table 5-1.

Table 5-1. Flood Scenarios

Flooding Type	Scenario	Source
100-year (1% chance) Flood	100-year Flood	FEMA Flood Insurance Study for Okaloosa County
Compound Flooding – 100-year + SLR	100-Year + 2040 Intermediate-Low Sea Level Rise	FEMA, NOAA
	100-Year + 2040 Intermediate-High Sea Level Rise	
	100-Year + 2070 Intermediate-Low Sea Level Rise	
	100-Year + 2070 Intermediate-High Sea Level Rise	
Tidal Flooding	Mean High Water Level + 2 feet	NOAA
Sea Level Rise (NOAA 2017 predictions)	Tidal + 2040 Intermediate-Low Sea Level Rise	NOAA
	Tidal + 2040 Intermediate-High Sea Level Rise	
	Tidal + 2070 Intermediate-Low Sea Level Rise	
	Tidal + 2070 Intermediate-High Sea Level Rise	

5.1 Sea Level Rise

Rising sea levels pose a significant stress for the County's communities and infrastructure. SLR can impact the County by:

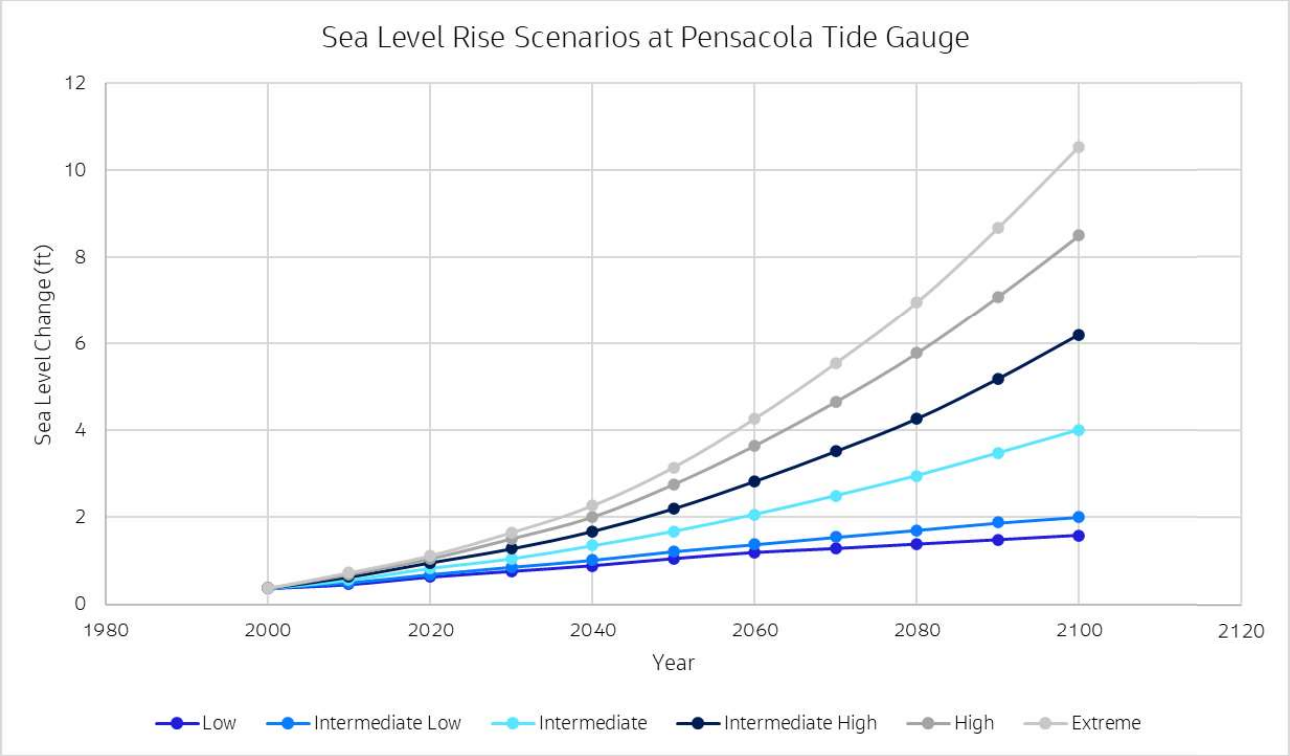
- Increasing the depth of tidal floods and storm surge events, resulting in increased flood magnitudes and extents
- Permanently inundating coastal infrastructure and properties
- Accelerating erosion on shorelines
- Infiltrating into pipes and other subterranean infrastructure such as utility vaults, placing increased stress on water and wastewater systems, as well as potentially compromising buried electrical and communication ducts and associated systems
- Impacting water supply wells through increased rates of saltwater intrusion

NOAA defines six SLR scenarios in Sweet et al. (2017), which provides the basis for Florida's VA requirements. These scenarios are categorized as Low, Intermediate-Low, Intermediate, Intermediate-High, High, and Extreme scenarios, with the depth of rise increasing in each scenario. SLR scenarios are measured at NOAA tide gauges.

The two tide gauges nearest to the County are at Pensacola (to the west) and Panama City (to the east). The mean sea level (MSL) is 0.3 feet North Atlantic Vertical Datum (NAVD) at Pensacola and 0.13 feet NAVD at Panama City. As a result, Jacobs elected to use the higher MSL at the Pensacola tide station (station ID 8729840). All tide elevations were converted into the NAVD88 datum. Figure 5-1 shows the SLR scenarios at the Pensacola tide gauge.

The tidal elevation data presented in this report comes from published values on the NOAA tides and currents website, for each tide gauge. These tidal datum values represent the calculated values for MSL and mean higher high water (MHHW), from tidal records during the (1983–2001) tidal epoch. This data generally aligns with the 2000 baseline timeframe used for the SLR projections to allow for the addition of SLR values to the tidal datum elevations, representing future conditions. Current tidal elevations may differ slightly from these elevations; however, the difference is not expected to adversely affect the intent of this analysis or significantly affect the results developed for current day tidal flood events.

Figure 5-1. Sea Level Rise Scenarios at the Pensacola Tide Gauge
Source: NOAA n.d.



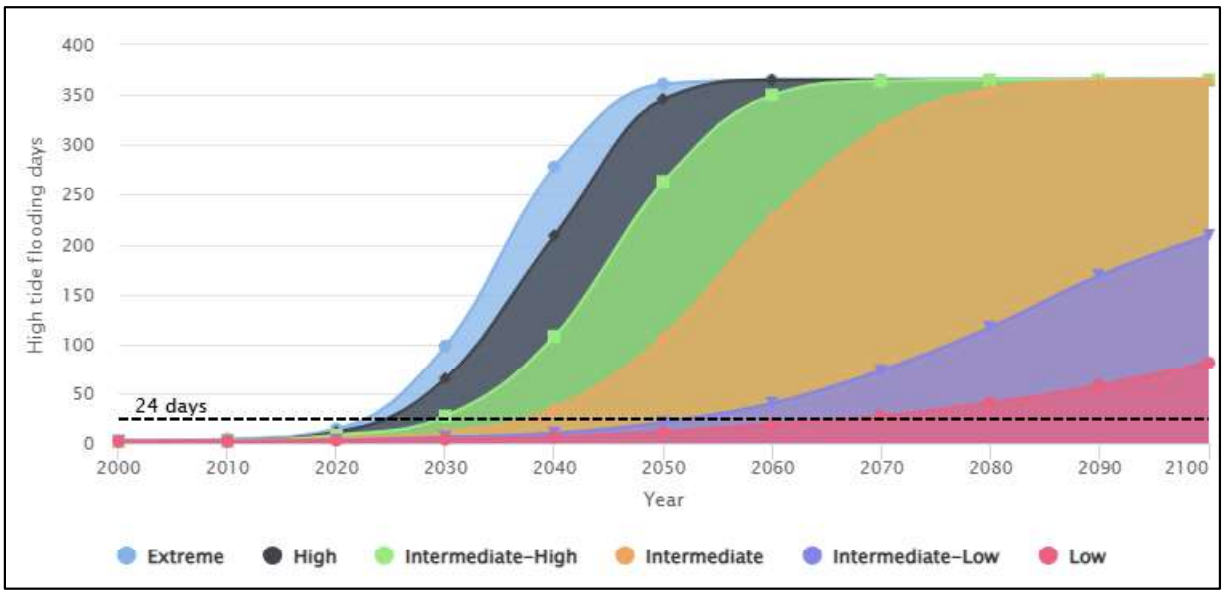
This assessment incorporates the 2017 NOAA Intermediate-Low and Intermediate-High SLR scenarios for the 2040 and 2070 planning horizons.

The SLR projections used in this study are based on the 2017 NOAA SLR projections and corresponding future scenarios, as outlined in the FDEP *Standardized Vulnerability Assessment: Scope of Work Guidance,* published in 2022. This project was funded and scoped following this 2022 FDEP guidance and is not required to reflect more recent changes in State policy/guidance, put into law after this project was initiated, including the use of the NOAA 2022 SLR projections.

5.2 Tidal/Spring Tide Flooding

Tidal flooding is defined as the combination of the MHHW water surface elevation plus 2 feet representing the additional water surface height resulting from the spring perigean tide. The County experiences approximately 3 days of high-water events/tidal flooding annually. The projections for frequency of tidal flood days for the County are provided in Figure 5-2, as sourced from NOAA's Assess Flood Risks Tool.

Figure 5-2. Projected Tidal Flooding Days
Source: NOAA Assess Flood Risks Tool (NOAA n.d.)



Under the Intermediate-Low SLR scenarios, there are projected to be 10 days of tidal flooding in the 2040s and 73 days of tidal flooding in the 2070s. Under the Intermediate-High SLR scenarios, it is estimated that there will be 108 days of tidal flooding in the 2040s and 364 days of tidal flooding in the 2070s.

Both present day and future projected tidal flooding scenarios were selected for analysis.

5.3 Storm Surge

Storm surge can cause physical damage to structures. Hurricanes Ivan (2004) and Sally (2020) had caused significant impacts in the County. Hurricane Sally caused significant storm surge, registering a maximum observed water level of 4.81 feet NAVD at the U.S. Geological Survey rapid deployment gauge at East Pass in Destin). Portions of US-98 were inundated by 2 to 3 feet of flood. The surge, coupled with significant rainfall, caused flash flooding and river flooding. Cumulative rainfall depths of 14.97, 14.40, and 11.52 inches were recorded in northeast Eglin AFB, Fort Walton Beach, and Crestview, respectively, during the duration of the storms (NWS 2024a, NWS 2024b).

5.4 The 1% AEP Flood

The 1% annual exceedance probability (AEP) flood event (more commonly known as the 100-year flood) is the standard flood event used in regulatory floodplain mapping. The 1% AEP flood event is the flood event that has a 1-in-100 likelihood of occurrence every year. The 1% AEP flood modeling incorporates rainfall, storm surge, and coastal flooding, providing a useful baseline for understanding flood condition.

Existing 1% AEP flood data were obtained from existing FEMA flood insurance rate maps (FIRMs) for Okaloosa County. These FIRMs are from the 2021 Flood Insurance Study for Okaloosa County (FEMA 2021). To account for higher future water levels, the selected SLR scenarios were added to the 1% AEP flood event in a bathtub model to better understand future coastal flood scenarios. **The 1% AEP flood event is approximately equivalent in magnitude to the Category 2 storm surge event in this part of Florida and, as such, was used to evaluate storm surge and its impacts.**

5.5 Rainfall

Increased rates of rainfall can result in riverine flood exposure in the inland portions of the County and amplify flood depths in areas affected by coastal flooding. Extreme rainfall events can overwhelm regional and local drainage systems, causing inundation of roadways and flooding of homes and businesses. Table 5-2 shows historical rainfall data in various areas in the County.

Table 5-2. Historical Rainfall Events

Location	NOAA Atlas 14 25-year, 24-hour storm (inches)[a]	NOAA Atlas 14, 100-year, 24-hour storm (inches)[a]	NOAA Atlas 14, 500-year, 24-hour storm (inches)	Hurricane Ivan (2004) (inches)[b]	Hurricane Sally (2020) (inches)[c]
Crestview	11.3	15.6	21.9	8.4	11.5
Eglin AFB	12.1	16.8	23.0	7.4	15.0
Fort Walton Beach	12.1	16.8	23.0	6.1	14.4
Mary Esther	12.1	16.8	23.0	No Data	17.3
Niceville	12.1	16.8	23.0	6.6	15.5

[a] Source: NOAA (n.d.)

[b] Source: National Weather Service (2024b)

[c] Source: National Weather Service (2024a)

Future rainfall is projected to change. The Florida Flood Hub developed projected future flood depths across a series of climate models and scenarios (USF n.d.). Jacobs calculated the average of the projected rainfall depths from the models that best fit the Florida panhandle. The data in Figures 5-3 and 5-4 show present-day rainfall depths (plotted using values from NOAA Atlas 14) and projected future rainfall depths at the rainfall gauges in Niceville (Gauge 08-6240) and Crestview (Gauge 08-1986).

It is important to note that the rainfall depth values represent the amount of rainfall that occurs in a given area during a given rain event and are not necessarily representative of flood depths experienced from that rain or flood event, which vary widely based on topography, stormwater management, tidal influence and presence of flood mitigation systems. While more rainfall may often correspond to more flooding, a direct correlation between the two is not recommended; rather, further analysis is required.

Rainfall depths in Crestview are projected to decrease across the 25-year, 50-year, 100-year, and 500-year, 24-hour storm events. According to the Florida Flood Hub data, rainfall depths in Niceville are projected to remain relatively constant over time. The 25-year, 50-year, and 100-year rainfall depths exhibit slight decreases but remain at approximately 11, 13.5, and 15 inches, respectively. Rainfall depths from the 500-year storm event are projected to decrease from approximately 22 to 20 inches going into the 2040s and then increase to approximately 22 inches in the 2070s.

However, it is important to note that there is a discrepancy with other sources. The Strategic Environmental Research and Development Program, an independent program under the Department of Defense, provides rainfall projections for military installations throughout the United States. SERDP's rainfall projections for Eglin AFB show *an increase* in rainfall depths in multiple future scenarios in 2045, and 2075 (DoD n.d.). Because of this data gap, it was decided that rainfall would not be added to compound flood scenarios and that the FEMA effective FIRMs would be used to evaluate inland flooding in the northern portion of the County.

Figure 5-3. Projected Future Rainfall Depths in Crestview

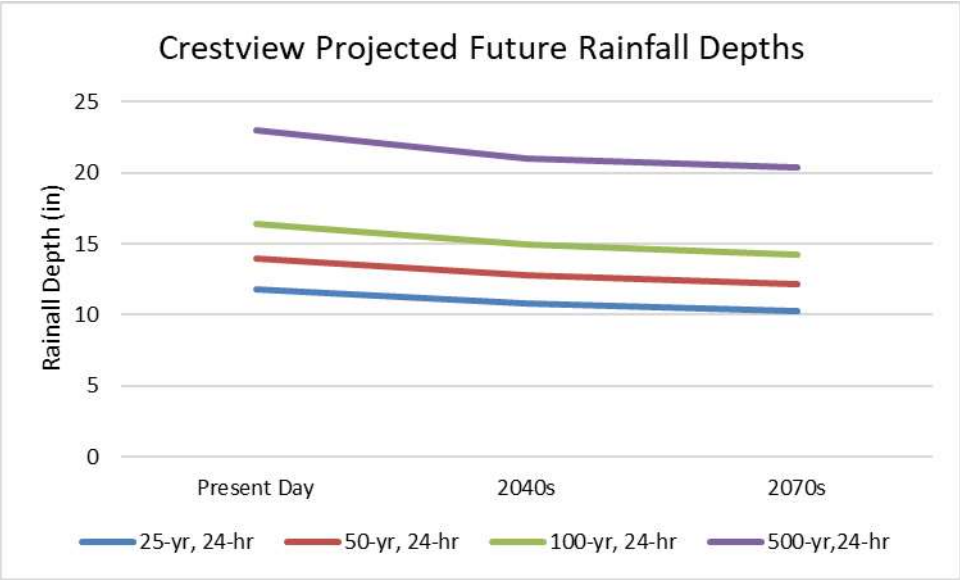
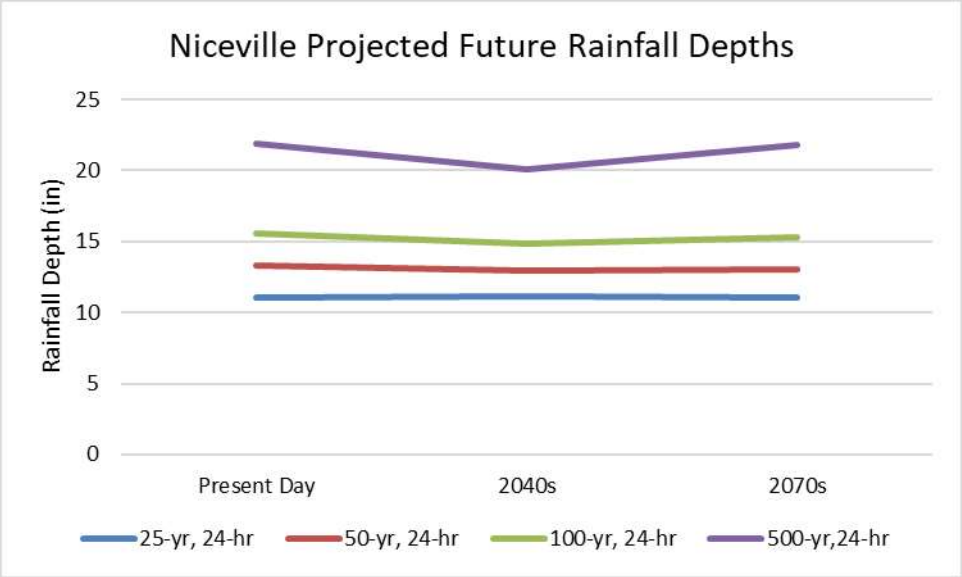


Figure 5-4. Projected Future Rainfall Depths in Niceville



6. Flood Exposure Analysis

The flood exposure analysis evaluates the flood depths at assets for each flood scenario. The exposure analysis consisted of analyzing both parcel and asset exposure to flooding. These exercises provide a holistic understanding of the exposure of both the County and its assets to flooding.

6.1 Flood Exposure Analysis Methodology

Jacobs evaluated flood exposure for the selected flood scenarios (the present-day and future1% AEP flood and present-day and future tidal flood scenarios). The following subsections describe the methodology for analyzing asset flood exposure.

6.1.1 1% AEP Flood Exposure and Future 1% AEP Flood Exposure

Using the FEMA 100-year floodplain, Jacobs calculated the water depths at each asset by subtracting the asset elevations from the base flood elevation (BFE). For inland riverine floodplains, Jacobs used the existing cross sections within For Zone A floodplains. Because these cross sections have no associated flood depth, a flood depth of 2 feet was assumed to estimate the future 100-year flood scenarios. Future 1% AEP flood elevations, in tidally influenced areas, were calculated by adding projected SLR increases to the 1% AEP elevations.

6.1.2 Tidal Flood Exposure

As discussed in Section 5.2, perigean tidal flood elevation was calculated by adding 2 feet to the MHHW, which represents the annual spring tide event. Future tidal flood scenarios were incorporated by adding projected SLR scenarios to the tidal flood scenario.

6.2 Parcel Exposure

To identify County exposure to flood hazards, Jacobs conducted an exposure analysis for parcels within the County. Parcel data for Okaloosa County was obtained from the County's Property Appraiser GIS Mapping downloadable data web page (Okaloosa County Property Appraiser n.d.). Parcel data from the County had *DOR Use Descriptions* listed for each parcel. These use descriptions were simplified into different parcel 'subtypes' as follows:

- Agricultural
- Commercial
- Conservation/Natural
- Industrial
- Institutional
- Military
- Public
- Residential

There were five parcels where the *Use Description* was left blank; these were grouped together as Parcel Type 'Other'.

Parcel layers were subsequently overlaid over the flood layers to understand parcel exposure to flood depths. The resulting parcel exposure maps are provided in Appendix C. The following subsections discuss parcel exposure to the tidal and 1% AEP flood scenarios. Table 6-1 shows percentages of parcels exposed to each flood scenario.

Table 6-1. Percent Inundation of Parcels by Type for Flood Scenarios

Parcel Type	Number of Parcels Inundated by Current Tidal Flood	% of inundated Parcel area that is exposed to Current Tidal Flood	Number of Parcels Inundated by Tidal Flooding - 2040	% of inundated Parcel area that are exposed to Tidal Flooding - 2040	Number of Parcels Inundated by Tidal Flooding - 2070	% of inundated Parcels that is exposed to Tidal Flooding - 2070	Number of Parcels Inundated by Current 1% AEP Flood	% of inundated Parcel area that is exposed to Current 1% AEP Flood	Number of Parcels Inundated by 1% AEP Flood – 2040	% of inundated Parcel area that is exposed to 1% AEP Flood – 2040	Number of Parcels Inundated by 1% AEP Flood – 2070	% of inundated Parcel area that is exposed to 1% AEP Flood - 2070
Agricultural	5	13.6%	6	22.3%	7	29.8%	826	26.0%	826	26.0%	826	26.0%
Commercial	150	7.4%	188	10.6%	274	17.9%	412	21.6%	412	21.6%	413	21.7%
Conservation/ Natural	346	22.4%	409	40.9%	492	50.7%	1279	59.6%	1279	59.6%	1284	59.6%
Industrial	15	2.3%	19	7.6%	25	9.2%	61	52.2%	61	52.2%	61	52.3%
Institutional	14	4.7%	15	11.7%	22	20.8%	51	17.9%	51	17.9%	52	17.9%
Military	23	1.3%	24	2.9%	28	5.5%	84	13.9%	84	13.9%	84	13.9%
Public	195	8.8%	240	15.1%	334	22.2%	685	38.2%	685	38.2%	688	38.2%
Residential	6,478	5.3%	8,007	8.3%	13,035	12.6%	19,010	50.5%	19,010	50.5%	19,135	50.9%
Other	0	0%	0	0%	1	0.6%	2	10.8%	2	10.8%	2	11.5%
Total in County	**7,226**	**2.7%**	**8,908**	**5.3%**	**14,218**	**9.5%**	**22,410**	**23.8%**	**22,410**	**23.8%**	**22,545**	**23.9%**

6.2.1 Parcel Exposure to Present and Future Tidal Flooding

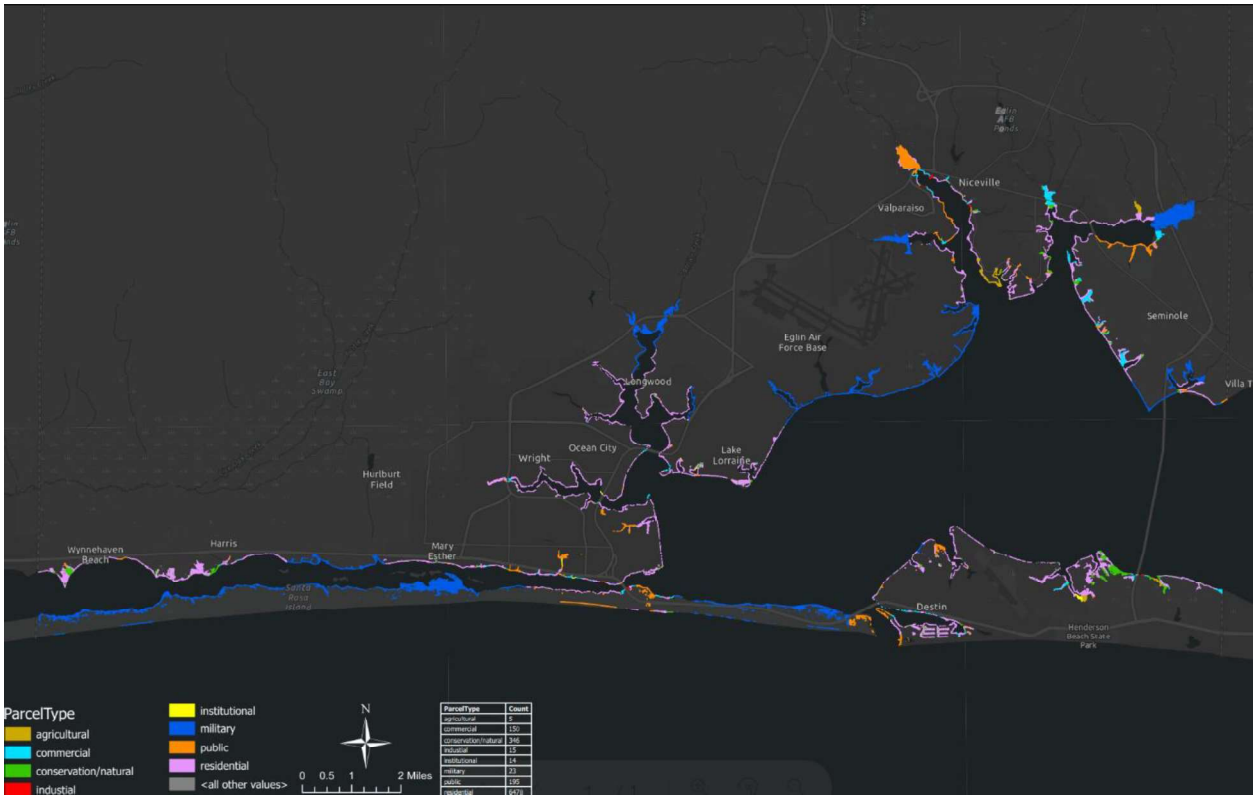
Overall, parcel exposure to tidal flooding ranges from approximately 2.7% in the present day to around 9.5% in the 2070s. Approximately 5.3% of the County's residential parcels are exposed to the current tidal flood; this encompasses coastal residential properties in Mary Esther, Fort Walton Beach, installation housing at Hurlburt Field, Destin, Niceville, and Seminole. The exposure of residential parcels is projected to increase to approximately 12.6% under the 2070 tidal flood scenarios. Commercial parcels similarly exhibit increasing impacts from tidal flooding, with exposure increasing from 7.4% in the present day to 17.9% in the 2070 tidal flood scenarios. This shows increasing future impacts on commercial activities along the coasts, such as tourism. Commercial parcels exposed to present-day tidal flooding are located in southern Fort Walton Beach, north Okaloosa Island, Bluewater Bay, and northern Rocky Bayou.

6.2.2 Parcel Exposure to Present and Future 1% AEP Flood

In the north portion of the County, parcel flooding from the analyzed flood scenarios occurs near the Shoal River, the Yellow River, the Blackwater River, and their associated tributaries. Parcels most exposed to flooding are agricultural and conservation lands that are adjacent to the surface water bodies. Industrial parcels along the Shoal River, Yellow River, Trammel Creek, and unnamed tributaries in Crestview are exposed to the 1% AEP flood, indicating potential economic impacts on industrial activity stemming from a large-magnitude flood event.

In the south portion of the County, the majority of affected parcels are residential, followed by publicly owned and commercial parcels. Figure 6-1 shows parcel exposure under present-day tidal flooding, and Appendix C includes figures showing parcel flooding in all 1% AEP flood scenarios.

Figure 6-1. Parcel Exposure to Present-Day Tidal Flooding



6.3 Asset Exposure

Flood exposure was defined as the flood depth at an asset. A flood exposure analysis was conducted for each of the select assets in the County regardless of whether they are located within the floodplain or associated flood areas. Table 6-2 shows percentage of assets exposed to each flood scenario, as organized by the four asset classes.

Table 6-2. Asset Class Exposure by Flood Scenario

Flood Scenario	Asset Class			
	Critical Community and Emergency Facilities	Critical Infrastructure	Natural Cultural and Historical Resources	Transportation and Evacuation Routes
Mean Higher High Water Level + 2 feet	0.0%	0.5%	6.8%	1.0%
Tidal + 2040 Intermediate-Low Sea Level Rise	0.0%	0.7%	7.7%	1.4%
Tidal + 2040 Intermediate-High Sea Level Rise	0.0%	2.0%	10.9%	2.0%
Tidal + 2070 Intermediate-Low Sea Level Rise	0.0%	0.8%	0.3%	2.0%
Tidal + 2070 Intermediate-High Sea Level Rise	0.5%	2.4%	9.8%	4.7%
100-Year	1.9%	7.6%	12.6%	10.6%
100-Year + 2040 Intermediate-Low Sea Level Rise	1.9%	7.0%	12.5%	8.5%
100-Year + 2040 Intermediate-High Sea Level Rise	2.4%	7.0%	12.6%	8.6%
100-Year + 2070 Intermediate-Low Sea Level Rise	2.4%	7.0%	12.6%	8.6%
100-Year + 2070 Intermediate-High Sea Level Rise	2.4%	7.0%	12.6%	8.6%

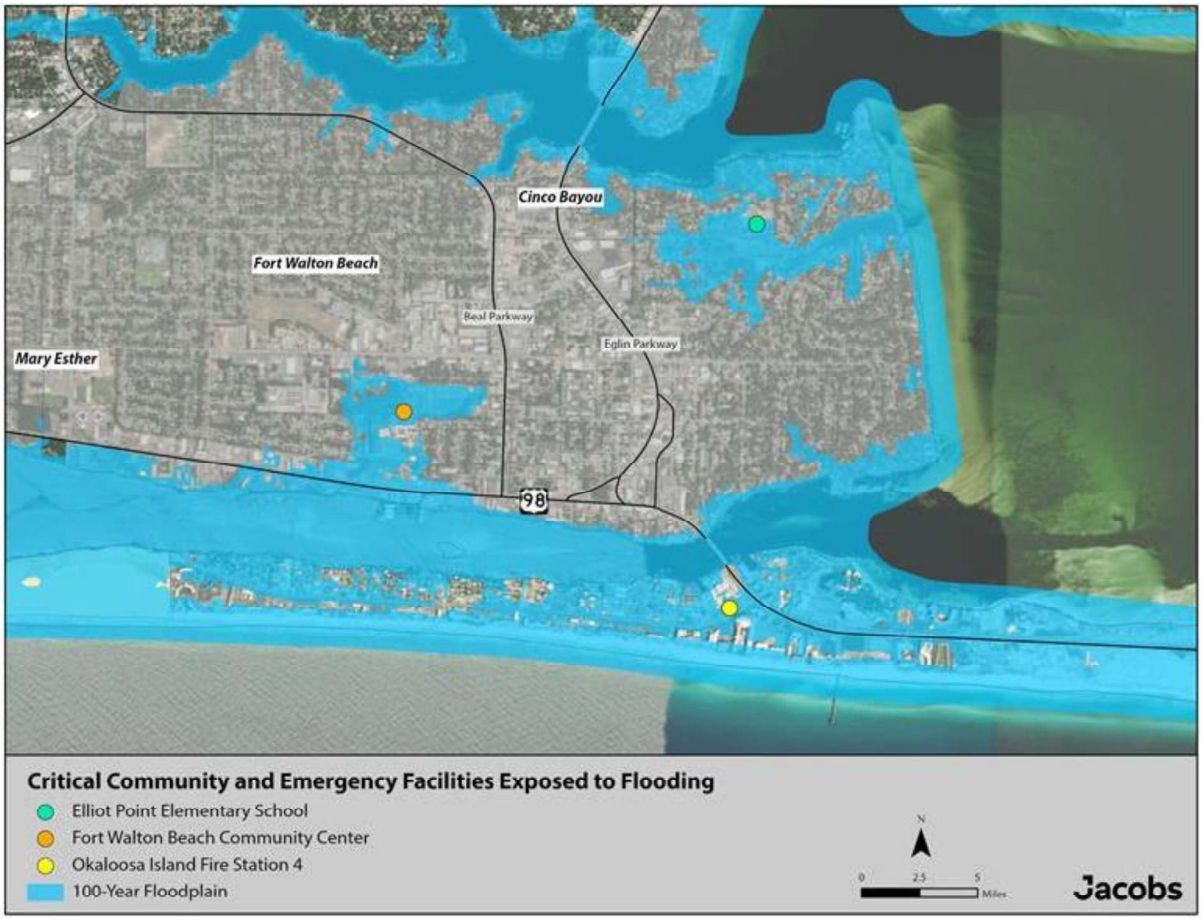
6.3.1 Critical Community and Emergency Facilities

Findings from the exposure analysis include:

- **No hospitals, healthcare facilities, correctional facilities, law enforcement facilities, or state or local government facilities are exposed to the modeled flood scenarios.**

- **No critical community and emergency facilities are exposed to tidal flooding.** None of the assets within this asset class is exposed to tidal flooding; consequentially, they will not be exposed to SLR either.
- **Only three asset types assets within this asset class are exposed to the 1% AEP flood (Figure 6-2):**
  - **Community Centers.** The City of Fort Walton Beach Community Center is exposed to the 1% AEP flood in the present day. The facility experiences flood depths of approximately 0.8 feet (10 inches) in the present day (effective FEMA FIRM).
  - **Schools.** Three schools are exposed to the 1% AEP flood. Of those, two (the Montessori Learning Center and a daycare) are private schools. The one public school, Elliott Point Elementary, is exposed to the present day 100-year flood and future scenarios, with approximate modeled flood depths of 1.5 feet measured using the effective FEMA FIRMs.
  - **Colleges and Universities.** One college is exposed to the 1% AEP flood, the Northwest Florida State College campus located in Fort Walton Beach. This campus is exposed to the present day 100-year flood and future scenarios, with assumed flood depths of 2 feet measured using the effective FEMA FIRMs.
  - **Fire Stations.** Okaloosa Island Fire Station 4 is exposed to future 1% AEP flood scenarios**.** It is projected to experience 1% AEP flood depths of approximately 0.5 feet and 2.3 feet under the 2040 Intermediate-High and 2070 Intermediate-High flood scenarios, respectively.

Figure 6-2. Critical Community and Emergency Facilities Exposed to the 1% AEP Flood



Appendix D provides Asset Flood Exposure Maps.

6.3.2 Critical Infrastructure

Selected findings from the exposure analysis are discussed in the following list:

- **Communications Facilities.** Of the 96 communications facilities assessed, only three are exposed to the flood scenarios analyzed. Two cell towers are exposed to all 1% AEP flood scenarios and the 2070 Intermediate-High tidal flood scenario. The Shalimar Post Office is exposed to all of the 1% AEP flood scenarios.
- **Disaster Debris Management Sites.** No currently identified disaster debris management sites are exposed to any of the analyzed flood scenarios.
- **Drinking Water Facilities.** Only one of the 185 drinking water facility assets analyzed are exposed to any of the tidal flooding scenarios. For the 1% AEP flood event, four drinking water facilities are exposed to the present-day event; this number increases to five in the 2040 and 2050 flood scenarios. The exposed assets include a potable water well owned by the City of Fort Walton Beach, three-privately owned wells, and a pump owned by the County.
- **Electric Production and Supply Facilities.** Twelve electric production and supply assets are exposed to the 1% AEP flood scenarios, experiencing average flood depths ranging from approximately 7 feet to 9.5 feet.
- **Solid and Hazardous Waste Facilities.** Of the 1,626 solid and hazardous waste facilities, 27 are exposed to the tidal flood scenarios while 56 are exposed to the 1% AEP flood scenarios, experiencing depths ranging from 1 to 8 feet. None of these facilities is owned by the County; however, coordination may be required to prevent spills or pollution in the event of a large-magnitude flood event.
- **Stormwater Treatment Facilities and Pump Stations.** Of the analyzed assets, the County's one stormwater water pump station is not exposed to flooding. Several dams are exposed to flooding, including six dams in the northern portion of the County and one in the southern portion of the County.
- **Wastewater Treatment Facilities and Lift Stations.** No wastewater treatment plants in the County are exposed to the analyzed flood scenarios. Approximately 30% of County-owned sanitary lift stations (LS) are exposed to at least one of the identified flood scenarios. Three LSs owned by the City of Mary Esther are exposed to flooding while no LSs owned by the City of Crestview are exposed. Flooding at a wastewater lift station can result in floodwaters entering the wet well, increasing the quantity of wastewater in the system and causing sanitary sewer overflows.
- **Water Utility Conveyance Systems.** Two water storage tanks are exposed to flooding in multiple flood scenarios.

6.3.3 Transportation and Evacuation Routes

Finding from the flood exposure analysis include:

- **Airports.** No airports are exposed to the analyzed flood scenarios.
- **Railroad facilities and bridges**. Of the three railroad facilities in the County, one is exposed to present and future 1% AEP flood scenarios, the CSXT MAINLINE (K). This line is exposed at two of its four bridges, at the crossing of Shoal River and at the crossing of Yellow River. Flood depths range from 13.5 to 13.8 feet measured using the effective FEMA FIRMs.

- **Marinas.** In the present day, four marinas are exposed to tidal flooding. This is projected to increase to approximately half of them (16/33) under 2070 Intermediate-High SLR scenario. Similarly, 17 marinas are exposed to future 1% AEP flood scenarios, with maximum flood depths ranging from 10 to 13 feet.
- **Roadways.** Of the 5,546 roadway assets analyzed in the assessment, 715 (12.8%) are exposed to at least one of the analyzed flood scenarios. Several evacuation routes are exposed, including SR-85, SR-4, and CR-393. SR-4 is projected to experience around 8 feet of flooding during the 1% AEP flood while CR-190 will experience flood depths ranging from 5.5 to 8.6 feet of flooding. CR-393 is expected to experience a maximum flood depth of 8 feet during the 1% AEP flood.

6.3.4 Natural, Cultural, and Historical Resources

Parks. Because many parks are located along waterbodies (either rivers or the coast), many of these assets experience exposure to the analyzed flood scenarios. Nine parks are exposed to the present-day tidal flood event.

Conservation Lands. These areas, which consist mostly of open spaces and related natural spaces, are exposed to flooding from current and future flood events, as anticipated for these types of land features.

Shorelines. Approximately 95% of coastal shorelines are inundated under current tidal flooding conditions, experiencing an average flood depth of 3 inches. This flood exposure indicates the need for coordinated shoreline protection.

7. Sensitivity Analysis

The sensitivity analysis is based on the depth of flooding at each critical asset and assigns a corresponding score representing asset sensitivity. Flood sensitivity may typically include an evaluation of each asset materials, age, condition, and other factors affecting its performance when inundated by flood waters. For the purposes of this study, and because of the planning level nature of this analysis, the greater the flood depths, the higher the sensitivity of the asset to the flood hazard. Scoring criteria were assigned in accordance with flood depths to understand the flood sensitivity for each asset under each flood hazard scenario (Table 7-1). Appendix E provides the complete flood sensitivity analysis results.

Table 7-1. Sensitivity Scoring Criteria

Asset Category	Assets	Sensitivity Scoring Criteria					
		0 – No Exposure	1 – Very Low	2 – Low	3 – Medium	4 – High	5 – Extreme
Critical Community and Emergency Facilities	All assets	0"	<3"	3–6"	6–18"	18–36"	>36"
Critical Infrastructure	All Assets	0"	<3"	3–6"	6–18"	18–36"	>36"
Natural, Cultural, and Historical Resources	Buildings	0"	<3"	3–18"	6–18"	18–36"	>36"
	Parcels	0"	<25%	25–50%	50–75%	>75%	>90%
Transportation and Evacuation Routes	Bus Terminals and Marinas	0"	<3"	3–18"	6–18"	18–36"	>36"
	Roadways and Railroads	0"	<25%	25–50%	50–75%	>75%	>90%

8. Vulnerability Assessment Results

Vulnerability is the combination of exposure and sensitivity. Exposure and sensitivity scores for each asset in each flood hazard scenario were summed, yielding a vulnerability score. The vulnerability scores for each flood scenario were then added together, yielding a composite vulnerability score that encompasses all of the flood scenarios. The maximum vulnerability score is 100; the higher the score, the higher the flood vulnerability of the asset (Table 8-1). Scores were normalized for inland and coastal assets. The following subsections detail assets with moderate through extreme vulnerability scores and have been tailored to focus on County- or municipal-owned assets.

Table 8-1. Overall Vulnerability Scoring

Overall Vulnerability	No Vulnerability	Very Low	Low	Moderate	High	Extreme
Score	0	1-24	25-49	50-74	75-89	90-100

It is important to note that vulnerability scoring does not incorporate asset criticality relative to County or municipal operation or public health and safety. These factors are incorporated into the risk calculation found in Section 9, Risk Analysis.

8.1 Focus Areas

Using the results of the public engagement meetings, parcel and asset flood exposure analysis, Jacobs identified multiple 'hot spot' areas around the County with notable flooding issues.

Vulnerability hot spots include:

- Okaloosa Island
- Southern and eastern Fort Walton Beach, and the town of Cinco Bayou
- Southern Mary Esther
- Western Crestview along the Yellow River
- Shoal River Bridge
- Southern Niceville
- Eastern Valparaiso
- The lands around Boggy Bayou, Cinco Bayou, Rocky Bayou, and Tom's Bayou
- Gap Creek and its drainage basin
- Conservation and agricultural lands along the Blackwater and Shoal Rivers
- Lands around CR-393 and Pond Creek

8.2 North County Vulnerability

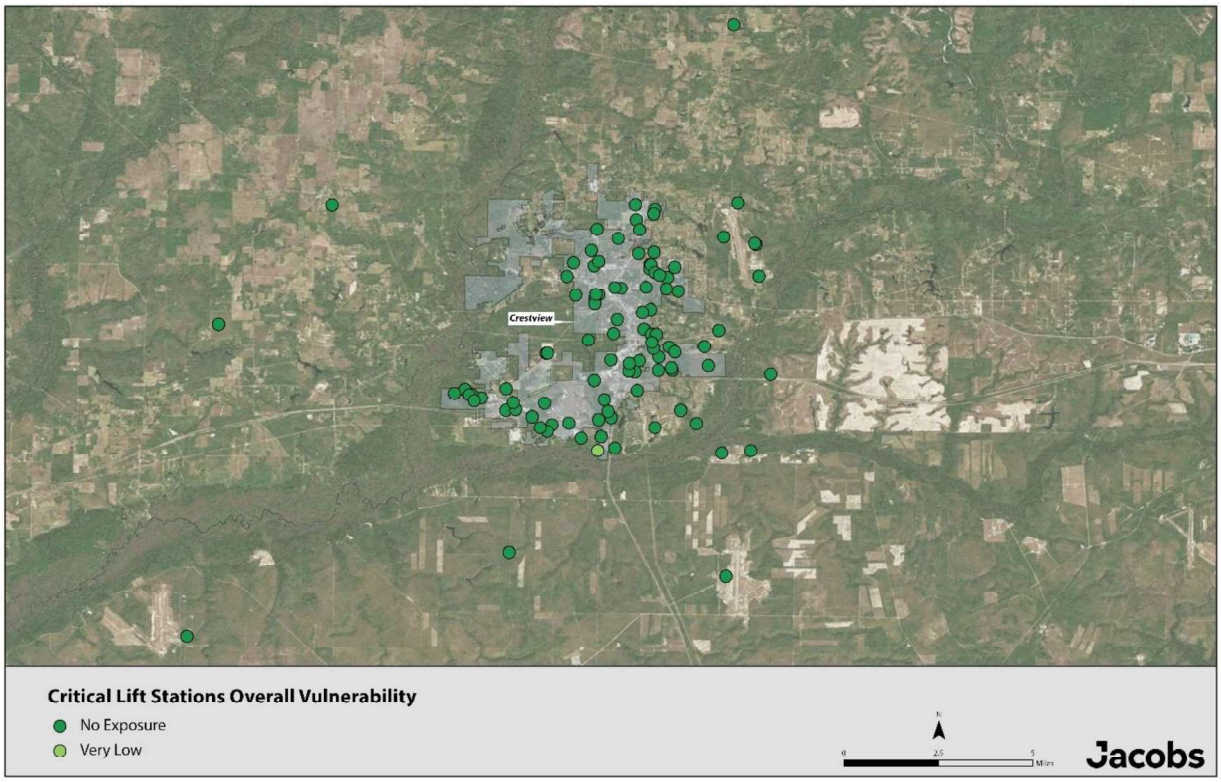
Flood vulnerability in the north portion of the County is concentrated among roadways, parks, and conservation lands, with few critical infrastructure assets exposed to the 1% AEP flood event. No assets within the boundaries of the City of Laurel Hill are exposed to the mapped 1% AEP flood event. None of the analyzed critical community and emergency facility assets north of Eglin AFB is vulnerable to flooding. The following subsections describe flood vulnerability across the other three asset classes.

8.2.1 Critical Infrastructure

Multiple privately owned solid and hazardous waste facilities and dams are vulnerable to the 1% AEP flood event. The only municipal-owned critical infrastructure facilities exhibiting vulnerability are wastewater lift stations as shown in Figure 8-1.

Wastewater Facilities and Lift Stations. Most lift stations were not vulnerable to the 1% AEP flood: a City of Crestview lift station experiences low vulnerability while all other were not exposed to flooding.

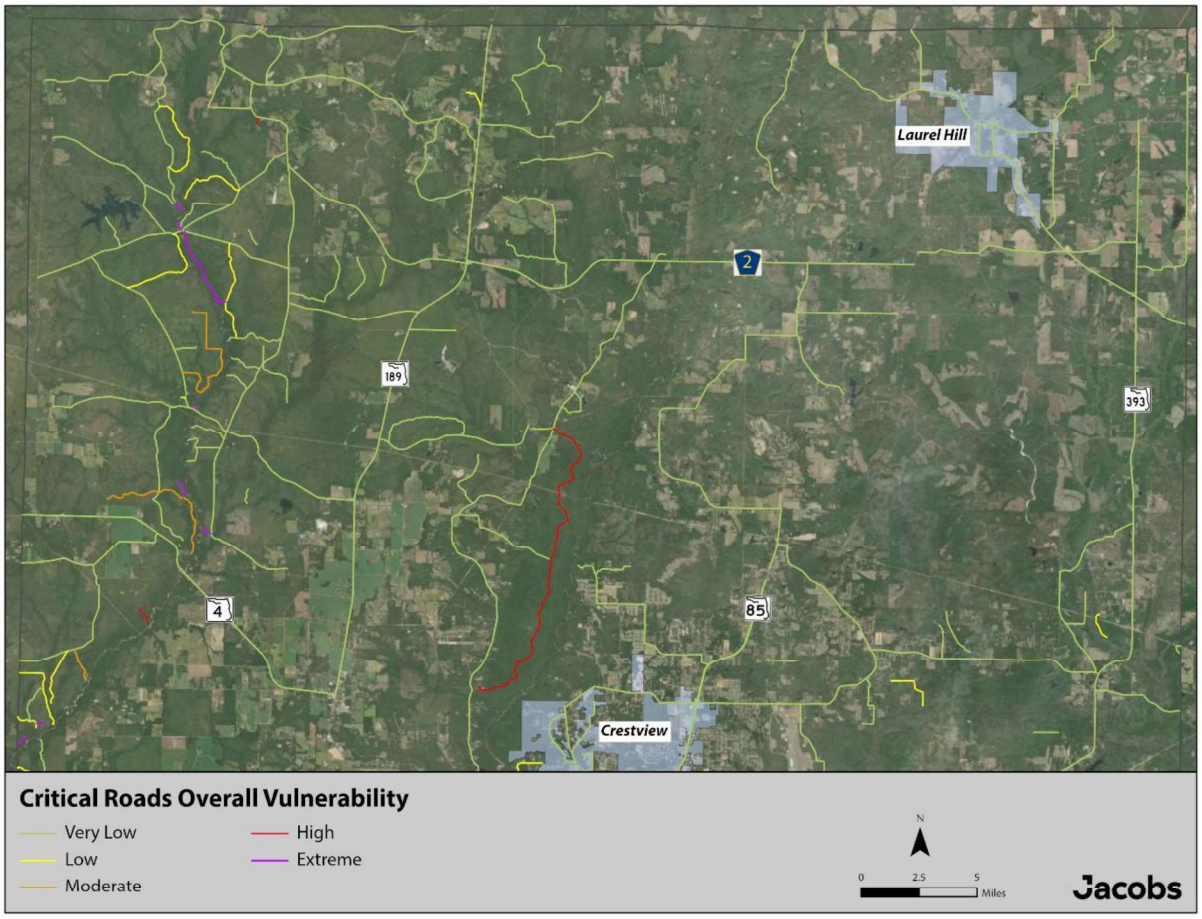
Figure 8-1. Critical infrastructure vulnerability (lift stations) in North County



8.2.2 Transportation and Evacuation Routes

Figure 8-2 shows vulnerable roadways north of Eglin AFB.

Figure 8-2. Roadway Vulnerability in North County



State Roadways. Multiple critical state roadways that function as evacuation routes are vulnerable to the 1% AEP flood: SR-4 over the Blackwater River, SR-8, I-10, and CR-393 experience varying degrees of flood exposure (refer to Table 8-2).

Table 8-2. Critical Northern Roadways Flood Impacts

Roadway Name	% of Roadway Inundated in 100-year Floodplain	Min. Flood Depth (feet)	Max. Flood Depth	Average Flood Depth	Vulnerability Rank
SR-4 W	4%	0.0 feet	23.0 feet	8.3 feet	Very Low
SR-8	4%	0.5 feet	14.0 feet	10.4 feet	Very Low
SR-8 at 58 feet BFE	4%	0.5 feet	14.0 feet	12.3 feet	Very Low
SR-8 at 78 feet BFE	4%	6.3 feet	11.4 feet	8.6 feet	Very Low
I-10	4%	0.4 feet	17.0 feet	8.8 feet	Very Low
I-10 at 67 BFE	4%	0.4 feet	15.8 feet	8.6 feet	Very Low
I-10 at 85 BFE	4%	2.4 feet	17.0 feet	8.9 feet	Very Low
CR-393	6%	0.0 feet	19.9 feet	4.4 feet	Very Low

While only small portions of the roadway experience inundation, resulting in low vulnerability scores, it is crucial that these routes remain accessible to maintain connectivity between north and south County. Jacobs recommends that coordination occur between the County and the Florida Department of Transportation to address flood risks on these roads.

Table 8-3. High or Extreme Vulnerability County-Owned or Maintained Roads

Roadway Name	Community	% of Roadway Inundated in 100-year Floodplain	Average Flood Depth	Vulnerability Rank
Barrow Ln.	Holt	100%	2 feet[a]	Extreme
Canoe Lake Rd.	Holt	100%	7.3 feet	Extreme
Easy St.	Holt	100%	2 feet[a]	Extreme
Gladway Dr.	Crestview	100%	8.1 feet	Extreme
Yellow River Ln.	Holt	100%	2 feet[a]	Extreme
Yellow River Log Lake Rd.	Holt	100%	7.0 feet	Extreme
Beth Cir.	Crestview	99%	2 feet[a]	Extreme
Saw Mill Rd.	Baker	92%	2 feet[a]	Extreme
Haiseal	Baker	90%	8 feet	High
Hughes Rd.	Baker	87%	2 feet	High
Carr Rd.	Holt	83%	4.2 feet	High
Calvin Carr Rd	Holt	79%	2.7 feet	High

Table 8-3. High or Extreme Vulnerability County-Owned or Maintained Roads

Roadway Name	Community	% of Roadway Inundated in 100-year Floodplain	Average Flood Depth	Vulnerability Rank
Sowell Dr.	Crestview	77%	4.5 feet	High

[a] Indicates asset is located in a Zone A floodplain. Assumed flood depth is 2 feet.

In addition, Trevor Court (owned by the City of Crestview) is located in the Zone A floodplain and has high vulnerability to flooding, with approximately 83% of the roadway experiencing inundation.

8.2.3 Natural, Cultural, and Historical Resources

Conservation Lands. Both the Blackwater River State Forest and conservation lands adjacent to the Shoal River exhibit high vulnerability to flood hazards (Figure 8-3).

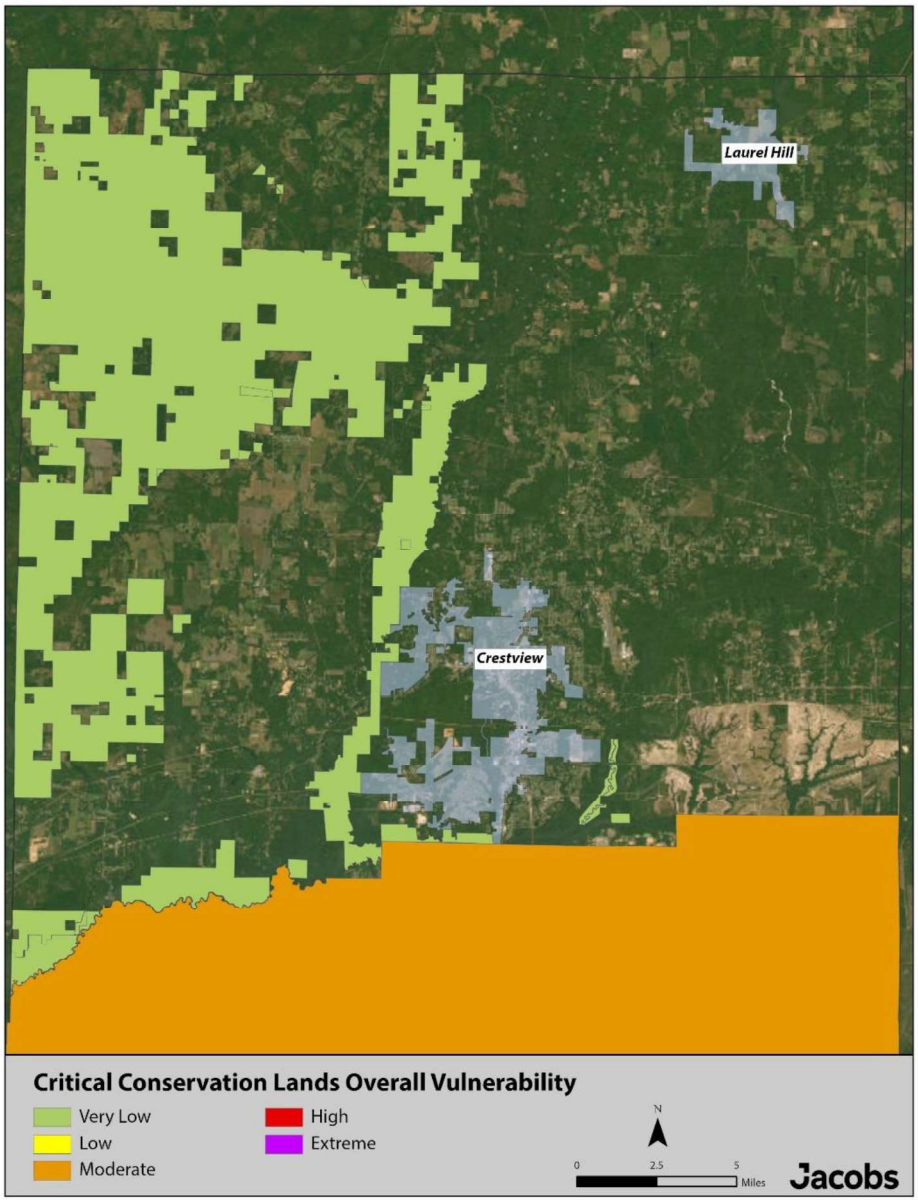
Parks. There are twelve vulnerable parks that are vulnerable to the 1% AEP flood in the northern portion of the County (Table 8-4).

Table 8-4. Vulnerable Parks in North County

Park	Community	Average Flood Depth	Vulnerability Rank
Cotton Bridge Park	Baker	22.5 feet	Extreme
Reedy Landing	Baker	14.6 feet	Extreme
Milligan/Yellow River Park	Baker	14.6 feet	Extreme
Ray Lynn Barnes Park	Crestview	12.4 feet	Extreme
Gator Hole on Blackwater River	Baker	8.7 feet	Extreme
Kennedy Bridge Recreation Area	Baker	7.6 feet	Extreme
Turkey Bluff Boat Ramp	Crestview	7.3 feet	Extreme
Guest Lake Park Boat Ramp	Holt	6.2 feet	Extreme
Wilderness Landing	Baker	5.3 feet	Extreme
Shoal River Wayside Park	Crestview	4.8 feet	Extreme
Triple Lake Estates Park	TBD (Undeveloped neighborhood park)	2.0 feet[a]	High
Oak Grove River Park	Baker	0.6 feet	Moderate

[a] Indicates asset is located in a Zone A floodplain; assumed flood depth is 2 feet.

Figure 8-3. Vulnerable Conservation Lands in North County



8.3 South County Vulnerability

Vulnerability in the south portion of the County is concentrated in coastal areas, including Fort Walton Beach, Mary Esther, Niceville, Valparaiso, Okaloosa Island, and Bluewater Bay. The following subsections describe vulnerability across the four asset classes.

8.3.1 Critical Community and Emergency Facilities

In the south portion of the County, the following County-owned facilities shown in Figure 8-4 were found to be highly or extremely vulnerable to flooding:

- **Elliott Point Elementary School.** This high-vulnerability school is located within the current 100-year floodplain and demonstrates vulnerability to the 1% AEP flood in the 2040s and 2070s.
- **Okaloosa Island Fire Station #4.** The fire station is in the 100-year floodplain under the 2070 Intermediate-High SLR with 2 feet of flooding, resulting in high vulnerability. Though not an immediate need, this facility will need to be hardened or relocated in the future to avoid flood impacts.

Figure 8-4. Critical Community and Emergency Facilities in South County



8.3.2 Critical Infrastructure

Overall, relatively few critical infrastructure point assets exhibit extreme or high vulnerability to the evaluated flood scenarios. Vulnerability of critical infrastructure assets are further discussed in the following subsections.

8.3.2.1 Communications Facilities

No County-owned communications facilities are vulnerable to flooding. The U.S. Post Office in Shalimar has moderate vulnerability, experiencing flood impacts under the 1% AEP 2040 and 2070 flood scenarios. In addition, two privately owned communications towers also demonstrate moderate vulnerability, being vulnerable to all 1% AEP flood scenarios as shown in Figure 8-5.

Figure 8-5. Communication Facilities in South County



8.3.2.2 Water Utility Assets

Multiple water storage tanks on Okaloosa Island (East Island and West Island) are vulnerable to multiple flood scenarios as shown in Figure 8-6. In addition, two water wells are vulnerable to flooding – one owned by the County and the other owned by the City of Niceville as shown in Figure 8-7.

Figure 8-6. Critical Water Utilities (wells) in South County



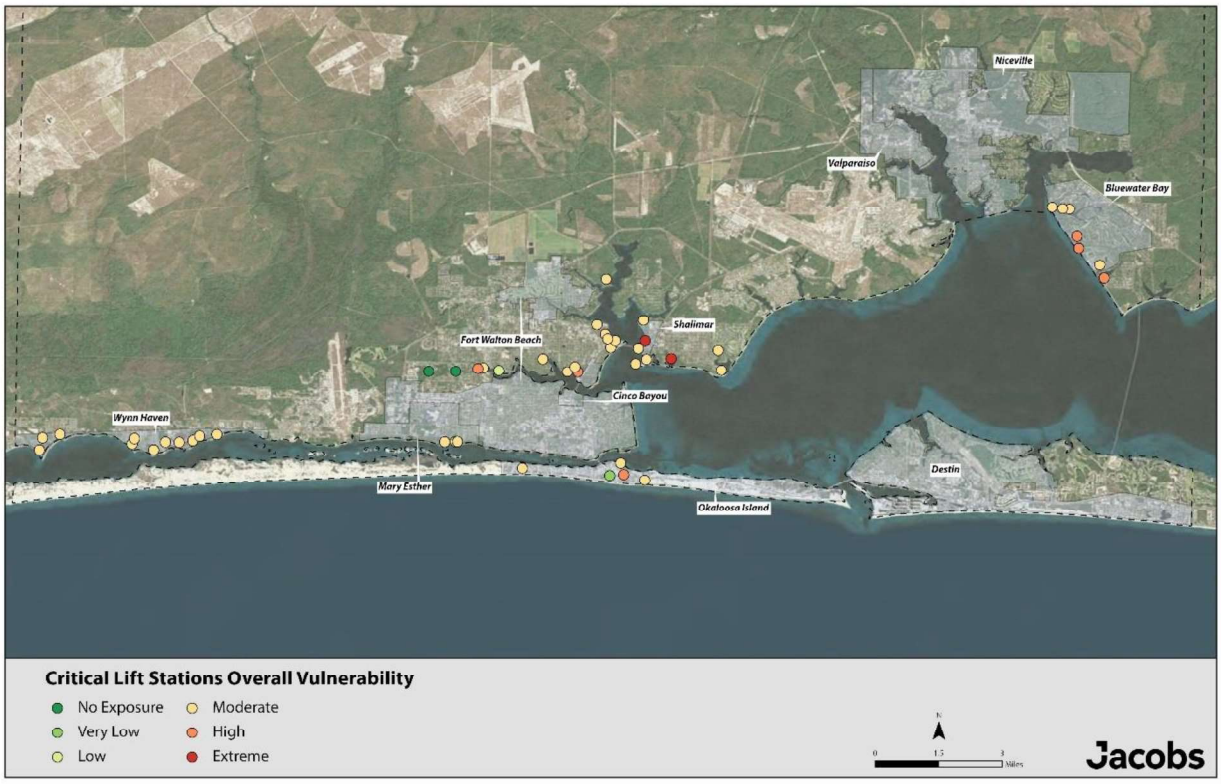
Figure 8-7. Critical Water Utilities (tanks) in South County



8.3.2.3 Wastewater Utility Assets

Less than half of the wastewater lift stations analyzed are vulnerable to flooding as shown in Figure 8-8.

Figure 8-8. Critical Water Utilities (lift stations) in South County



8.3.3 Transportation and Evacuation Routes

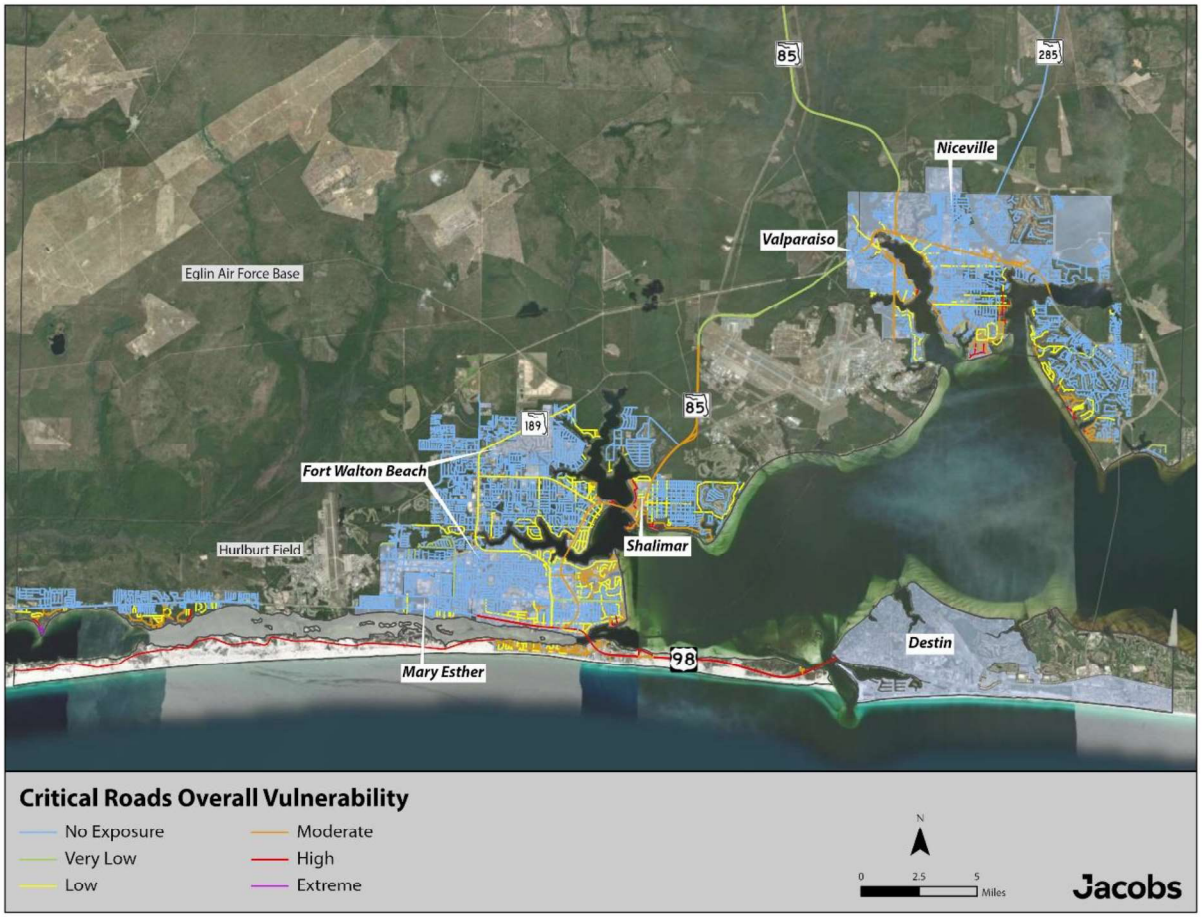
8.3.3.1 Marinas

Almost all marinas in the region display varying degrees of vulnerability to flood hazards. The most vulnerable marinas in the present day are the boat ramps at Lions Park in Niceville and Lincoln Park in Valparaiso.

8.3.3.2 Roadways

Critical roadways and evacuation routes that with high flood vulnerability include Miracle Strip Parkway, SR-85, and US-98 (Figure 8-9). While these roads are owned by the State, they are critical for community traversal and evacuation. Community roadway vulnerability is concentrated south of US-98 in Mary Esther, on Okaloosa Island, in northeastern Fort Walton Beach, in eastern Shalimar, southern Niceville, and in Bluewater Bay's coastal communities.

Figure 8-9. Roadway Vulnerability in South County



State Roadways. Multiple critical state roadways that function as evacuation routes are vulnerable to the 1% AEP flood: SR-188 (Racetrack Road), SR-189 (Beal Parkway and Lewis Turner Boulevard), SR-20 E (John Sims Parkway), SR-293 (Mid Bay Bridge Road), SR-85 (Eglin Parkway), SR-85 N (Government Avenue, John Sims Parkway, and W Eglin Parkway), SR-30 (Miracle Strip Parkway), and SR-397 (John Sims Parkway) experience varying degrees of flood exposure (Table 8-5).

Table 8-5. Critical Southern Roadways Flood Impacts

Roadway Name	Common Roadway Name/ Roadway Unique Identifier	% of Roadway Inundated in 100-year Floodplain/Location of Roadway Flooding	Min. Flood Depth	Max. Flood Depth	Average Flood Depth	Vulnerability Rank
SR-188	Racetrack Road	0%	0.1 feet	0.33 feet	0.25 feet	Low
SR-189	Beal Parkway and Lewis Turner Boulevard	1%	0.2 feet	2.11 feet	0.37 feet	Low

Table 8-5. Critical Southern Roadways Flood Impacts

Roadway Name	Common Roadway Name/ Roadway Unique Identifier	% of Roadway Inundated in 100-year Floodplain/Location of Roadway Flooding	Min. Flood Depth	Max. Flood Depth	Average Flood Depth	Vulnerability Rank
SR-189	Lewis Turner Boulevard	6%	0.1 feet	3.0 feet	1.1 feet	Low
SR-20 E	John Sims Parkway	2%	2.6 feet	30.9 feet	19.7 feet	Moderate
SR-293	Mid Bay Bridge Road	Westward-most approach to bridge crossing Fox Head Branch	2 feet[a]	2 feet[a]	2 feet[a]	Moderate
SR-293	Mid Bay Bridge Road	Bridge approaches for the crossing of Rocky Creek	1.5 feet	4.1 feet	3.0 feet	Moderate
SR-85	Eglin Parkway	6%	0.1 feet	35.7 feet	8.3 feet	Moderate
SR-85	N Eglin Parkway	40%	0.0 feet	44.8 feet	13.0 feet	Moderate
SR-85 N	Government Avenue and John Sims Parkway W	20%	0.6 feet	10.6 feet	2.6 feet	Moderate
SR-85 N	Eglin Parkway and Segment North of College Boulevard up to Crestview	1%	2 feet[a]	2 feet[a]	2 feet[a]	Very Low
SR-30	Miracle Strip Parkway SE and SW	55%	0.0 feet	23.9 feet	3.9 feet	High
SR-30	West US-98, Miracle Strip Parkway E and W	5%	0.0 feet	3.4 feet	1.0 feet	Low
SR-30	Miracle Strip Parkway SE	100%	2.2 feet	3.8 feet	3.9 feet	Moderate
SR-30	Emerald Coast Parkway, US-98 E, Miracle Strip Parkway SE	25%	0.0 feet	30.6 feet	4.1 feet	Moderate
SR-397	South John Sims Parkway	8%	1.1 feet	22.8 feet	15.2 feet	Moderate

Table 8-5. Critical Southern Roadways Flood Impacts

Roadway Name	Common Roadway Name/ Roadway Unique Identifier	% of Roadway Inundated in 100-year Floodplain/Location of Roadway Flooding	Min. Flood Depth	Max. Flood Depth	Average Flood Depth	Vulnerability Rank
SR-397	John Sims Parkway West	44%	0.0 feet	3.0 feet	1.4 feet	Low

[a] Indicates asset is located in a Zone A or AE floodplain. Assumed flood depth is 2 feet.

The following are critical state roadways that function as evacuation routes that are not vulnerable to the 1% AEP flood: SR-123 (Roger J Clary Highway), SR-145 (Perry Avenue SE), SR-190 (Valparaiso Parkway) within the city limits of Valparaiso and on Eglin AFB property, SR-85 N (Government Avenue) within the city limits of Valparaiso, SR-285 segment north of College Boulevard northeastern to County limits, SR-285 (Partin Drive N), CR-393 (Mary Esther Boulevard and Mary Esther Cutoff NW), and SR-397 (Eglin Parkway NW and W Eglin Boulevard).

8.3.4 Natural, Cultural, and Historical Resources

8.3.4.1 Parks

Parks and boat ramps with extreme flood vulnerability include: Okaloosa Island Boat Basin, Florida Park, the Seaway Boat Ramp, Meigs Park Boat Ramp, Rickey Ave Boat Ramp, Bay Accessways 4 and 7, and the Okaloosa Island Beachfront. Figure 8-10 shows the locations of all vulnerable parks south of Eglin AFB.

8.3.4.2 Shorelines

The shorelines demonstrating extreme flood vulnerability are in Wynn Haven, Mary Esther, Okaloosa Island, Cinco Bayou, Garnier Bayou adjacent to Eglin AFB, Valparaiso, and portions of Niceville and Bluewater Bay (Figure 8-11).

Figure 8-10. Park Vulnerability in South County

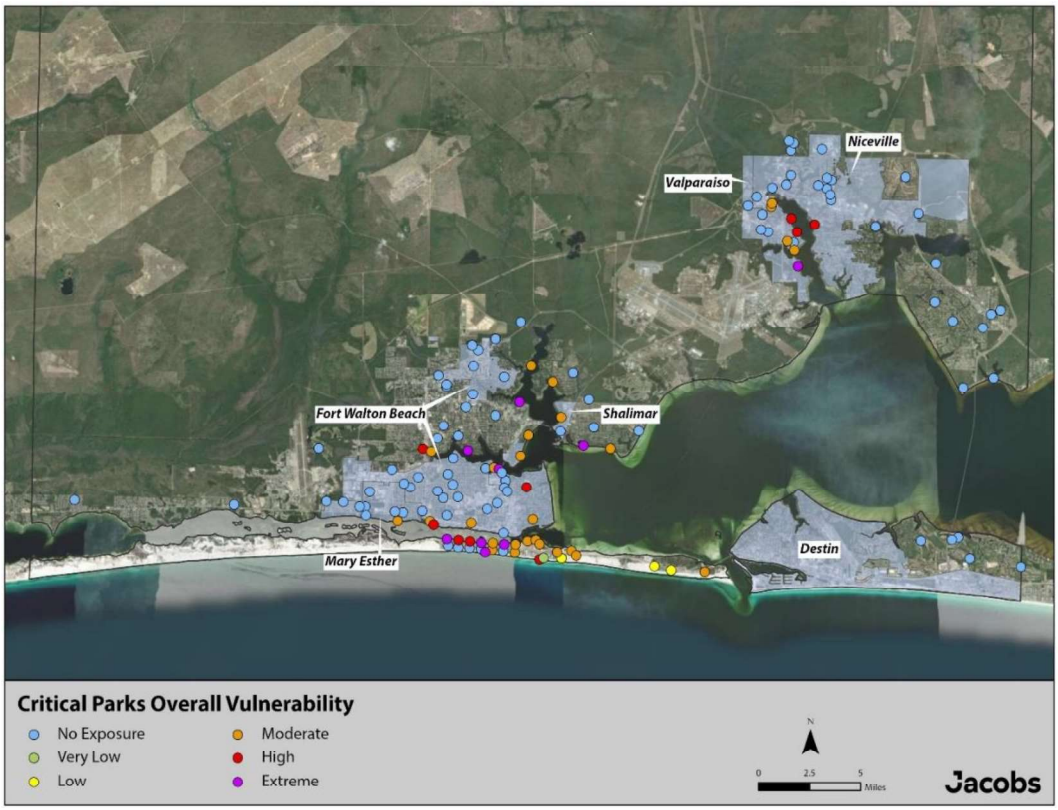
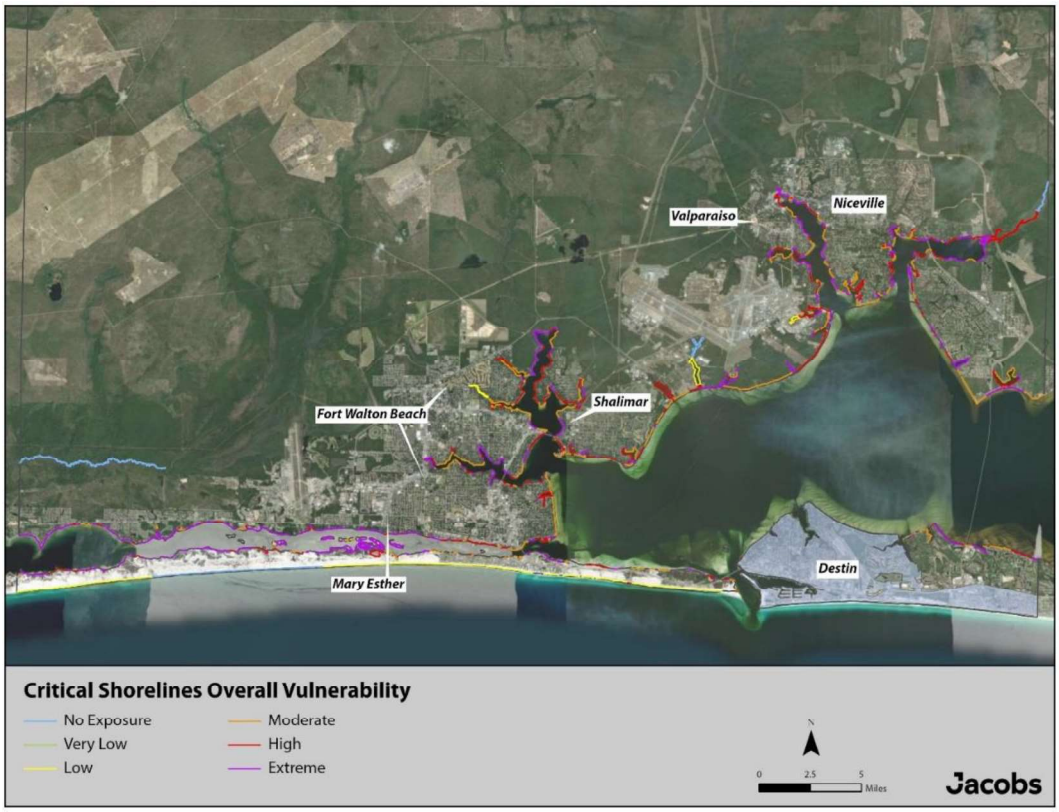


Figure 8-11. Shoreline Vulnerability in South County



9. Risk Analysis

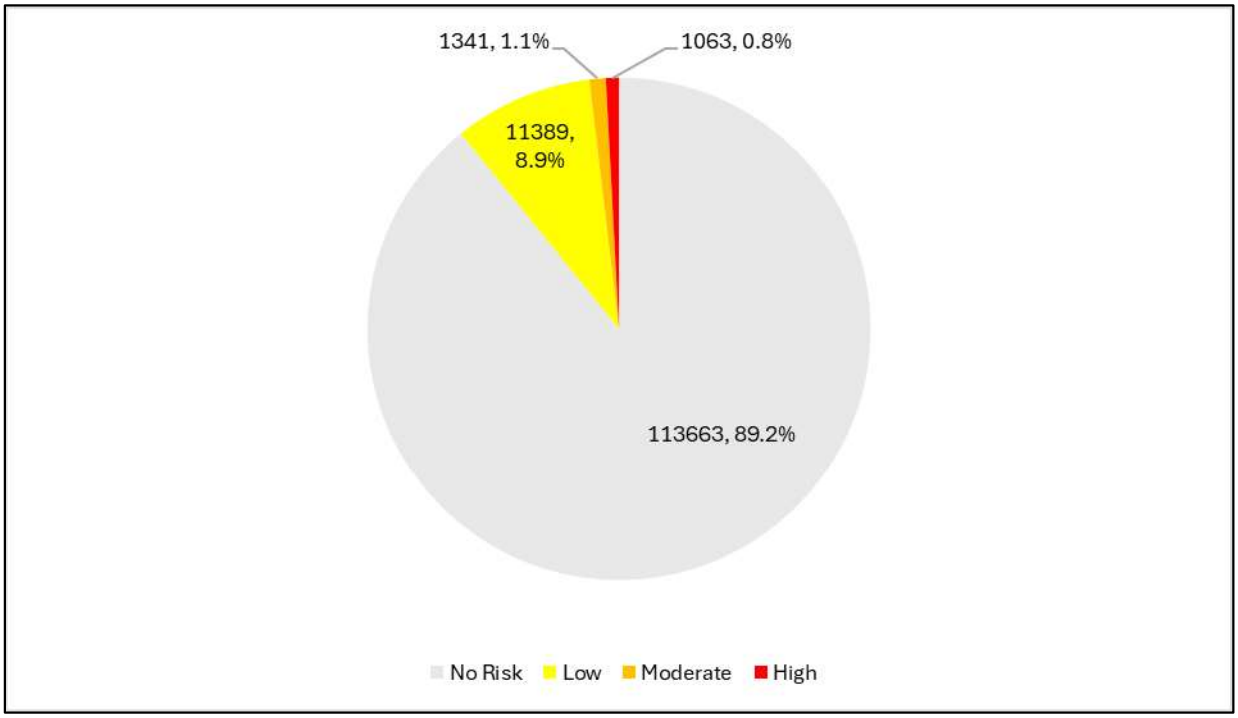
To provide a clear understanding of when assets will become affected by flood hazards and support prioritization of asset improvements, Jacobs conducted a risk analysis. Risk is quantification of severity and probability – it incorporates the effects of the hazard's impact on the asset and the likelihood of the hazard. Asset criticality was assigned to each asset type using the criticality ratings and justifications in Table 9-1. Appendix F provides the complete asset criticality table.

Table 9-1. Asset Criticality Scoring

Criticality Rating	Asset Name
High	Asset is critical for health and safety, critical services, government operations, or evacuation/ shelter before, during, or after storm events.
Medium	Asset supports everyday community activities and supports, but is not critical for, public health and safety.
Low	Asset is not essential for community functioning or life safety. While loss or damage to asset may be inconvenient, impacts do not impair community safety or service operations.

Risk was calculated for each asset and flood scenario and summed for each time period, resulting in flood risk scores for the present day, 2040s, and 2070s. Figure 9-1 shows the distribution of flood risk across all evaluated assets.

Figure 9-1. Flood Risk Distribution Across All Assets



The vast majority of assets in the County (89.2%) have no flood risk. Of the remaining 13,793 assets, most of those are low risk. Approximately 1.1% and 0.8% of assets are moderate and high risk, respectively. The 1,063 high risk assets are comprised primarily of shorelines.

Within the 1,063 high-risk assets, 94.6% are shorelines or wetlands. The remainder are bridges, gravity mains, retention ponds, roads, wastewater treatment facilities and lift stations, and water utility conveyances. Table 9-2 lists the highest-risk, high-criticality assets.

Table 9-2. Top 10 Highest Risk Assets, High-Criticality Built Infrastructure Assets

#	Asset Type	Asset Name	Criticality	Risk Level	Cascading Impacts
1	Wastewater Facilities and Lift Stations	LS-061	High	High	Impacts to public health, local economy
2	Wastewater Facilities and Lift Stations	LS-592	High	High	Impacts to public health, local economy
3	Wastewater Facilities and Lift Stations	LS-562	High	High	Impacts to public health, local economy
4	Wastewater Facilities and Lift Stations	LS-039	High	High	Impacts to public health, local economy
5	Water Utility Conveyances	East Island Tank	High	High	Impacts to public health, local economy
6	Roadways	Miracle Strip Parkway	High	High	Impacts to local economy, evacuations
7	Wastewater Facilities and Lift Stations	LS-570	High	High	Impacts to public health, local economy
8	Wastewater Facilities and Lift Stations	LS-204	High	High	Impacts to public health, local economy
9	Wastewater Facilities and Lift Stations	LS-114	High	High	Impacts to public health, local economy
10	Wastewater Facilities and Lift Stations	LS-107	High	High	Impacts to public health, local economy

Other findings from the flood risk analysis include:

- **Shorelines and wetlands have high consequence associated with loss of function.** In the event of permanent inundation under SLR, these assets will no longer provide the natural and beneficial functions (flood protection, water quality improvements) that they normally do.
- **Local roads in coastal neighborhoods exposed to flooding, result in a high risk of road damage and disruption of service.** Select roads in coastal neighborhoods in Mary Esther, Niceville, and Fort Walton Beach have high flood risk. These roads have high vulnerability and may already be experiencing tidal flood impacts. The highest-risk local roads include Southminster Ct. (located in Niceville), Hasty Ln. (Niceville), Lighthouse Rd. (Fort Walton Beach), Yacht Club Drive (Fort Walton Beach), Sunset Cove W (Bluewater Bay), Bayshore Drive (Shalimar), and Osceola Bay Ave. (Niceville).
- **Few inland assets are at high risk to assets or systems when exposed to flooding.** Only two wastewater lift stations are classified as high risk.

- **Coastal wastewater collection and water distribution pipelines/systems may experience a moderate risk from coastal flooding and SLR.** On an individual basis, coastal wastewater collection and water distribution pipelines may not be significantly impacted by coastal flooding. However, wastewater collection system inflow and infiltration stemming from aboveground flooding and/or elevated groundwater levels from SLR can result in increased corrosion of pipelines, excessive flows into wastewater systems, and impacts to wastewater treatment from increased chloride levels.
- **Many privately owned solid waste generators exposed to flooding, result in a moderate risk of transportation of pollutants and health and safety impacts.** Though the flooding of a solid waste facilities may not significantly inhibit County operations, the combination of potential contamination of floodwaters from those facilities and their high vulnerability to coastal flood hazards renders these facilities a potential source of public health impacts.
- **Seven regional stormwater retention ponds exposed to flooding are at a moderate risk of impacts to system performance.** Retention pond storage may be affected by tidal flood events, resulting in decreased storage or backflow into the pond or urban drainage systems.
- **Flood risk reduction is critical for certain evacuation routes.** Based on the metrics used, certain roads, such as CR-393, were classified as low risk of impacts from flood exposure. However, it is still crucial that vulnerabilities in these roadways be addressed because of their importance as both community connectors and evacuation routes.

10. Next Steps

Upon the acceptance of the VA by the County and the State, the next steps involve adaptation planning and the implementation of prioritized projects. The beginning phase of adaptation planning will focus on identifying and ranking projects based on their urgency and potential to mitigate flood vulnerabilities for critical assets. This process includes assessing the criticality of infrastructure, reviewing capital improvement project lists, reviewing master plans for infrastructure, and the risks associated with delaying implementation. Additionally, proposed local ordinances and/or policies are recommended to be developed to support the implementation of these prioritized projects, creating guidelines, regulations, and frameworks that support efforts to mitigate these identified flood risks.

After the development and acceptance of the Adaptation Plan, the implementation phase will address vulnerable critical community infrastructure by implementing the prioritized projects. This may involve securing additional funding to upgrade existing systems, constructing new facilities, and developing and implementing new policies and local ordinances to enhance resilience against identified flood threats. Continuous monitoring and evaluation of implementation projects is also needed to track the progress of these projects and assess their effectiveness, allows for adjustments to strategies and plans as needed, to maximize their effectiveness. These steps are crucial for ensuring that the community's critical infrastructure is resilient and capable of withstanding various shocks and stressors they will face over their service life.

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Appendix A
Data Collection Summary

Jacobs

Data Gap Technical Memorandum and Summary Report of Recommendations

Okaloosa County, Florida

Resilient Florida Vulnerability Assessment
March 31, 2025

Executive Summary

Jacobs Engineering Group (Jacobs) was selected to complete a vulnerability assessment for the unincorporated area of Okaloosa County Florida. Jacobs conducted a thorough asset data collection process that included reviewing available state asset data sources, requesting asset information from the County, reaching out to local utilities and municipalities for asset data information, and held steering committee and public meetings with stakeholders and County residents to gain information and importance of asset data. For hazard data, Jacobs collected hazard data from state and federal resources including sea level rise and flood. All asset and hazard data collected was classified by asset class and is noted in this technical memorandum.

Based on the data collected, few data gaps were encountered. These included the following:

- Data was not acquired for local municipalities, including Bayou Chico, Destin, and Laurel Hill. Jacobs reached out to these entities during the data collection phase but was unable to obtain system data.

Though data are missing from the above municipalities, their assets are private and not owned or maintained by Okaloosa County. These data were supplemented with data from the FDEP statewide database.

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Acronyms and abbreviations

CHELCO	Choctawhatchee Electric Cooperative
FDEP	Florida Department of Environmental Protection
FEMA	Federal Emergency Management Agency
F.S.	Florida Statues
FPL	Florida Power and Light
NOAA	National Oceanic and Atmospheric Administration
VA	Vulnerability Assessment

1. Introduction

The Resilient Florida Grant Program aims to enhance community resilience through comprehensive vulnerability assessments (VAs). Typically, VAs focus on identifying risks posed by flood hazards to inform resilient planning efforts. Jacobs Engineering Group (Jacobs) was selected to complete the VA for Okaloosa County, and part of the scope of work includes completing a Data Gaps Analysis for asset data. Section 1 outlines the asset data and hazard data that was gathered from multiple sources to be used in the VA and compares the data gathered to the required asset data as mentioned in F.S. 380.93. Data gaps are discussed in Section 2.

1.1 Required Critical Asset and Hazard Data

As previously mentioned, community critical assets are required to be researched and incorporated into the VA. Critical assets as defined in F.S. 380.093 include assets within four categories: transportation and evacuation routes, critical infrastructure, critical community and emergency facilities, and natural, cultural, and historical resources. For the critical assets defined in F.S. 380.093, sub-classifications of critical assets (asset types) are shown in Table 1-1 with respect to the critical asset category.

Table 1-1. Critical Asset Categories and Associated Asset Types

Asset Category	Asset Type	
Transportation	Airports Bridges Bus Terminals Ports	Major Roadways Marinas Rail Facilities Railroad Bridges
Critical Infrastructure	Wastewater Treatment Facilities Lift Stations Stormwater Treatment Facilities Pump Stations Drinking Water Facilities Water Utility Conveyance Systems	Electric Production and Supply Facilities Solid and Hazardous Waste Facilities Military Installations Communications Facilities Disaster Debris Management Sites
Critical Community and Emergency Facilities	Schools Colleges Universities Community Centers Correctional Facilities Disaster Recovery Centers Emergency Medical Service Facilities Emergency Operation Centers Fire Stations	Health Care Facilities Hospitals Law Enforcement Facilities Local Government Facilities Logistical Staging Areas Affordable Public Housing Risk Shelter Inventory State Government Facilities
Natural, Cultural and Historical Resources	Conservation Lands Wetlands Historical & Cultural Assets	Parks Shorelines Surface Waters

As required for the critical asset exposure to hazards in the VA, Jacobs researched and compiled hazard data for multiple flood hazards, including sea level rise, storm surge, rainfall-induced flooding, and tidal flooding. Hazard source data is detailed in Table 1-2 below.

2. Data Inventory

2.1 Asset Data

The Jacobs team used various data sources to gather information on critical asset infrastructure. Data sources for critical asset infrastructure included data from the Florida Geodatabase Library, Okaloosa County GIS Division, local municipalities, and utility providers in the area. Jacobs also held multiple Steering Committee and Public meetings with stakeholders and local communities to discuss assets, gain more information on assets, and understand the importance of different assets. Table 2-1 below inventories asset data and indicates if data was collected for each respective asset type. An "N/A" noted on Table 2-1 does not indicate an asset is missing; instead, it means that the asset exists within the boundaries of the VA.

Table 2-1. Asset Data Collected by Asset Type and Class

Asset Type	Description	Data Source	Number of Assets
Critical Community and Emergency Facilities			
Affordable Public Housing	Data for affordable public housing assets is from The Assisted Housing Inventory (AHI). AHI consists of subsidized developments that provide affordable rental housing in Florida. The AHI data is prepared by The Florida Housing Data Clearinghouse, which provides access to data about Florida housing, including subsidized rental housing, and demographics.	FDEP, City of Niceville	39
Colleges and Universities	Data for colleges and universities was sourced from the Florida Division of Emergency Management (FDEM) Critical Facilities Inventory (CFI); compiled by FDEM using source data from the Counties.	FDEP	1
Community Centers	Data for community centers was sourced from FDEM's CFI; compiled by FDEM using source data from the Counties. Three data layers from FDEM's CFI database were merged into a single coverage for community centers as critical assets. These included community centers, libraries, and food banks.	FDEP	16
Correctional Facilities	Data for correctional facilities was sourced from FDEM's CFI; compiled by FDEM using source data from the Counties.	FDEP	6
Disaster Recovery Centers	Data for disaster recovery centers was sourced from FDEM's CFI; compiled by FDEM using source data from the Counties and the State Emergency Response Team (SERT).	FDEP	4

Emergency Medical Service Facilities	Data for emergency medical service facilities was sourced from FDEM's CFI; compiled by FDEM using source data from the Counties. Additional facilities were added to this assessment with data from the City of Niceville GIS Division.	FDEP, City of Niceville	2
Emergency Operation Centers	Data for emergency operations centers was sourced from FDEM's CFI; compiled by FDEM using source data from the Counties.	FDEP	1
Fire Stations	Data for fire stations was sourced from FDEM's CFI; compiled by FDEM using source data from the Counties.	FDEP	34
Health Care Facilities	Data for health care facilities was sourced from FDEM's CFI; compiled by FDEM using source data from the Counties and from Florida Department of Health (FDOH).	FDEP	30
Hospitals	Data for hospitals was sourced from FDEM's CFI; compiled by FDEM using source data from the Counties and from the Florida Agency for Health Care Administration (AHCA).	FDEP	6
Law Enforcement Facilities	Data for law enforcement facilities was sourced from FDEM's CFI; compiled by FDEM using source data from the Counties.	FDEP	14
Local Government Facilities	Data for local government facilities was sourced from FDEM's CFI; compiled by FDEM using source data from the Counties.	FDEP	7
Logistical Staging Areas	Data for logistical staging areas was sourced from FDEM's CFI; compiled by FDEM using source data from the Counties and SERT	FDEP	4
Risk Shelter Inventory	Data for risk shelters was sourced from FDEM's CFI; compiled by FDEM using source data from the Counties. Risk shelters are represented as two data layers: risk shelters and special needs risk shelters. Pet friendly risk shelters are a separate data layer in FDEM's CFI database, but these are represented by an attribute in the general shelters data coverage so an additional data layer is not needed.	FDEP	1
Schools	Data for schools was sourced from FDEM's CFI; compiled by FDEM using source data from the Counties. Public and private schools are separate layers in FDEM's CFI database; these were merged into a single coverage for schools as critical assets. Additional schools were added into this assessment	FDEP, City of Niceville, Okaloosa County GIS Division	82

	with data from the City of Niceville and Okaloosa County GIS Divisions.		
State Government Facilities	Data for State Government Facilities was sourced from FDEM's CFI; compiled by FDEM using source data from the Florida State Owned Lands and Records Information System (FL-SOLARIS).	FDEP	5
Critical Infrastructure			
Communications Facilities	Data for communications facilities was sourced from FDEM's CFI; compiled by FDEM using source data from the Counties. Numerous communications data layers from the Department of Homeland 12 Security (DHS) Homeland Infrastructure Foundation-Level Data (HIFLD) database were analyzed, and the FDEM data were used because they represented a more complete coverage in terms of locations and communication types.	FDEP	41
Disaster Debris Management Sites	Asset data for disaster debris management sites was sourced from FDEM's CFI; compiled by FDEM using source data from the Counties and SERT.	FDEP, City of Niceville	9
Drinking Water Facilities - Points	Data for drinking water facilities was sourced from FDEP's Public Water Supply (PWS) Plants coverage as the most comprehensive coverage. Additional facilities were added into this assessment with data from the Okaloosa County GIS Division.	FDEP, Okaloosa County GIS Division	186
Electric Production and Supply Facilities - Points	Three data layers comprise electric production and supply facilities asset types. Substations and transmission lines are sourced from DHS-HIFLD. Power plants, including renewables, are sourced from Environmental Protection Agency's (EPA's) eGRID 2021 data (Plant File; 2021 is newest available). Additional substations were added into this assessment with data from CHELCO.	FDEP, CHELCO	47
Electric Production and Supply Facilities – Lines	Three data layers comprise electric production and supply facilities asset types. Substations and transmission lines are sourced from DHS-HIFLD. Power plants, including renewables, are sourced from Environmental Protection Agency's (EPA's) eGRID 2021 data (Plant File; 2021 is newest available). Transmission lines entirely outside of Florida were excluded from the data, but those that crossed the Florida boundary were included.	FDEP, CHELCO	59

Military Installations	Data for military installations was sourced from USDOT Bureau of Transportation Statistics.	FDEP	6
Post Offices	Data for post offices was sourced from US Geological Survey (USGS) National Structures Dataset (NSD).	FDEP	11
Solid and Hazardous Waste Facilities	Solid and hazardous waste facilities are comprised of four data layers. Solid waste facilities are sourced from FDEP's coverage of the same name. Superfund and brownfield sites are from EPA's coverage of those locations. Data for County Small Quantity Generators (SQG) and Hazardous Waste Treaters Storers and Disposers (TSDs) are both from FDEP.	FDEP	1,626
Stormwater Treatment Facilities and Pump Stations - Points	Stormwater assets from NWFWMD are included in the statewide critical assets database, which was included in this VA. Dams from U.S. Army Corps of Engineers (USACE) are also included as stormwater assets if they were not already represented by NWFWMD data. Additional facilities were added into this assessment with data from the City of Crestview, City of Mary Esther, City of Niceville, and Okaloosa County GIS Divisions.	FDEP, City of Crestview, City of Mary Esther, City of Niceville, and Okaloosa County GIS Divisions.	41
Stormwater Treatment Facilities and Pump Stations – Polygons	Stormwater assets from NWFWMD are included in the statewide critical assets database. Stormwater assets were merged into like-geometry datasets. A stormwater ponds data layer was assembled from the National Hydrography Dataset (NHD) water bodies layer, subsetting those data to only selected reservoir types identified to best align with stormwater ponds. Only those that were classified as water storage or unspecified types (if less than about 250 acres in area) were included as likely stormwater ponds. Additional facilities were added into this assessment with data from the City of Crestview, City of Mary Esther, City of Niceville, and Okaloosa County GIS Divisions.	FDEP, City of Crestview, City of Mary Esther, City of Niceville, and Okaloosa County GIS Divisions	1,382
Wastewater Treatment Facilities and Lift Stations - Points	Data for wastewater treatment facilities were sourced from FDEP's coverage for Wastewater Facility Regulation (WAFR) - Wastewater Facilities. Additional facilities were added into this assessment with data from the City of Crestview, City of Fort Walton Beach, City of Mary Esther and Okaloosa County GIS Divisions.	FDEP, City of Crestview, City of Fort Walton Beach, City of Mary Esther and Okaloosa County GIS Divisions	282

Water Utility Conveyance Systems – Points	Data for water utility conveyance were sourced from FDEP's coverage for Public Water Supply (PWS) Tanks. These are storage facilities for holding drinking water prior to distribution. Additional facilities were added into this assessment with data from the City of Fort Walton Beach, City of Mary Esther, City of Niceville, and Okaloosa County GIS Divisions.	FDEP, City of Fort Walton Beach, City of Mary Esther, City of Niceville, and Okaloosa County GIS Divisions.	96
Water Utility Conveyance Systems – Lines	Water utility conveyance systems, in particular pipeline networks, were gathered from local water utilities. The water utility conveyance systems included are from the City of Fort Walton Beach, City of Mary Esther, City of Niceville, and Okaloosa County GIS Divisions.	FDEP, City of Fort Walton Beach, City of Mary Esther, City of Niceville, and Okaloosa County GIS Divisions	101,756
	Transportation and Evacuation Routes		
Airports	Data for airports was combined from FDEM's public, private, and heliport airports. Strategic Intermodal System (SIS) attributes were joined to FDEM's coverage to designate those airports that are part of the SIS.	FDEP	18
Bridges	Data for bridges was sourced from Florida Department of Transportation (FDOT) from their Roadway Characteristics Inventory data.	FDEP	151
Bus Terminals	Data from bus terminals was sourced from FDEM's CFI, compiled using source data from FDOT.	FDEP	1
Marinas	Data for marinas was sourced from FDEM's CFI; compiled by FDEM using source data from FDEP. These data include coverages for boat ramps and marinas merged to a single coverage from FDEM data and assigned an attribute to distinguish between the two types.	FDEP	33
Ports	N/A	N/A	0
Rail Facilities	Rail facilities are represented by a combined data layer version of four SIS coverages for rail terminals (freight, passenger, urban fixed guideway (UFG), and intermodal). Rail lines from FDOT's SIS are included as the rail line features. Rail crossings locations were	FDEP	3

	sourced from the National Transportation Atlas Database (NTAD).		
Railroad Bridges	N/A	N/A	0
Roads	Data for roadways was sourced from FDOT, USGS National Transportation Dataset (NTD) and FDEM's CFI. The base geometry for FDOT roads was their Basemap Routes with Measures coverage. Local names were added to that layer from FDOT's local names roads coverage, and evacuation route status was assigned from FDEM's CFI coverage using spatial overlays. Additionally, SIS attributes were added to the FDOT roads layer. The resulting statewide roads coverage of FDOT roadways is a complete spatial coverage including information on evacuation routes and SIS designation. The USGS NTD includes all roads, including local roads. Only the roads not already represented with the FDOT roads coverage were retained in the NTD, and the separate NTD layer provides a coverage of roads that are not represented by the FDOT coverage. The resulting roadways data layers represents all roadways in Florida, recognizing these are not all major roadways, but the vulnerability of smaller roads does affect public access to major roadways, which has implications for flood vulnerability and emergency management.	FDEP	5,545
Natural, Cultural, and Historical Resources			
Conservation Lands	Data for conservation lands was sourced from the Florida Natural Areas Inventory and consists of the Florida Managed Areas (FLMA) and the Florida Forever lands. The layers were merged with processing steps to produce a single conservation lands coverage that includes FLMA and all FF lands with no overlapping geometry. Additional lands were added to this assessment with data from the City of Niceville GIS Division.	FDEP, City of Niceville	158
Historical Bridges	Data for historical and cultural assets was sourced from the Bureau of Archaeological Research. These data are ultimately sourced from the 15 Florida Master Site File (FMSF), the State of Florida's official inventory of historical and cultural resources.	FDEP	32
Historical Cemeteries	Data for historical and cultural assets was sourced from the Bureau of Archaeological Research. These data are ultimately sourced from the 15 Florida	FDEP	23

	Master Site File (FMSF), the State of Florida's official inventory of historical and cultural resources.		
Historical and Cultural Resource Groups	Data for historical and cultural assets was sourced from the Bureau of Archaeological Research. These data are ultimately sourced from the 15 Florida Master Site File (FMSF), the State of Florida's official inventory of historical and cultural resources.	FDEP	48
Historical Structures	Data for historical and cultural assets was sourced from the Bureau of Archaeological Research. These data are ultimately sourced from the 15 Florida Master Site File (FMSF), the State of Florida's official inventory of historical and cultural resources.	FDEP	1,870
Parks - Points	Data for parks includes state park areas and structures as separate spatial coverages, both sourced from FDEP. Parks data also includes national parks from U.S. Department of Transportation (USDOT) Bureau of Transportation Statistics (BTS). Additional parks were added in with data from City of Niceville and Okaloosa County GIS Divisions.	FDEP, City of Niceville, and Okaloosa County GIS Divisions	223
Parks - Polygons	Data for parks includes state park areas and structures as separate spatial coverages, both sourced from FDEP. Parks data also includes national parks from U.S. Department of Transportation (USDOT) Bureau of Transportation Statistics (BTS). Additional parks were added in with data from City of Niceville and Okaloosa County GIS Divisions.	FDEP, City of Niceville, and Okaloosa County GIS Divisions	33
Shorelines	Shoreline locations and classification of shoreline type were sourced from Florida Fish and Wildlife Conservation Commission (FWC) Florida Shoreline dataset.	FDEP	908
Surface Waters - Lines	Data for surface waters was sourced from the United States Geological Survey (USGS) National Hydrography Dataset (NHD). Surface water linear features (streams, ditches, canals) are included in the surface waters flowlines data.	FDEP	8,791
Surface Waters - Polygons	Data for surface waters was sourced from the United States Geological Survey (USGS) National Hydrography Dataset (NHD). NHD Areas (flowing water bodies) and NHD water bodies (largely lakes/ponds and reservoirs) were merged into a combined polygon coverage of statewide surface waters. Reservoirs were excluded from this data coverage (with some exceptions) and were used to	FDEP	952

	represent stormwater treatment facilities as described above in the Critical Infrastructure asset group. NHD water bodies classified as reservoirs were retained in the surface waters layer if the name included lake or pond. The resulting dataset for surface waters represents mostly natural-shoreline water features (with few constructed water bodies). The surface water polygons in the NHD included marsh/wetland areas, but those features were removed to avoid overlaps with the wetlands layer and for consistency with this asset type name as surface waters.		
Wetlands	Data for surface waters was sourced from FDEP's statewide landcover, including only those features designated as wetland types according to the landcover codes.	FDEP	4,045

2.2 Hazard Data

Flood data was collected for sea level rise, tidal flooding, the 100-year, and 500-year flood events, and compound flooding. Data sources for the selected flood scenarios are described in Table 2-2.

Table 2-2. Flood-Scenario-Related Data

Flooding Type	Scenario	Source
Sea Level Rise (NOAA 2017 and 2022 predictions)	2040 Intermediate-Low (1.7 feet NAVD)	NOAA Sea Level Rise Viewer
	2070 Intermediate-Low (2.2 feet NAVD)	
	2040 Intermediate-High (2.3 feet NAVD)	
	2070 Intermediate-High (4.2 feet NAVD)	
Current Tidal Flooding	2.7 feet NAVD	NOAA
Effective & Preliminary 100-Year Flood	100-Year Flood	FEMA Regulatory Flood Maps
Effective & Preliminary 500-Year Flood	500-Year Flood	FEMA Regulatory Flood Maps
Future Compound Flooding	Current tidal + 2040 Intermediate-Low; Current tidal + 2070 Intermediate-Low; Current tidal + 2040 Intermediate-High; Current tidal + 2070 Intermediate-High; 100-year flood + 2040 Intermediate-Low; 100-year flood + 2070	

	Intermediate-Low; 100-year flood + 2040 Intermediate-High; 100-year flood + 2070 Intermediate-High	

FEMA: Federal Emergency Management Agency

NOAA: National Oceanic and Atmospheric Administration

3. Data Gaps Identified and Recommendations Provided

Jacobs conducted a comprehensive data collection process, ensuring that all relevant asset and hazard data were gathered. All required data for County-owned assets was collected. The following bullet items describe the data gaps and recommendations of solutions related to collected data:

Table 3-1. Summary of Data Gaps Identified and Recommendations Provided

Data Gap Identified	Recommendations
Data was not acquired from two local municipalities: Bayou Chico and Laurel Hill. Jacobs reached out to these entities during the data collection phase but was unable to obtain system data.	Data from the State's Critical asset Geodatabase was used to supplement areas that did not provide local data.
The City of Destin's data was not included in the assessment; however, this was intentional. Destin is conducting its own VA.	Another subconsultant is performing a Vulnerability Assessment for the City of Destin.
Many of the flood zones in the northern portion of the county are listed as Zone AE, indicating an undefined base flood elevation within the floodplain.	For better coverage on the flood layers, additional data were gathered from non-GIS data sources. For example, base flood elevations from the 2021 FEMA Flood Insurance Study (FIS) were extracted from the report to fill in gaps in geospatial data for the 100-year flood scenarios (FEMA 2021).
Rainfall and localized flooding, and the interplay between large magnitude flood events and stormwater drainage systems, was not included in this desktop analysis.	A Hydrologic and Hydraulic (H & H) model would be needed to model rainfall and localized flooding.
Bridge data did not have low chord elevations. Bridge elevations were calculated from generating points along the , however, the lowest point of the bridge may not have been captured in a point. Thus, a bridge that is showing as not vulnerable to flooding may actually be vulnerable at its lowest elevation.	A more in-depth investigation into bridges crossing floodplains could be done to find records of the bridges' low chord elevations to use that elevation as the Asset Elevation to confirm if the bridge is vulnerable to flooding.
Building finished floor elevations were not acquired. This means a facility that was returning as being vulnerable to flooding may have a high foundation that is above what the flood depth would be at the point location so the building may not be washed out as the model shows.	Buildings finish floor elevations could be collected from Okaloosa County Planning Division for select buildings returning as vulnerable to confirm their susceptibility to the modeled flooding scenarios.

Appendix B
Public Meeting Materials and Minutes

Okaloosa County Vulnerability Assessment
Public Meeting #1 - Agenda

July 30th, 2024, 5:30 pm – 7:00 pm

Okaloosa County Administrative Building Training Room – 1250 Eglin Pkwy, Shalimar, FL

1. **Welcome and Introductions**
    a. Introduction of Okaloosa County and Jacobs team
    b. Overview of purpose and goals of the meeting
2. **Overview of Resilient Florida Grant Program**
    a. Explanation of the Resilient Florida initiative and its objectives
3. **Review of Vulnerability Assessment Process**
    a. Overview of the vulnerability assessment methodology
    b. Explanation of data collection methods, analysis techniques, and evaluation criteria
    c. Discussion on potential vulnerabilities and potential impacts on communities
4. **Breakout Sessions and Report Out**
    a. Participants divided into smaller groups for focused discussions.
    b. Discussion on community priorities and concerns regarding resilience and vulnerability
    c. Summary of input received from community stakeholders.
5. **Next Steps**
6. **Questions**

Residents Invited to Vulnerability Assessment Project Public Meeting Tuesday, July 30th, 2024

Okaloosa County, in partnership with Jacobs Engineering, invites residents to the first public meeting for the Vulnerability Assessment and Adaptation Planning Project Tuesday, July 30th, from 5:30-7 p.m. at the Okaloosa County Administrative Building Training Room, 1250 Elgin Parkway, Shalimar, Florida. The meeting is open to anyone interested in learning more about future flood mitigation and the possible impacts of flood events on the community.

During the meeting, attendees will hear from county staff and representatives from Jacobs Engineering on the initial stages of data collection, methodologies, evaluation criteria, and analysis techniques. Staff will also discuss potential vulnerabilities and impacts on communities. Attendees will have the chance to provide input on the initial stages of the Vulnerability Assessment Project and participate in a question-and-answer session at the end of the meeting.

The Vulnerability Assessment Project is an initiative aimed at safeguarding Okaloosa County against environmental risks, including rising sea levels and flooding. For more information, contact Ryan Prince at rprince@myokaloosa.com.

SEA LEVEL RISE

Tabletop Exercise

Session Goals

- Identify areas that have experienced flooding because of sea level rise and/or areas that are vulnerable to future sea level rise.
- Document ways individuals in the community have worked to mitigate against sea level rise.

Discussion Questions

- What are the most vulnerable areas in your community to sea level rise?
- Have you noticed any changes in coastal flooding or erosion in your area over the past decade? How has sea level rise impacted your community?
- How concerned are you about the potential impacts of sea level rise on your community?
- Do you believe that current infrastructure in your area is prepared to handle future sea level rise impacts?

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STORM SURGE

Tabletop Exercise

Session Goals

- Identify areas that have experienced storm surge flooding and/or areas that are vulnerable to storm surge.
- Document ways individuals in the community have worked to mitigate against storm surge.

Discussion Questions

- How familiar are you with the concept of storm surge and its potential impact on coastal communities?
- Based on your knowledge or experience, what areas have previously been impacted by storm surge?
- How prepared do you feel your household or business is to respond to a significant storm surge event? What is your plan in the event of an oncoming hurricane?
- What steps would you take if your property was flooded?
- Are you aware of evacuation routes and designated shelters in case of a storm surge emergency?
- What specific challenges do you anticipate our community facing during a storm surge event?
- Do you think you would be more impacted by localized flooding, storm surge flooding, or SLR flooding?

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Localized Flooding

Tabletop Exercise

Session Goals

- Identify areas that have experienced localized flooding and/or are vulnerable to localized flooding.
- Document ways individuals in the community have worked to mitigate against localized flooding.

Discussion Questions

- What are the most vulnerable areas in your community to localized flooding?
- How concerned are you about the potential impacts of localized flooding on your community?
- Do you believe that current infrastructure in your area is prepared to handle future localized flooding impacts?

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COMMUNITY ASSETS

Tabletop Exercise

Session Goals

- Review the list FDEP critical assets required by Florida Statute to be included in the assessment.
- Develop a list of additional community assets of importance.

Discussion Questions

- Which community assets (e.g., infrastructure, facilities, natural resources) do you consider most critical to include in a countywide vulnerability assessment?
- Are there specific historical or cultural assets in our community that should be considered in the vulnerability assessment?
- What services do you need to access or rely on in the event of an emergency?
- Are there any technological assets or systems (e.g., communication networks, transportation hubs) that are particularly vulnerable to natural hazards and should be prioritized?
- What other data do you think needs to be included in this assessment?

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Public Meeting #1 Compiled Notes

Date:	August 5, 2024
Project name:	Okaloosa County Vulnerability Assessment & Adaptation Plan
Project no:	D3852300
Attention:	Okaloosa County
Company:	Jacobs
Prepared by:	Charley Golden
Reviewed by:	*[Reviewed by]*
Document no:	1 of 1
Revision no:	1 of 1
Copies to:	Project Folder

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1. Breakout Session – Table #1 – Alec Rodriguez, Charley Golden Natalie Macaluso

1.1 Storm Surge

- ALL of Destin erodes
    - Specifically, Norriego Point
- Gap creek
- Cinco Bayou
- Opal storm surge carried debris from Okaloosa Island to mainland
    - Sailboats on HWY 98
- Storm surge debris up into Rocky Bayou too
- Rocky Bayou
- Tom's Bayou
- Ivan and Opal flooded out homes on Monaham Drive
- During Hurricane Opal took 27 hours to get out of county
- 98 thin point between water bodies experiences storm surge overtopping road.
- Niceville fuel dock is susceptible.
    - Citgo, Jay Gos is the manager.

1.2 Localized Flooding

- Eglin Parkway south of Cinco Bayou bridge to light at Racetrack Road
- Lovejoy Road
    - Relevant on previous applications for other grants
    - Mixed ownership
    - County of Fort Walton
- Gap Creek
- Monaham Drive
- Green Acres
- Carr Road and Trailer Creek towards Yellow River
- Sylvania Heights
- Olive Lovejoy (Bill Parkway [SR 189]) to Tanglewood and Overbrook (Lang Road)
- Holmes Blvd
- Highland Drive
- Edge of Hurlburt area
- Laguna Landing off Yacht Club Drive
- On the north side of the county at Hwy 90, the smaller, 2-lane roads that intersect with river systems flood.
- Shoal River
- Dorkus Drive
    - Restore Grant??
    - Check with Scott Bitterman
- Millside Road at Steel Creek Rd (south of HWY 2) in Laurel Hill
- Steel Mill Creek Road
- Bridge on 393 by Dorkus Rd
- Poverty Creek Road
- Turkey Creek (V zones on both sides)
- Bluewater Bay

- Bayshore Drive Peninsula of Niceville (V zones on both sides)
- Dana Point neighborhood (3 feet below Bayshore Drive)
- Rocky Bayou
- Marina/Schooners are
- Homes/streets in Bluewater Bay
- Choctawhatchee Bay Area
- Santa Rosa Blvd on Okaloosa Island experiences a lot of flooding and has many condos vulnerable to flooding.
-

1.3 Sea Level Rise

- Building codes will have to change with future floods
- Brooks Street to HWY 98
- Bay Drive
- Dana Pt at the point of Niceville, bottom of Bay Dr
- Gap Creek
- Cinco Bayou
- Lovejoy Road
- Boggy Bayou
- Turkey Creek intersection (tidal sensitive)
- From fuel dock to Citgo along FL-293
- Destin's south side does not flood
- Along Hwy 20
- All along 98 is susceptible to sea level rise, and there is no redundancy for 98.

1.4 Critical Community Asset

- Bottleneck in Crestview on 85 when it narrows
- Evacuation Routes
    - traffic of 17 hours to get to Jackson, MS in Hurricane Opal
- county hurricane evac policy
    - HURREVAC
    - 3 days for evacuation (instead of 12–24-hour notice)
- Tourism!!!!!!!!!!!!! (Fort Walton Beach, Destin, Okaloosa Island)
    - Restaurants
    - Hotels/Condos
    - Small beachy shops
    - Living shorelines
- Assisted living (Bay Port) on Hollywood Blvd
- Commercial fishery in Valparaiso and Destin
- Destin Airport
- HWY 189 Town of Baker
- EOC: NWF State College in Niceville
- EOC: Extension office in Crestview
- Davidson Middle School in Crestview, FL
    - Health shelter
    - Separate (general??) shelter
- Agriculture in north part of county
- Fire Department in Navarre

- Rejected City Hall location on HWY 98
- Mary Esther Elementary School
- Failed assets
    - Drainage systems
    - Retention ponds
- Water quality in Choctawhatchee Bay and Cinco Bayou
    - Sewage
    - SSO
- US Coast Guard at base of bridge Okaloosa Island to Destin
- Destin Middle School at foot of Midbay Bridge
- Lift stations
- Sheriff offices
- Eglin Airforce dock
- Bay Port assisted living on Hollywood Blvd is a storm shelter for residents and their families.
- Both the bay and ocean sides of Okaloosa Island, Destin, and FWB
- Destin Community Center
- Area all along 98 by Mary Esther and Navarre
-

2. Breakout Session - Table 2 – Tanya Gallagher, Blaine Beck, Chris Lambert

2.1 Non-Jacobs Notable People at Table

- Ryan Prince, Emergency Management Chief for the county
- Mark Wise, Deputy Director of Okaloosa County Water & Sewer
- Ryan Herring, Okaloosa Island Property Management

2.2 Storm Surge

- Hurricane George in 1998 catastrophic to area (makes seem worse than Opal)
    - Ryan Herring with Okaloosa Island Property Management
- Category 3 and above hurricanes is when OCWS staff take interest in storm prep ~Mark Wise with OCWS
- When there are mandatory evacuations on the island, OCWS shuts off all utility infrastructure to the island ~Mark Wise with OCWS
- natural gas service did not seem to get cut off during previous hurricanes
- that all of Bluewater Bay area (unincorporated area near Niceville) has all underground power, do not have to worry about power outages due to tree because buried utilities ~Mark Wise
- most lift stations have generators natural gas, and ones that do not have generators OCWS drives around providing generators for brief power service to pump down lift stations. ~Mark Wise
    - generators are not the solution (e.g., some lift stations are severely inundated by floodwaters and no sense in pumping)
    - County seeking funding for generators, which could be a mitigation project worth going after for the County.
- During bad hurricanes, there is a breach between the sound and gulf washing the roadway out completed.
    - 2004 was the last time that happened.
    - Opal did also.

2.3 Localized Flooding

- Tanglewood subdivision
    - 1 the citizens claimed there is a street culvert that has collapsed and does results in flooding.
    - when flooded a “river” runs parallel to road and behind houses.
- the French drains may be collapsed (???) Santa Rosa Blvd on the other side of Brooks Bridge flooded but once the FDOT brooks bridge project is completed it will be completed.
- The Destin ER is a dangerous flood zone and regularly floods – one of the citizens works there.
- Green Acre Area – the south end of Fort Walton Beach area towards Hurlburt AFB and it is 50-ft above sea level, and it regularly floods.
    - neighborhoods, NW FL State College, and UWF Emerald Coast campus
    - Old maps shows swamp developers filled in long ago.
    - 18” of floodwater on the roadway ~Mark Wise
    - that there is a large canal, the water in the area cannot get into the canal and cannot drain correctly.
    - County maintained roadways and neighborhood here.
    - The area was mostly built in the 1970s and some are built in the 1990s.
    - Canals here are always full of water and never dry.
    - Lower income area, possible Justice 40 candidate.

- SR-85 crossing at Shoal River - bridge has been inundated by floodwaters 3 times in the last few years.
    - The prison will flood when the Shoal River flood stage reaches 16.2-ft, and the prison must be evacuated.
    - When the Shoal River floods SR-85, the county essentially splits between the north and south because there are no crossings possible.
- Gap Creek Bridge
    - There has been flooding issues for years and previous flood studies have been completed contact Scott Bitterman in Okaloosa County Public Works Director and ask for the findings from him.
    - The bridge was replaced 5-10 years ago, but the whole area surrounding it floods easily.
    - There is an active flooding study.
    - Ask Scott Bitterman for this one and Overbrook.
- Overbrook bridge
- Scranton Street
- Scott Bitterman has a list of problem areas for flooding.
- The eastern end of racetrack and 85 floods and cars get stalled there.
    - Frequency of flooding has increased in the last few years, possibly due to an increase of impervious surfaces.
- Another place where the Northwest Florida Daily News building at 85 and Hollywood
- The college near Green Acres (UWF and NWFSC in Fort Walton Beach) has flooding issues.
    - Built in the 1990s, around 1993?
    - Not sure if the campus floods but the surrounding roadways floods.
- In the Summerhill Subdivision, the drain that goes to the culvert may be clogged and it is a U-shaped subdivision, and there was flooding on the backside.
    - small area with around 15 houses floods often during rain.
    - Floods on both sides of road and behind the neighborhood.
    - There is a dip in the road of the subdivision and those areas flood.
    - Some of the houses that are at the entrance have had flooding within the home.
- US-98 in Mary Esther is washing out, chunk of pavement that went missing a year or two ago just east of Hurlburt AFB in the west bound lane.
    - FDOT had to close the roadway to mill and overlay.
    - The runway is in a N-S trend with flightline and taxi aprons covering a large area possibly affecting runoff from rainfall and more intense storms.
    - Category 3+ makes this go from bad to extreme worse.
- Erosion on the island itself.
- Opp and Troy Street has a wetland where it floods.
    - Glenwood Park
- Stanley Lane
    - a rain event maybe 2014? And flooded the roadways and almost flooded the homes.
    - When you get 5-6" rainstorm event, it will flood.
- Creeks begin to back up like Murder Creek.
- Brooks bridge is affected by severe flooding.
    - At this time, it is noted to be in the process of being taken care of by the state.
    - New construction in the area will (should) alleviate the flooding.
- Cinco Bayou is prone to flooding during normal rain events, and it gets worse during heavy events. Potential catastrophe during category 3+ storms when evacuation is required.
- Hollywood Blvd is prone to flooding during normal rain events, and it gets worse during heavy events. Potential catastrophe during category 3+ storms when evacuation is required.

- Eglin Pkwy are all prone to flooding during normal rain events, get worse during heavy events. Potential catastrophe during category 3+ storms when evacuation is required.

2.4 Sea Level Rise

- Portions of Pelican Dr will be under water

2.5 Critical Community Asset

- Mark Wise with OCWS wants county-maintained lift station's exposure
    - There should be 157 lift stations in the county.
    - When mapped they should have the information for listing by name (ideally) and number.
    - This would be consistent with FGDS and when assigning an Asset Unique ID = Asset Type and/or Asset Name + Unique ID.
- The CR-393 – Shoal River area
    - Dorcus Road which is an evacuation route in the north end of the county.
    - One across pond creek and shoal river on 393 and they both flood, near the Walton County line.
    - The route over shoal river and pond creek are evacuation routes.
    - All roads lead to laurel hill.
- Temple Mound within the City of Fort Walton Beach – a cultural point and floods but it is elevated and does not flood?
- The school board offices in downtown off Eglin just north of 98, not sure if they flood but they are not elevated.
- Newcastle pond
    - Mark explained that there is stormwater pump station at the pond to pump stormwater out of the pond.
    - Owned by public works but operated by OCWS.
    - And it discharges in Dog Bayou?
    - so-called due to large amount of flooding that forms in area.
    - Water drains to this area, has no outlet.
    - Stormwater pipe and force main need reinforcement and/or renovation.
- Gap Creek Bridge existing lift station is being replaced to be above grade.
- The County has elevation certificates for all County buildings.
- On the island there will not be any lift station replacements, there will only be lift station upgrades/rehab.
- Destin Emergency Facility is greatly affected by storms/flooding, extremely vulnerable due to possible inability to evacuate during severe weather events.
    - The public expressed concerns about the back-up generator.

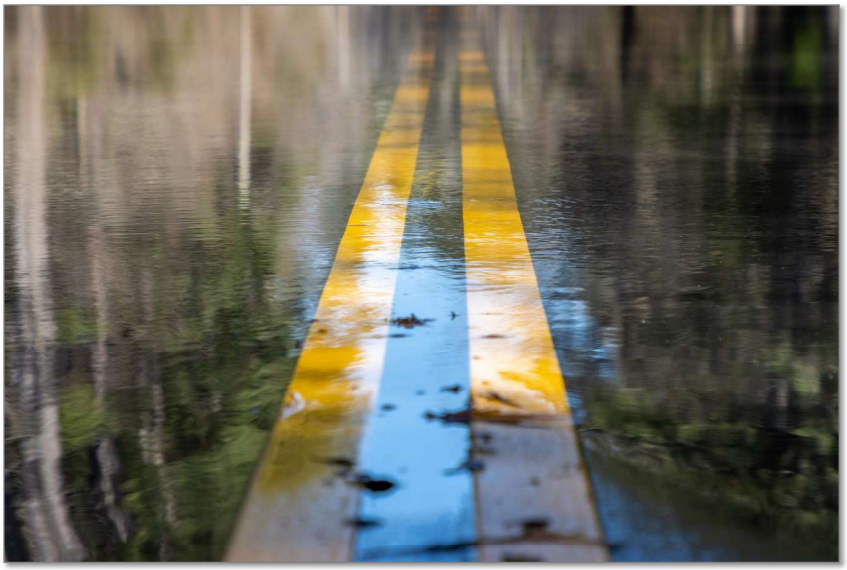
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Okaloosa County Vulnerability Assessment

Public Meeting #1

AGENDA

1. Introduction
2. Project Overview
3. Breakout Sessions
4. Next Steps and Action Items



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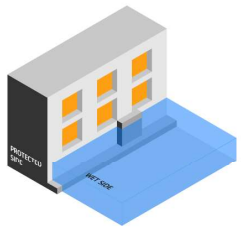
What is a Vulnerability Assessment?

- Identifies inland and coastal infrastructure, geographic areas and communities in Florida most vulnerable to flooding and sea level rise.

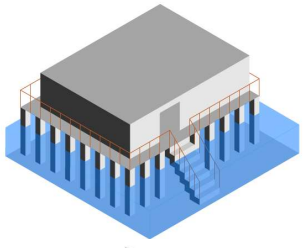
- **A VA Does Not / Is Not:**
  - Intended for individual homeowners/property assessments
  - Account for property level improvements
  - Account for capital projects in development
  - Account for stormwater engineering projects
  - Meet hydrology and hydraulic (H&H) modeling standards

- **A VA Does:**
  - Make Okaloosa County eligible for future mitigation funding
  - Position the County for future grant opportunities
  - Identify adaptation priority areas
  - Inform policy

Dry-Flood Proofing

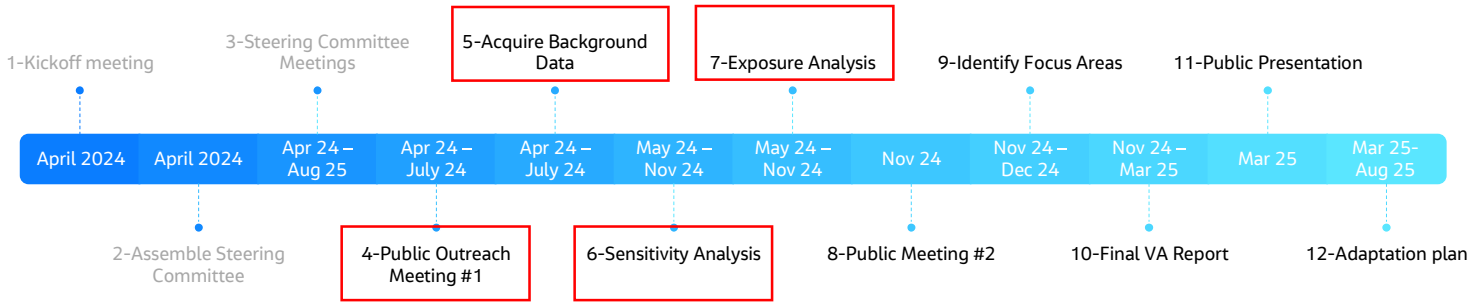


Elevating of Critical Asset



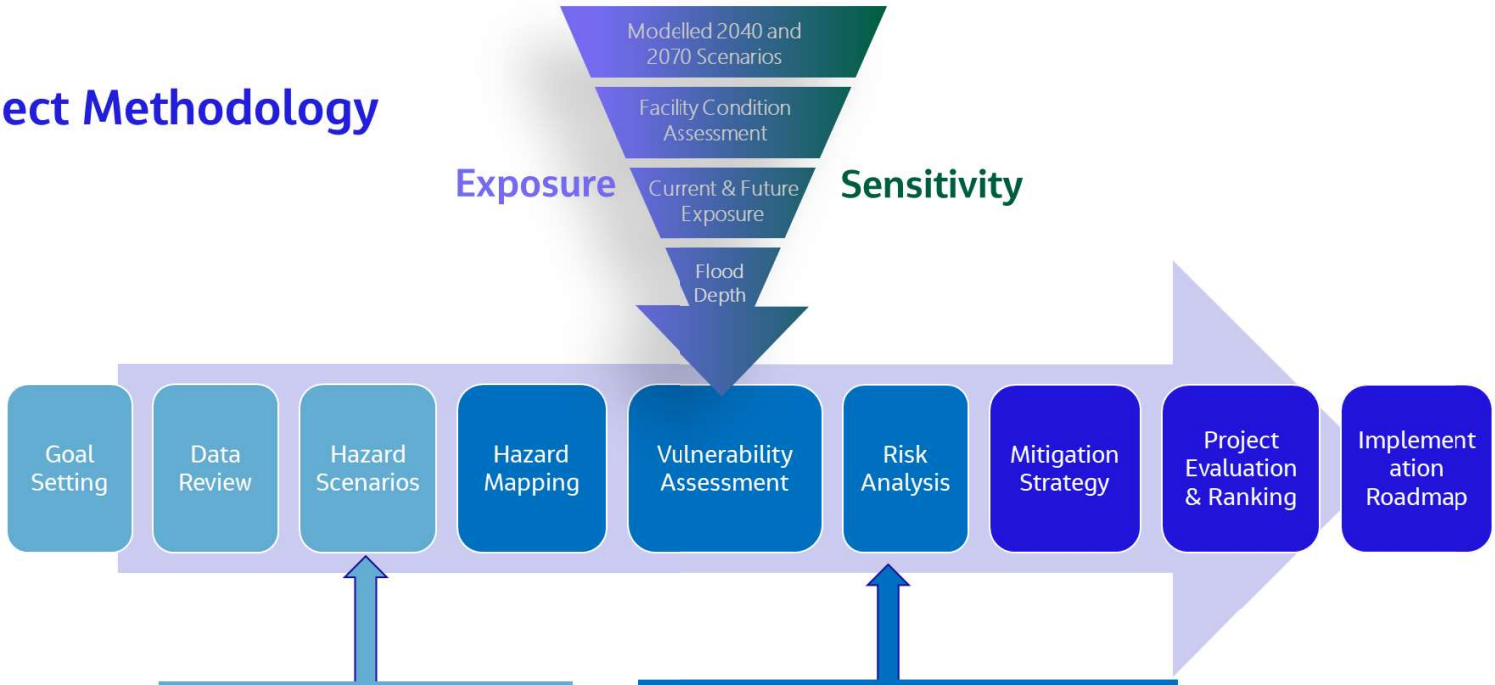
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Vulnerability Assessment Tasks Overview and Timeline



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Project Methodology



Flood scenarios include: Current (2024) and Future (2040 and 2070)

Order-of-magnitude flood impact costs (cost of repair or replacement) resulting from anticipated flood impacts for each scenario.

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Task 4 – Public Outreach



- There at least 2 public outreach meetings

- Objectives of the first public meeting is to allow the public to:
  - provide input for the initial data collection stages,
  - include input on preferred methodologies, data for analyzing potential sea level rise impacts and/or flooding, guiding factors to consider, and critical assets important to the community

- Objectives of the second public meeting will allow the public to
  - provide community-specific input on the results of the analyses
  - reconsider methodologies and assumptions used in the analysis for refinement

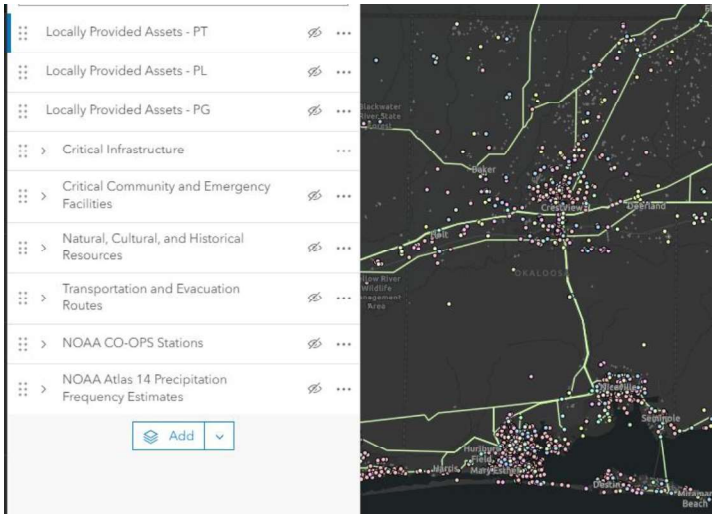
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Task 5 - Acquire Background Data and Municipal Outreach

- Jacobs staff has already initiated data collection

- Critical Asset Data for VA:
  - Transportation/Evacuation Routes
  - Critical Infrastructure
  - Critical Community and Emergency Facilities
  - Natural Cultural and Historical Resources

- Sources of data include:
  - Stakeholder meetings and surveys
  - Site tours and workshops
  - Interviews, follow up calls, and meetings



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Task 5 – Data Collection – Assets Included in the Assessment

Transportation and Evacuation Routes

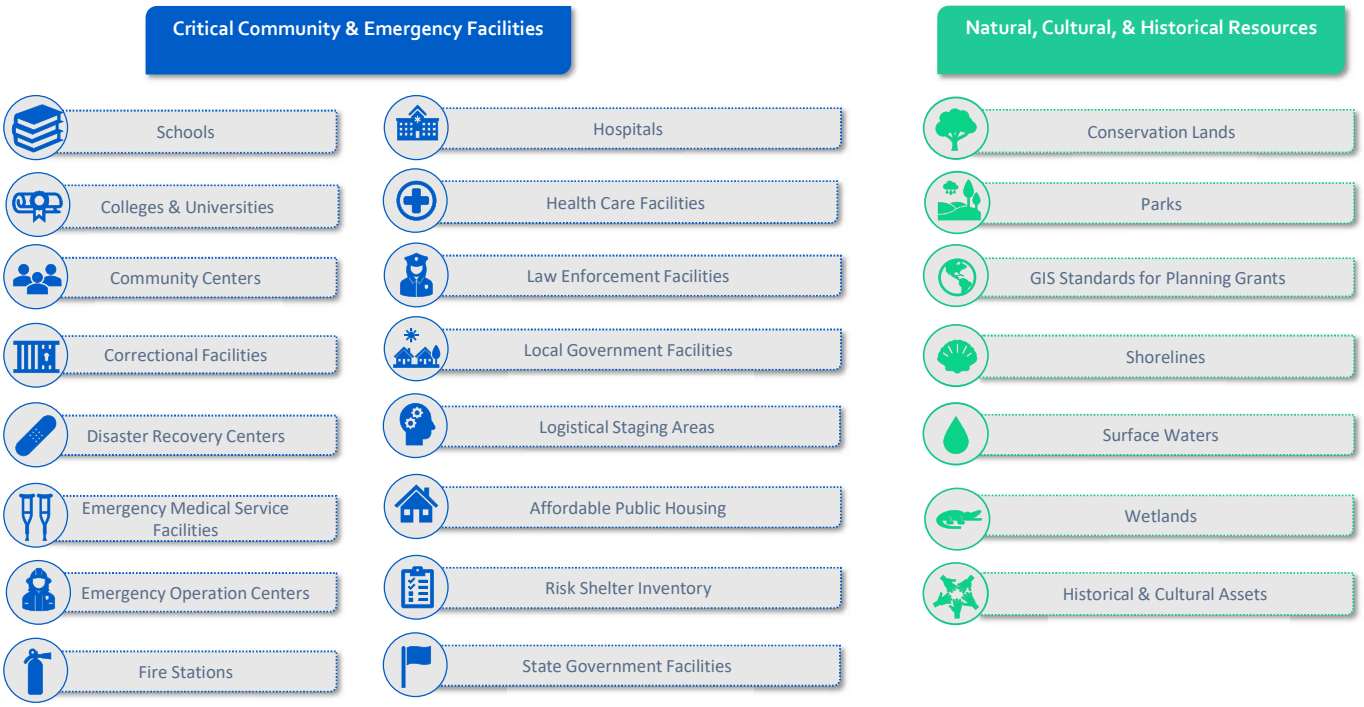
- Airports
- Bridges
- Bus Terminals
- Ports
- Major Roadways
- Marinas
- Rail Facilities
- Railroad Bridges

Critical Infrastructure

- Wastewater Treatment Facilities and Lift Stations
- Stormwater Treatment Facilities and Pump Stations
- Drinking Water Facilities
- Water Utility Conveyance Systems
- Electric Production and Supply Facilities
- Solid and Hazardous Waste Facilities
- Military Installations
- Facilities
- Disaster Debris Management Sites

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Task 5 – Data Collection – Assets Included in the Assessment

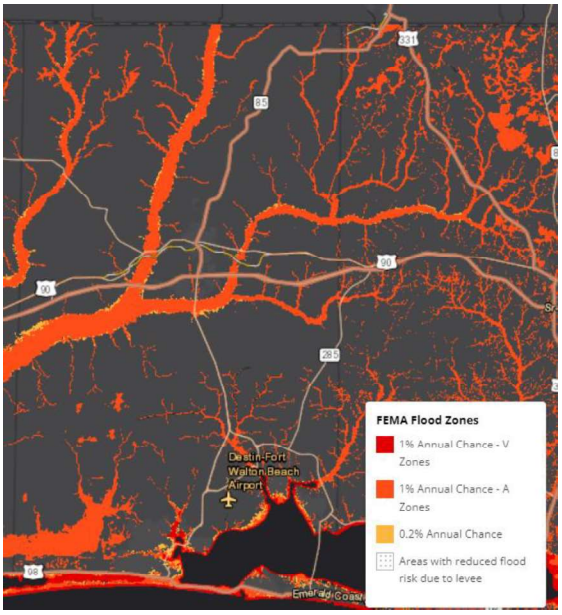


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Tasks 6 & 7 – Exposure Analysis and Sensitivity Analysis
Hazards to Critical Assets for Vulnerability Assessment

- FEMA Floodplain
- Sea Level Rise Scenarios for years 2040 and 2070 (Required)
  - Includes intermediate-low and intermediate-high level scenarios for 2040 and 2070
- Any additional hazards to consider in VA?
  - Wildfires
  - Heat
  - Lightning
  - Other Hazards?

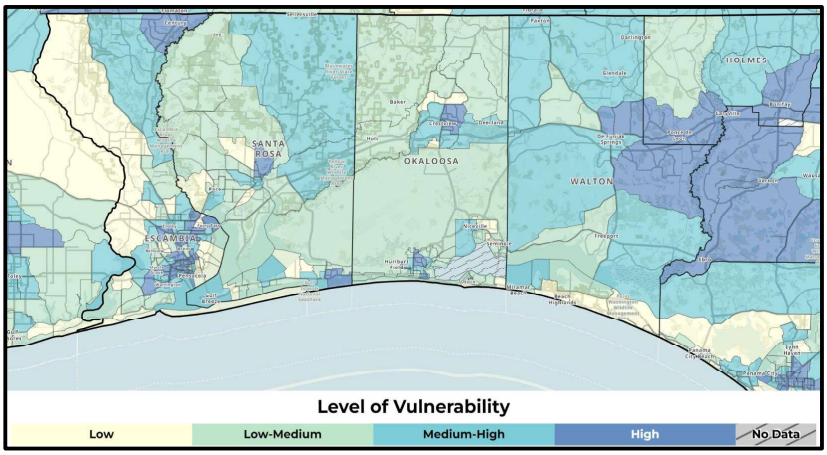




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Tasks 6 & 7 – Exposure Analysis and Sensitivity Analysis
Indicators of Community Vulnerability

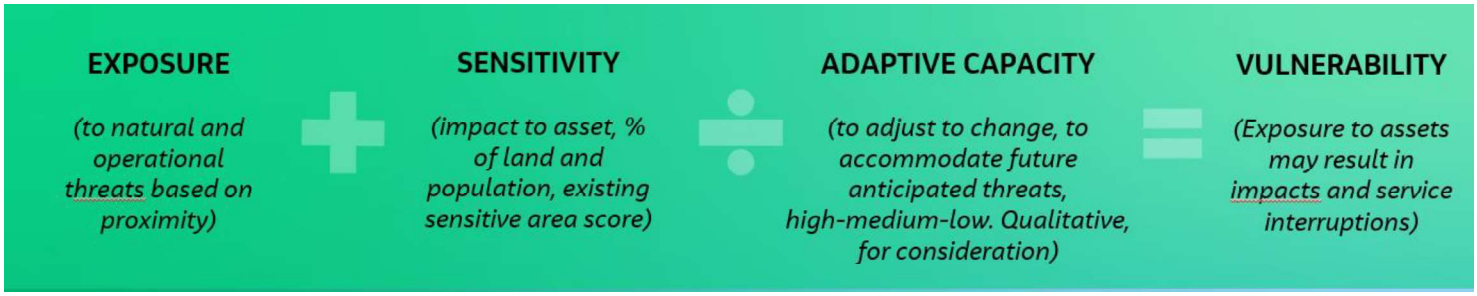
- Understand community by multiple factors
  - Socioeconomic status
  - Household characteristics
  - Public health
  - Race
  - Housing type
  - Transportation
- Variety of indices
  - Centers for Disease Control Social Vulnerability Index (SVI)
  - Climate and Economic Justice Screening Tool (CEJST)



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Tasks 6 & 7 – Exposure Analysis and Sensitivity Analysis

- Hazard and Asset Data collected in Task 5 will be used in the vulnerability analysis



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Task 8 – Public Outreach #2

- Vulnerability assessment findings will be presented to the public
  - Public feedback will be received on results

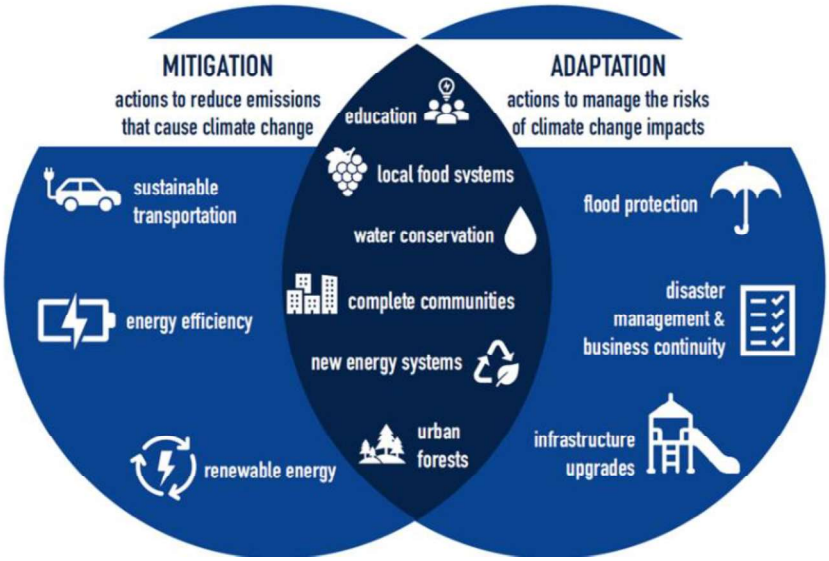




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Task 9 – Identify Focus Areas

- Identify focus areas based on the results of the vulnerability assessment, second public outreach meeting, and input from the steering committee.



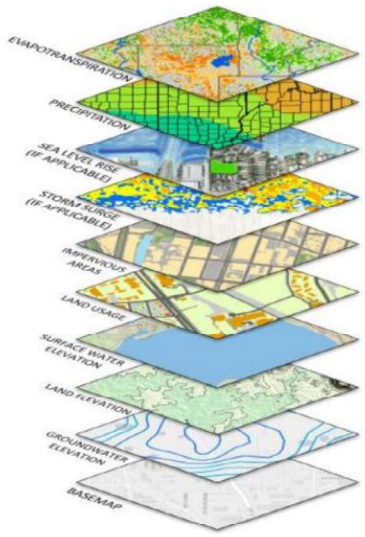
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Task 10 – Final Vulnerability Assessment Report, Maps, and Tables

- Jacobs will prepare the VA report that meets the grant program requirements

- The VA report will summarize the results from the exposure and sensitivity analyses

- Deliverables for this task are:
  - Final VA Report
  - Maps
  - Tables



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Task 11 – Public Presentation

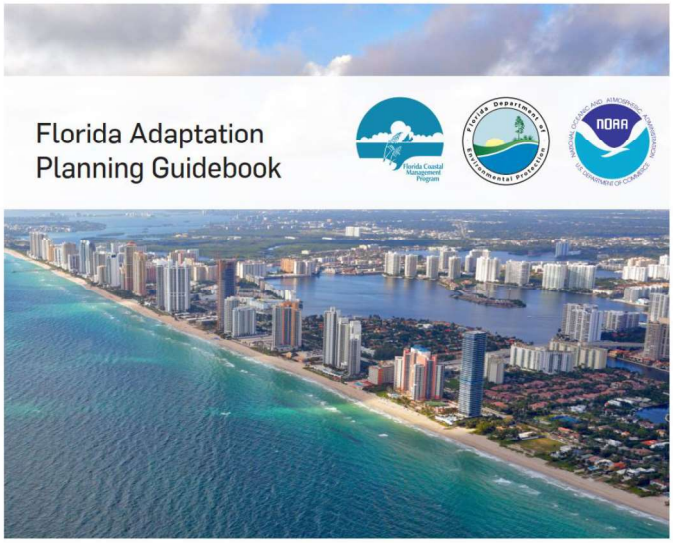
- Jacobs will present findings to the Board of County Commissioners



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Task 12 – Adaptation Plan

- Jacobs will develop adaptation interventions to mitigate the vulnerabilities identified in Tasks 6 and 7.
- Adaptation interventions can consist of physical infrastructure projects and policy initiatives



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Contact Information

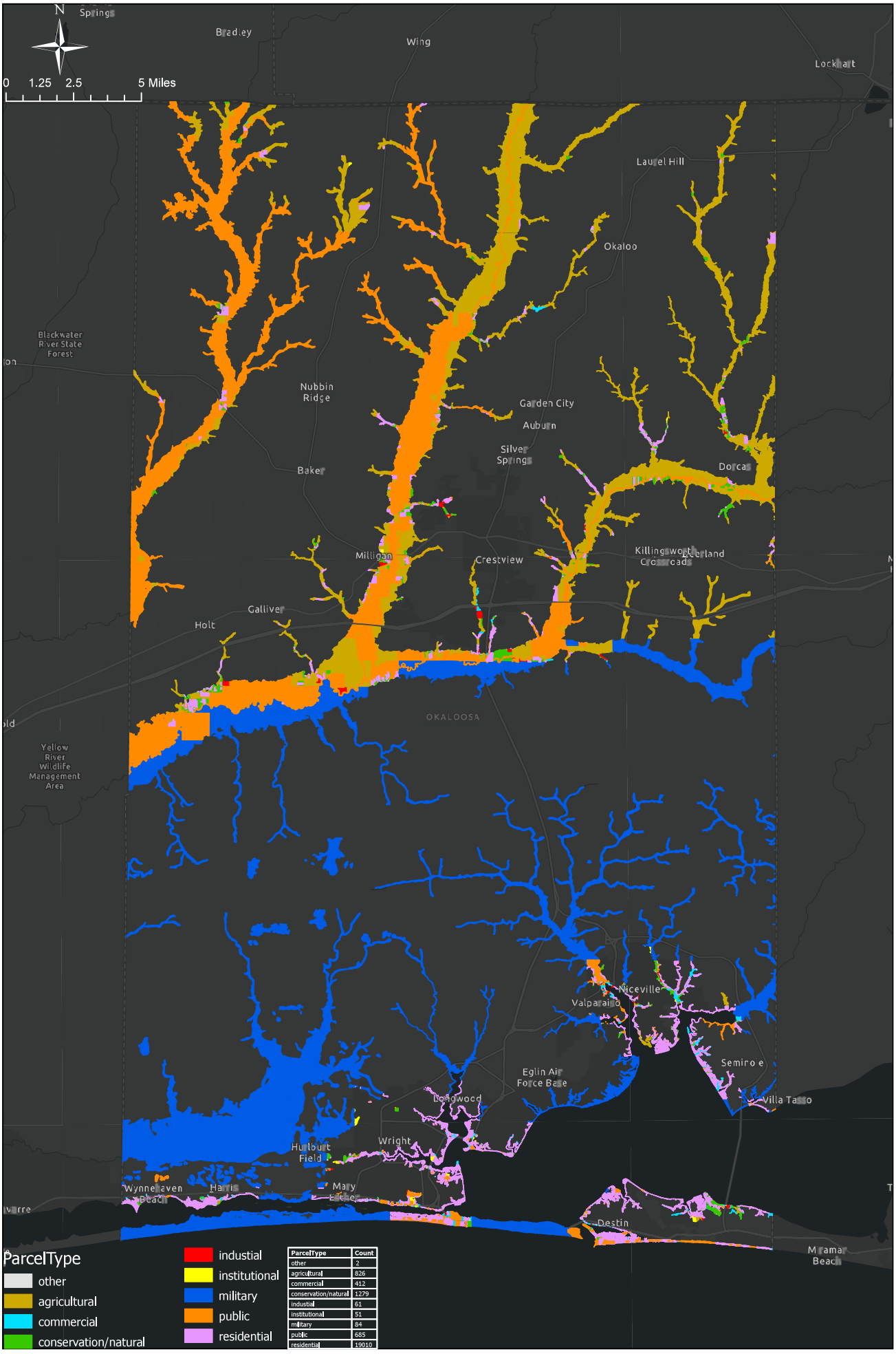
Ryan Prince, Project Manager
rprince@myokaloosa.com

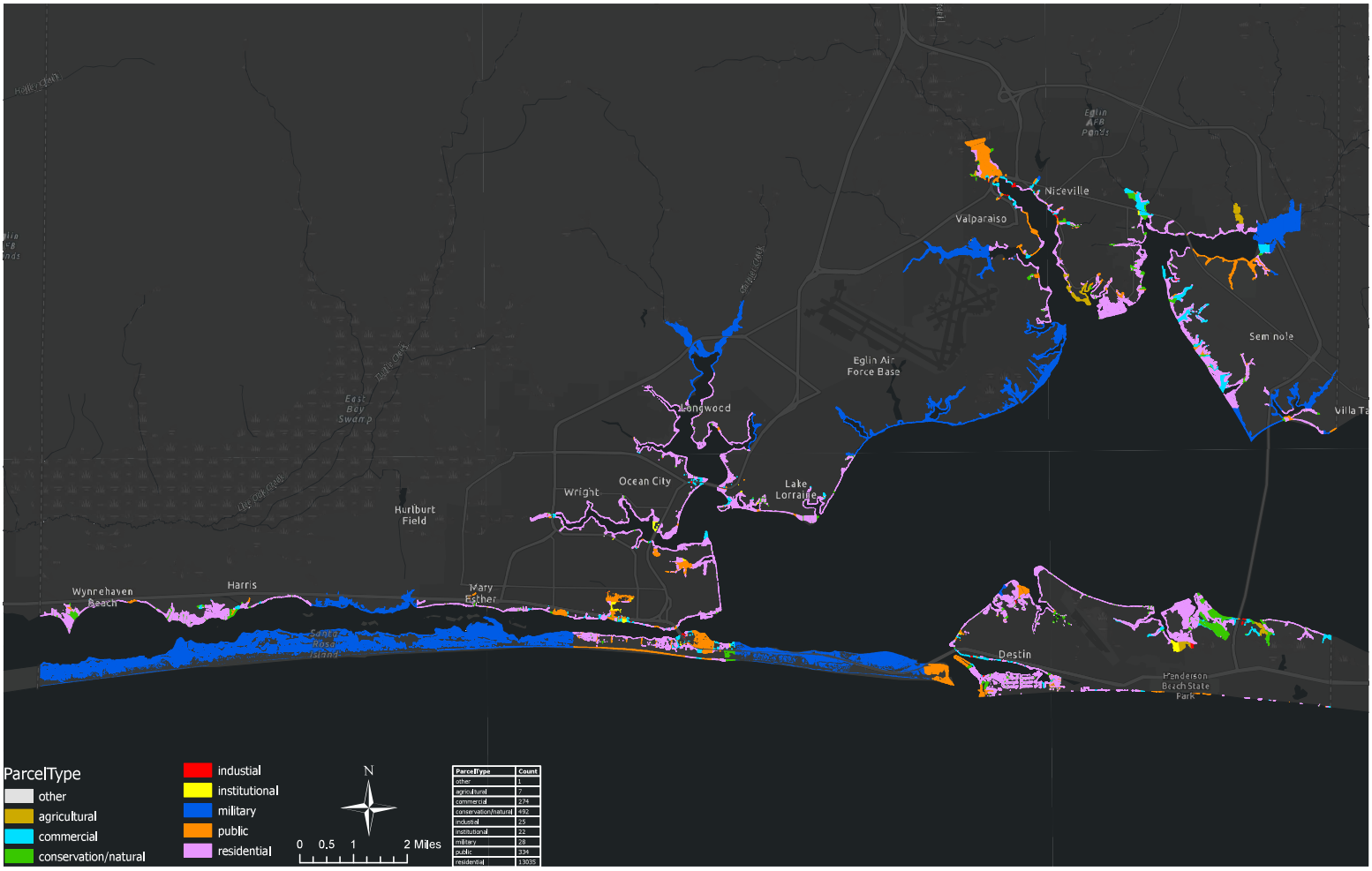
Tanya Gallagher, Project Manager
Tanya.Gallagher@jacobs.com

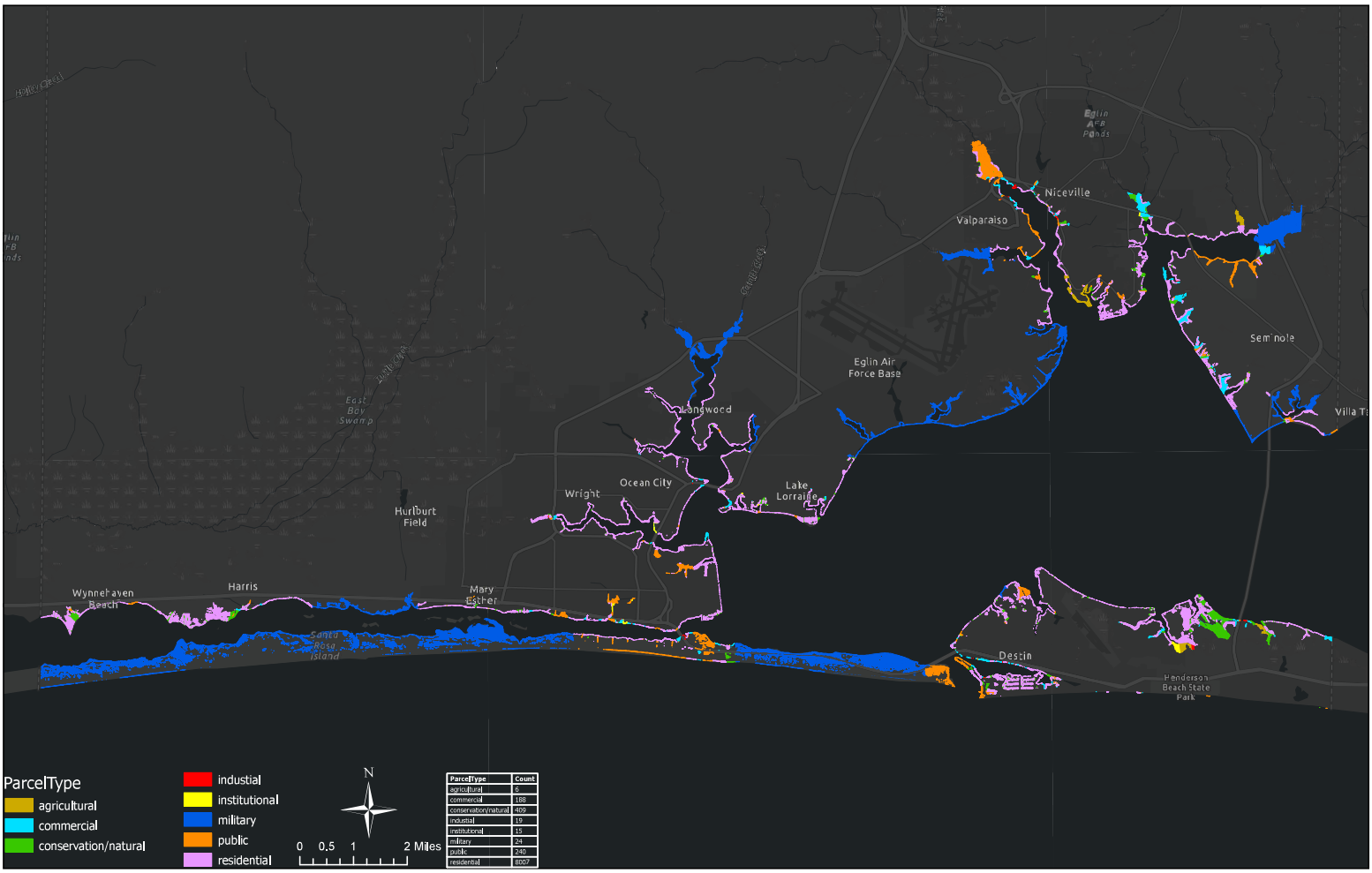
Hank Hodde, Deputy Project Manager
Hank.Hodde@jacobs.com

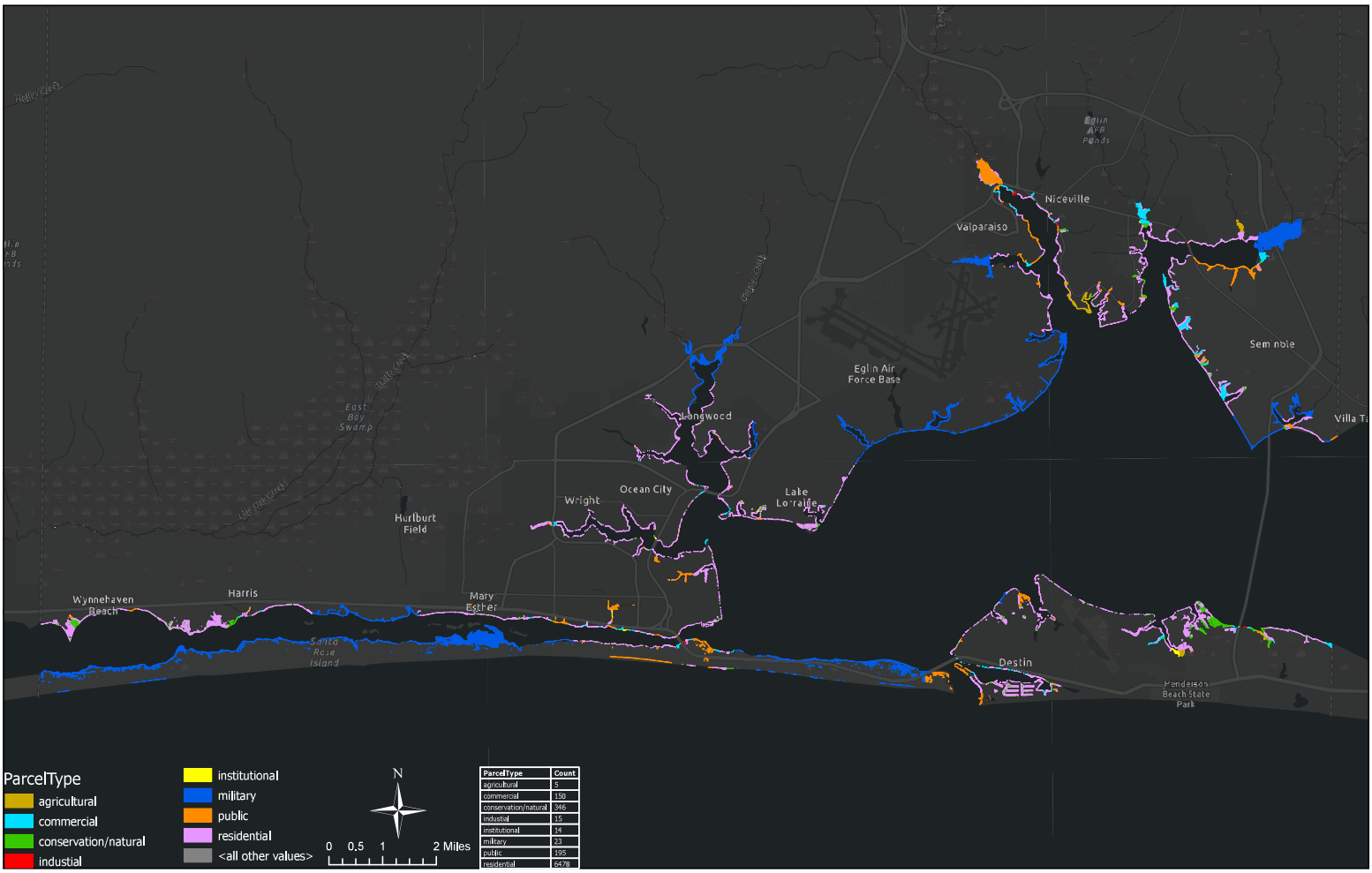
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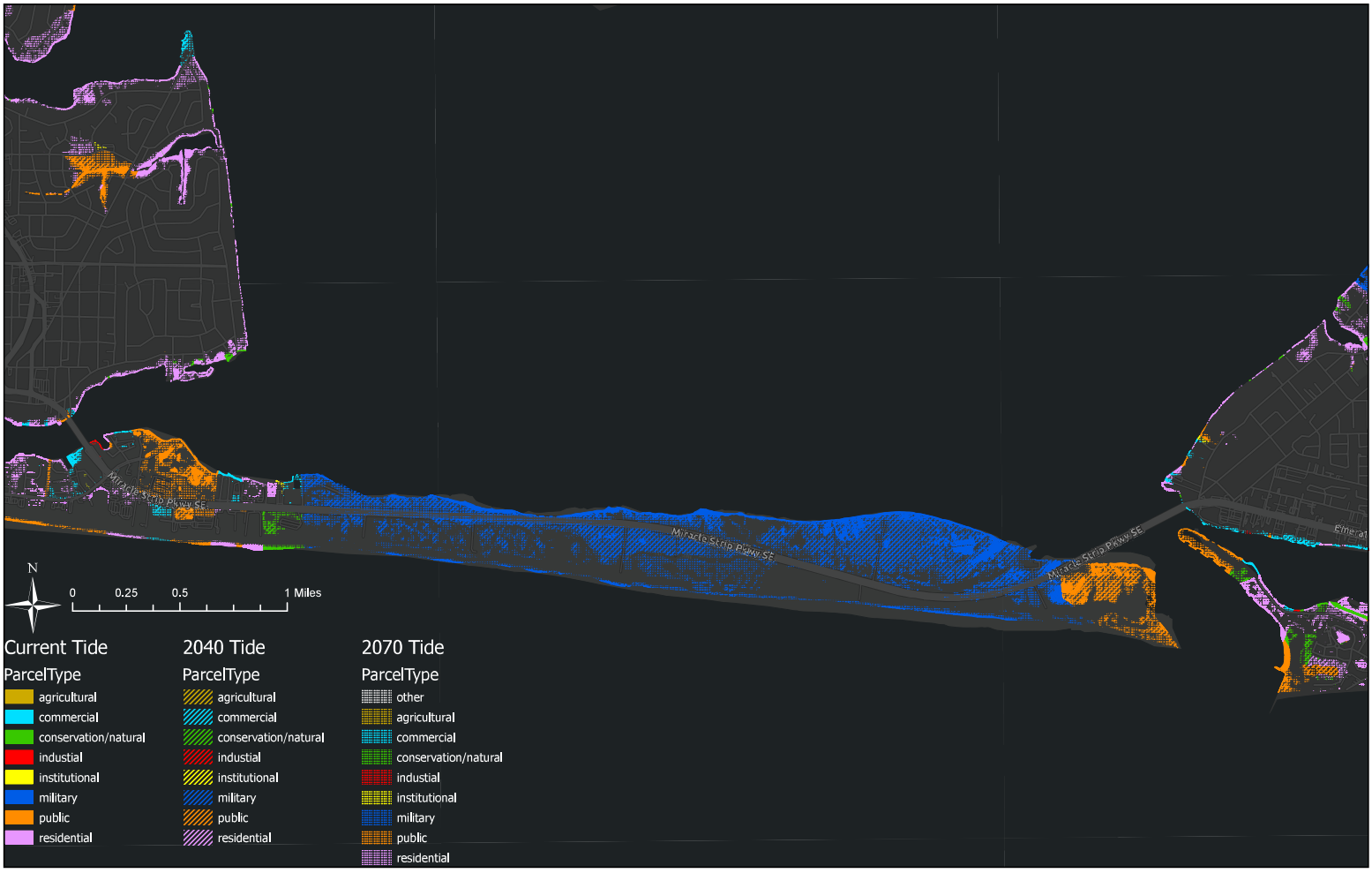

N
0 1.25 2.5 5 Miles
Bradley
Wing
Lockhart
Laurel Hill
Okaloo
Blackwater River State Forest
Nubbin Ridge
Garden City
Auburn
Silver Springs
Baker
Dorcas
Milligan
Crestview
Killingsworth Crossroads
Lorland
Galliver
Holt
OKALOOSA
Yellow River Wildlife Management Area
Niceville
Valparaiso
Eglin Air Force Base
Longwood
Villa Tasso
Wright
Hurlburt Field
Wynnehaven Beach
Harris
Mary Esther
Destin
Miramar Beach
ParcelType
other
agricultural
commercial
conservation/natural
industrial
institutional
military
public
residential
ParcelType | Count
other | 2
agricultural | 826
commercial | 412
conservation/natural | 1279
industial | 61
institutional | 51
military | 84
public | 685
residential | 19010

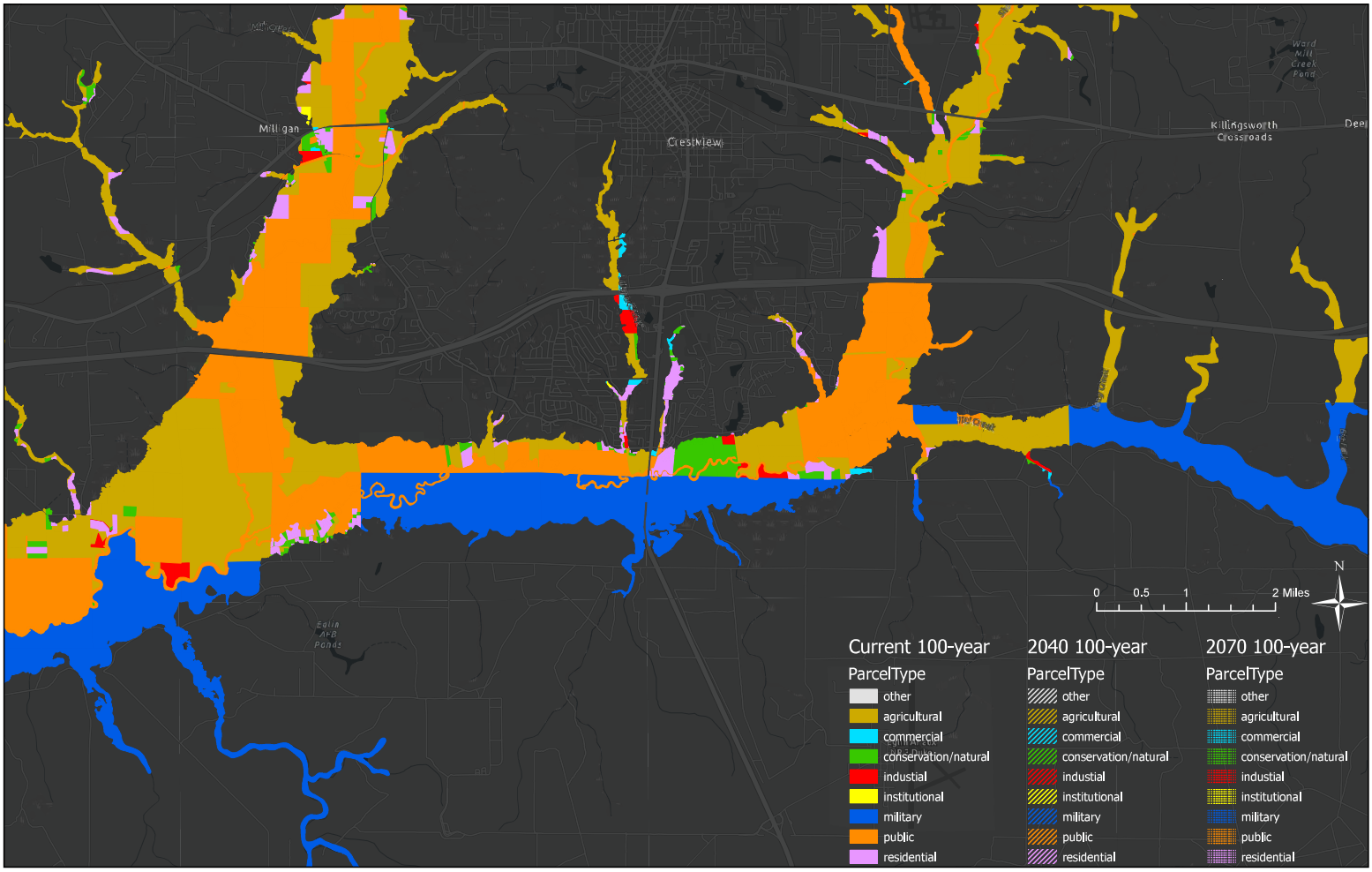

Niceville
Valparaiso
Eglin Air Force Base
Longwood
Ocean City
Wright
Lake Lorraine
Hurlburt Field
Wynnehaven Beach
Harris
Mary Esther
Destin
Sem nole
East Bay Swamp
Henderson Beach State Park
ParcelType
other
agricultural
commercial
conservation/natural
industial
institutional
military
public
residential
N
0 0,5 1 2 Miles
ParcelType Count
other 1
agricultural 7
commercial 274
conservation/natural 492
industial 25
institutional 22
military 28
public 334
residential 13035

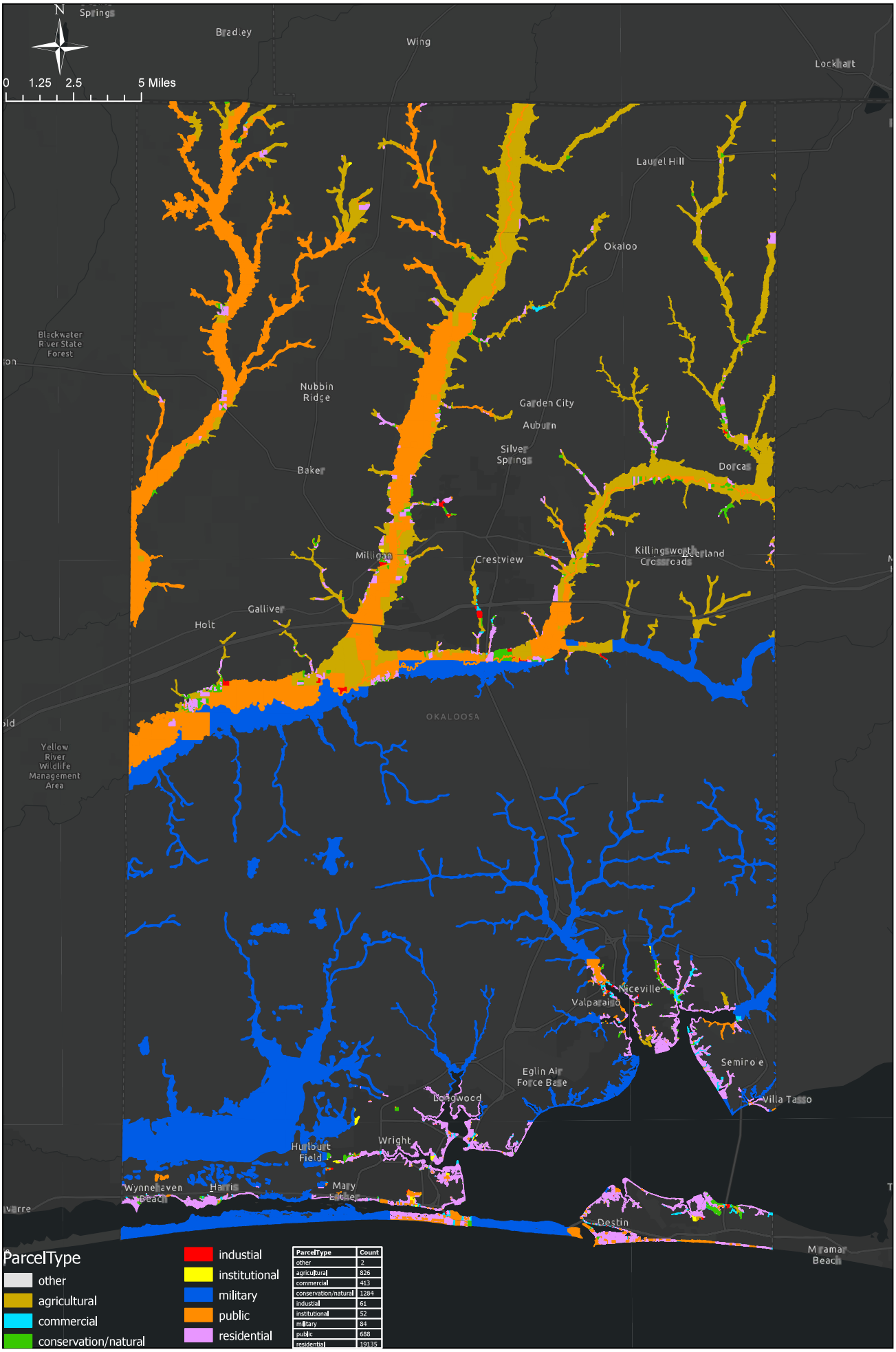

Niceville
Valparaiso
Eglin Air Force Base
Seminole
Longwood
Ocean City
Wright
Lake Lorraine
Hurlburt Field
Wynnehaven Beach
Harris
Mary Esther
Destin
Henderson Beach State Park
East Bay Swamp
Santa Rosa Island
ParcelType
agricultural
commercial
conservation/natural
industial
institutional
military
public
residential
N
0 0,5 1 2 Miles
ParcelType | Count
agricultural | 6
commercial | 188
conservation/natural | 409
industial | 19
institutional | 15
military | 24
public | 240
residential | 6007



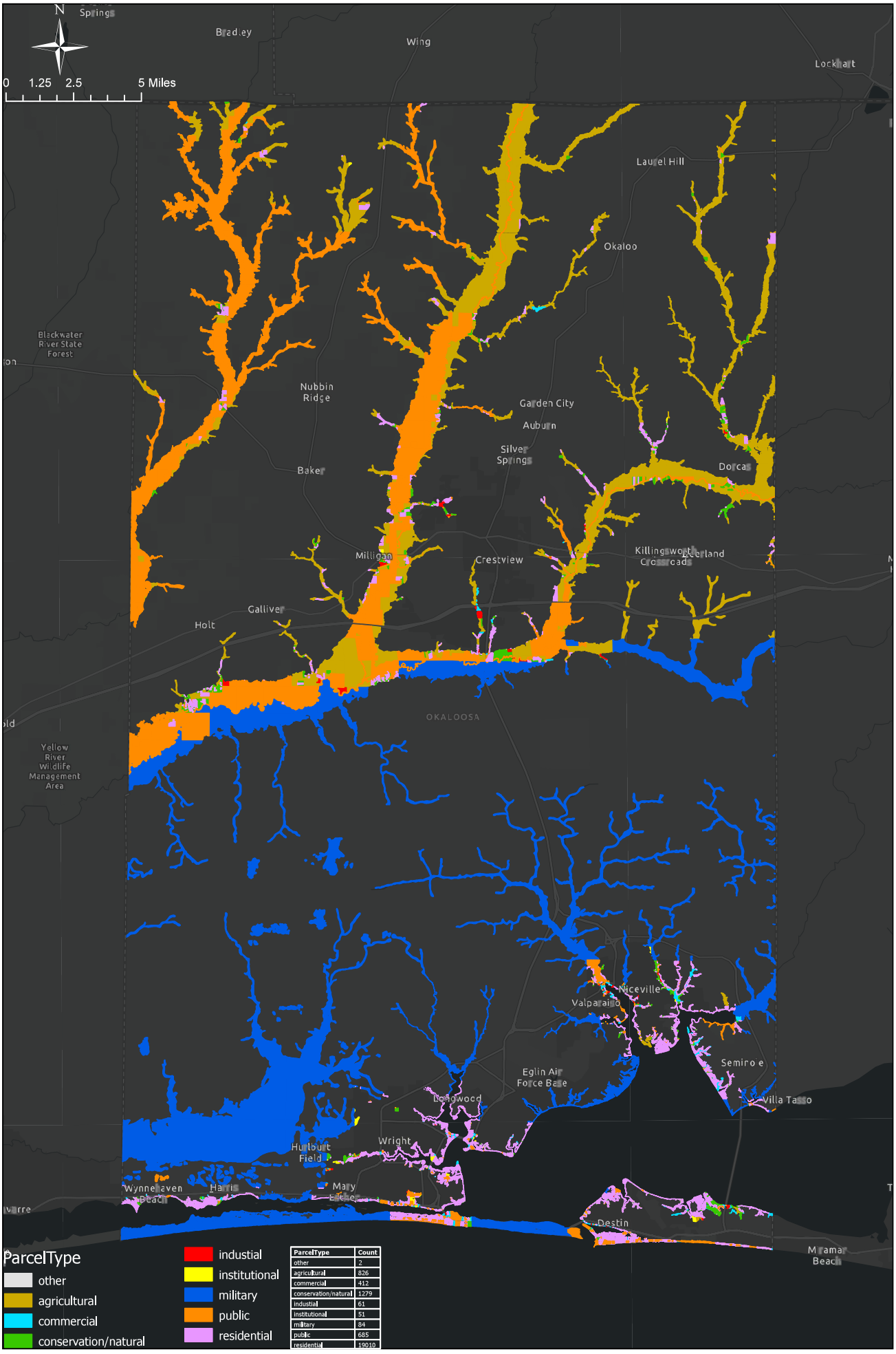
ParcelType	Count
agricultural	5
commercial	150
conservation/natural	346
industial	15
institutional	14
military	23
public	195
residential	6478


Miracle Strip Pkwy SE
Miracle Strip Pkwy SE
Miracle Strip Pkwy SE
N
0
0.25
0.5
1 Miles
Current Tide
ParcelType
agricultural
commercial
conservation/natural
industial
institutional
military
public
residential
2040 Tide
ParcelType
agricultural
commercial
conservation/natural
industial
institutional
military
public
residential
2070 Tide
ParcelType
other
agricultural
commercial
conservation/natural
industial
institutional
military
public
residential


Mill gan
Crestview
Killingsworth Crossroads
Ward Mill Creek Pond
Eglin AFB Ponds
0
0.5
1
2 Miles
N
Current 100-year
ParcelType
other
agricultural
commercial
conservation/natural
industrial
institutional
military
public
residential
2040 100-year
ParcelType
other
agricultural
commercial
conservation/natural
industrial
institutional
military
public
residential
2070 100-year
ParcelType
other
agricultural
commercial
conservation/natural
industrial
institutional
military
public
residential



ParcelType	Count
other	2
agricultural	826
commercial	413
conservation/natural	1284
industrial	61
institutional	52
military	84
public	688
residential	19135



ParcelType	Count
other	2
agricultural	826
commercial	412
conservation/natural	1279
industrial	61
institutional	51
military	84
public	685
residential	19010

FOR IMMEDIATE RELEASE

Board of County Commissioners

January 24, 2025

Residents Invited to Second Flood Vulnerability Assessment Project Public Meeting

Monday, February 10th, 2024, at Okaloosa County Administrative Building Training Room

Okaloosa County, in partnership with Jacobs Engineering, invites residents to the second public meeting for the Vulnerability Assessment Project on Monday, February 10th, from 5:30-7:00 p.m. at the Okaloosa County Administrative Building Training Room, 1250 Eglin Parkway, Shalimar, Florida. The meeting is open to anyone interested in learning more about future flood mitigation and the possible impacts of flood events on the community.

"I encourage everyone to learn more about where they live and the potential flood risks they may encounter," said Okaloosa County Board Chairman Paul Mixon. "These public meetings give our residents the chance to not only learn about their community but to engage in worthy conversations that can lead to a safer County."

During the meeting, attendees will hear from county staff and representatives from Jacobs Engineering on the methodology and results of the countywide vulnerability assessment. Attendees will have the chance to provide input on results from the exposure and sensitivity analysis and participate in a question-and-answer session at the end of the meeting. The meeting will be streamed live on YouTube at: https://www.youtube.com/@CountyOkaloosaTV.

The Vulnerability Assessment Project is an initiative aimed at safeguarding the unincorporated areas of Okaloosa County against environmental risks, including rising sea levels and flooding. For more information, contact Okaloosa County Emergency Management Chief, Ryan Prince at rprince@myokaloosa.com.

###

FOR MORE INFORMATION, CONTACT PUBLIC INFORMATION OFFICER NICK TOMECEK AT 850.651.7321

NTOMECEK@MYOKALOOSA.COM

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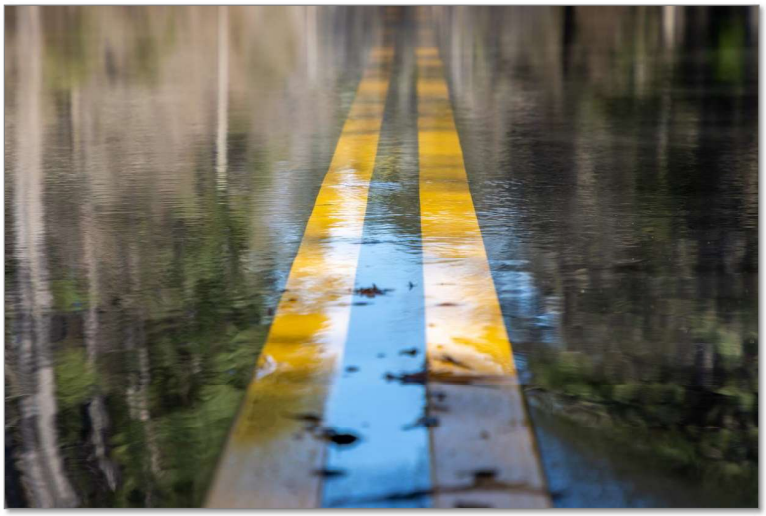
Okaloosa County Vulnerability Assessment and Adaptation Plan

Public Meeting #2

February 10th, 2024

AGENDA

1. Introductions
2. Project Overview
3. Assets and Data Collection
4. Sensitivity/Exposure Analysis Results
5. Next Steps & Questions



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INTRODUCTIONS



Tanya Gallagher, PHD
Project Manager



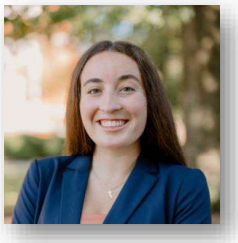
Alec Rodriguez, PE, CFM
Deputy PM, Engineer



Hank Hodde, CFM, ENV SP
Task Lead



Blaine Beck, PE
Project Engineer



Charley Golden, EIT
Jr. Engineer

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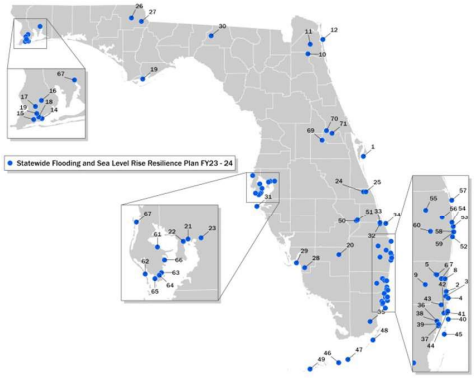
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Project Overview

What is a Vulnerability Assessment?

- Identifies inland and coastal infrastructure, geographic areas and communities in Florida most vulnerable to flooding and sea level rise and the associated risks.

- **A VA Does Not / Is Not:**
  - Intended for individual homeowners/property assessments
  - Account for property level improvements
  - Account for capital projects in development
  - Account for stormwater engineering projects
  - Meeting H&H modeling standings - not an H&H model

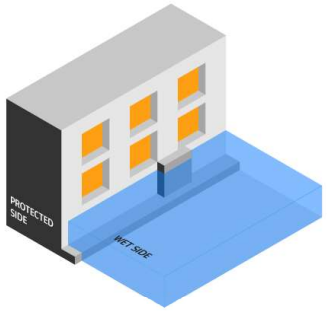


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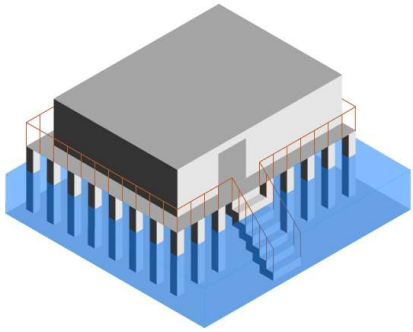
What is a Vulnerability Assessment?

- **A VA Does / Is :**
  - Make Okaloosa County eligible for future mitigation funding
  - Position the County for future grant opportunities
  - Help to identify adaptation priority areas
  - Link to other policies - local mitigation strategies
  - Help to prioritize for land acquisition
  - Help to create recommendations on policies

Dry-Flood Proofing

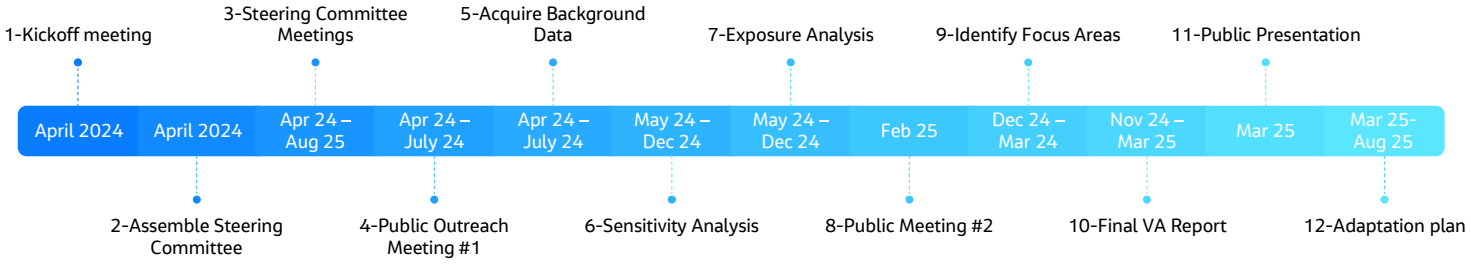


Elevating of Critical Asset



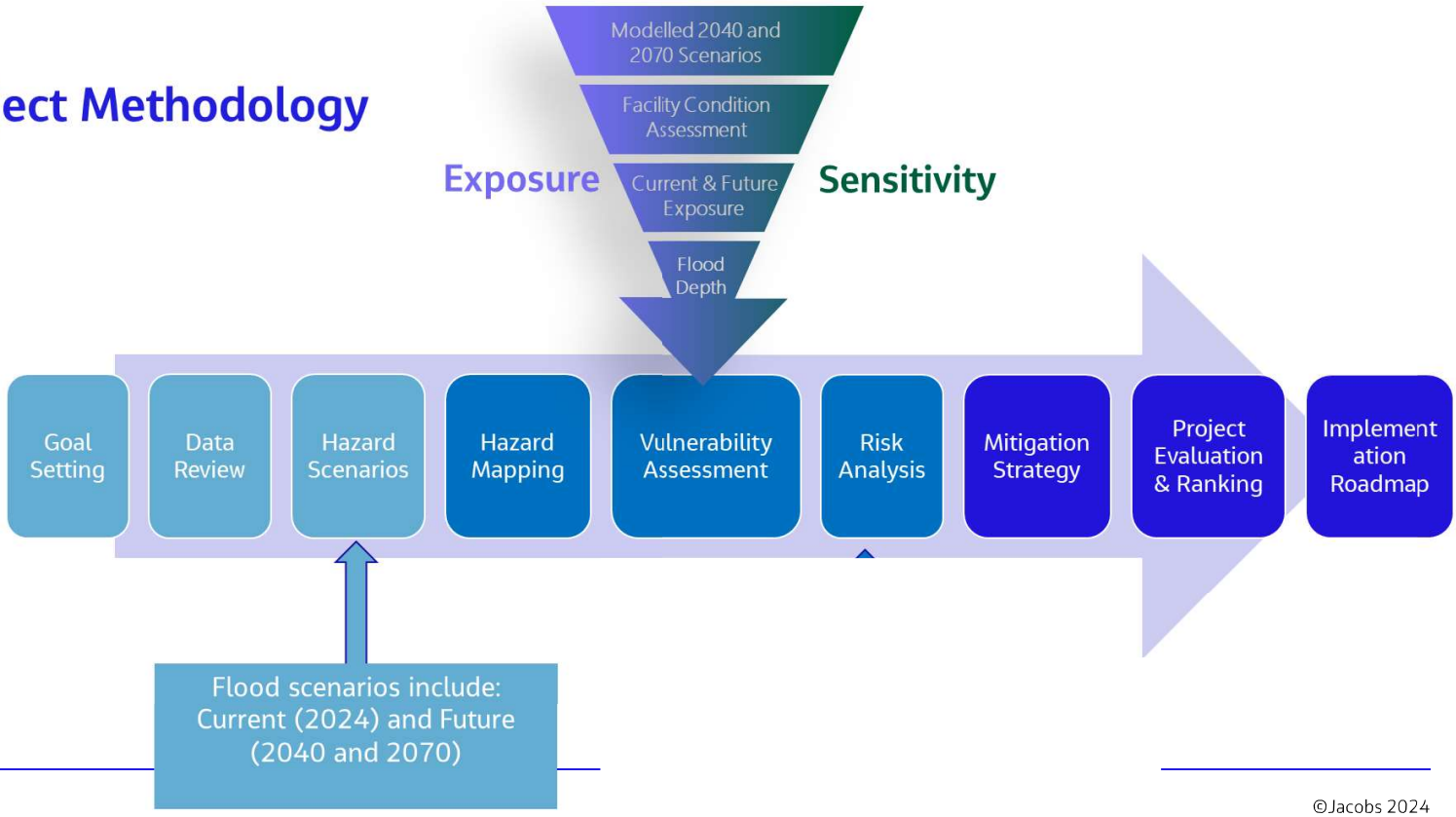
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Vulnerability Assessment Tasks Overview and Timeline



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Project Methodology



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Assets and Data Collection

Task 4 – Public Outreach Meeting #1

- Jacobs conducted Public Meeting #1 at the end of July 2024.
- 25-30 participants from across the County.
- Collected input for the initial data collection stages, to include input on preferred methodologies, data for analyzing potential sea level rise impacts and/or flooding, guiding factors to consider, and critical assets important to the community.



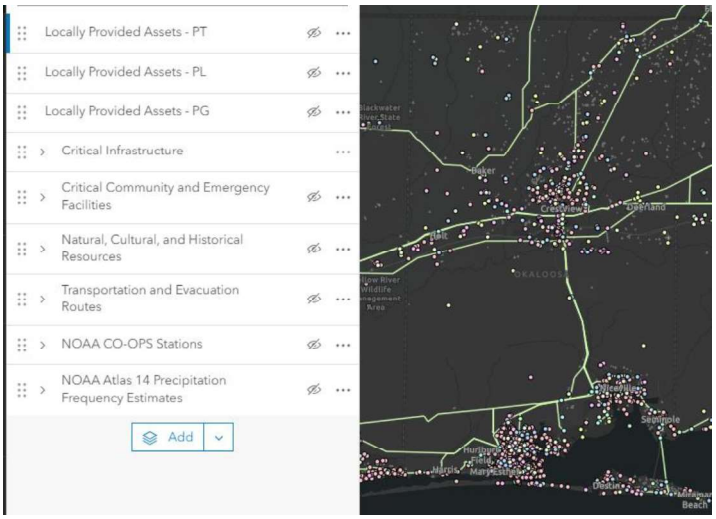
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Task 5 - Acquire Background Data and Municipal Outreach

- Critical Asset Data for VA:
  - Transportation/Evacuation Routes
  - Critical Infrastructure
  - Critical Community and Emergency Facilities
  - Natural Cultural and Historical Resources

- Reviewed nearly 127,000 assets

- Online Maps of data include:
  - Transportation/Evacuation Routes
  - Critical Infrastructure
  - Critical Community and Emergency Facilities
  - Natural Cultural and Historical Resources



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Exposure Analysis

Where is flooding occurring?

Selected Flood Hazards

100- Year Flood



- Incorporates rainfall, coastal flooding, riverine flooding
- Range of Depths: 1-4 feet

Tidal Flooding

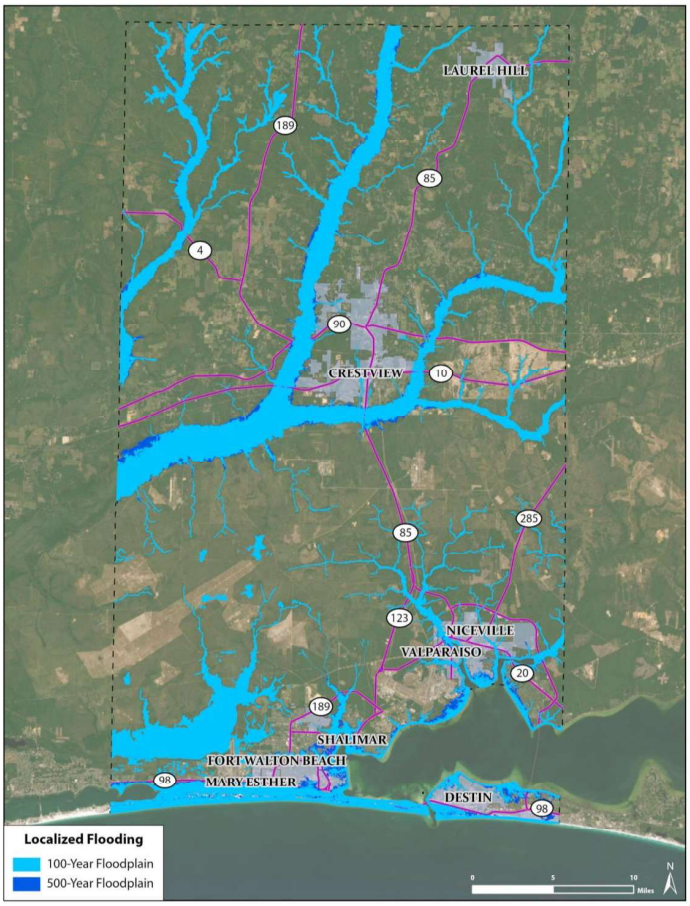


- Tidal flood (Mean Higher High Water Level + 2 feet)
- Range of Depths: 1-3 feet

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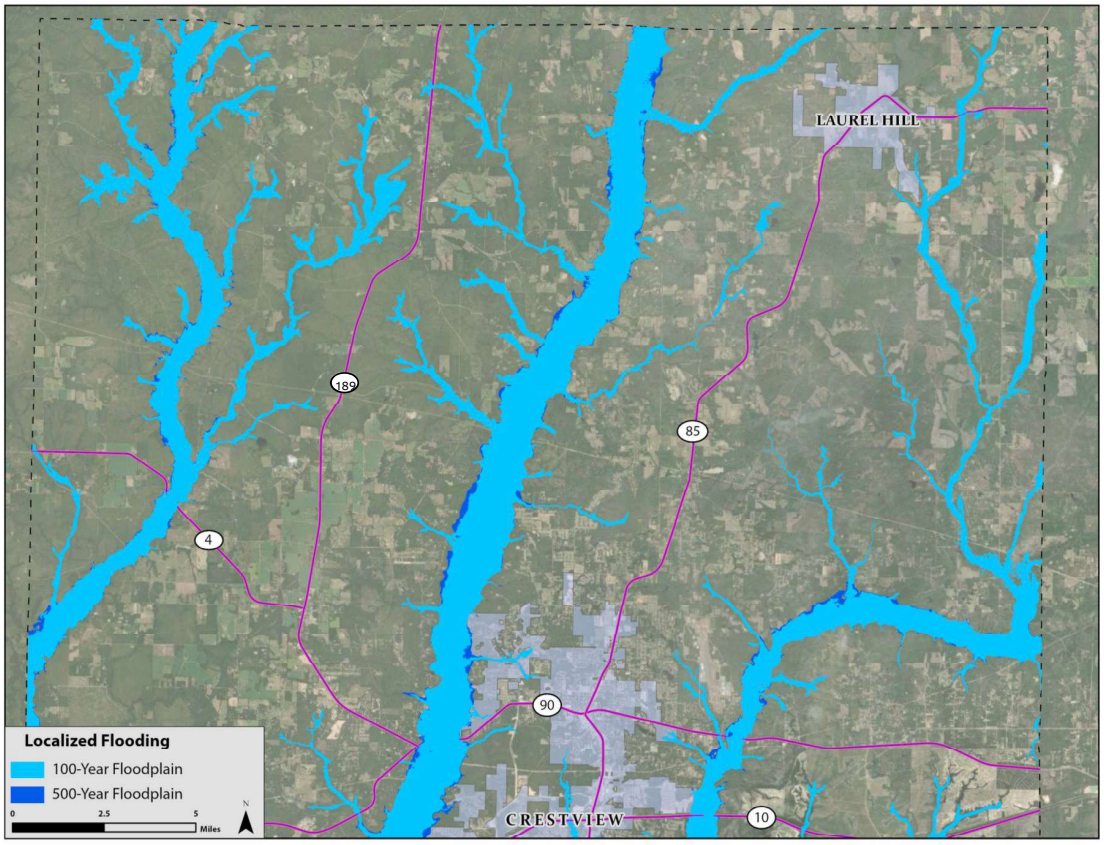
Countywide Flood Exposure – 100 and 500-Year Flood

CLOSER LOOK AT IMPACTED AREAS ON FOLLOWING SLIDES



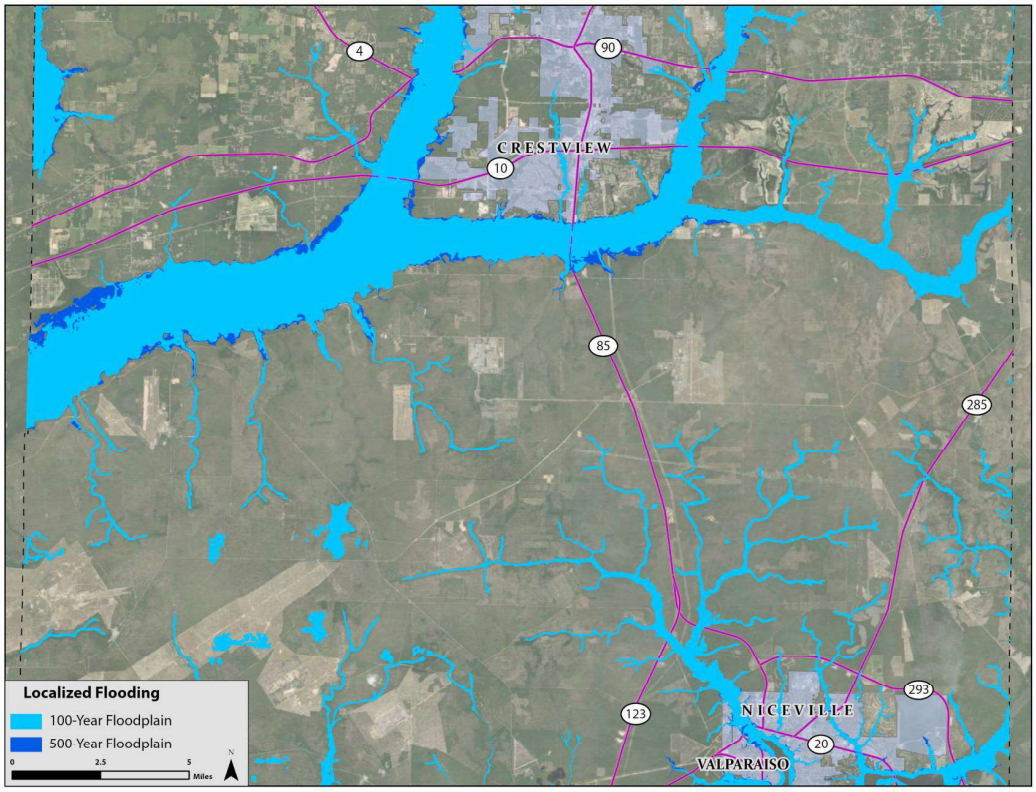
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North County Flood Exposure – 100 and 500-Year Flood



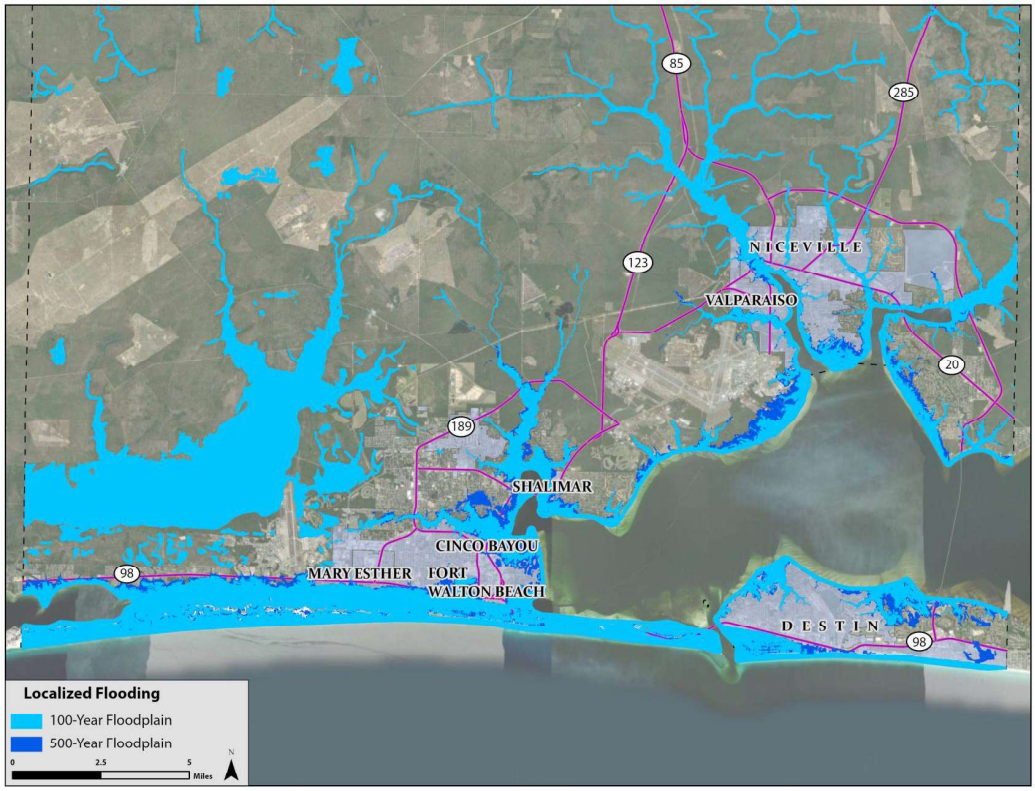
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Central County Flood Exposure – 100 and 500-Year Flood



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South County Flood Exposure – 100 and 500-Year Flood

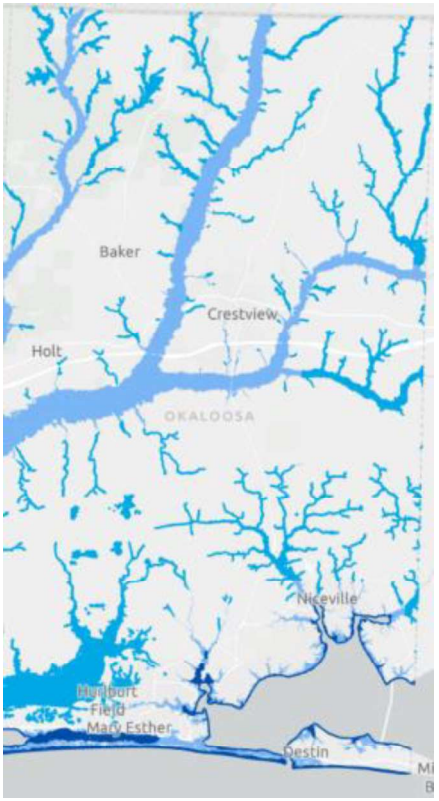


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100-YEAR FLOOD EXPOSURE

Percent of Total Critical Assets Exposed

	Present-Day 100-Yr Flood Exposure	Projected 2040s 100-Yr Flood Exposure	Projected 2070s 100-Yr Flood Exposure
Number of Critical Assets (%)	11,032 (8.7%)	11,385 (8.9%)	11,392 (8.9%)



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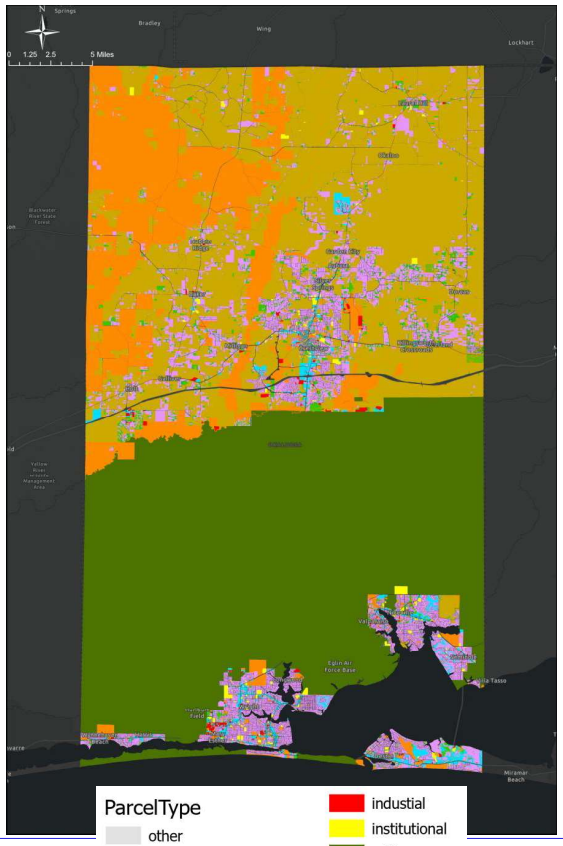
Parcel Exposure

What types of lands are exposed to flooding and where?

Parcel Types

Residential	Commercial	Agricultural	Industrial
• Single family homes • Townhomes • Condos	• Tourist attractions • Restaurants • Offices • Retail	• Cropland • Pastures • Timberlands	• Warehouses • Manufacturing

Public	Conservation	Institutional	Military
Local, state, and federally-owned parcels	• Forests and Parks • Rivers and Lakes	• Churches • Colleges • Clubs • Schools	Military-owned parcels (Eglin AFB, Hurlburt Field)

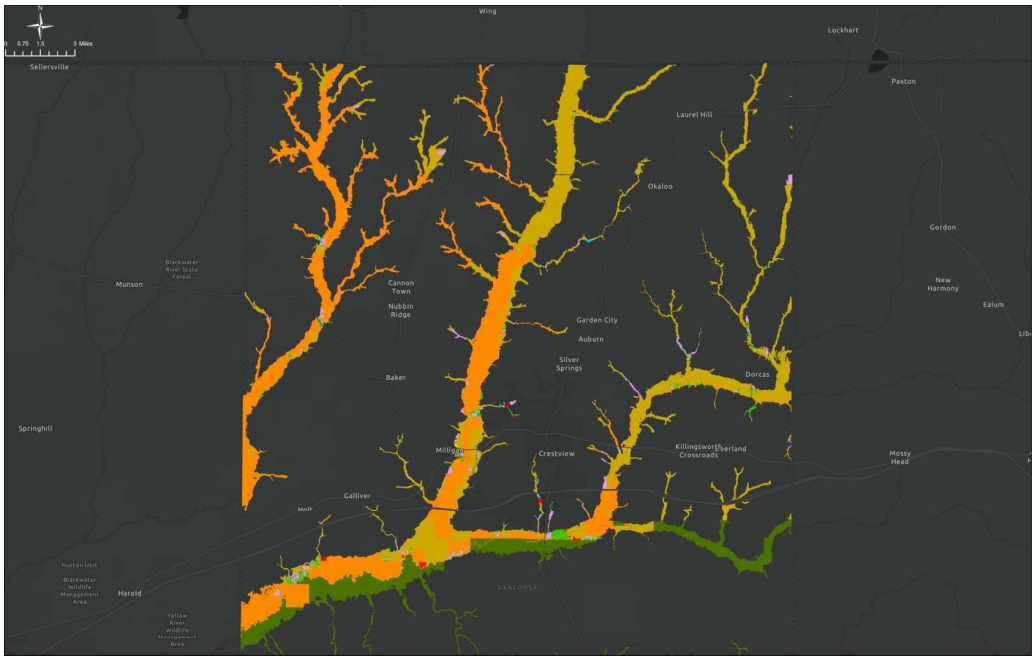


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Parcels affected by Current 100-Year Floodplain – North County

ParcelType

- other
- agricultural
- commercial
- conservation/natural
- industrial
- institutional
- military
- public
- residential

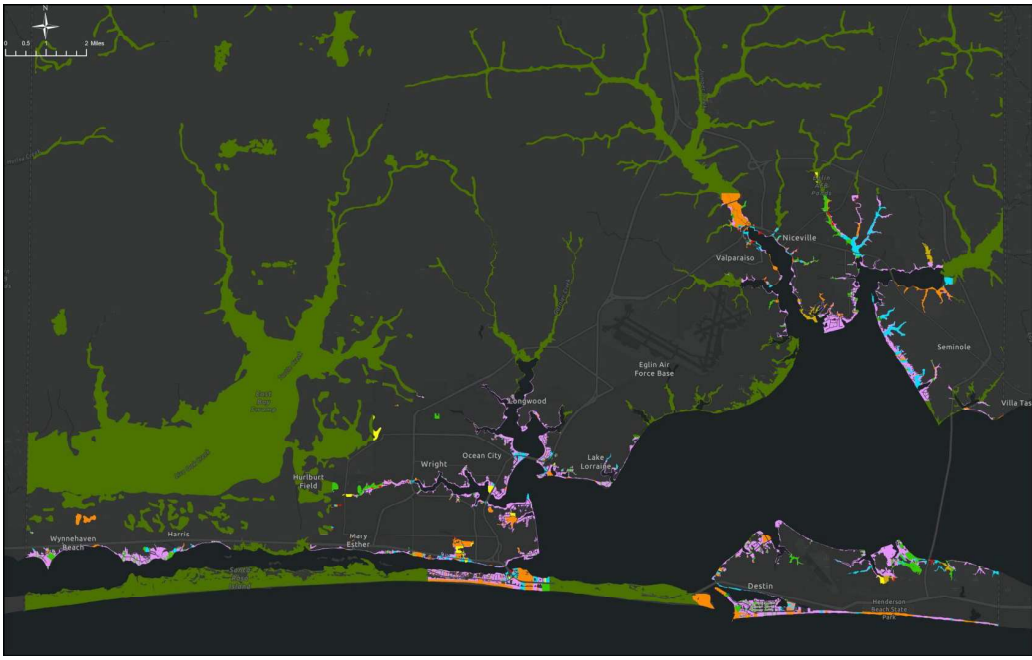


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Parcels affected by Current 100-Year Floodplain – South County

ParcelType

- other
- agricultural
- commercial
- conservation/natural
- industrial
- institutional
- military
- public
- residential



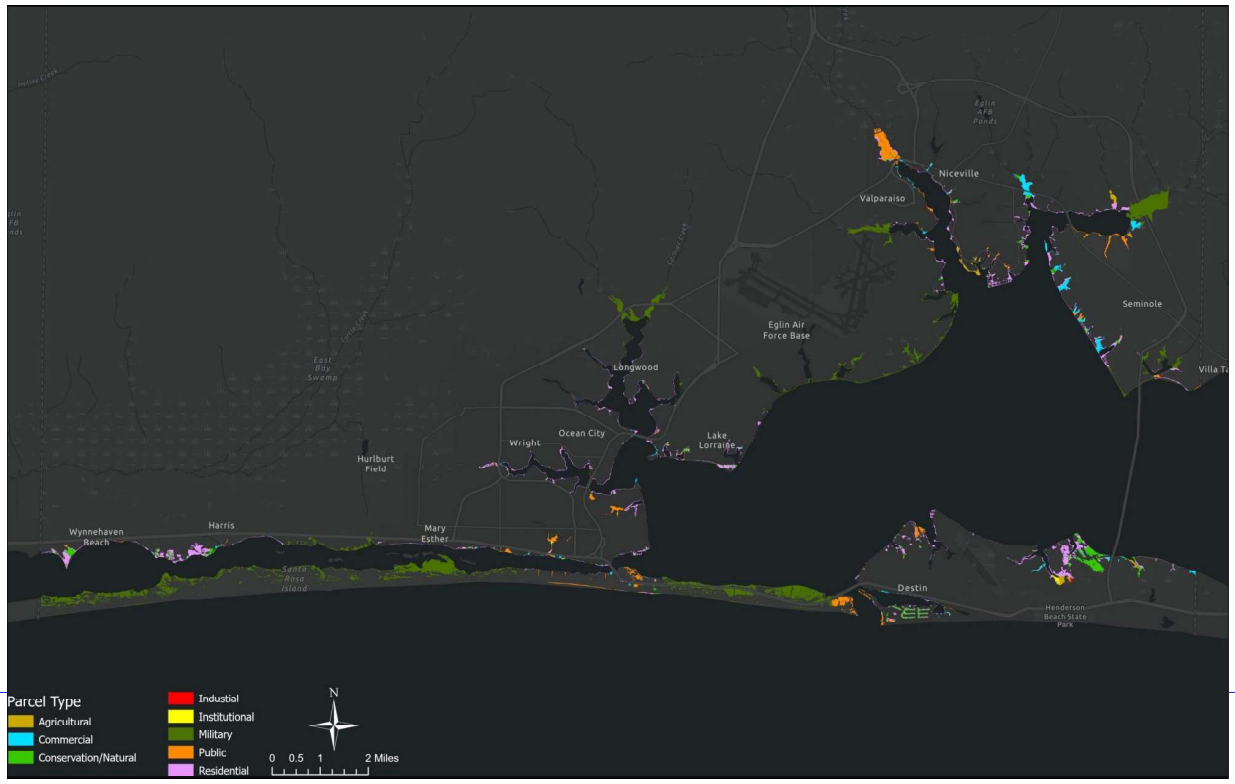
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Parcels affected by Current Tidal Flooding



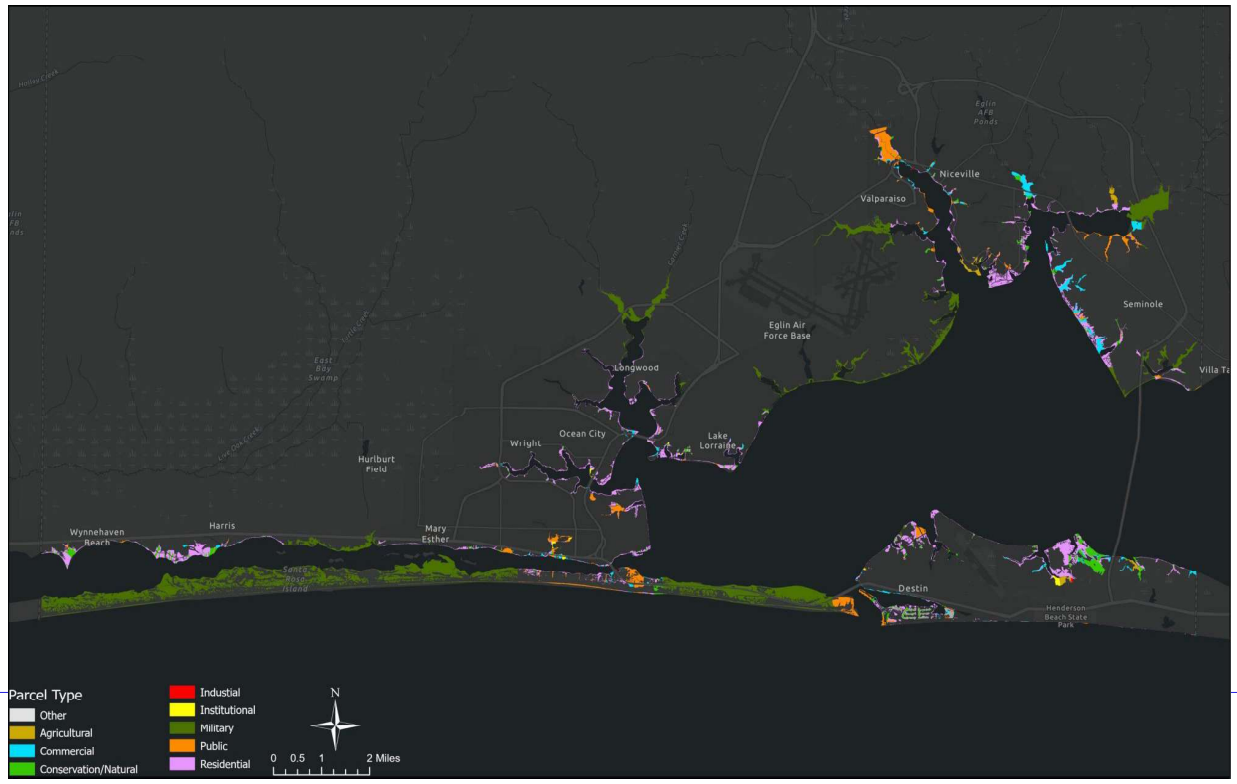
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Parcels affected by Current Tidal + 2040 Intermediate-High SLR Flooding



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Parcels affected by Current Tidal + 2070 Intermediate-High SLR Flooding



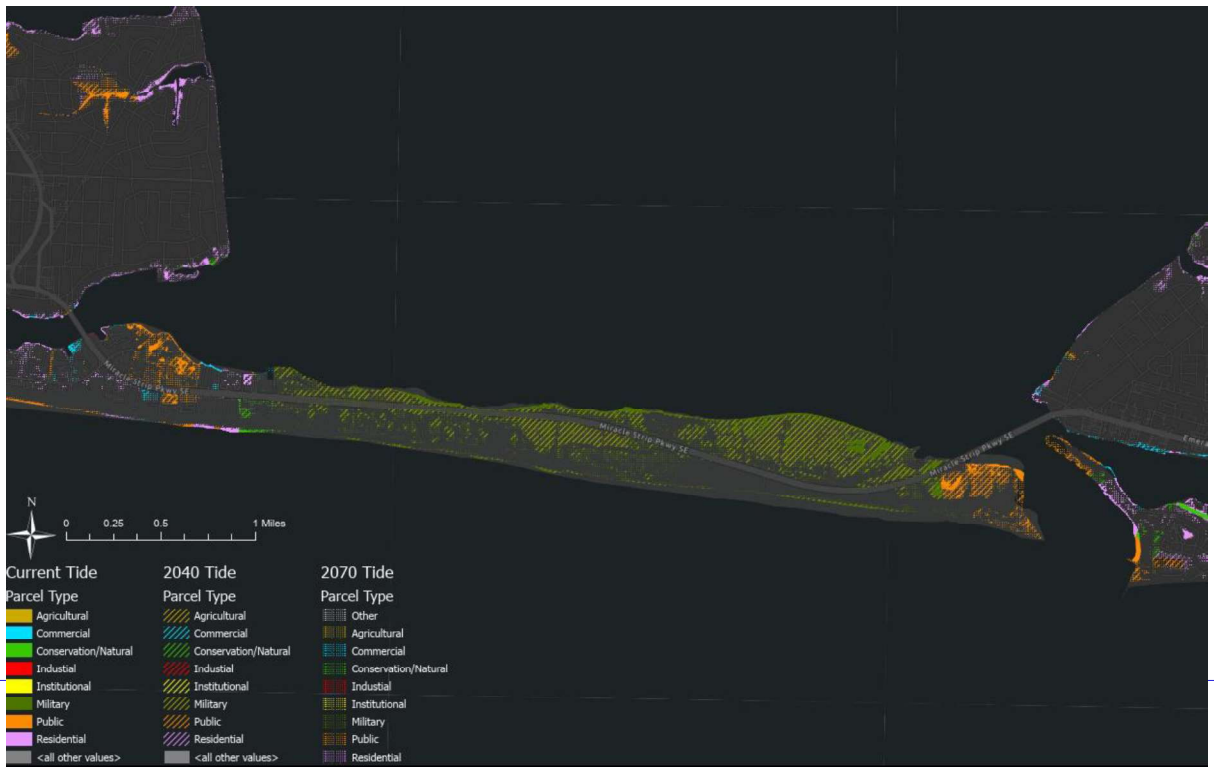
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Percent Inundation by Parcel Type (Countywide)

Parcel Type	Current Tidal	Tidal Flooding + Intermediate-High SLR Scenario in 2040	Tidal Flooding + Intermediate-High SLR Scenario in 2070	Current 100-Year Flood	100-Year Flood + Intermediate-High SLR Scenario in 2040	100-Year Flood + Intermediate-High SLR Scenario in 2070
Agricultural	13.6%	22.3%	29.8%	26.0%	26.0%	26.0%
Commercial	7.4%	10.6%	17.9%	21.6%	21.6%	21.7%
Conservation/ Natural	22.4%	40.9%	50.7%	59.6%	59.6%	59.6%
Industrial	2.3%	7.6%	9.2%	52.2%	52.2%	52.3%
Institutional	4.7%	11.7%	20.8%	17.9%	17.9%	17.9%
Military	1.3%	2.9%	5.5%	13.9%	13.9%	13.9%
Public	8.8%	15.1%	22.2%	38.2%	38.2%	38.2%
Residential	5.3%	8.3%	12.6%	50.5%	50.5%	50.9%
Other	0%	0%	0.6%	10.8%	10.8%	11.5%
Total in County	2.7%	5.3%	9.5%	23.8%	23.8%	23.9%

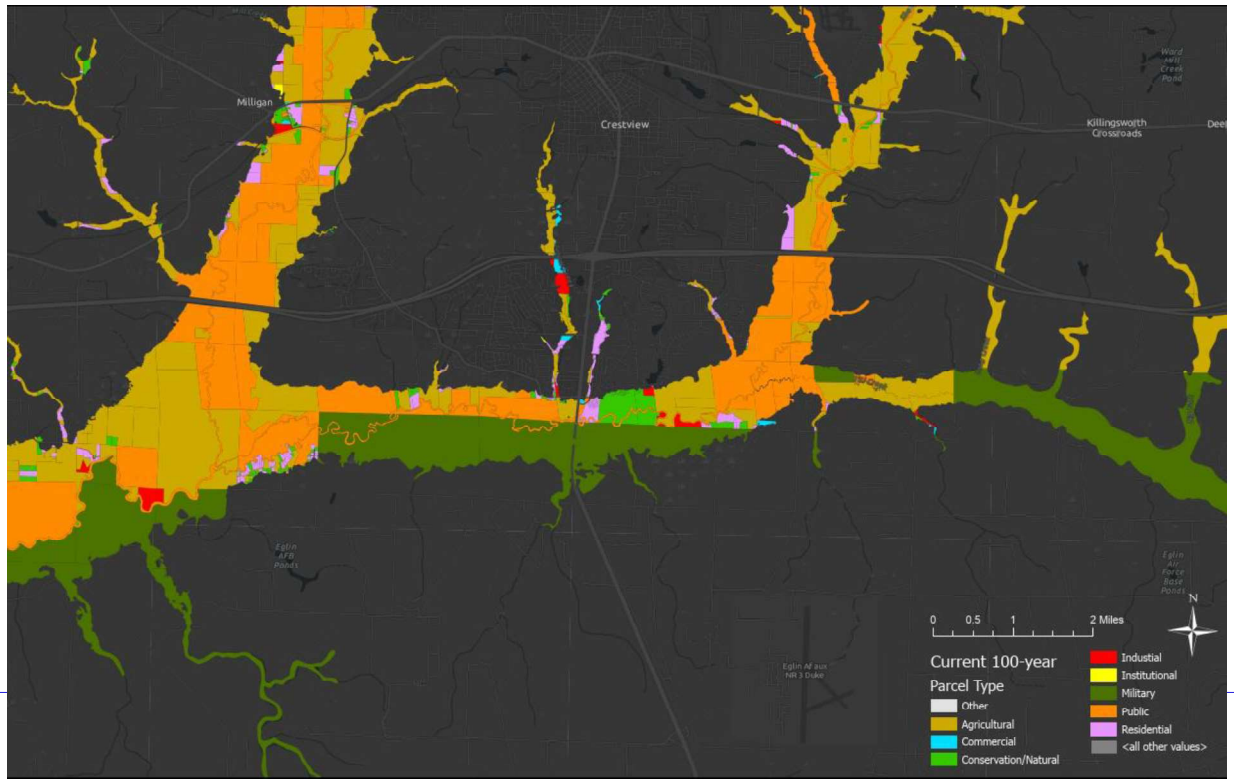
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Tidal Flooding Affects on Parcels along US 98 (Miracle Strip Pkwy) on Okaloosa Island



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100-Year Flooding Affects on Parcels near SR 85 at Shoal River



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Sensitivity Analysis

Based on flood depths at specific locations, how would you define the vulnerability of an asset?

Criteria for Assessing Sensitivity

Asset Class		No Exposure	Low	Mild	Moderate	High	Extreme
Critical Community and Emergency Facilities		0"	<3"	3–6"	6–18"	18–36"	>36"
Critical Infrastructure		0"	<3"	3–6"	6–18"	18–36"	>36"
Natural, Cultural, and Historical Resources	Buildings (Points)	0"	<3"	3–6"	6–18"	18– 36"	>36"
	Parcels	0%	<25%	25–50%	50–75%	75–90%	>90%
Transportation and Evacuation Routes	Bus Terminals and Marinas	0"	<3"	3–6"	6–18"	18–36"	>36"
	Roadways	0%	<25%	25%–50%	50–75%	75–90%	>90%

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Preliminary Findings

What did we learn? Which assets display highest vulnerability to flooding?

Vulnerable Critical Community and Emergency Facilities

- Overall, few critical community and emergency facilities are exposed to flood hazards
- Of the 213 facilities analyzed, 4 and 5 exhibit high vulnerability to flood hazards in 2040 and 2070, respectively
  - Schools - 3 (1 public)
  - Fire Stations – 1



Elliott Point Elementary School
Facility is in the current100-year floodplain and has extreme vulnerability in 2024, 2040, and 2070



Okaloosa Island Fire Station #4
Facility is in the100-year floodplain in 2070 intermediate high SLR scenario with 2-feet flood depths, resulting in high vulnerability

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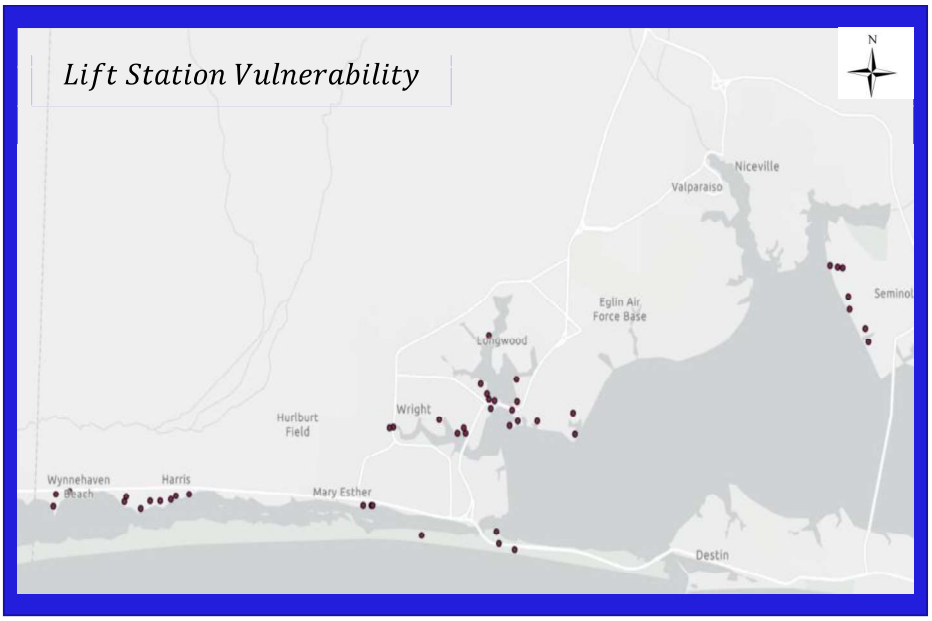
Vulnerable Critical Infrastructure

- Overall, few critical infrastructure point assets exhibit extreme or high vulnerability to flood scenarios
  - LS 562 – Gap Creek
  - Electrical infrastructure on barrier islands
- Many utility facilities (wastewater lift stations, water storage tanks, pump stations, some well sites) are vulnerable to flood hazards in 2040 and 2070

Asset Name	Asset Type	Asset Owner
Santa Rosa Island East Substation	Electric Production and Supply Facilities	FPL
Shalimar Post Office	Communication Facilities	US Postal Service
Water Storage Tank – East Island Tank	Water Utility Conveyance Systems	Okaloosa County
PW5	Drinking Water Facilities	City of Fort Walton Beach
Flagship Communications – Communications Tower	Communication Facilities	Private
Water Storage Tank – El Matador	Water Utility Conveyance Systems	Okaloosa County
Water Storage Tank – Stand Pipe Tank	Water Utility Conveyance Systems	Okaloosa County
Lower Memorial Lake Dam	Stormwater Treatment Facilities and Pump Stations	USAF AFMC
New Cingular Wireless PCS, LLC – Communications Tower	Communications Facilities	Private
Santa Rosa Island West	Electric Production and Supply Facilities	FPL
Well #1	Drinking Water Facilities	Okaloosa County

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Wastewater Utility Sensitivity

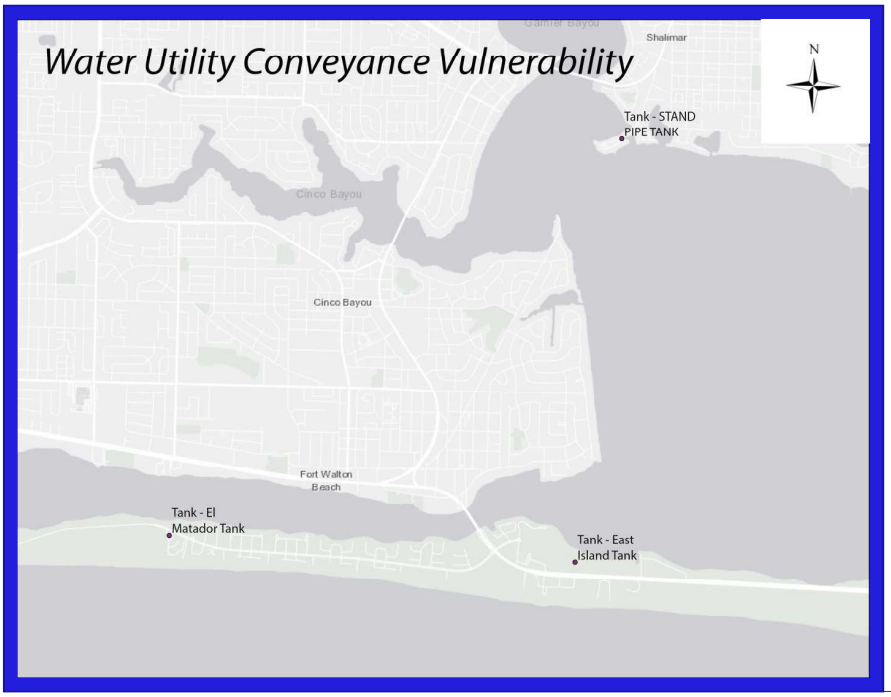


Asset Name	Asset Owner
LS-562 Gap Creek	Okaloosa County
LS-581 Beal Pkwy	Okaloosa County
LS-599 Bayview	Okaloosa County
LS-039 Island #1*	Okaloosa County
LS-204 Raintree	Okaloosa County
LS-114 Southwind	Okaloosa County
LS-107 St Andrews 3	Okaloosa County
LS-061 Shalimar Dr	Okaloosa County
LS-020 Parish Point*	Okaloosa County
LS-027 Tarpon Dr	Okaloosa County
LS-018 Parish Pnt Rd	Okaloosa County
LS-592 Meigs Dr	Okaloosa County
LS-591 Eglin Pkwy*	Okaloosa County
LS-570 Cove Rd #2	Okaloosa County
LS-569 Monhan	Okaloosa County
LS-584 Cove Rd 1*	Okaloosa County
LS-004 Sandy Point	Okaloosa County
LS-594 Beachview Dr	Okaloosa County
LS-008 Emerald Point	Okaloosa County
LS-009 Wynnhaven Rd*	Okaloosa County
LS-583 Pocahontas*	Okaloosa County
LS-593 Credit Unioin*	Okaloosa County
LS-598 Harrleson	Okaloosa County
LS-595 Harris	Okaloosa County
LS-044 Eastview Ave	Okaloosa County
LS-037 Island #4*	Okaloosa County
LS-117 Southwind 2	Okaloosa County
LS-115 Lakeview	Okaloosa County
LS-104 Capri Cove E	Okaloosa County
LS-105 Lido Circle W	Okaloosa County
LS-062 Carl Brandt	Okaloosa County
LS-025 Cobia Bay	Okaloosa County
LS-017 Marsh Harbor	Okaloosa County
LS-028 Neptune Dr	Okaloosa County
LS-030 La Mar West	Okaloosa County
LS-021 Brookwood	Okaloosa County
LS-055 Lake Pointe	Okaloosa County
LS-050 Snug Harbor	Okaloosa County
LS-051 Old Ferry Rd	Okaloosa County
LS-053 4th Avenue*	Okaloosa County
LS-023 Marler Park	Okaloosa County
LS-022 Beasley Park	Okaloosa County
Sleepy Hollow Rd Lift Station	City of Mary Esther
Calle Rio Lift Station	City of Mary Esther
Islandview Drive Lift Station	City of Mary Esther

*Okaloosa County is actively upgrading or planning to upgrade these facilities in the future

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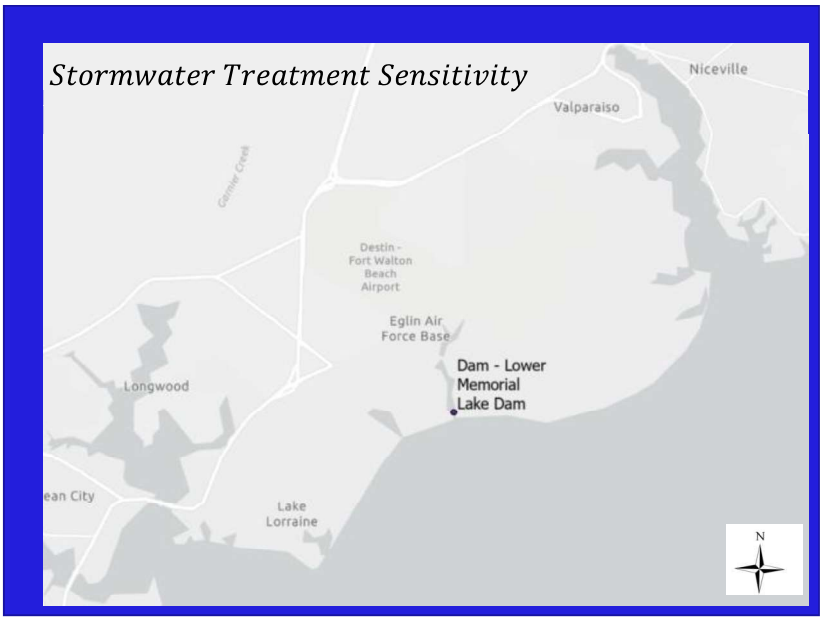
Water Utility Sensitivity



Asset Name	Asset Owner
Tank - East Island Tank	Okaloosa County
Tank - El Matador Tank	Okaloosa County
Tank – Stand Pipe Tank	Private

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Stormwater Treatment Sensitivity

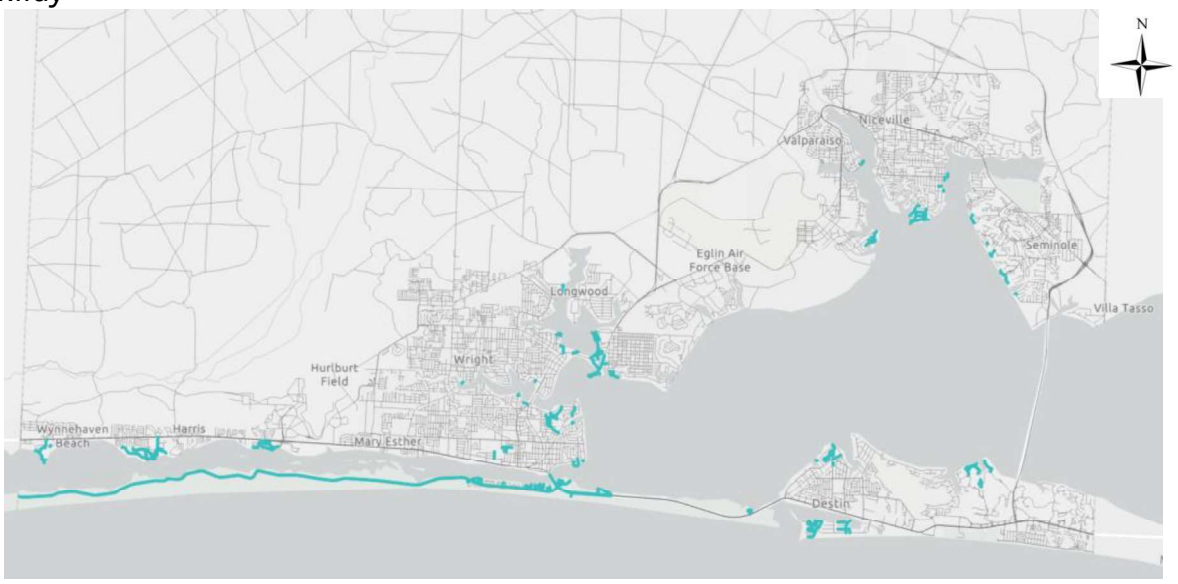


Asset Name	Asset Owner
Lower Memorial Lake Dam	USAF

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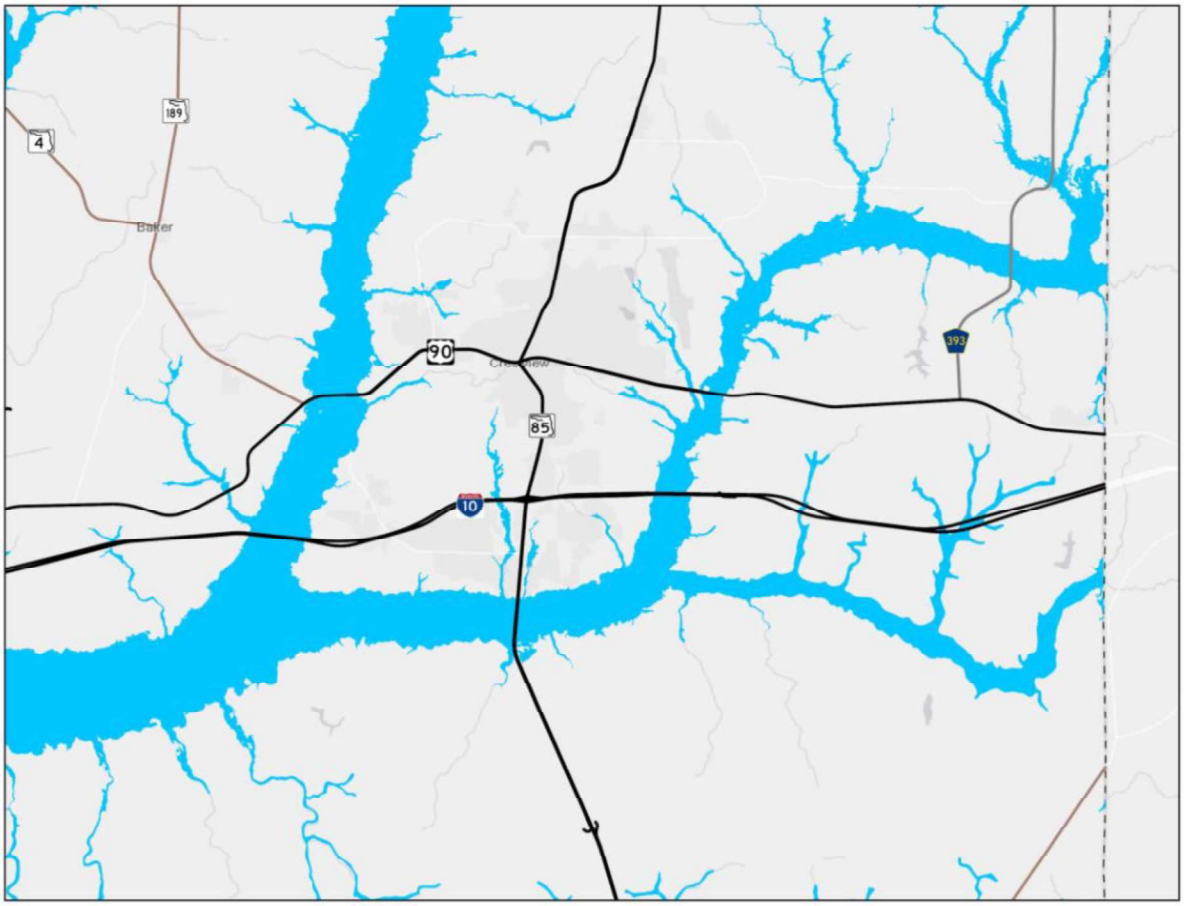
Vulnerable Transportation and Evacuation Routes

- Point transportation assets (airports, railroad crossings) experience minimal vulnerability to flood hazards
- Many roadways experience vulnerability to tidal flooding and/or the 100-year flood in the present day
  - Critical evacuation routes that experience high flood depths:
    - Miracle Strip Parkway
    - SR 85
    - Highway 98

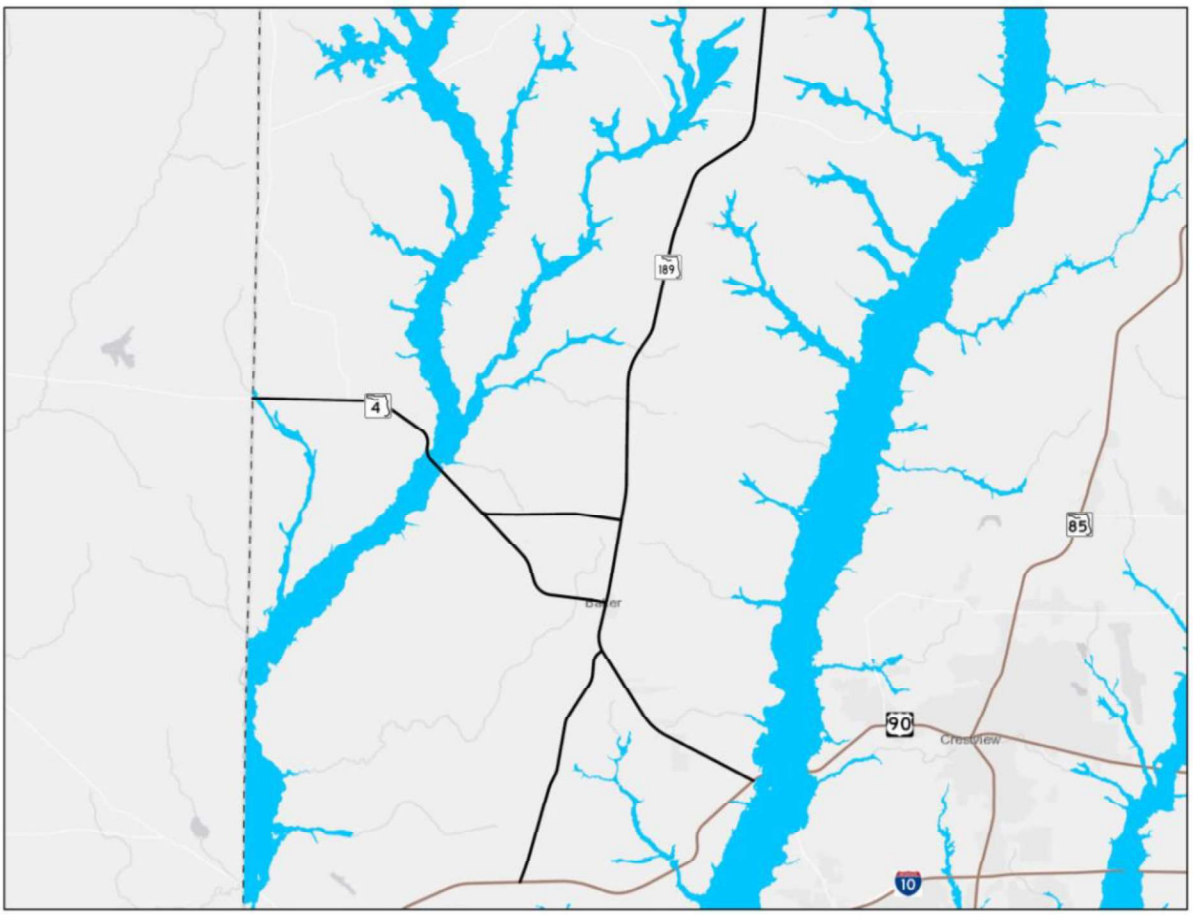


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Vulnerable Transportation and Evacuation Routes – Shoal River Crossings



Vulnerable Transportation and Evacuation Routes - Highways 4 and 189



Vulnerable Transportation and Evacuation Routes - Highway 393



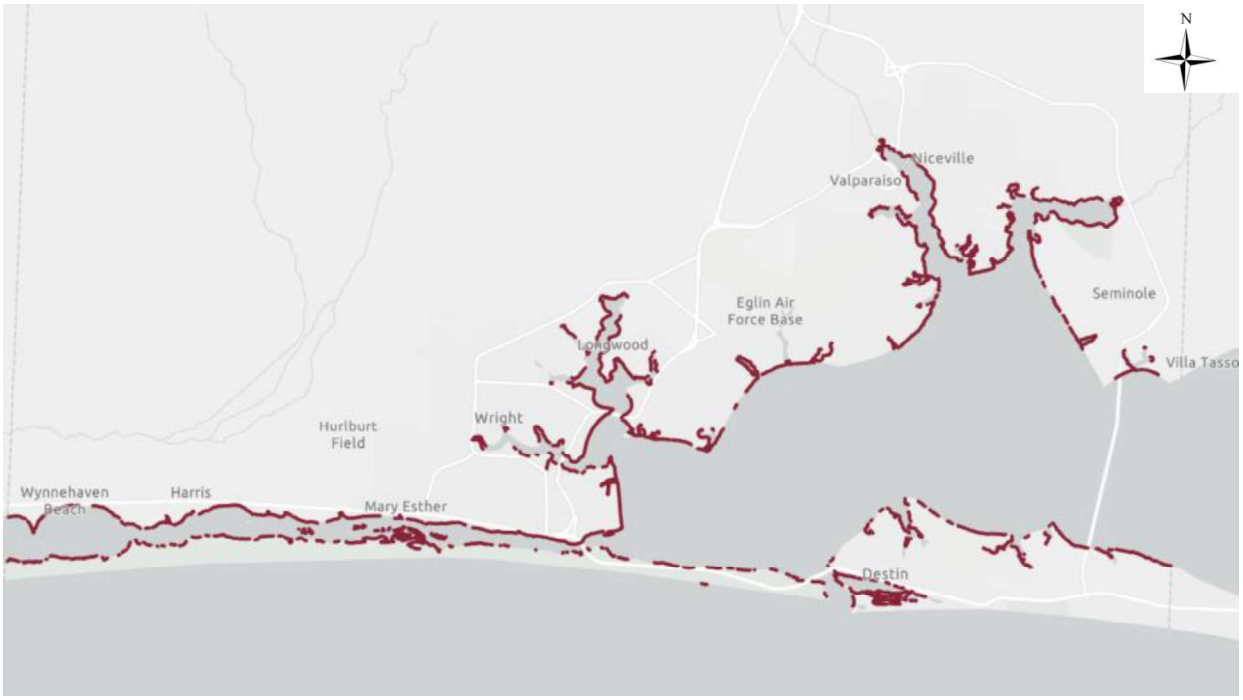
Vulnerable Transportation and Evacuation Routes – Highways 98, 85, 189



Vulnerable Natural, Cultural, and Historical Resources - Shorelines

Significant shoreline vulnerability throughout the region*

*Vulnerability calculation does not account for shoreline type or existing protection

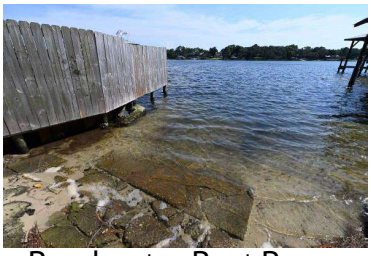


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Vulnerable Natural, Cultural, and Historical Resources - Parks



Florida Park, Valparaiso



Pocahontas Boat Ramp, Fort Walton Beach



Okaloosa Island Beach Front, Fort Walton Beach



Shipyard Point Park, Valparaiso



Lincoln Park, Valparaiso

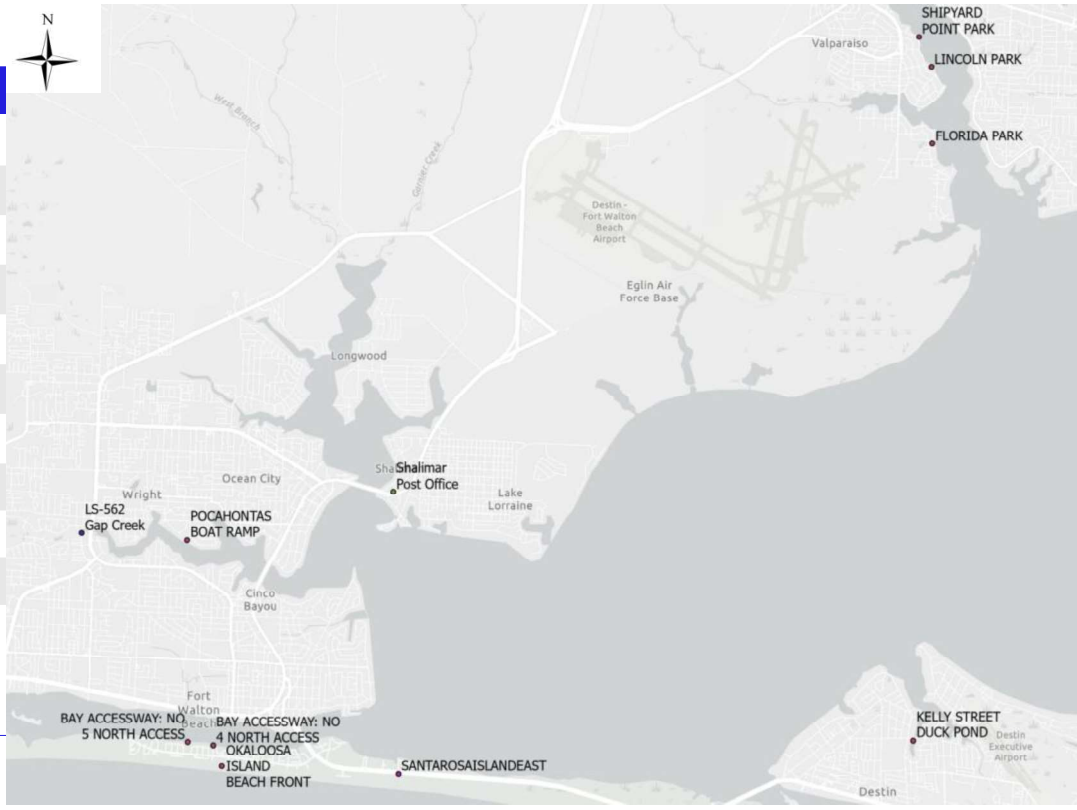
Other Highly Vulnerable Parks

- Bay Accessway: No. 4 North Access, Fort Walton Beach
- Bay Accessway: No. 5 North Access, Fort Walton Beach
- Kelly Street Duck Pond, Destin

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Most Vulnerable County/Municipal-Owned Vertical Assets

Asset Name	Owner
Florida Park	City of Valparaiso
Pocahontas Boat Ramp	Okaloosa County
Bay Accessway: No. 4 North Access	Okaloosa County
Okaloosa Island Beachfront	Okaloosa County
LS-562 Gap Creek	Okaloosa County
Shipyard Point Park	City of Valparaiso
Bay Accessway: No. 5 North Access	Okaloosa County
Santa Rosa Island East Power Poles	FPL
Shalimar Post Office	USPS
Lincoln Park	City of Valparaiso

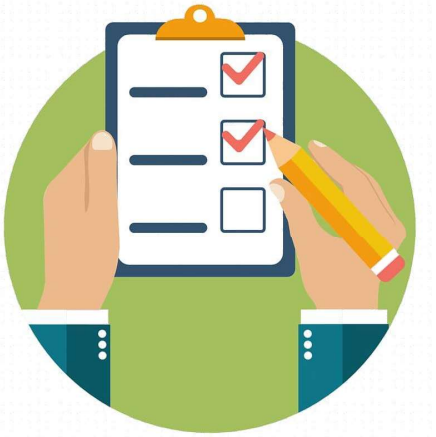


Jacobs

Challenging today.
Reinventing tomorrow.

PUBLIC SURVEY

OPEN DISCUSSION AND QUESTIONS



Survey123 Link

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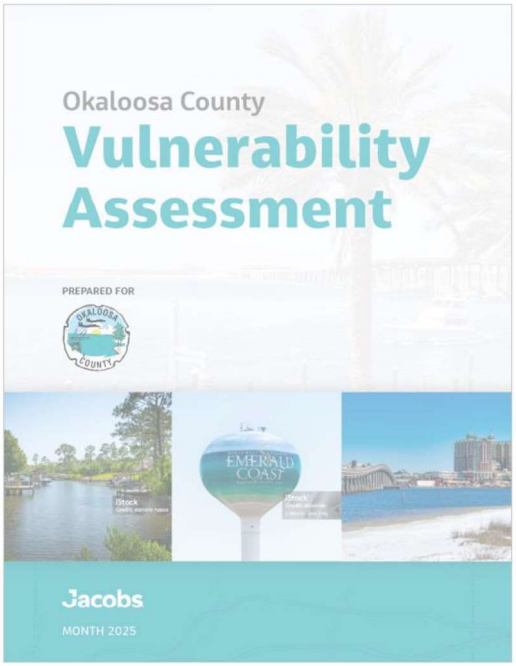
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NEXT STEPS

Next Steps

- Focus Areas
- Vulnerability Assessment Report
- Adaptation Planning



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Thank you!

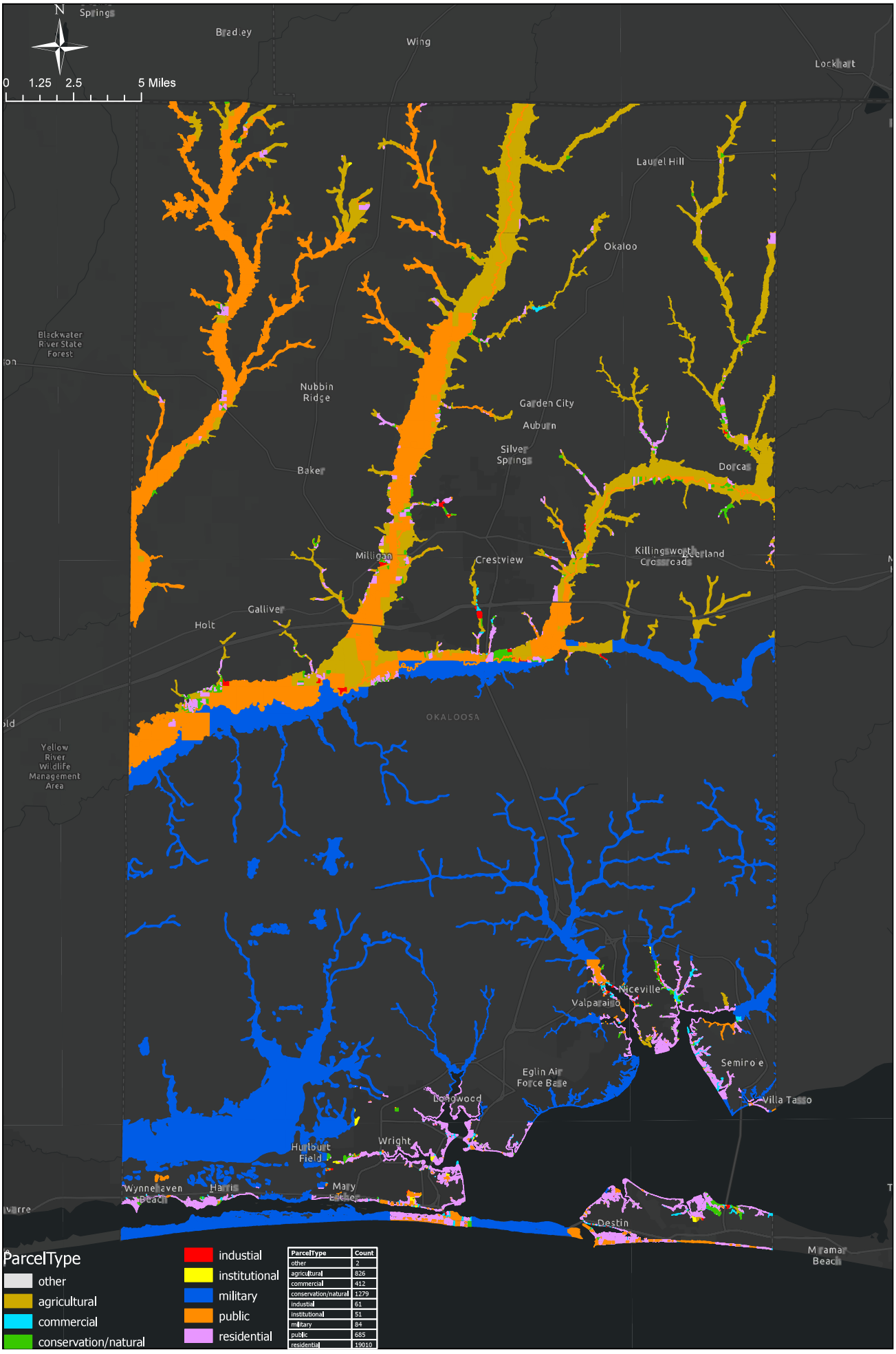
Tanya Gallagher, Project Manager
Tanya.Gallagher@jacobs.com

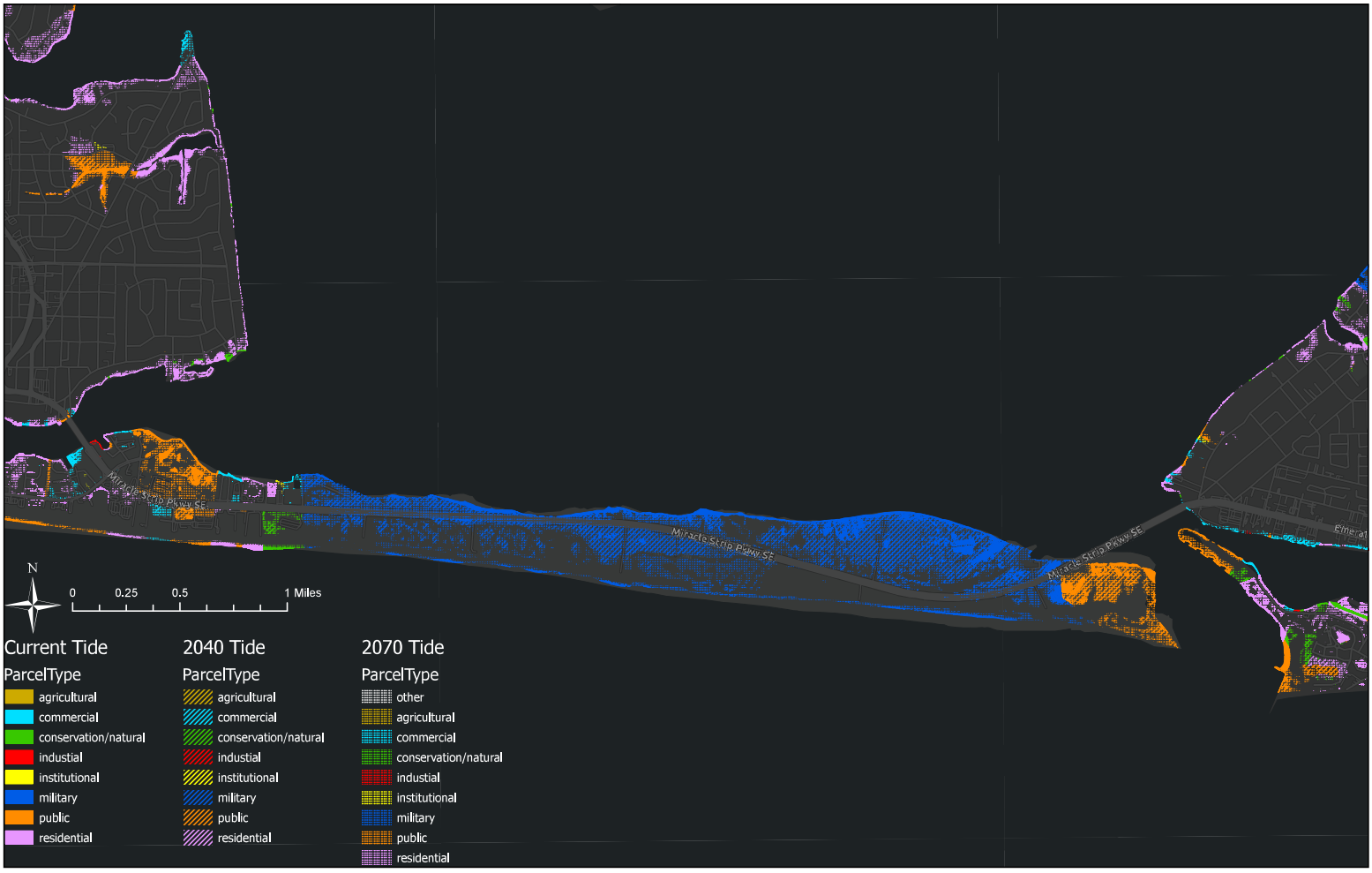
Blaine Beck, Technical Lead
Blaine.Beck@jacobs.com

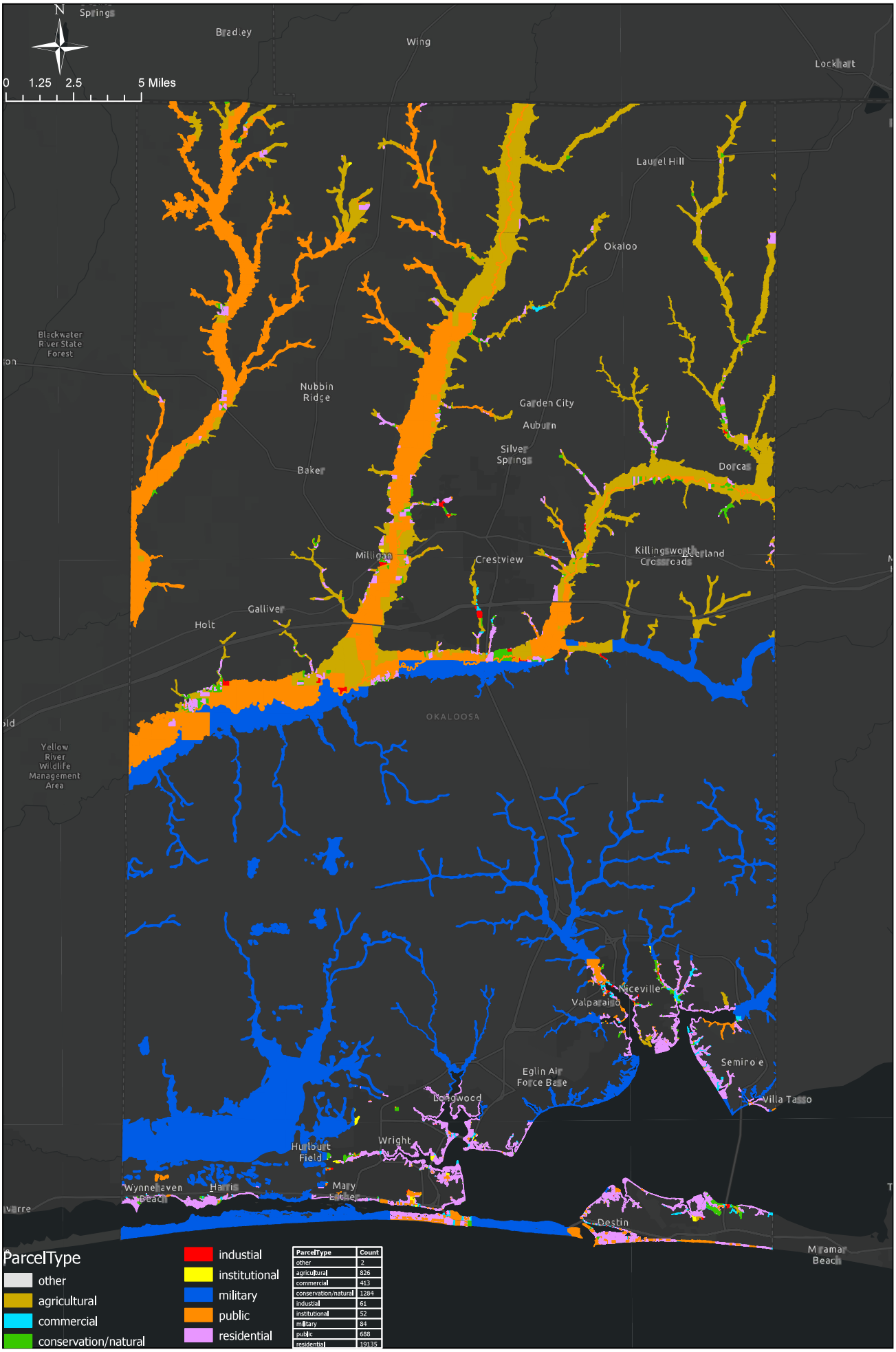
Alec Rodriguez, Deputy Project Manager
Alec.Rodriguez@jacobs.com

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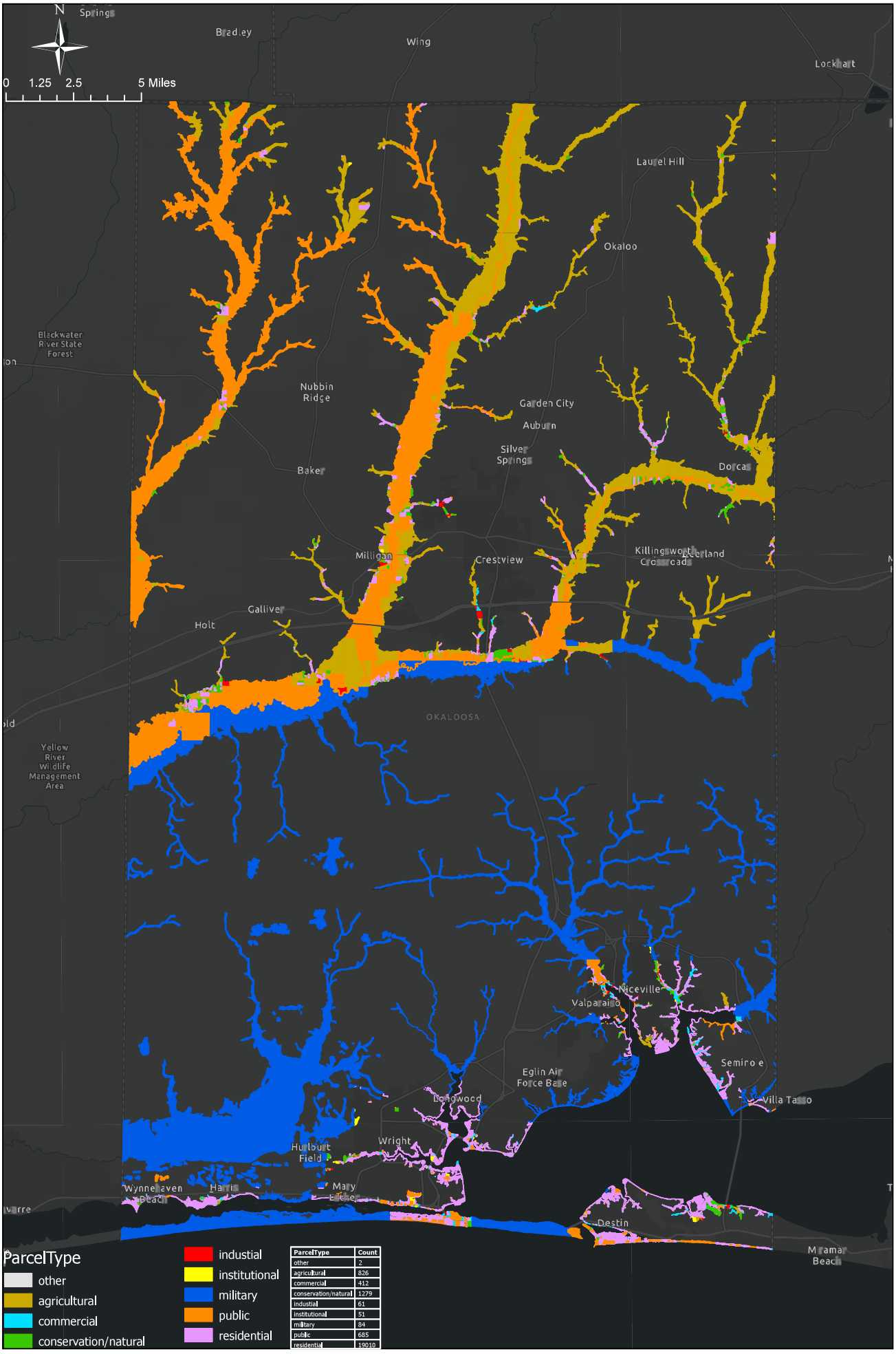
Appendix C
Parcel Exposure Maps


N
0 1.25 2.5 5 Miles
Bradley
Wing
Lockhart
Laurel Hill
Okaloo
Blackwater River State Forest
Nubbin Ridge
Garden City
Auburn
Silver Springs
Baker
Dorcas
Milligan
Crestview
Killingsworth Crossroads
Lucerland
Galliver
Holt
OKALOOSA
Yellow River Wildlife Management Area
Niceville
Valparaiso
Eglin Air Force Base
Seminole
Villa Tasso
Longwood
Wright
Hurlburt Field
Wynnehaven Beach
Harris
Mary Esther
Destin
Miramar Beach
ParcelType
other
agricultural
commercial
conservation/natural
industrial
institutional
military
public
residential
ParcelType | Count
other | 2
agricultural | 826
commercial | 412
conservation/natural | 1279
industrial | 61
institutional | 51
military | 84
public | 685
residential | 19010

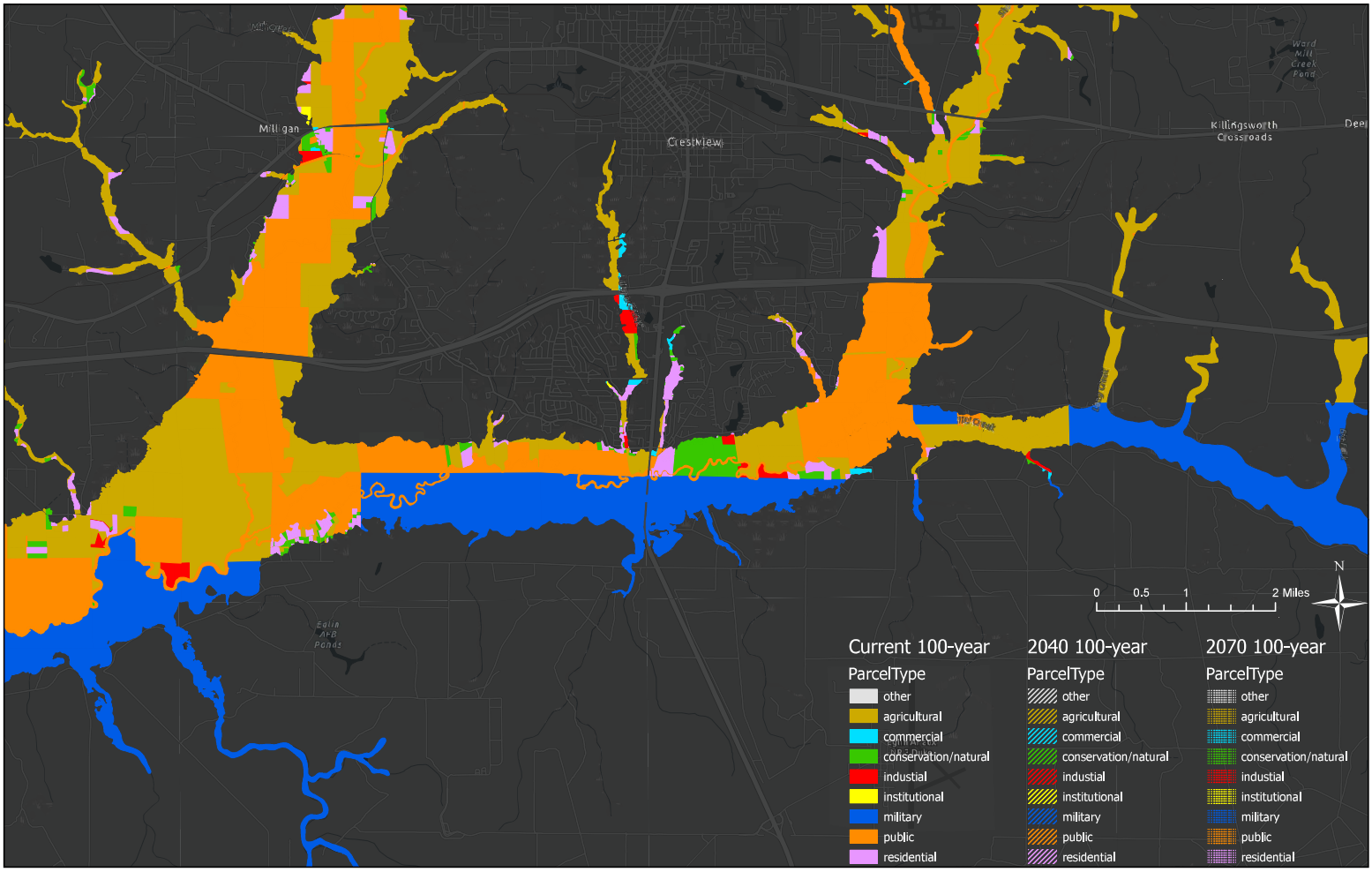

Miracle Strip Pkwy SE
Miracle Strip Pkwy SE
Miracle Strip Pkwy SE
N
0
0.25
0.5
1 Miles
Current Tide
ParcelType
agricultural
commercial
conservation/natural
industial
institutional
military
public
residential
2040 Tide
ParcelType
agricultural
commercial
conservation/natural
industial
institutional
military
public
residential
2070 Tide
ParcelType
other
agricultural
commercial
conservation/natural
industial
institutional
military
public
residential

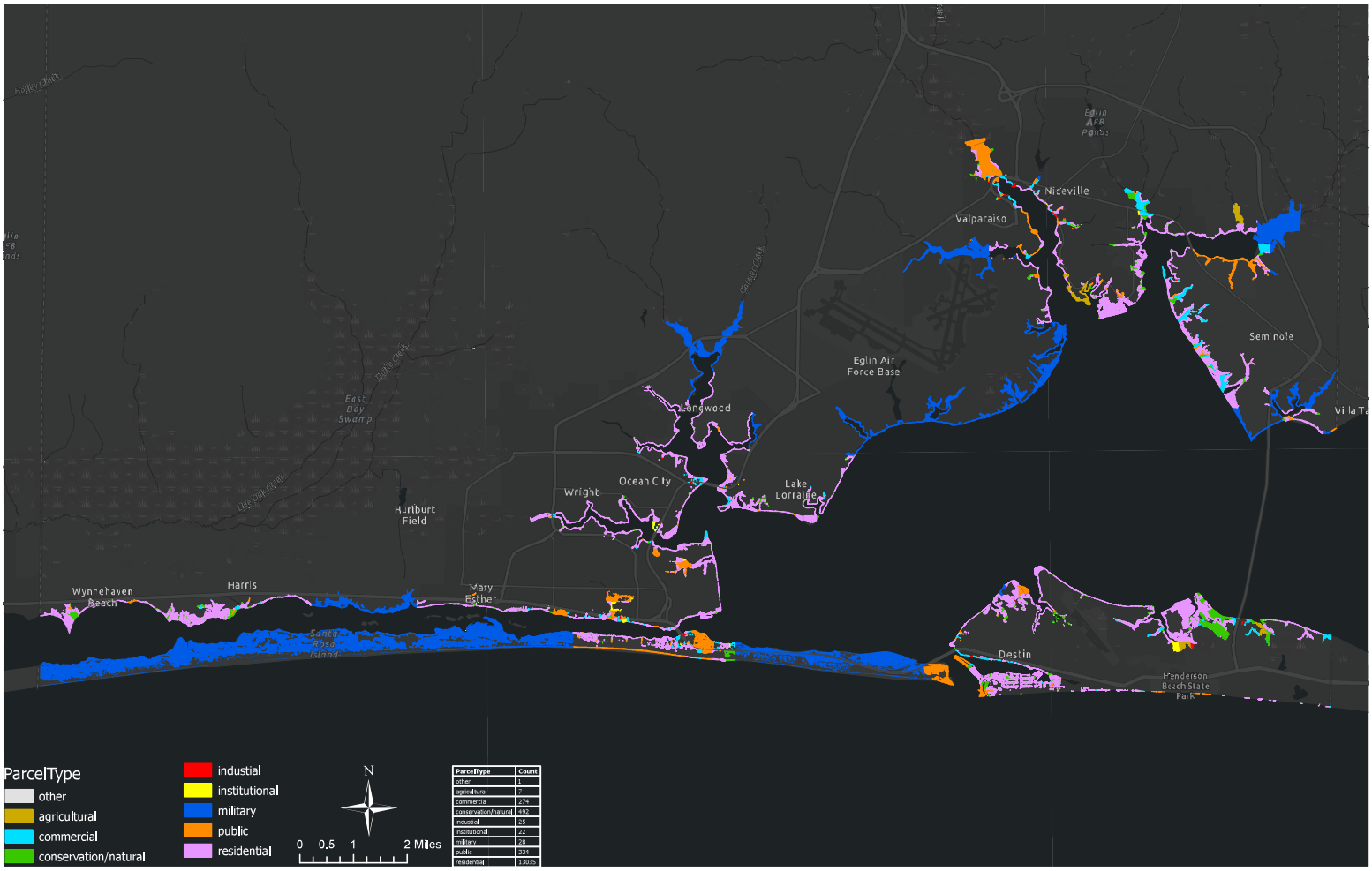


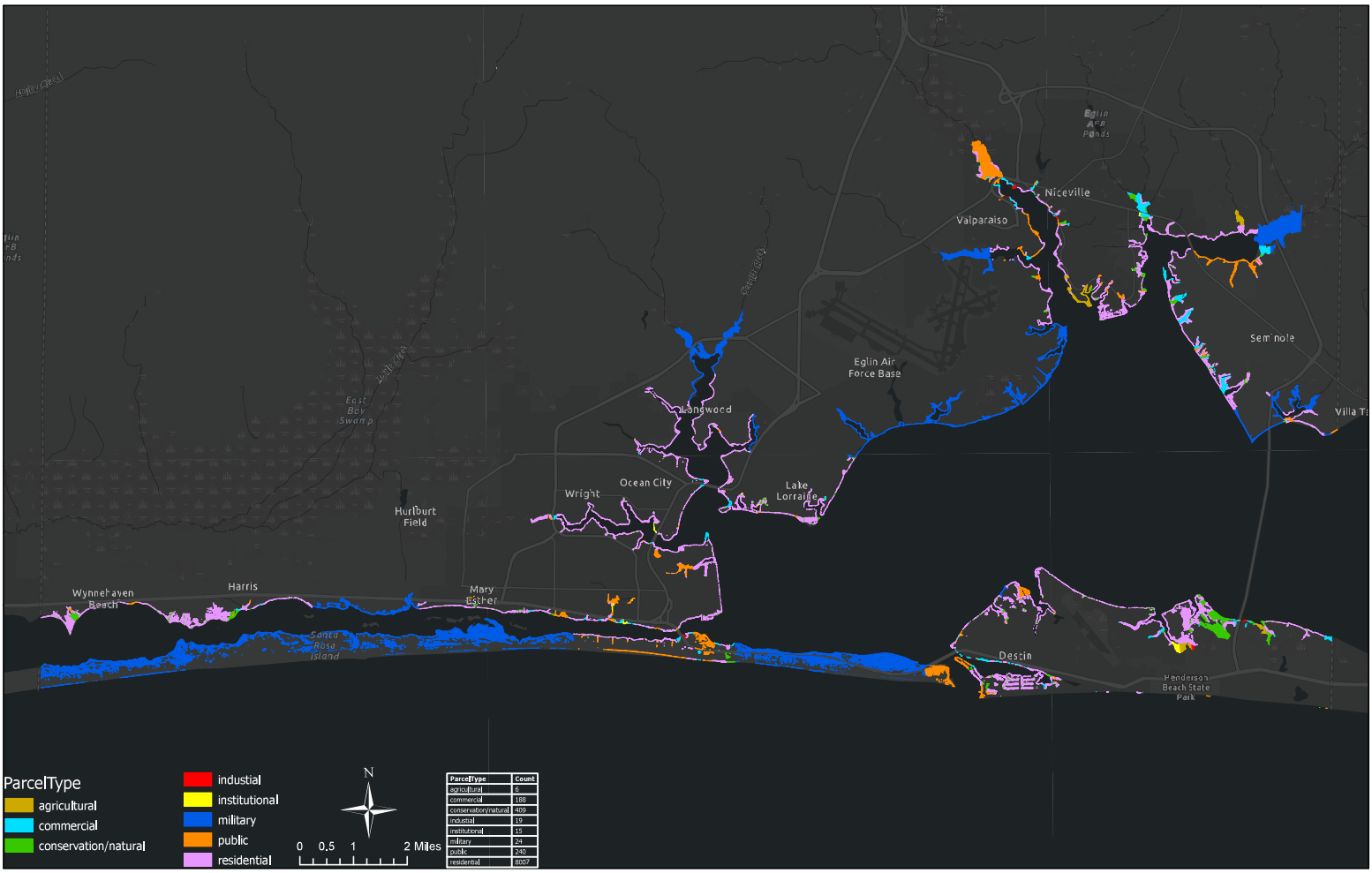
ParcelType	Count
other	2
agricultural	826
commercial	413
conservation/natural	1284
industrial	61
institutional	52
military	84
public	688
residential	19135

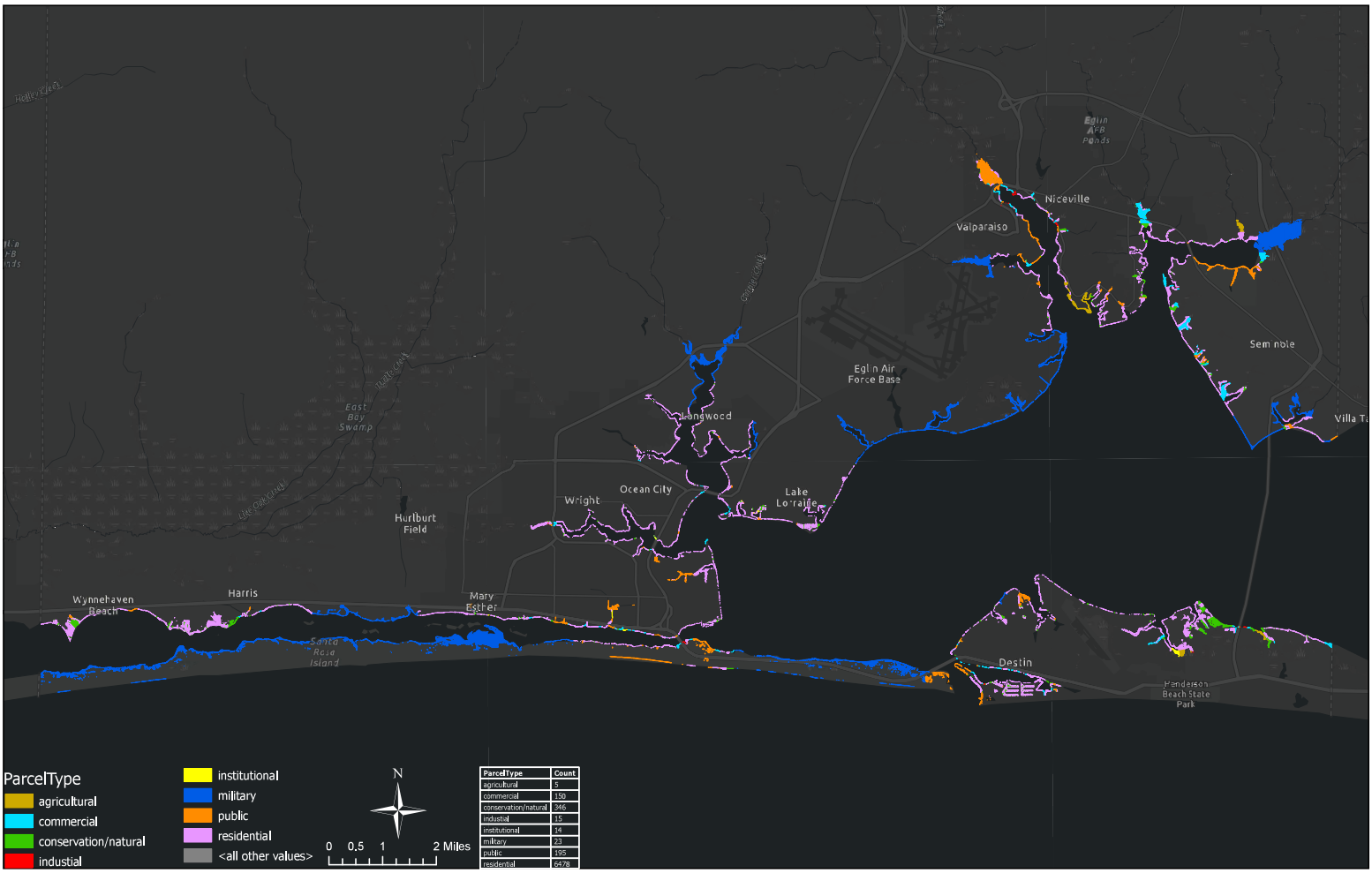


ParcelType	Count
other	2
agricultural	826
commercial	412
conservation/natural	1279
industrial	61
institutional	51
military	84
public	685
residential	19010


Mill gan
Crestview
Killingsworth Crossroads
Ward Mill Creek Pond
Eglin AFB Ponds
0
0.5
1
2 Miles
N
Current 100-year
ParcelType
other
agricultural
commercial
conservation/natural
industrial
institutional
military
public
residential
2040 100-year
ParcelType
other
agricultural
commercial
conservation/natural
industrial
institutional
military
public
residential
2070 100-year
ParcelType
other
agricultural
commercial
conservation/natural
industrial
institutional
military
public
residential

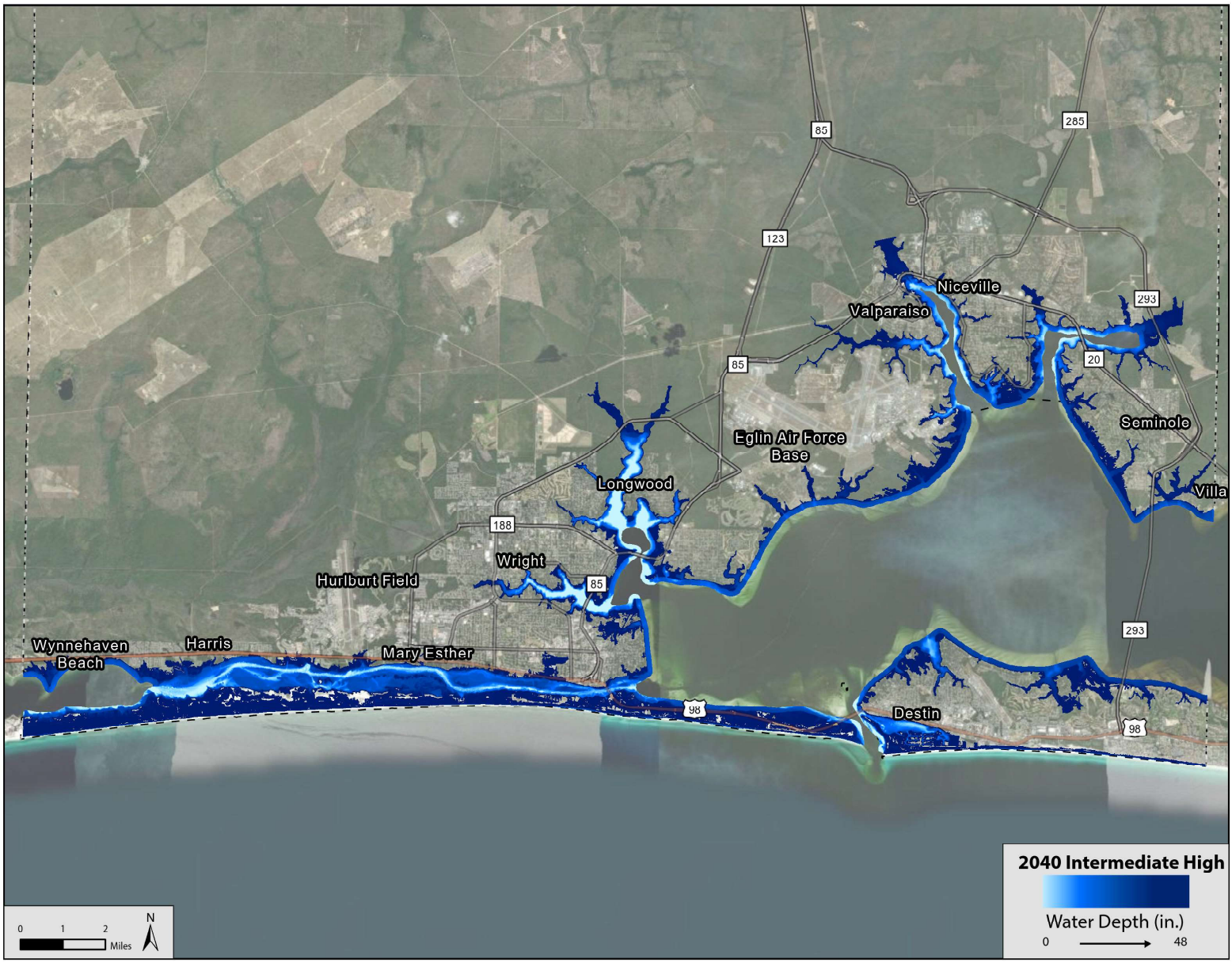

Niceville
Valparaiso
Eglin Air Force Base
Longwood
Ocean City
Wright
Lake Lorraine
Hurlburt Field
Wynnehaven Beach
Harris
Mary Esther
Destin
Sem nole
East Bay Swamp
Henderson Beach State Park
ParcelType
other
agricultural
commercial
conservation/natural
industial
institutional
military
public
residential
N
0 0,5 1 2 Miles
ParcelType Count
other 1
agricultural 7
commercial 274
conservation/natural 492
industial 25
institutional 22
military 28
public 334
residential 13035

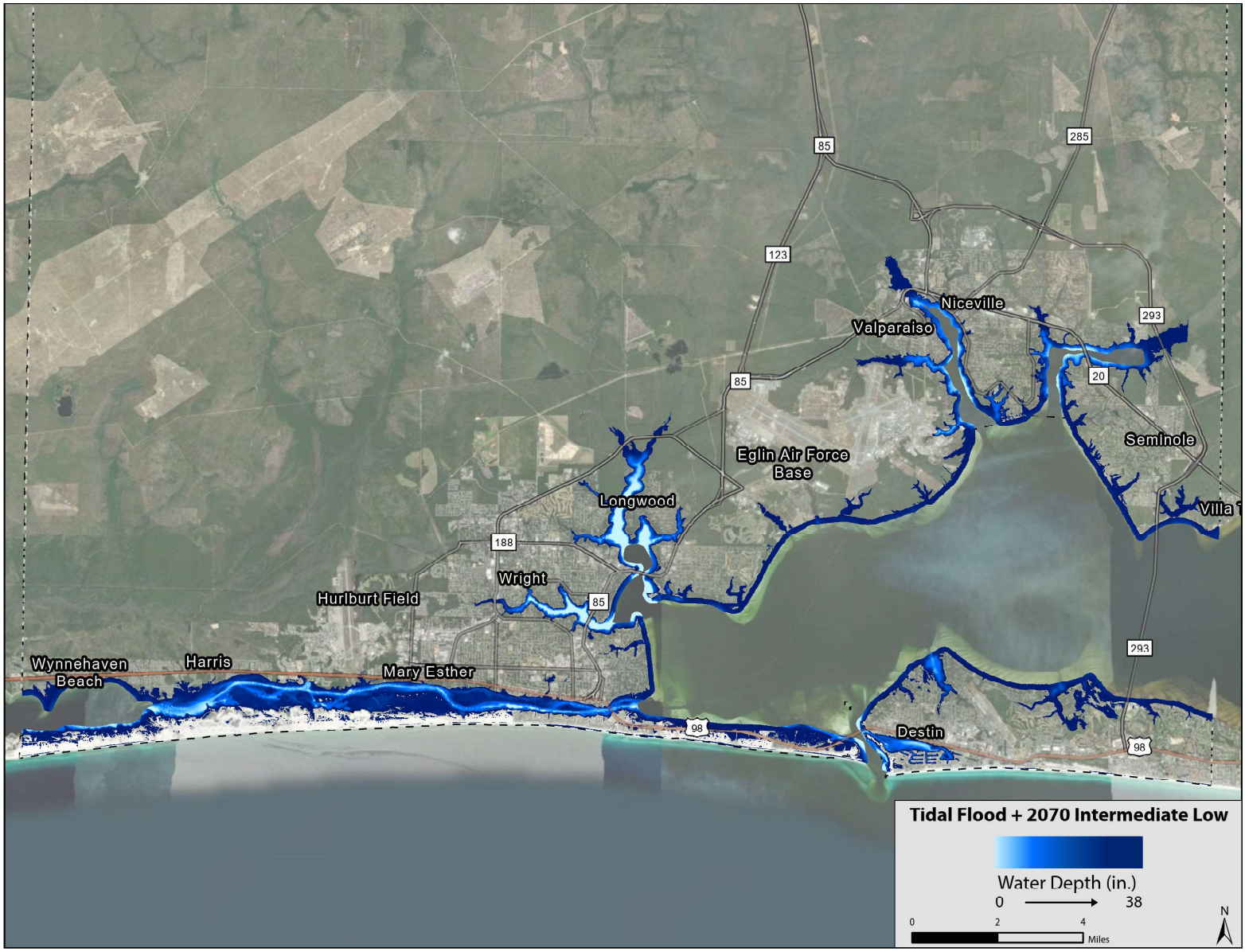

Niceville
Valparaiso
Eglin Air Force Base
Seminole
Longwood
Ocean City
Wright
Lake Lorraine
Hurlburt Field
Wynnehaven Beach
Harris
Mary Esther
Destin
Henderson Beach State Park
East Bay Swamp
Santa Rosa Island
ParcelType
agricultural
commercial
conservation/natural
industial
institutional
military
public
residential
N
0 0,5 1 2 Miles
ParcelType | Count
agricultural | 6
commercial | 188
conservation/natural | 409
industial | 19
institutional | 15
military | 24
public | 240
residential | 6007

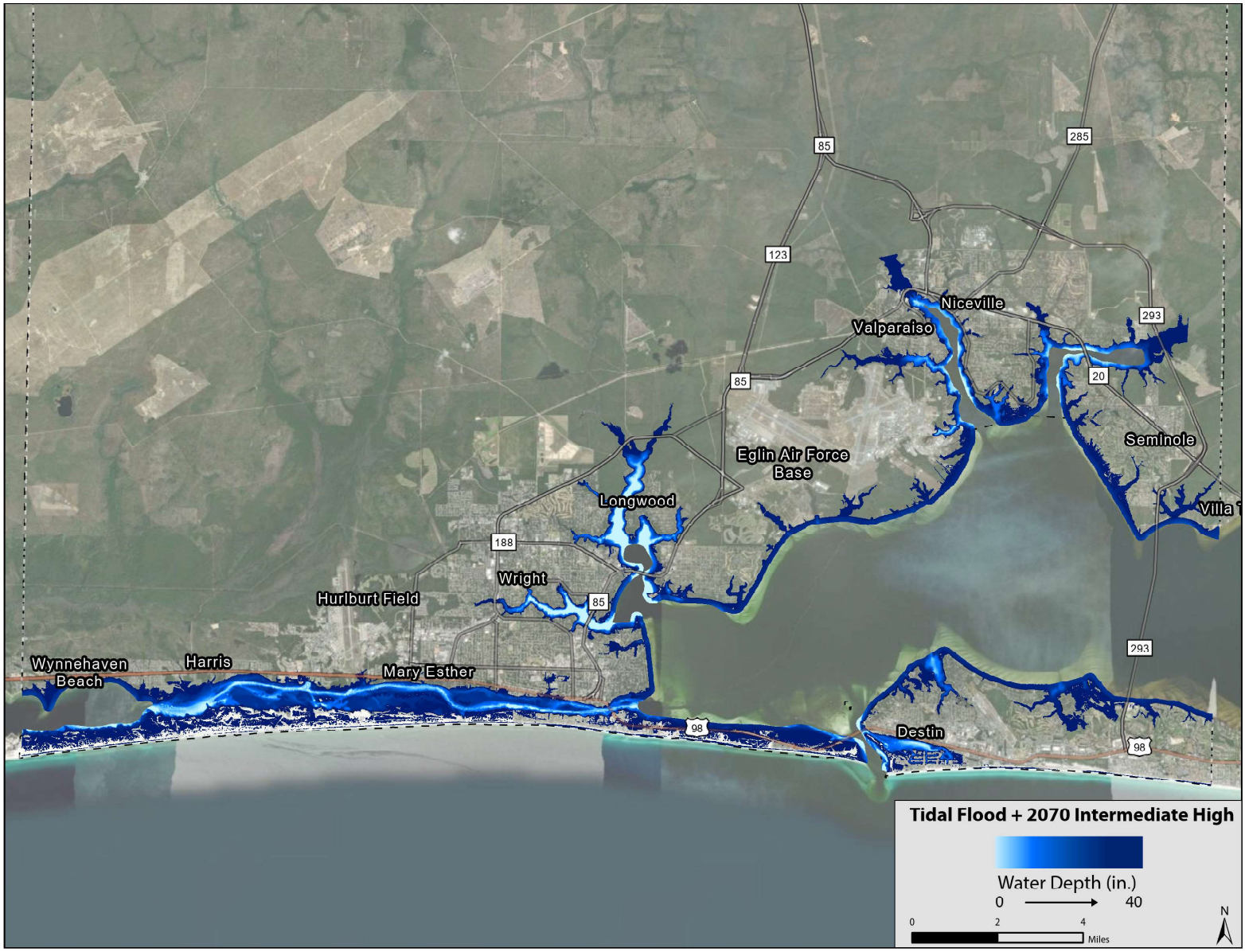


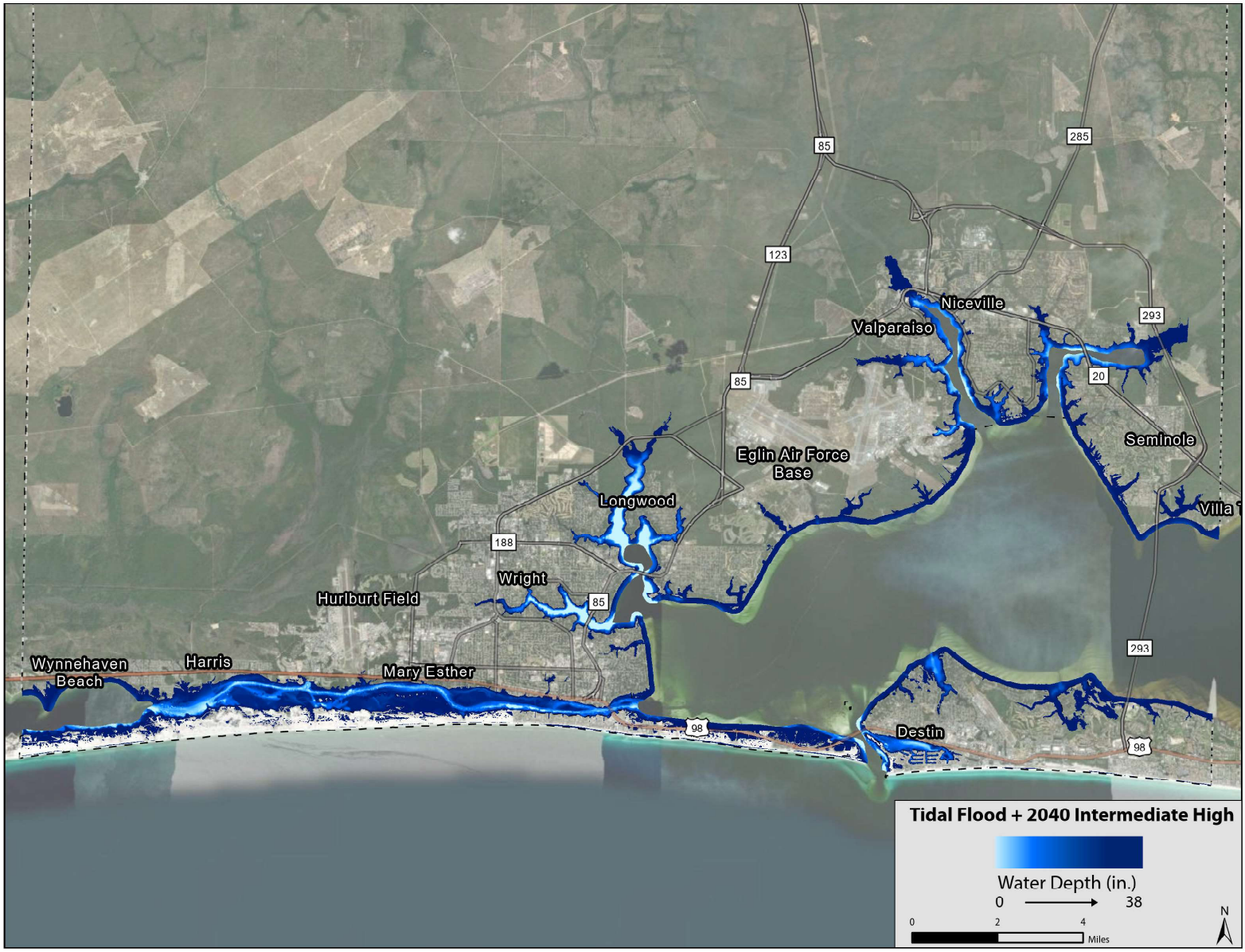
ParcelType	Count
agricultural	5
commercial	150
conservation/natural	346
industial	15
institutional	14
military	23
public	195
residential	6478

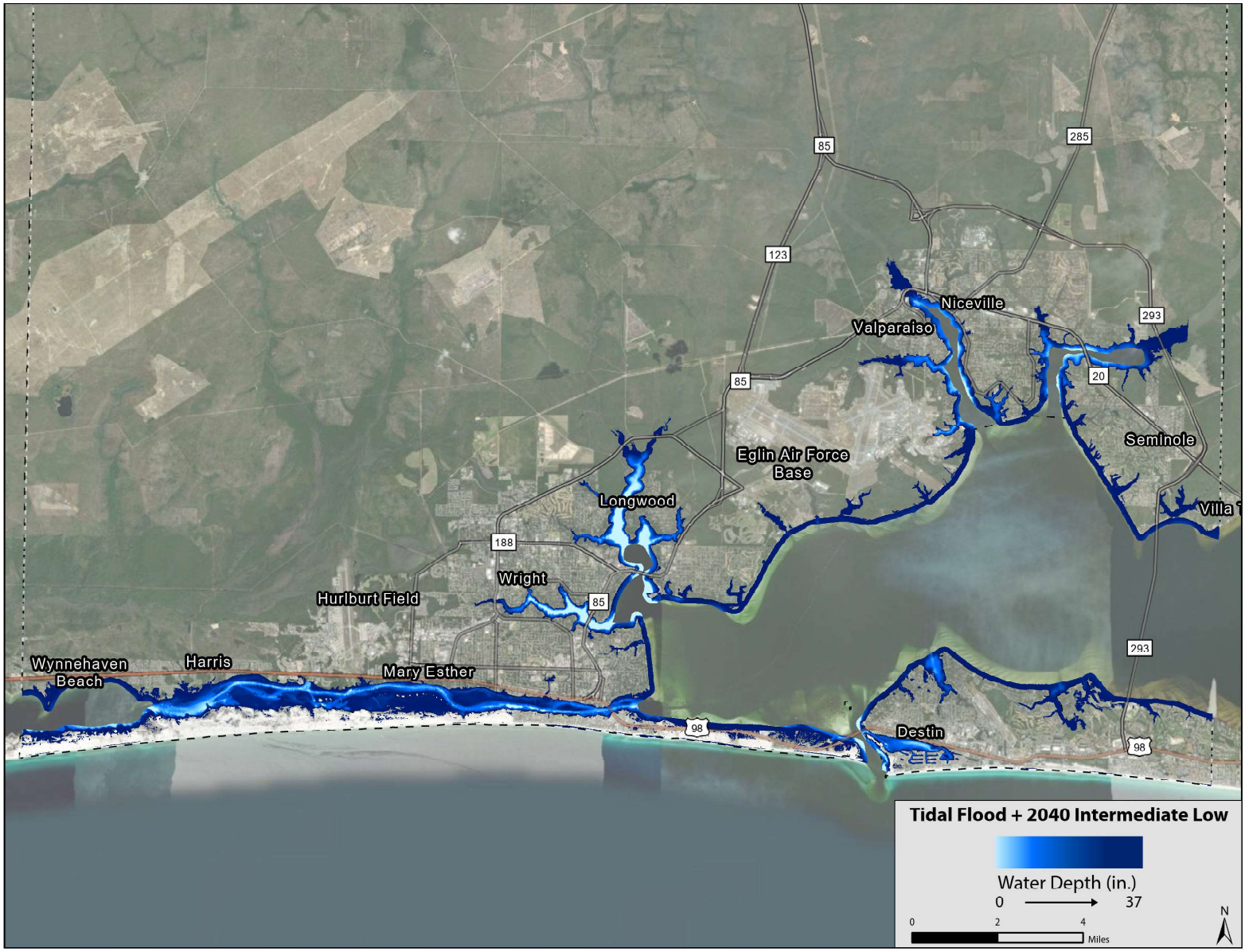
Appendix D
Asset Flood Exposure Maps

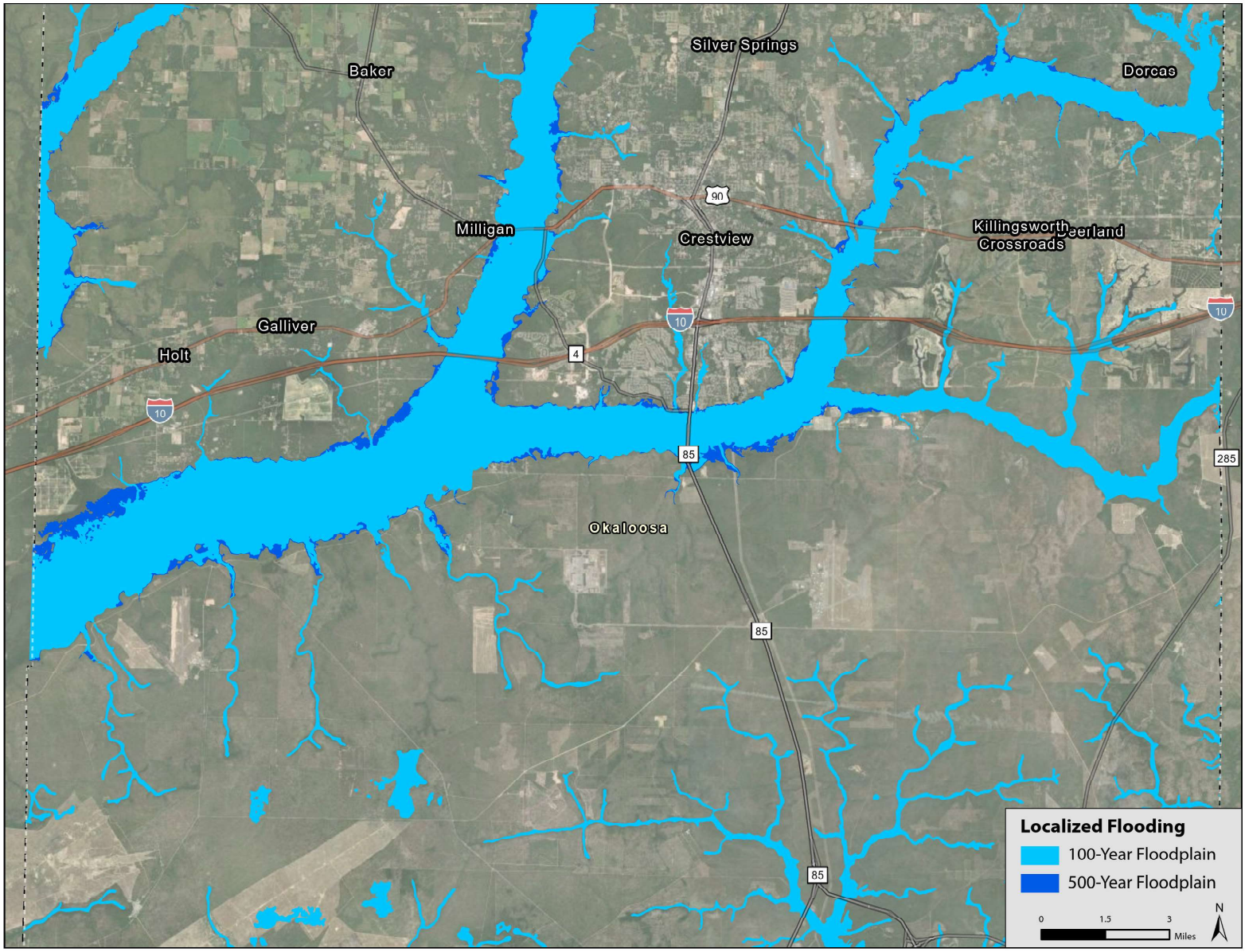

85
285
123
Niceville
Valparaiso
293
85
20
Seminole
Eglin Air Force Base
Longwood
Villa
188
Wright
Hurlburt Field
85
293
Wynnehaven Beach
Harris
Mary Esther
98
Destin
98
0 1 2 Miles
N
2040 Intermediate High
Water Depth (in.)
0
48

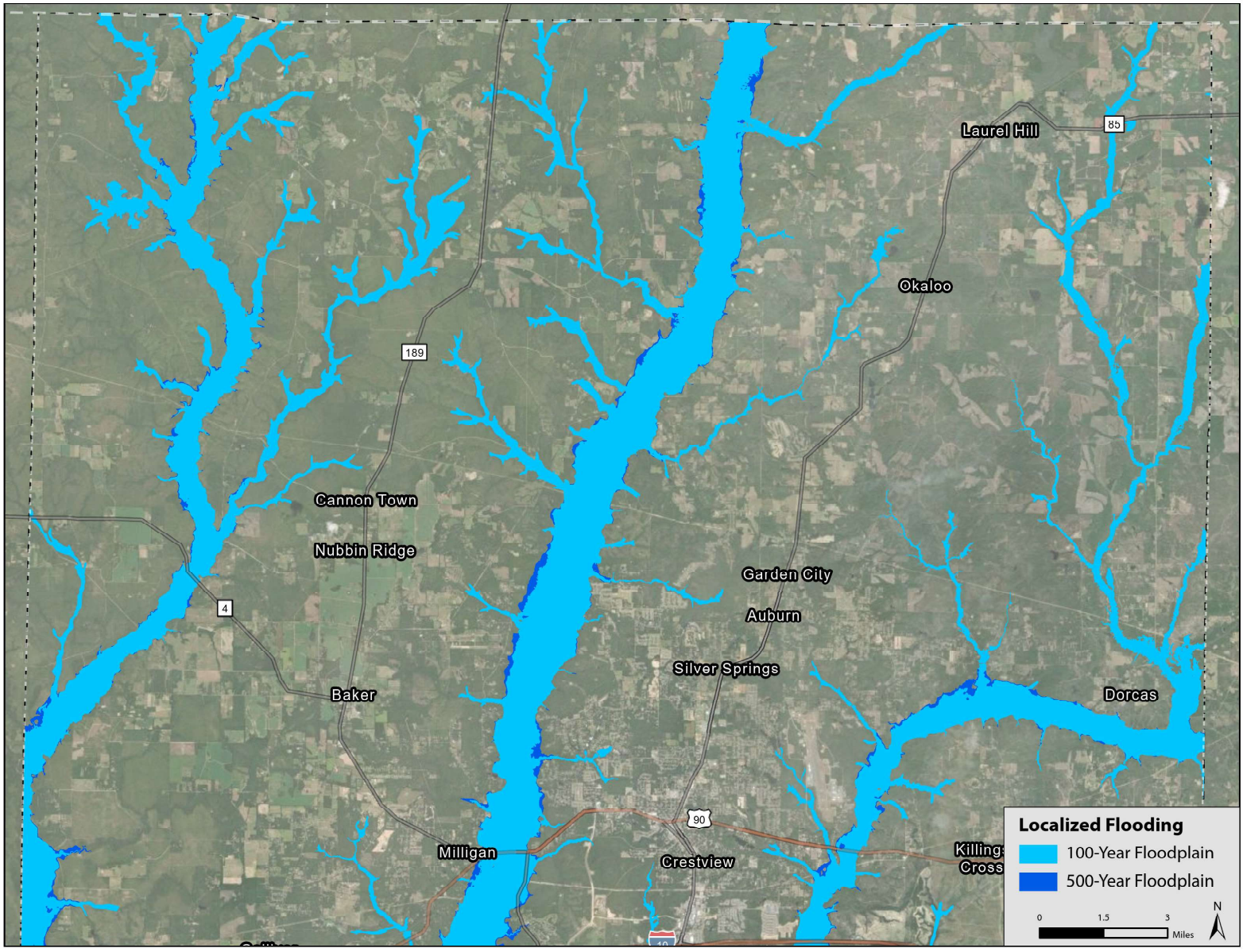

85
285
123
Niceville
Valparaiso
293
85
20
Seminole
Eglin Air Force Base
Longwood
188
Wright
Hurlburt Field
85
Wynnehaven Beach
Harris
Mary Esther
293
98
Destin
98
Tidal Flood + 2070 Intermediate Low
Water Depth (in.)
0
38
0
2
4
Miles
N

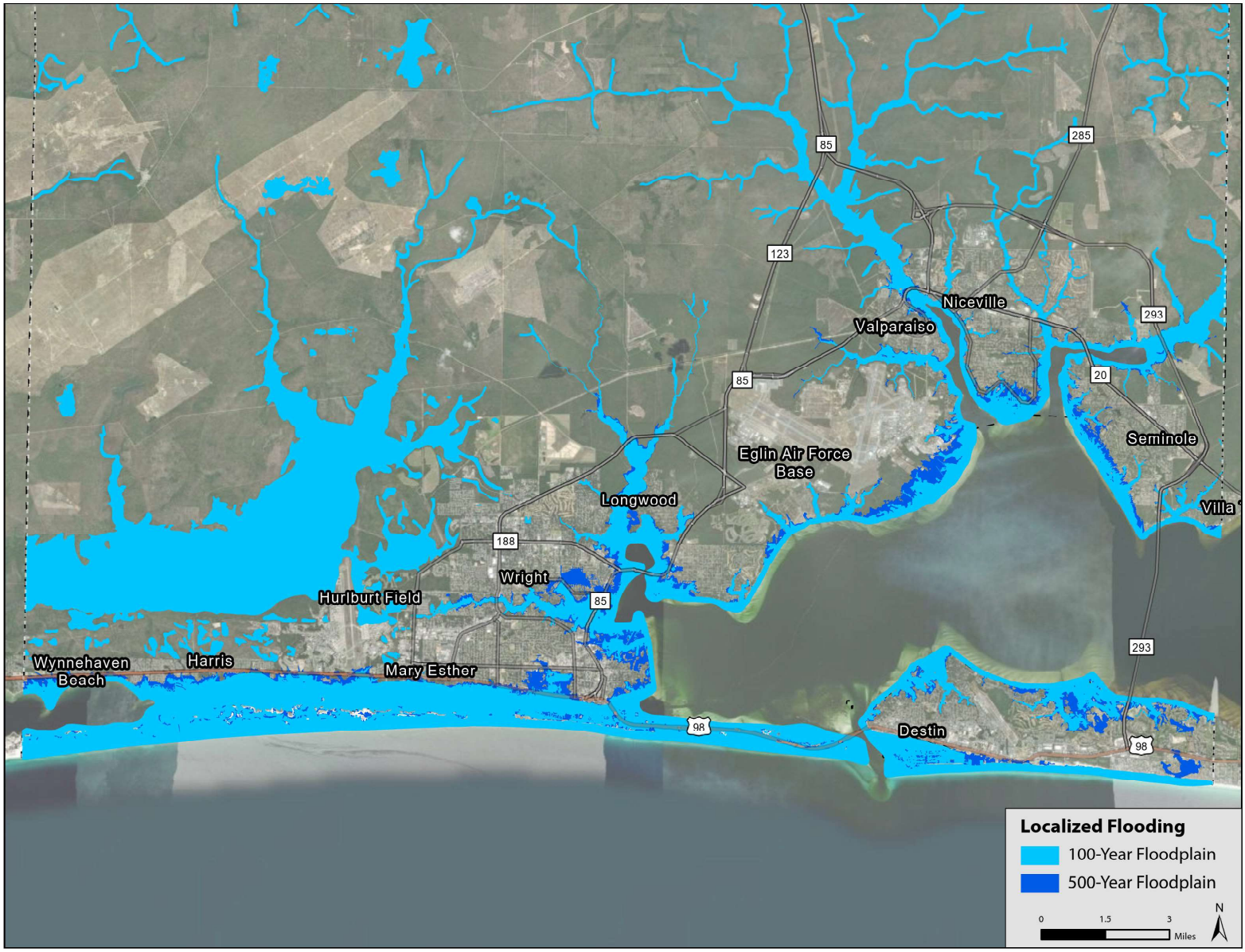

85
285
123
Niceville
Valparaiso
293
85
20
Seminole
Eglin Air Force Base
Longwood
188
Wright
Hurlburt Field
85
Wynnehaven Beach
Harris
Mary Esther
293
98
Destin
98
Tidal Flood + 2070 Intermediate High
Water Depth (in.)
0
40
0
2
4
Miles
N

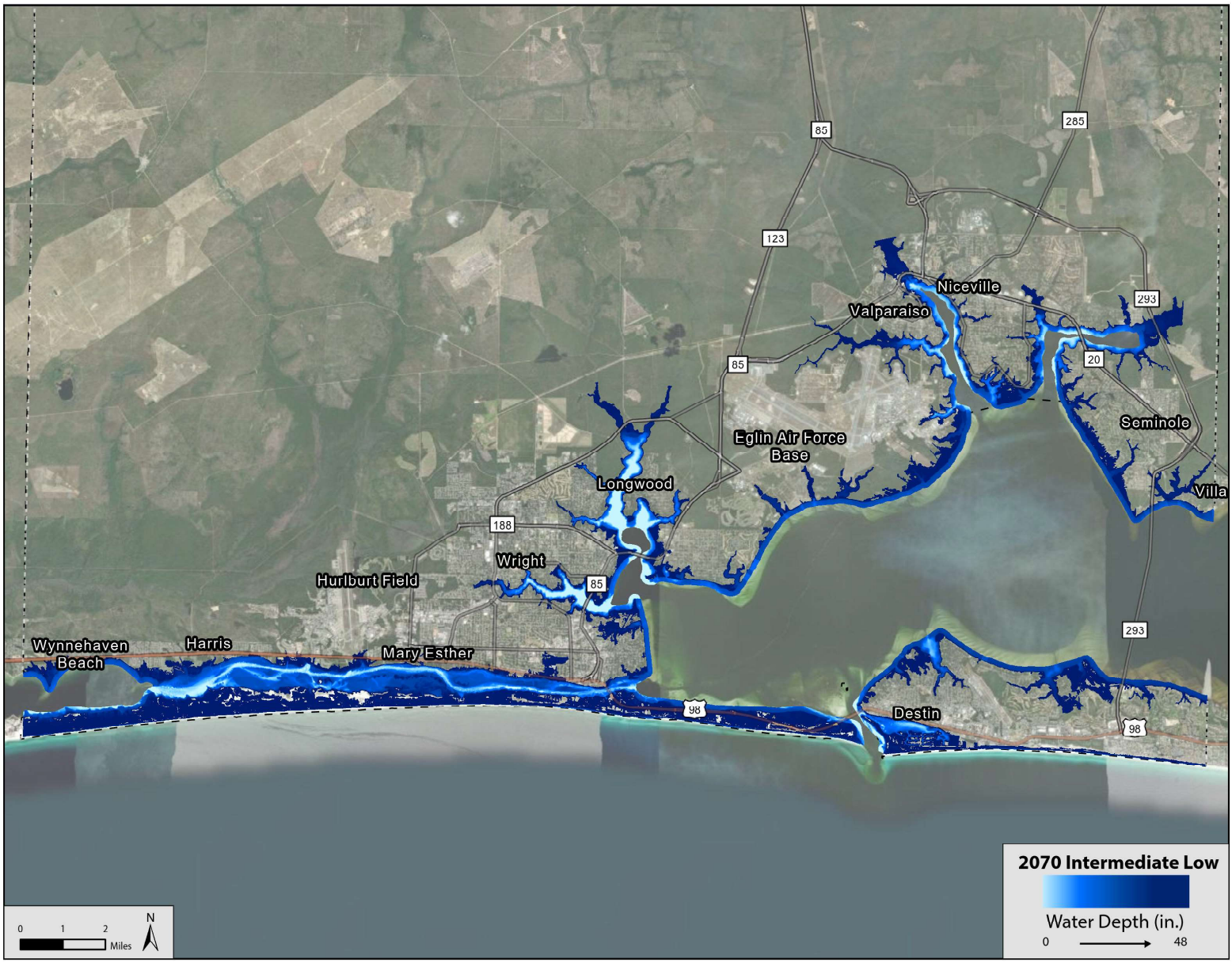

85
285
123
Niceville
Valparaiso
293
85
20
Seminole
Eglin Air Force Base
Longwood
188
Wright
Hurlburt Field
85
Wynnehaven Beach
Harris
Mary Esther
293
98
Destin
98
Tidal Flood + 2040 Intermediate High
Water Depth (in.)
0
38
0
2
4
Miles
N

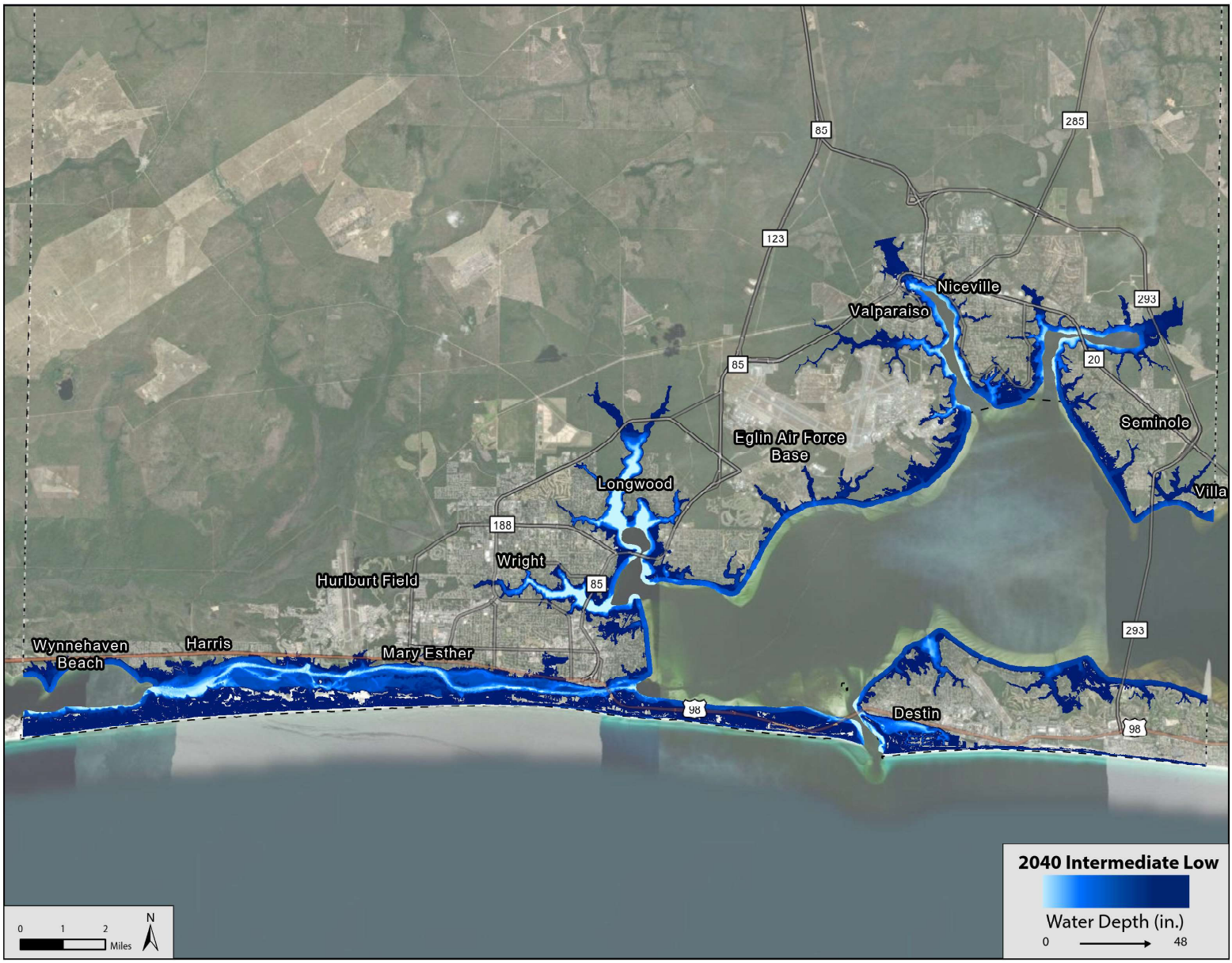

85
285
123
Niceville
Valparaiso
293
85
20
Seminole
Eglin Air Force Base
Longwood
188
Wright
Hurlburt Field
85
Wynnehaven Beach
Harris
Mary Esther
293
98
Destin
98
Tidal Flood + 2040 Intermediate Low
Water Depth (in.)
0
37
0
2
4
Miles
N

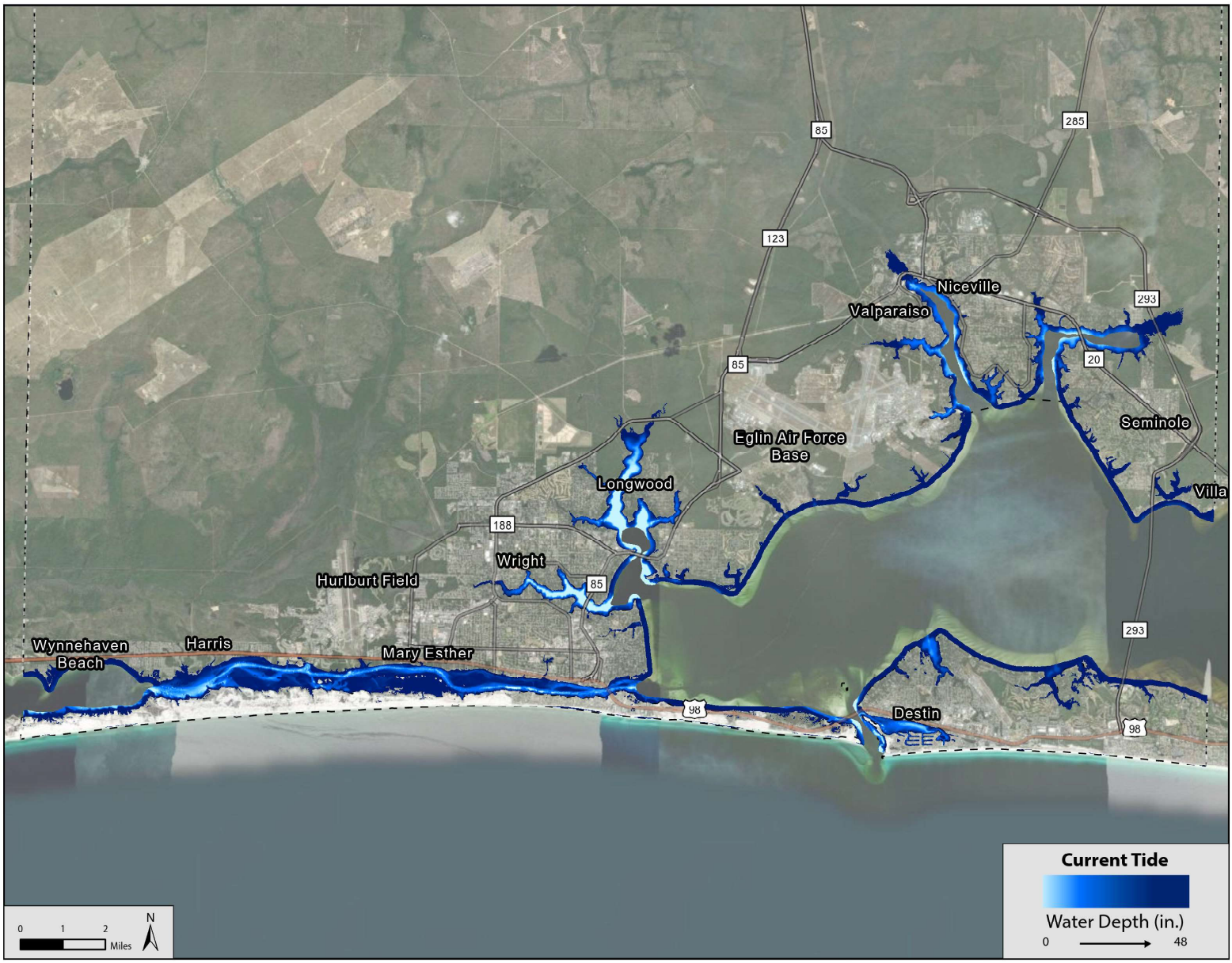

Silver Springs
Baker
Dorcas
Milligan
Crestview
Killingsworth
Crossroads
Galliver
Holt
Okaloosa
90
10
4
85
285
Localized Flooding
100-Year Floodplain
500-Year Floodplain
0
1.5
3
Miles
N

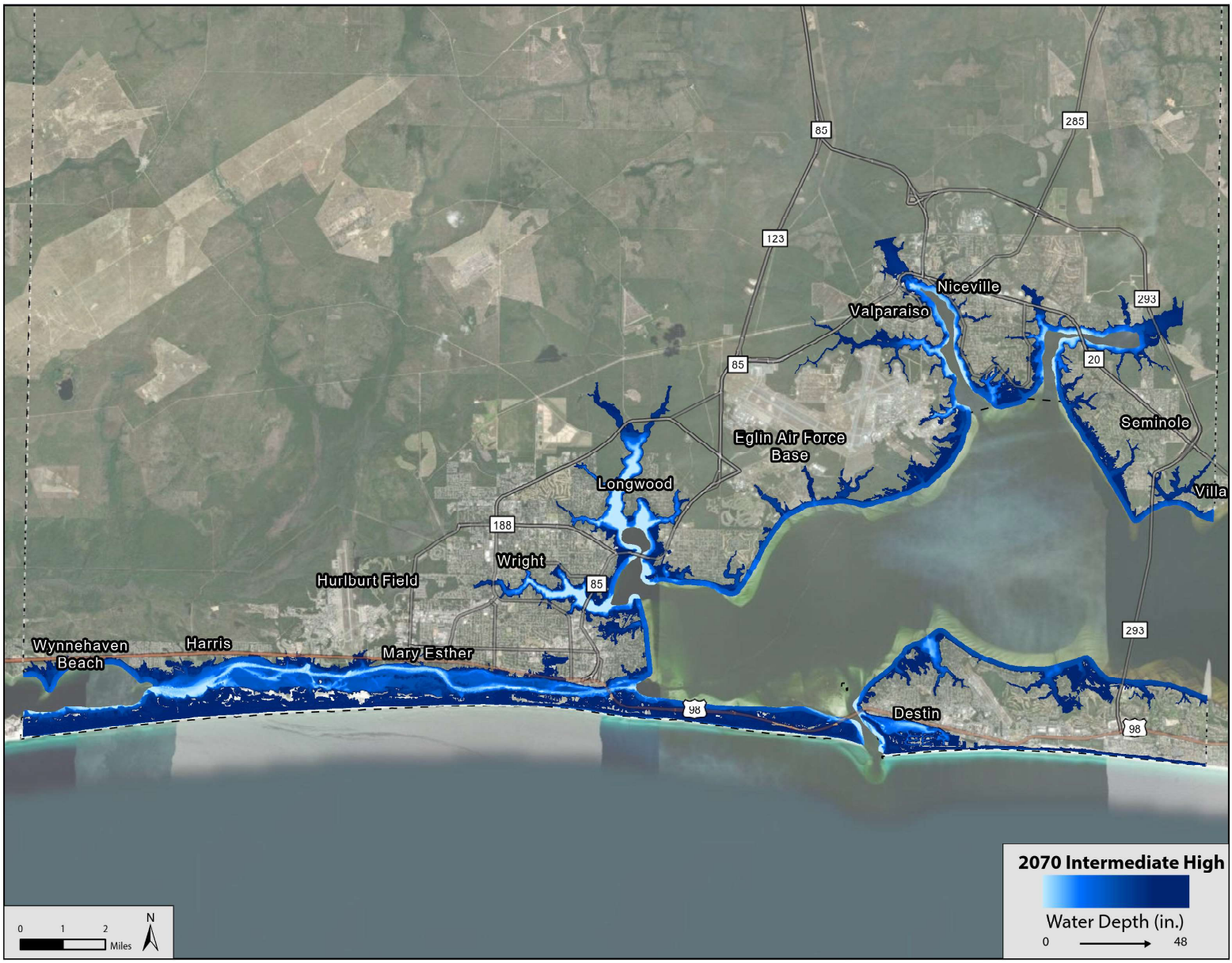

Laurel Hill
85
Okaloo
189
Cannon Town
Nubbin Ridge
4
Garden City
Auburn
Silver Springs
Baker
Dorcas
90
Milligan
Crestview
Killing
Cross
Localized Flooding
100-Year Floodplain
500-Year Floodplain
0
1.5
3
Miles
N


85
285
123
Niceville
Valparaiso
293
85
20
Seminole
Eglin Air Force Base
Longwood
Villa
188
Wright
Hurlburt Field
85
293
Wynnehaven Beach
Harris
Mary Esther
98
Destin
98
Localized Flooding
100-Year Floodplain
500-Year Floodplain
0
1.5
3
Miles
N


85
285
123
Niceville
Valparaiso
293
85
20
Seminole
Eglin Air Force Base
Longwood
Villa
188
Wright
Hurlburt Field
85
293
Wynnehaven Beach
Harris
Mary Esther
98
Destin
98
0 1 2 Miles
N
2070 Intermediate Low
Water Depth (in.)
0
48


85
285
123
Niceville
Valparaiso
293
85
20
Seminole
Eglin Air Force Base
Longwood
Villa
188
Wright
Hurlburt Field
85
293
Wynnehaven Beach
Harris
Mary Esther
98
Destin
98
2040 Intermediate Low
Water Depth (in.)
0
48
0
1
2
Miles
N


85
285
123
Niceville
Valparaiso
293
85
20
Seminole
Eglin Air Force Base
Longwood
Villa
188
Wright
Hurlburt Field
85
293
Wynnehaven Beach
Harris
Mary Esther
98
Destin
98
0 1 2 Miles
N
Current Tide
Water Depth (in.)
0
48


85
285
123
Niceville
Valparaiso
293
85
20
Seminole
Eglin Air Force Base
Longwood
Villa
188
Wright
Hurlburt Field
85
293
Wynnehaven Beach
Harris
Mary Esther
98
Destin
98
0 1 2 Miles
N
2070 Intermediate High
Water Depth (in.)
0
48

Appendix E
Sensitivity Tables

Asset Type	Count	Mean Higher-of-High Water Level + 3 feet						Title 4 + 2040 Intermediate Low Sea Level Rise						Title 5 + 2040 Intermediate High Sea Level Rise						Total + 2070 Intermediate Low Sea Level Rise						Title 5 + 2070 Intermediate High Sea Level Rise						100-Year						100-Year + 2040 Intermediate Low Sea Level Rise						100-Year + 2040 Intermediate High Sea Level Rise						100-Year + 2070 Intermediate Low Sea Level Rise						100-Year + 2070 Intermediate High Sea Level Rise					
		None	Low	Mid	Moderate	High	Extreme	None	Low	Mid	Moderate	High	Extreme	None	Low	Mid	Moderate	High	Extreme	None	Low	Mid	Moderate	High	Extreme	None	Low	Mid	Moderate	High	Extreme	None	Low	Mid	Moderate	High	Extreme	None	Low	Mid	Moderate	High	Extreme	None	Low	Mid	Moderate	High	Extreme	None	Low	Mid	Moderate	High	Extreme
Colleges and Universities	4	1	0	0	0	0	3	1	0	0	0	0	3	1	0	0	0	0	3	1	0	0	0	0	3	1	0	0	0	0	3	1	0	0	0	0	3	1	0	0	0	0	3	1	0	0	0	0	3	1	0	0	0	0	3
Correctional Facilities	12	12	0	0	0	0	0	12	0	0	0	0	0	12	0	0	0	0	0	12	0	0	0	0	0	12	0	0	0	0	0	12	0	0	0	0	0	12	0	0	0	0	0	12	0	0	0	0	0	12	0	0	0	0	0
Correctional Facilities	12	12	0	0	0	0	0	12	0	0	0	0	0	12	0	0	0	0	0	12	0	0	0	0	0	12	0	0	0	0	0	12	0	0	0	0	0	12	0	0	0	0	0	12	0	0	0	0	0	12	0	0	0	0	0
Disaster Recovery Centers	4	4	0	0	0	0	0	4	0	0	0	0	0	4	0	0	0	0	0	4	0	0	0	0	0	4	0	0	0	0	0	4	0	0	0	0	0	4	0	0	0	0	0	4	0	0	0	0	0	4	0	0	0	0	0
Emergency Medical Service Facilities	5	2	0	0	0	1	2	3	0	0	0	0	2	3	0	0	0	0	2	2	0	0	0	0	3	2	0	0	0	0	3	2	0	0	0	0	3	2	0	0	0	0	3	2	0	0	0	0	3	2	0	0	0	0	3
Emergency Operation Centers	2	1	0	0	0	0	1	1	0	0	0	0	1	1	0	0	0	0	1	1	0	0	0	0	1	1	0	0	0	0	1	1	0	0	0	0	1	1	0	0	0	0	1	1	0	0	0	0	1	1	0	0	0	0	1
Fire Stations	54	54	0	0	0	0	0	54	0	0	0	0	0	54	0	0	0	0	0	54	0	0	0	0	0	54	0	0	0	0	0	54	0	0	0	0	0	54	0	0	0	0	0	54	0	0	0	0	0	54	0	0	0	0	0
Healthcare Facilities	98	50	0	0	0	0	0	50	0	0	0	0	0	50	0	0	0	0	0	50	0	0	0	0	0	50	0	0	0	0	0	50	0	0	0	0	0	50	0	0	0	0	0	50	0	0	0	0	0	50	0	0	0	0	0
Hospitals	6	6	0	0	0	0	0	6	0	0	0	0	0	6	0	0	0	0	0	6	0	0	0	0	0	6	0	0	0	0	0	6	0	0	0	0	0	6	0	0	0	0	0	6	0	0	0	0	0	6	0	0	0	0	0
Local Government Facilities	14	11	0	0	0	0	3	11	0	0	0	0	3	11	0	0	0	0	3	11	0	0	0	0	3	11	0	0	0	0	3	11	0	0	0	0	3	11	0	0	0	0	3	11	0	0	0	0	3	11	0	0	0	0	3
Local Government Facilities	8	5	0	0	0	0	3	5	0	0	0	0	3	5	0	0	0	0	3	5	0	0	0	0	3	5	0	0	0	0	3	5	0	0	0	0	3	5	0	0	0	0	3	5	0	0	0	0	3	5	0	0	0	0	3
Medical Digital Assets	4	4	0	0	0	0	0	4	0	0	0	0	0	4	0	0	0	0	0	4	0	0	0	0	0	4	0	0	0	0	0	4	0	0	0	0	0	4	0	0	0	0	0	4	0	0	0	0	0	4	0	0	0	0	0
Rail Stations	6	5	0	0	0	0	1	5	0	0	0	0	1	5	0	0	0	0	1	5	0	0	0	0	1	5	0	0	0	0	1	5	0	0	0	0	1	5	0	0	0	0	1	5	0	0	0	0	1	5	0	0	0	0	1
Schools	53	51	0	0	0	0	2	51	0	0	0	0	2	51	0	0	0	0	2	51	0	0	0	0	2	51	0	0	0	0	2	51	0	0	0	0	2	51	0	0	0	0	2	51	0	0	0	0	2	51	0	0	0	0	2
State Government Facilities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	313	225	0	0	0	1	87	225	0	0	0	0	88	225	0	0	0	0	88	225	0	0	0	0	88	225	0	0	0	0	88	225	0	0	0	0	88	225	0	0	0	0	88	225	0	0	0	0	88	225	0	0	0	0	88
%		100.0%	0.0%	0.0%	0.0%	0.3%	27.8%	100.0%	0.0%	0.0%	0.0%	0.0%	28.1%	100.0%	0.0%	0.0%	0.0%	0.0%	28.1%	100.0%	0.0%	0.0%	0.0%	0.0%	28.1%	99.9%	0.0%	0.0%	0.0%	0.3%	28.1%	98.7%	0.0%	0.0%	0.0%	0.3%	28.1%	98.7%	0.0%	0.0%	0.0%	0.3%	28.1%	97.7%	0.0%	0.0%	0.0%	0.3%	28.1%	97.7%	0.0%	0.0%	0.0%	0.3%	28.1%

		Mean Highest High Water Level + 2 feet						Total + 2040 Intermediate Low Sea Level Rise						Total + 2040 Intermediate High Sea Level Rise						Total + 2070 Intermediate Low Sea Level Rise						Total + 2070 Intermediate High Sea Level Rise						100-Year						100-Year + 2040 Intermediate Low Sea Level Rise						100-Year + 2040 Intermediate High Sea Level Rise						100-Year + 2070 Intermediate Low Sea Level Rise						100-Year + 2070 Intermediate High Sea Level Rise					
Asset Type	Count	None	Low	Mod	Moderate	High	Extreme	None	Low	Mod	Moderate	High	Extreme	None	Low	Mod	Moderate	High	Extreme	None	Low	Mod	Moderate	High	Extreme	None	Low	Mod	Moderate	High	Extreme	None	Low	Mod	Moderate	High	Extreme	None	Low	Mod	Moderate	High	Extreme	None	Low	Mod	Moderate	High	Extreme	None	Low	Mod	Moderate	High	Extreme
Airports	18	18	0	0	0	0	0	18	0	0	0	0	0	18	0	0	0	0	0	18	0	0	0	0	0	18	0	0	0	0	0	18	0	0	0	0	0	18	0	0	0	0	0	18	0	0	0	0	0	18	0	0	0	0	0
Bridges	161	128	11	0	9	0	9	127	1	1	9	0	9	122	0	1	9	0	9	127	1	1	9	0	9	122	0	1	9	0	9	126	1	0	9	0	9	125	0	1	9	0	9	126	1	0	9	0	9	125	0	1	9	0	9
Bus Terminal	1	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
Harbors	34	25	0	0	0	0	9	25	0	0	0	0	9	22	0	0	0	0	9	22	0	0	0	0	9	19	0	0	0	0	15	17	0	0	0	0	17	15	0	0	0	0	15	15	0	0	0	0	15	12	0	0	0	0	15
Railroads	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Roads	9142	5305	21	4	7	5	0	5402	16	4	0	3	0	5448	0	2	1	1	87	5454	25	11	3	2	1	5383	133	44	27	15	21	4963	158	67	61	48	211	5438	184	74	59	35	164	5432	211	77	61	31	220	5391	221	91	61	38	220	5378	270	78	61	38	220
Total	9743	5481	33	4	7	5	9	5969	18	5	9	3	9	5929	0	3	1	1	111	6015	26	13	12	2	10	5679	134	47	36	15	36	5198	160	69	70	48	230	5619	198	80	69	35	179	5632	212	78	69	31	229	5531	222	92	69	38	229	5517	271	79	69	38	229
%		96.5%	0.6%	0.1%	0.1%	0.1%	0.2%	96.6%	0.3%	0.1%	0.2%	0.1%	0.2%	97.6%	0.0%	0.0%	0.0%	0.0%	1.9%	98.1%	1.3%	0.2%	0.2%	0.0%	0.2%	96.2%	2.2%	0.8%	0.5%	0.2%	0.6%	88.0%	2.8%	1.2%	1.1%	0.8%	4.1%	96.5%	3.3%	1.3%	1.0%	0.6%	3.0%	96.0%	3.6%	1.3%	1.2%	0.5%	3.7%	94.0%	3.8%	1.5%	1.2%	0.6%	3.7%	91.2%	3.8%	1.3%	1.0%	0.6%	3.7%

		Mean Sea Level Fall Water Level +2 Feet						Total + 2040 Intermediate Low Sea Level Rise						Total + 2040 Intermediate High Sea Level Rise						Total + 2070 Intermediate Low Sea Level Rise						Total + 2070 Intermediate High Sea Level Rise						100 Year						100 Year + 2040 Intermediate Low Sea Level Rise						100 Year + 2040 Intermediate High Sea Level Rise						100 Year + 2070 Intermediate Low Sea Level Rise						100 Year + 2070 Intermediate High Sea Level Rise					
Asset Type	Count	None	Low	Mid	Moderate	High	Extreme	None	Low	Mid	Moderate	High	Extreme	None	Low	Mid	Moderate	High	Extreme	None	Low	Mid	Moderate	High	Extreme	None	Low	Mid	Moderate	High	Extreme	None	Low	Mid	Moderate	High	Extreme	None	Low	Mid	Moderate	High	Extreme	None	Low	Mid	Moderate	High	Extreme	None	Low	Mid	Moderate	High	Extreme
Communication Facilities	90	90	0	0	0	0	0	86	3	0	0	0	1	80	0	3	8	0	0	86	3	0	0	0	1	80	0	3	8	0	0	94	0	0	0	0	1	93	0	1	0	0	1	90	0	0	0	0	0	93	0	0	0	0	0
Disaster Debris Management Sites	9	9	0	0	0	0	0	9	0	0	0	0	0	9	0	0	0	0	0	9	0	0	0	0	0	9	0	0	0	0	0	9	0	0	0	0	0	9	0	0	0	0	0	9	0	0	0	0	0	9	0	0	0	0	0
Electrical Power Facilities	145	145	0	0	0	0	0	140	0	0	0	0	5	140	0	0	0	0	5	140	0	0	0	0	5	140	0	0	0	0	5	144	0	0	0	0	1	141	0	0	0	0	4	138	0	0	0	0	7	138	0	0	0	0	7
Electric Peak Alternative Backup Facilities	145	145	0	0	0	0	0	140	0	0	0	0	5	140	0	0	0	0	5	140	0	0	0	0	5	140	0	0	0	0	5	144	0	0	0	0	1	141	0	0	0	0	4	138	0	0	0	0	7	138	0	0	0	0	7
Food and Hazardous Waste Facilities	1601	1522	0	6	0	2	71	1	0	0	0	1	1599	0	0	0	0	0	1601	0	0	0	0	0	1601	0	0	0	0	0	1601	0	0	0	0	0	1601	0	0	0	0	0	1601	0	0	0	0	0	1601	0	0	0	0	0
Wastewater Treatment Facilities and Pump Stations	41	41	0	0	0	0	0	41	0	0	0	0	0	41	0	0	0	0	0	41	0	0	0	0	0	41	0	0	0	0	0	41	0	0	0	0	0	41	0	0	0	0	0	41	0	0	0	0	0	41	0	0	0	0	0
Wastewater Treatment Facilities and Lift Stations	393	393	0	0	0	0	0	235	0	0	0	0	4	218	0	0	0	0	4	224	0	0	0	0	4	218	0	0	0	0	4	224	0	0	0	0	4	224	0	0	0	0	4	218	0	0	0	0	4	218	0	0	0	0	4
Water Stations	97	97	0	0	0	0	0	91	0	0	0	0	6	91	0	0	0	0	6	91	0	0	0	0	6	91	0	0	0	0	6	91	0	0	0	0	6	91	0	0	0	0	6	91	0	0	0	0	6	91	0	0	0	0	6
Water Utility Connections	1601	1522	0	6	0	2	71	1	0	0	0	1	1599	0	0	0	0	0	1601	0	0	0	0	0	1601	0	0	0	0	0	1601	0	0	0	0	0	1601	0	0	0	0	0	1601	0	0	0	0	0	1601	0	0	0	0	0
Total	4042	3958	0	6	0	2	76	2478	3	0	0	1	1560	3481	21	3	8	0	529	3478	43	0	0	0	521	3450	21	3	8	0	560	3482	21	3	8	0	528	3455	45	0	0	0	542	3436	45	0	0	0	571	3436	45	0	0	0	571
%		97.9%	0.2%	0.1%	0.0%	0.0%	1.9%	61.3%	0.1%	0.0%	0.0%	0.0%	38.6%	86.1%	0.5%	0.1%	0.2%	0.0%	13.1%	86.0%	1.1%	0.0%	0.0%	0.0%	12.9%	85.3%	0.5%	0.1%	0.2%	0.0%	13.9%	86.1%	0.5%	0.1%	0.2%	0.0%	13.1%	85.4%	1.1%	0.0%	0.0%	0.0%	13.4%	85.0%	1.1%	0.0%	0.0%	0.0%	14.1%	85.0%	1.1%	0.0%	0.0%	0.0%	14.1%

		Mass Highway Risk Water Level = 2 feet						Total = 2040 Intermediate Low Sea Level Rise						Total = 2040 Intermediate High Sea Level Rise						Total = 2070 Intermediate Low Sea Level Rise						Total = 2070 Intermediate High Sea Level Rise						10-Year						10-Year + 2040 Intermediate Low Sea Level Rise						10-Year + 2040 Intermediate High Sea Level Rise						10-Year + 2070 Intermediate Low Sea Level Rise						10-Year + 2070 Intermediate High Sea Level Rise					
Asset Type	Count	None	Low	Mild	Moderate	High	Extreme	None	Low	Mild	Moderate	High	Extreme	None	Low	Mild	Moderate	High	Extreme	None	Low	Mild	Moderate	High	Extreme	None	Low	Mild	Moderate	High	Extreme	None	Low	Mild	Moderate	High	Extreme	None	Low	Mild	Moderate	High	Extreme	None	Low	Mild	Moderate	High	Extreme	None	Low	Mild	Moderate	High	Extreme
Conservation Lands	148	132	0	2	0	2	0	131	1	4	0	1	0	127	0	0	0	0	21	126	0	0	0	0	0	124	1	0	4	0	11	98	10	7	0	2	33	112	15	5	7	1	10	112	14	6	7	1	10	112	14	6	7	1	10	85	0	3	1	0	6	85	0	3	1	0	6	85	0	3	1	0	6
Parks + Playgrounds	69	27	0	1	0	1	0	27	0	0	0	0	0	26	0	0	0	0	7	26	0	0	0	0	0	23	0	2	0	0	0	22	0	1	0	0	0	19	3	0	1	0	0	19	3	0	1	0	0	19	3	0	1	0	0	8	0	0	0	0	0	8	0	0	0	0	0	8	0	0	0	0	0
Parks + Fields	223	155	0	0	0	0	0	147	0	0	0	0	0	147	0	0	0	0	0	147	0	0	0	0	0	147	0	0	0	0	0	147	0	0	0	0	0	147	0	0	0	0	0	147	0	0	0	0	0	147	0	0	0	0	0	37	0	0	0	0	0	37	0	0	0	0	0	37	0	0	0	0	0
Cultural Assets	3420	2176	0	1	22	22	0	2420	0	7	17	0	0	2420	0	7	17	0	0	2061	0	1	0	0	0	2061	0	1	0	0	0	2061	0	1	0	0	0	2061	0	1	0	0	0	2061	0	1	0	0	0	2061	0	1	0	0	0	359	0	1	0	0	0	359	0	1	0	0	0	359	0	1	0	0	0
Water System	82	32	0	0	0	0	0	55	0	8	0	0	0	30	0	0	0	0	0	30	0	0	0	0	0	30	0	0	0	0	0	30	0	0	0	0	0	30	0	0	0	0	0	30	0	0	0	0	0	30	0	0	0	0	0	7	0	0	0	0	0	7	0	0	0	0	0	7	0	0	0	0	0
Wetlands	4145	1741	0	20	39	20	69	3720	0	63	43	29	69	2772	0	0	0	0	103	2717	0	0	0	0	0	3006	0	0	0	0	0	1654	20	22	10	28	283	2625	37	26	20	10	245	2625	50	26	30	10	245	3025	30	26	30	10	247	3025	30	26	30	10	247	3025	30	26	30	10	247
Properties	1501	46	0	21	79	31	406	77	0	11	49	69	571	26	1	3	0	3	672	25	0	0	0	0	0	25	1	3	22	25	754	15	2	3	10	15	955	15	1	5	10	14	999	15	1	5	11	13	999	15	1	5	11	13	999	15	1	5	11	13	999	15	1	5	11	13	999
Total	13,103	8,060	145	293	140	145	620	11,618	43	213	113	123	670	11,463	41	31	17	4	1,016	11,003	0	13	17	4	48	10,911	61	23	57	36	1,018	11,131	49	69	80	45	1,014	10,931	403	53	103	51	1,010	10,931	466	71	201	51	1,010	11,197	403	71	201	51	1,060	11,197	403	71	201	51	1,060	11,197	403	71	201	51	1,060
%		89.5%	1.1%	0.4%	0.4%	1.2%	4.9%	89.1%	0.3%	0.2%	0.9%	0.2%	5.1%	88.1%	0.3%	0.2%	0.1%	0.0%	7.8%	84.7%	0.0%	0.1%	0.1%	0.0%	0.4%	83.7%	0.5%	0.2%	0.4%	0.3%	7.8%	85.4%	0.4%	0.5%	0.6%	0.3%	7.8%	83.9%	3.1%	0.4%	0.8%	0.4%	7.7%	83.9%	3.6%	0.5%	1.5%	0.4%	7.7%	85.9%	3.1%	0.5%	1.5%	0.4%	8.1%	85.9%	3.1%	0.5%	1.5%	0.4%	8.1%	85.9%	3.1%	0.5%	1.5%	0.4%	8.1%

		Mass Wipe+High Water Level + 2 Year						Total + 2040 Intervention Low Sea Level Rise						Total + 2040 Intervention High Sea Level Rise						Total + 2070 Intervention Low Sea Level Rise						Total + 2070 Intervention High Sea Level Rise						10-Year						100-Year + 2040 Intervention Low Sea Level Rise						100-Year + 2040 Intervention High Sea Level Rise						100-Year + 2070 Intervention Low Sea Level Rise						100-Year + 2070 Intervention High Sea Level Rise					
Asset Type	Count	None	Low	Mod.	Moderate	High	Extreme	None	Low	Mod.	Moderate	High	Extreme	None	Low	Mod.	Moderate	High	Extreme	None	Low	Mod.	Moderate	High	Extreme	None	Low	Mod.	Moderate	High	Extreme	None	Low	Mod.	Moderate	High	Extreme	None	Low	Mod.	Moderate	High	Extreme	None	Low	Mod.	Moderate	High	Extreme	None	Low	Mod.	Moderate	High	Extreme
Conservation Lands	149	132	0	2	0	2	2	131	1	4	0	1	2	127	0	3	0	1	11	126	0	9	0	0	0	124	1	3	4	3	11	98	10	7	6	2	16	112	15	5	7	1	10	112	14	6	7	1	10	112	14	6	7	1	10	85
Parks + Houses	43	27	0	1	0	3	0	27	0	3	0	3	0	26	0	3	0	3	7	26	0	5	0	0	0	23	0	2	5	0	8	19	3	3	2	2	6	19	3	3	3	2	6	19	3	3	3	2	6	19	3	3	3	2	6	9
Parks + Lands	223	156	0	3	0	3	28	147	0	9	0	3	30	151	1	3	1	3	6	146	0	9	0	3	29	138	0	3	0	0	40	105	15	9	6	3	55	167	8	9	6	0	33	168	8	9	6	0	33	168	8	9	6	0	33	37
Safety + Fire	1426	1136	0	1	22	10	143	1120	0	7	17	15	147	1061	0	3	0	3	156	1033	0	6	0	3	183	1018	1	3	26	22	196	1003	27	15	17	17	351	1061	32	15	10	10	203	1061	33	24	10	10	204	1006	33	30	15	10	203	169
Water System	67	32	0	0	1	4	30	0	0	8	0	3	4	30	0	3	0	3	31	30	0	3	0	3	6	30	0	3	0	0	6	26	17	1	1	4	18	50	17	0	1	0	5	50	17	0	1	0	7	50	17	0	1	0	7	8
Wetlands	4145	3241	5	25	39	29	63	3230	5	63	43	29	108	3227	0	3	0	3	103	3217	0	3	0	3	9	3190	5	3	15	28	101	3154	29	17	15	18	177	3225	37	15	10	10	249	3225	38	29	10	10	249	3175	38	35	15	10	249	247
Properties	7501	95	0	21	79	51	406	37	0	11	48	38	571	26	1	3	0	3	672	25	0	3	0	0	6	25	1	3	22	25	754	11	2	5	10	15	955	11	1	5	10	14	960	11	1	5	11	14	960	11	1	5	11	14	960	1115
Total	13,565	4,860	6	53	140	145	681	4,681	7	105	113	101	1,030	4,683	3	28	1	16	1,115	4,600	0	38	23	11	253	4,533	8	23	53	76	1,319	4,139	109	69	80	80	1,564	4,619	93	53	44	24	1,631	4,620	94	71	44	24	1,631	4,523	94	81	73	24	1,763	1,115
%		89.3%	0.1%	0.4%	1.0%	1.1%	5.0%	86.1%	0.1%	0.8%	0.8%	0.7%	7.6%	86.1%	0.1%	0.2%	0.0%	0.1%	8.2%	84.6%	0.0%	0.3%	0.2%	0.1%	1.9%	83.3%	0.1%	0.4%	1.0%	1.4%	24.2%	76.1%	2.0%	1.3%	1.5%	1.5%	28.7%	84.9%	1.7%	1.0%	0.8%	0.4%	30.0%	84.9%	1.7%	1.3%	0.8%	0.4%	30.0%	83.1%	1.7%	1.5%	1.3%	0.4%	32.4%	8.2%

		Mean Higher High Water Lower + 2 feet						Total + 2040 Intermediate Low Sea Level Rise						Total + 2040 Intermediate High Sea Level Rise						Total + 2070 Intermediate Low Sea Level Rise						Total + 2070 Intermediate High Sea Level Rise						2040 Year						2040 Year + 2040 Intermediate Low Sea Level Rise						2040 Year + 2040 Intermediate High Sea Level Rise						2070 Year + 2070 Intermediate Low Sea Level Rise						2070 Year + 2070 Intermediate High Sea Level Rise					
Asset Type	Count	None	Low	Mid	Moderate	High	Extreme	None	Low	Mid	Moderate	High	Extreme	None	Low	Mid	Moderate	High	Extreme	None	Low	Mid	Moderate	High	Extreme	None	Low	Mid	Moderate	High	Extreme	None	Low	Mid	Moderate	High	Extreme	None	Low	Mid	Moderate	High	Extreme	None	Low	Mid	Moderate	High	Extreme	None	Low	Mid	Moderate	High	Extreme
Communication Facilities	90	90	0	0	0	0	0	86	3	0	0	0	1	90	0	0	0	0	0	90	0	0	0	0	0	86	3	0	0	0	1	94	0	0	0	0	1	93	0	0	0	0	1	93	0	0	0	0	1	90	0	0	0	0	0
Disaster Debris Management Sites	9	9	0	0	0	0	0	9	0	0	0	0	0	9	0	0	0	0	0	9	0	0	0	0	0	9	0	0	0	0	0	9	0	0	0	0	0	9	0	0	0	0	0	9	0	0	0	0	0	9	0	0	0	0	0
Electrical Power Facilities	185	185	0	0	0	0	0	180	5	0	0	0	0	185	0	0	0	0	0	185	0	0	0	0	0	180	5	0	0	0	0	186	0	0	0	0	0	184	2	0	0	0	0	184	2	0	0	0	0	185	1	0	0	0	0
Electric Peak Alternative Backup Facilities	110	110	0	0	0	0	0	101	9	0	0	0	0	105	0	0	0	0	5	110	0	0	0	0	0	101	9	0	0	0	0	115	0	0	0	0	0	114	0	0	0	0	1	110	0	0	0	0	0	114	0	0	0	0	1
Solid and Hazardous Waste Facilities	1601	1522	0	0	0	0	79	1522	1	0	0	0	78	1428	5	0	0	0	168	1521	0	0	0	0	80	1498	1	0	0	0	102	1535	12	0	0	0	54	1520	0	0	0	0	81	1495	0	0	0	0	106	1520	0	0	0	0	81
Wastewater Treatment Facilities and Pump Stations	43	43	0	0	0	0	0	43	0	0	0	0	0	43	0	0	0	0	0	43	0	0	0	0	0	43	0	0	0	0	0	43	0	0	0	0	0	43	0	0	0	0	0	43	0	0	0	0	0	43	0	0	0	0	0
Wastewater Treatment Facilities and Lift Stations	263	263	0	0	0	0	0	226	3	0	0	0	4	218	5	0	0	0	40	224	0	0	0	0	39	224	3	0	0	0	36	224	3	0	0	0	36	218	0	0	0	0	45	216	0	0	0	0	47	216	3	0	0	0	44
Water Systems	97	97	0	0	0	0	0	91	5	0	0	0	1	83	0	0	0	0	14	91	0	0	0	0	6	90	1	0	0	0	7	91	0	0	0	0	6	91	0	0	0	0	6	91	0	0	0	0	6	90	1	0	0	0	6
Water Utility Conveyance	2	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0
Total	2400	2318	0	0	0	0	82	2208	23	0	0	0	84	2160	10	0	0	0	227	2245	0	0	0	0	83	2161	22	0	0	0	84	2305	15	0	0	0	82	2185	2	0	0	0	133	2165	2	0	0	0	138	2165	5	0	0	0	132
%		96.5%	0.0%	0.0%	0.0%	0.0%	3.4%	92.0%	1.0%	0.0%	0.0%	0.0%	3.5%	90.0%	0.4%	0.0%	0.0%	0.0%	9.5%	93.5%	0.0%	0.0%	0.0%	0.0%	3.5%	90.0%	0.9%	0.0%	0.0%	0.0%	3.5%	96.0%	0.6%	0.0%	0.0%	0.0%	3.4%	91.0%	0.1%	0.0%	0.0%	0.0%	5.5%	90.2%	0.1%	0.0%	0.0%	0.0%	5.8%	90.2%	0.2%	0.0%	0.0%	0.0%	5.5%

		Mean Highest High Water Level + 2 feet						Total + 2040 Intermediate Low Sea Level Rise						Total + 2060 Intermediate High Sea Level Rise						Total + 2070 Intermediate Low Sea Level Rise						Total + 2100 Intermediate High Sea Level Rise						10%/Year						10%-Year + 2040 Intermediate Low Sea Level Rise						10%-Year + 2060 Intermediate High Sea Level Rise						10%-Year + 2070 Intermediate Low Sea Level Rise						10%-Year + 2100 Intermediate High Sea Level Rise					
Asset Type	Count	None	Low	Mid	Moderate	High	Extreme	None	Low	Mid	Moderate	High	Extreme	None	Low	Mid	Moderate	High	Extreme	None	Low	Mid	Moderate	High	Extreme	None	Low	Mid	Moderate	High	Extreme	None	Low	Mid	Moderate	High	Extreme	None	Low	Mid	Moderate	High	Extreme	None	Low	Mid	Moderate	High	Extreme	None	Low	Mid	Moderate	High	Extreme
Airports	18	18	0	0	0	0	0	18	0	0	0	0	0	18	0	0	0	0	0	18	0	0	0	0	0	18	0	0	0	0	0	18	0	0	0	0	0	18	0	0	0	0	0	18	0	0	0	0	0	18	0	0	0	0	0
Bridges	182	128	31	0	0	5	0	122	3	3	0	3	0	122	3	3	0	3	0	122	1	4	0	3	0	120	1	2	3	3	0	120	1	2	3	3	0	120	1	2	3	3	0	120	1	2	3	3	0	116	0	2	3	3	0
Bus Terminal	3	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
Harbors	33	25	0	0	0	0	3	25	0	0	0	0	3	22	0	0	0	1	0	22	0	1	0	0	3	19	0	0	0	0	3	17	0	0	0	0	3	17	0	0	0	0	3	17	0	0	0	0	3	13	0	0	0	0	3
Railroads	3	3	0	0	0	0	0	3	0	0	0	0	0	3	0	0	0	0	0	3	0	0	0	0	0	3	0	0	0	0	0	3	0	0	0	0	0	3	0	0	0	0	0	3	0	0	0	0	0	3	0	0	0	0	0
Roads	9148	5705	21	4	2	9	0	5685	16	4	0	2	0	5648	0	2	1	1	87	5614	21	11	3	2	1	5353	133	44	27	13	23	4983	158	67	61	46	211	5488	184	74	59	23	118	5393	171	77	61	31	108	5355	221	76	61	31	102	5178	170	76	61	31	102
Total	9367	5881	53	4	2	14	3	5859	19	7	0	5	3	5815	3	5	1	5	87	5815	26	15	3	5	1	5517	134	47	30	16	23	5138	160	73	64	49	211	5627	186	80	63	26	118	5532	174	79	65	34	108	5493	224	78	64	34	102	5317	173	79	64	34	102
%		96.0%	0.8%	0.1%	0.0%	0.2%	0.0%	95.6%	0.3%	0.1%	0.0%	0.1%	0.0%	94.8%	0.0%	0.1%	0.0%	0.1%	1.4%	94.8%	0.4%	0.2%	0.0%	0.1%	0.0%	90.0%	2.2%	0.8%	0.5%	0.3%	0.4%	83.8%	2.6%	1.2%	1.0%	0.8%	3.4%	91.8%	3.0%	1.3%	1.0%	0.4%	1.9%	90.3%	2.8%	1.3%	1.1%	0.6%	1.8%	89.6%	3.7%	1.3%	1.1%	0.6%	1.7%	86.7%	2.8%	1.3%	1.1%	0.6%	1.7%

| | | Mean Higher-High Water Level + 3 feet | | | | | | Title 4 + 2040 Intermediate Low Sea Level Rise | | | | | | Title 4 + 2040 Intermediate High Sea Level Rise | | | | | | Total + 2040 Intermediate Low Sea Level Rise | | | | | | Total + 2040 Intermediate High Sea Level Rise | | | | | | Total + 2070 Intermediate Low Sea Level Rise | | | | | | Total + 2070 Intermediate High Sea Level Rise | | | | | | 100-Year | | | | | | 100-Year + 2040 Intermediate Low Sea Level Rise | | | | | | 100-Year + 2040 Intermediate High Sea Level Rise | | | | | | 100-Year + 2070 Intermediate Low Sea Level Rise | | | | | | 100-Year + 2070 Intermediate High Sea Level Rise | | | | | |
|---|---|---

		Mean Higher-High Water Level + 2 feet						Tidal + 2040 Intermediate Low Sea Level Rise					
Asset Type	**Count**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**
Colleges and Universities	1	1	0	0	0	0	0	1	0	0	0	0	0
Community Centers	16	16	0	0	0	0	0	16	0	0	0	0	0
Correctional Facilities	6	6	0	0	0	0	0	6	0	0	0	0	0
Disaster Recovery Centers	4	4	0	0	0	0	0	4	0	0	0	0	0
Emergency Medical Service Facilities	2	2	0	0	0	0	0	2	0	0	0	0	0
Emergency Operation Centers	1	1	0	0	0	0	0	1	0	0	0	0	0
Fire Stations	34	34	0	0	0	0	0	34	0	0	0	0	0
Healthcare Facilities	30	30	0	0	0	0	0	30	0	0	0	0	0
Hospitals	6	6	0	0	0	0	0	6	0	0	0	0	0
LawEnforcementFacilities	14	14	0	0	0	0	0	14	0	0	0	0	0
Local Government Facilities	8	8	0	0	0	0	0	8	0	0	0	0	0
Logistical Staging Areas	4	4	0	0	0	0	0	4	0	0	0	0	0
Risk Shelter Inventory	1	1	0	0	0	0	0	1	0	0	0	0	0
Schools	81	81	0	0	0	0	0	81	0	0	0	0	0
State Government Facilities	5	5	0	0	0	0	0	5	0	0	0	0	0
Total	213	213	0	0	0	0	0	213	0	0	0	0	0
%		100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%

		Tidal + 2040 Intermediate High Sea Level Rise						Tidal + 2070 Intermediate Low Sea Level Rise					
Asset Type	**Count**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**
Colleges and Universities	1	1	0	0	0	0	0	1	0	0	0	0	0
Community Centers	16	16	0	0	0	0	0	16	0	0	0	0	0
Correctional Facilities	6	6	0	0	0	0	0	6	0	0	0	0	0
Disaster Recovery Centers	4	4	0	0	0	0	0	4	0	0	0	0	0
Emergency Medical Service Facilities	2	2	0	0	0	0	0	2	0	0	0	0	0
Emergency Operation Centers	1	1	0	0	0	0	0	1	0	0	0	0	0
Fire Stations	34	34	0	0	0	0	0	34	0	0	0	0	0
Healthcare Facilities	30	30	0	0	0	0	0	30	0	0	0	0	0
Hospitals	6	6	0	0	0	0	0	6	0	0	0	0	0
LawEnforcementFacilities	14	14	0	0	0	0	0	14	0	0	0	0	0
Local Government Facilities	8	8	0	0	0	0	0	8	0	0	0	0	0
Logistical Staging Areas	4	4	0	0	0	0	0	4	0	0	0	0	0
Risk Shelter Inventory	1	1	0	0	0	0	0	1	0	0	0	0	0
Schools	81	81	0	0	0	0	0	81	0	0	0	0	0
State Government Facilities	5	5	0	0	0	0	0	5	0	0	0	0	0
Total	213	213	0	0	0	0	0	213	0	0	0	0	0
%		100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%

		Tidal + 2070 Intermediate High Sea Level Rise						100-Year					
Asset Type	**Count**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**
Colleges and Universities	1	1	0	0	0	0	0	1	0	0	0	0	0
Community Centers	16	16	0	0	0	0	0	15	0	0	0	0	1
Correctional Facilities	6	6	0	0	0	0	0	6	0	0	0	0	0
Disaster Recovery Centers	4	4	0	0	0	0	0	4	0	0	0	0	0
Emergency Medical Service Facilities	2	2	0	0	0	0	0	2	0	0	0	0	0
Emergency Operation Centers	1	1	0	0	0	0	0	1	0	0	0	0	0
Fire Stations	34	34	0	0	0	0	0	34	0	0	0	0	0
Healthcare Facilities	30	30	0	0	0	0	0	30	0	0	0	0	0
Hospitals	6	6	0	0	0	0	0	6	0	0	0	0	0
LawEnforcementFacilities	14	14	0	0	0	0	0	14	0	0	0	0	0
Local Government Facilities	8	8	0	0	0	0	0	8	0	0	0	0	0
Logistical Staging Areas	4	4	0	0	0	0	0	4	0	0	0	0	0
Risk Shelter Inventory	1	1	0	0	0	0	0	1	0	0	0	0	0
Schools	81	80	0	0	0	0	1	78	0	0	0	0	3
State Government Facilities	5	5	0	0	0	0	0	5	0	0	0	0	0
Total	213	212	0	0	0	0	1	209	0	0	0	0	4
%		99.5%	0.0%	0.0%	0.0%	0.0%	0.5%	98.1%	0.0%	0.0%	0.0%	0.0%	1.9%

		100-Year + 2040 Intermediate Low Sea Level Rise						100-Year + 2040 Intermediate High Sea Level Rise					
Asset Type	**Count**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**
Colleges and Universities	1	1	0	0	0	0	0	1	0	0	0	0	0
Community Centers	16	15	0	0	0	0	1	15	0	0	0	0	1
Correctional Facilities	6	6	0	0	0	0	0	6	0	0	0	0	0
Disaster Recovery Centers	4	4	0	0	0	0	0	4	0	0	0	0	0
Emergency Medical Service Facilities	2	2	0	0	0	0	0	2	0	0	0	0	0
Emergency Operation Centers	1	1	0	0	0	0	0	1	0	0	0	0	0
Fire Stations	34	34	0	0	0	0	0	33	0	0	0	0	1
Healthcare Facilities	30	30	0	0	0	0	0	30	0	0	0	0	0
Hospitals	6	6	0	0	0	0	0	6	0	0	0	0	0
LawEnforcementFacilities	14	14	0	0	0	0	0	14	0	0	0	0	0
Local Government Facilities	8	8	0	0	0	0	0	8	0	0	0	0	0
Logistical Staging Areas	4	4	0	0	0	0	0	4	0	0	0	0	0
Risk Shelter Inventory	1	1	0	0	0	0	0	1	0	0	0	0	0
Schools	81	78	0	0	0	0	3	78	0	0	0	0	3
State Government Facilities	5	5	0	0	0	0	0	5	0	0	0	0	0
Total	213	209	0	0	0	0	4	208	0	0	0	0	5
%		98.1%	0.0%	0.0%	0.0%	0.0%	1.9%	97.7%	0.0%	0.0%	0.0%	0.0%	2.3%

		100-Year + 2070 Intermediate Low Sea Level Rise						100-Year + 2070 Intermediate High Sea Level Rise					
Asset Type	**Count**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**
Colleges and Universities	1	1	0	0	0	0	0	1	0	0	0	0	0
Community Centers	16	15	0	0	0	0	1	15	0	0	0	0	1
Correctional Facilities	6	6	0	0	0	0	0	6	0	0	0	0	0
Disaster Recovery Centers	4	4	0	0	0	0	0	4	0	0	0	0	0
Emergency Medical Service Facilities	2	2	0	0	0	0	0	2	0	0	0	0	0
Emergency Operation Centers	1	1	0	0	0	0	0	1	0	0	0	0	0
Fire Stations	34	33	0	0	0	0	1	33	0	0	0	0	1
Healthcare Facilities	30	30	0	0	0	0	0	30	0	0	0	0	0
Hospitals	6	6	0	0	0	0	0	6	0	0	0	0	0
LawEnforcementFacilities	14	14	0	0	0	0	0	14	0	0	0	0	0
Local Government Facilities	8	8	0	0	0	0	0	8	0	0	0	0	0
Logistical Staging Areas	4	4	0	0	0	0	0	4	0	0	0	0	0
Risk Shelter Inventory	1	1	0	0	0	0	0	1	0	0	0	0	0
Schools	81	78	0	0	0	0	3	78	0	0	0	0	3
State Government Facilities	5	5	0	0	0	0	0	5	0	0	0	0	0
Total	213	208	0	0	0	0	5	208	0	0	0	0	5
%		97.7%	0.0%	0.0%	0.0%	0.0%	2.3%	97.7%	0.0%	0.0%	0.0%	0.0%	2.3%

		Mean Higher-High Water Level + 2 feet						Tidal + 2040 Intermediate Low Sea Level Rise					
Asset Type	**Count**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**
Airports	18	18	0	0	0	0	0	18	0	0	0	0	0
Bridges	151	139	12	0	0	0	0	137	2	3	5	1	3
Bus Terminal	1	1	0	0	0	0	0	1	0	0	0	0	0
Marinas	28	25	0	0	0	0	3	25	0	0	0	0	3
Railroads	3	3	0	0	0	0	0	3	0	0	0	0	0
Roads	5546	5505	21	4	7	9	0	5485	56	4	0	1	0
Total	5747	5691	33	4	7	9	3	5669	58	7	5	2	6
%		99.0%	0.6%	0.1%	0.1%	0.2%	0.1%	98.6%	1.0%	0.1%	0.1%	0.0%	0.1%

		Tidal + 2040 Intermediate High Sea Level Rise						Tidal + 2070 Intermediate Low Sea Level Rise					
Asset Type	**Count**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**
Airports	18	18	0	0	0	0	0	18	0	0	0	0	0
Bridges	151	137	0	0	0	0	14	137	1	4	3	3	3
Bus Terminal	1	1	0	0	0	0	0	1	0	0	0	0	0
Marinas	28	22	6	0	0	0	0	22	0	0	0	0	6
Railroads	3	3	0	0	0	0	0	3	0	0	0	0	0
Roads	5546	5448	0	0	1	0	97	5454	75	11	3	2	1
Total	5747	5629	6	0	1	0	111	5635	76	15	6	5	10
%		97.9%	0.1%	0.0%	0.0%	0.0%	1.9%	98.1%	1.3%	0.3%	0.1%	0.1%	0.2%

		Tidal + 2070 Intermediate High Sea Level Rise						100-Year					
Asset Type	**Count**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**
Airports	18	18	0	0	0	0	0	18	0	0	0	0	0
Bridges	151	136	1	3	3	3	5	135	0	2	4	1	9
Bus Terminal	1	1	0	0	0	0	0	1	0	0	0	0	0
Marinas	28	15	0	0	0	0	13	13	0	0	0	0	15
Railroads	3	3	0	0	0	0	0	3	0	0	0	0	0
Roads	5546	5303	123	44	27	15	33	4968	169	87	62	49	211
Total	5747	5476	124	47	30	18	51	5138	169	89	66	50	235
%		95.3%	2.2%	0.8%	0.5%	0.3%	0.9%	89.4%	2.9%	1.5%	1.1%	0.9%	4.1%

		100-Year + 2040 Intermediate Low Sea Level Rise						100-Year + 2040 Intermediate High Sea Level Rise					
Asset Type	**Count**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**
Airports	18	18	0	0	0	0	0	18	0	0	0	0	0
Bridges	151	134	1	2	4	1	9	134	0	2	3	2	10
Bus Terminal	1	1	0	0	0	0	0	1	0	0	0	0	0
Marinas	28	13	0	0	0	0	15	13	0	0	0	0	15
Railroads	3	3	0	0	0	0	0	3	0	0	0	0	0
Roads	5546	5088	168	78	59	25	128	5083	171	77	62	25	128
Total	5747	5257	169	80	63	26	152	5252	171	79	65	27	153
%		91.5%	2.9%	1.4%	1.1%	0.5%	2.6%	91.4%	3.0%	1.4%	1.1%	0.5%	2.7%

		100-Year + 2070 Intermediate Low Sea Level Rise						100-Year + 2070 Intermediate High Sea Level Rise					
Asset Type	**Count**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**
Airports	18	18	0	0	0	0	0	18	0	0	0	0	0
Bridges	151	134	0	2	3	2	10	134	0	2	3	2	10
Bus Terminal	1	1	0	0	0	0	0	1	0	0	0	0	0
Marinas	28	13	0	0	0	0	15	13	0	0	0	0	15
Railroads	3	3	0	0	0	0	0	3	0	0	0	0	0
Roads	5546	5082	170	76	60	28	130	5078	170	78	60	26	130
Total	5747	5251	170	78	63	30	155	5247	170	80	63	28	155
%		91.4%	3.0%	1.4%	1.1%	0.5%	2.7%	91.3%	3.0%	1.4%	1.1%	0.5%	2.7%

		Mean Higher-High Water Level + 2 feet						Tidal + 2040 Intermediate Low Sea Level Rise					
Asset Type	**Count**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**
Conservation Lands	158	132	3	2	3	2	2	131	1	4	3	3	3
Parks - Polygons	33	27	0	0	0	0	0	27	0	0	0	0	0
Parks - Points	223	214	0	0	0	0	9	207	0	0	0	0	16
Surface Water	9420	9136	0	5	22	23	132	9120	2	2	17	26	161
Water System	82	52	0	0	0	0	4	53	0	0	0	0	4
Wetlands	4045	3746	5	25	30	29	69	3730	3	19	43	29	108
Shoreline	908	46	6	21	70	91	466	37	3	11	48	69	571
Total	15092	13567	14	53	125	145	691	13512	9	36	111	127	879
%		89.9%	0.1%	0.4%	0.8%	1.0%	4.6%	89.5%	0.1%	0.2%	0.7%	0.8%	5.8%

		Tidal + 2040 Intermediate High Sea Level Rise						Tidal + 2070 Intermediate Low Sea Level Rise					
Asset Type	**Count**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**
Conservation Lands	158	127	0	0	0	0	31	128	0	0	0	0	0
Parks - Polygons	33	26	0	0	0	0	7	26	0	0	0	0	0
Parks - Points	223	201	21	0	1	0	0	203	0	0	0	0	20
Surface Water	9420	9084	0	0	0	0	336	9028	0	0	0	0	0
Water System	82	52	0	0	0	0	30	52	0	0	0	0	0
Wetlands	4045	3716	0	0	0	0	329	3717	0	0	0	0	0
Shoreline	908	35	1	0	0	0	872	25	0	0	0	0	0
Total	15092	13442	43	0	2	0	1605	13382	0	0	0	0	40
%		89.1%	0.3%	0.0%	0.0%	0.0%	10.6%	88.7%	0.0%	0.0%	0.0%	0.0%	0.3%

		Tidal + 2070 Intermediate High Sea Level Rise						100-Year					
Asset Type	**Count**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**
Conservation Lands	158	124	1	3	4	3	11	90	13	7	5	2	19
Parks - Polygons	33	23	0	2	2	0	0	22	3	3	2	2	0
Parks - Points	223	188	0	0	0	0	35	160	11	0	0	0	52
Surface Water	9420	9021	1	4	26	22	246	8853	27	26	37	27	320
Water System	82	52	0	1	0	0	6	36	17	1	1	4	7
Wetlands	4045	3690	3	9	33	30	201	1974	25	27	33	35	249
Shoreline	908	25	1	3	22	23	754	19	2	4	12	16	855
Total	15092	13311	6	22	87	78	1288	11314	109	68	90	86	1554
%		88.2%	0.0%	0.1%	0.6%	0.5%	8.5%	75.0%	0.7%	0.5%	0.6%	0.6%	10.3%

		100-Year + 2040 Intermediate Low Sea Level Rise						100-Year + 2040 Intermediate High Sea Level Rise					
Asset Type	**Count**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**
Conservation Lands	158	112	15	5	7	1	18	112	14	6	7	1	18
Parks - Polygons	33	23	3	3	2	2	0	23	3	3	2	2	0
Parks - Points	223	170	0	0	0	0	53	167	0	0	0	0	56
Surface Water	9420	8981	32	31	32	23	321	8981	32	31	30	22	324
Water System	82	52	17	0	1	5	7	52	17	0	1	5	7
Wetlands	4045	3675	37	26	29	33	245	3675	36	26	30	32	246
Shoreline	908	18	1	5	12	14	858	18	1	5	11	13	860
Total	15092	13201	105	70	83	78	1555	13195	103	71	81	75	1567
%		87.5%	0.7%	0.5%	0.5%	0.5%	10.3%	87.4%	0.7%	0.5%	0.5%	0.5%	10.4%

		100-Year + 2070 Intermediate Low Sea Level Rise						100-Year + 2070 Intermediate High Sea Level Rise					
Asset Type	**Count**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**
Conservation Lands	158	112	14	6	7	1	18	112	14	5	8	1	18
Parks - Polygons	33	23	3	3	2	2	0	23	3	3	2	2	0
Parks - Points	223	168	0	0	0	0	55	166	0	0	0	0	57
Surface Water	9420	8981	32	31	30	22	324	8979	32	29	30	21	329
Water System	82	52	17	0	1	5	7	52	17	0	1	4	8
Wetlands	4045	3675	36	26	30	32	246	3675	36	26	29	32	247
Shoreline	908	18	1	5	11	14	859	19	1	4	11	13	860
Total	15092	13197	103	71	81	76	1564	13192	103	67	81	73	1576
%		87.4%	0.7%	0.5%	0.5%	0.5%	10.4%	87.4%	0.7%	0.4%	0.5%	0.5%	10.4%

		Mean Higher-High Water Level + 2 feet						Tidal + 2040 Intermediate Low Sea Level Rise					
Asset Type	**Count**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**
Communications Facilities	96	96	0	0	0	0	0	96	0	0	0	0	0
Disaster Debris Management Sites	9	9	0	0	0	0	0	9	0	0	0	0	0
Drinking Water Facilities	185	185	0	0	0	0	0	185	0	0	0	0	0
Electric Production and Supply Facilities	126	122	4	0	0	0	0	121	5	0	0	0	0
Solid and Hazardous Waste Facilities	1625	1623	0	0	0	0	2	1622	1	0	0	0	2
Stormwater Treatment Facilities and Pump Stations	41	41	0	0	0	0	0	41	0	0	0	0	0
Wastewater Treatment Facilities and Lift Stations	282	280	0	0	0	0	2	278	0	0	0	0	4
Water System	82	52	0	0	0	0	4	53	0	0	0	0	4
Water Utility Conveyance	96	96	0	0	0	0	0	94	0	0	0	0	2
Total	2542	2504	4	0	0	0	8	2499	6	0	0	0	12
%		98.5%	0.2%	0.0%	0.0%	0.0%	0.3%	98.3%	0.2%	0.0%	0.0%	0.0%	0.5%

		Tidal + 2040 Intermediate High Sea Level Rise						Tidal + 2070 Intermediate Low Sea Level Rise					
Asset Type	**Count**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**
Communications Facilities	96	96	0	0	0	0	0	96	0	0	0	0	0
Disaster Debris Management Sites	9	9	0	0	0	0	0	9	0	0	0	0	0
Drinking Water Facilities	185	185	0	0	0	0	0	185	0	0	0	0	0
Electric Production and Supply Facilities	126	120	0	0	0	0	6	120	6	0	0	0	0
Solid and Hazardous Waste Facilities	1625	1620	5	0	0	0	0	1621	0	0	0	0	4
Stormwater Treatment Facilities and Pump Stations	41	41	0	0	0	0	0	41	0	0	0	0	0
Wastewater Treatment Facilities and Lift Stations	282	274	8	0	0	0	0	274	0	0	0	0	8
Water System	82	52	0	0	0	0	30	52	0	0	0	0	0
Water Utility Conveyance	96	94	2	0	0	0	0	94	0	0	0	0	2
Total	2542	2491	15	0	0	0	36	2492	6	0	0	0	14
%		98.0%	0.6%	0.0%	0.0%	0.0%	1.4%	98.0%	0.2%	0.0%	0.0%	0.0%	0.6%

		Tidal + 2070 Intermediate High Sea Level Rise						100-Year					
Asset Type	**Count**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**
Communications Facilities	96	95	0	0	0	0	1	94	0	0	0	0	2
Disaster Debris Management Sites	9	9	0	0	0	0	0	9	0	0	0	0	0
Drinking Water Facilities	185	184	0	0	0	0	1	181	0	0	0	0	4
Electric Production and Supply Facilities	126	118	7	0	0	0	0	115	7	2	0	0	2
Solid and Hazardous Waste Facilities	1625	1598	0	0	0	0	27	1541	12	0	0	0	72
Stormwater Treatment Facilities and Pump Stations	41	41	0	0	0	0	0	33	7	0	0	0	1
Wastewater Treatment Facilities and Lift Stations	282	265	0	0	0	0	17	234	3	0	0	0	45
Water System	82	52	0	1	0	0	6	36	17	1	1	4	7
Water Utility Conveyance	96	94	0	0	0	0	2	91	0	0	0	0	5
Total	2542	2456	7	1	0	0	54	2334	46	3	1	4	138
%		96.6%	0.3%	0.0%	0.0%	0.0%	2.1%	91.8%	1.8%	0.1%	0.0%	0.2%	5.4%

		100-Year + 2040 Intermediate Low Sea Level Rise						100-Year + 2040 Intermediate High Sea Level Rise					
Asset Type	**Count**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**
Communications Facilities	96	93	0	0	0	0	3	93	0	0	0	0	3
Disaster Debris Management Sites	9	9	0	0	0	0	0	9	0	0	0	0	0
Drinking Water Facilities	185	180	0	0	0	0	5	180	0	0	0	0	5
Electric Production and Supply Facilities	126	114	6	2	2	0	2	114	8	2	0	0	2
Solid and Hazardous Waste Facilities	1625	1549	0	0	0	0	76	1549	0	0	0	0	76
Stormwater Treatment Facilities and Pump Stations	41	40	0	0	0	0	1	40	0	0	0	0	1
Wastewater Treatment Facilities and Lift Stations	282	236	0	0	0	0	46	235	0	0	0	0	47
Water System	82	52	17	0	1	5	7	52	17	0	1	5	7
Water Utility Conveyance	96	91	0	0	0	0	5	91	0	0	0	0	5
Total	2542	2364	23	2	3	5	145	2363	25	2	1	5	146
%		93.0%	0.9%	0.1%	0.1%	0.2%	5.7%	93.0%	1.0%	0.1%	0.0%	0.2%	5.7%

		100-Year + 2070 Intermediate Low Sea Level Rise						100-Year + 2070 Intermediate High Sea Level Rise					
Asset Type	**Count**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**	**None**	**Low**	**Mild**	**Moderate**	**High**	**Extreme**
Communications Facilities	96	93	0	0	0	0	3	93	0	0	0	0	3
Disaster Debris Management Sites	9	9	0	0	0	0	0	9	0	0	0	0	0
Drinking Water Facilities	185	180	0	0	0	0	5	180	0	0	0	0	5
Electric Production and Supply Facilities	126	114	8	2	0	0	2	114	8	2	0	0	2
Solid and Hazardous Waste Facilities	1625	1549	0	0	0	0	76	1549	0	0	0	0	76
Stormwater Treatment Facilities and Pump Stations	41	40	0	0	0	0	1	40	0	0	0	0	1
Wastewater Treatment Facilities and Lift Stations	282	236	0	0	0	0	46	235	0	0	0	0	47
Water System	82	52	17	0	1	5	7	52	17	0	1	4	8
Water Utility Conveyance	96	91	0	0	0	0	5	91	0	0	0	0	5
Total	2542	2364	25	2	1	5	145	2363	25	2	1	4	147
%		93.0%	1.0%	0.1%	0.0%	0.2%	5.7%	93.0%	1.0%	0.1%	0.0%	0.2%	5.8%

Appendix F
Asset Criticality Rankings

Asset Type	Criticality	Criticality Numerical Score
Airports	H	1
Bridges	H	1
Bus Terminals	M	0.67
Colleges and Universities	M	0.67
Communications Facilities	H	1
Community Centers	M	0.67
Conservation Lands	M	0.67
Correctional Facilities	M	0.67
Disaster Debris Management Sites	H	1
Disaster Recovery Centers	H	1
Drinking Water Facilities	H	1
Electric Production and Supply Facilities	H	1
Emergency Medical Service Facilities	H	1
Emergency Operation Centers	H	1
Fire Stations	H	1
Gravity Mains	M	0.67
Healthcare Facilities	H	1
Hospitals	H	1
Law Enforcement Facilities	H	1
Local Government Facilities	H	1
Logistical Staging Areas	M	0.67
Marinas	L	0.33
Military Installations	N/A	0
Parks - polygons	L	0.33
Parks - points	L	0.33
Railroads	M	0.67
Retention Ponds	M	0.67
Risk Shelter Inventories	H	1
Roads	H	1
Schools	M	0.67
Shorelines	M	0.67
Solid and Hazardous Waste Facilities	M	0.67
State Government Facilities	H	1
Stormwater Treatment Facilities and Pump Stations	H	1
Surface Water	N/A	0
Water Mains	M	0.67
Water System	N/A	0
Wastewater Treatment Facilities and Lift Stations	H	1
Water Utility Conveyance	H	1
Wetlands	M	0.67

Criticality	Criteria
H	Asset is critical for health and safety, critical services, government operations, or supports evacuation/shelters.
M	Asset supports everyday community activities
L	Asset is not essential for community functioning or life safety. While inconvenient, loss or damage to asset does not impair community operatons.

Asset Type	Criticality	Criticality Numerical Score
Colleges and Universities	M	0.67
Community Centers	M	0.67
Water Mains	M	0.67
Correctional Facilities	M	0.67
Disaster Recovery Centers	H	1
Emergency Medical Service Facilities	H	1
Emergency Operation Centers	H	1
Fire Stations	H	1
Gravity Mains	M	0.67
Healthcare Facilities	H	1
Hospitals	H	1
Law Enforcement Facilities	H	1
Local Government Facilities	H	1
Logistical Staging Areas	M	0.67
Risk Shelter Inventories	H	1
Schools	M	0.67
State Government Facilities	H	1
Communications Facilities	H	1
Disaster Debris Management Sites	H	1
Drinking Water Facilities	H	1
Electric Production and Supply Facilities	H	1
Solid and Hazardous Waste Facilities	M	0.67
Stormwater Treatment Facilities and Pump Stations	H	1
Wastewater Treatment Facilities and Lift Stations	H	1
Water Utility Conveyance	H	1
Airports	H	1
Bridges	H	1
Bus Terminals	M	0.67
Marinas	L	0.33
Railroads	M	0.67
Retention Ponds	M	0.67
Roads	H	1
Surface Water	N/A	0
Water System	N/A	0
Military Installations	N/A	0
Conservation Lands	M	0.67
Parks - polygons	L	0.33
Parks - points	L	0.33
Wetlands	M	0.67
Shorelines	M	0.67

Criticality	Criteria
H	Asset is critical for health and safety, critical services, government operations, or supports evacuation/shelters.
M	Asset supports everyday community activities
L	Asset is not essential for community functioning or life safety. While inconvenient, loss or damage to asset does not impair community operatons.

Appendix F

City of Destin Vulnerability Assessment and Adaptation Plan

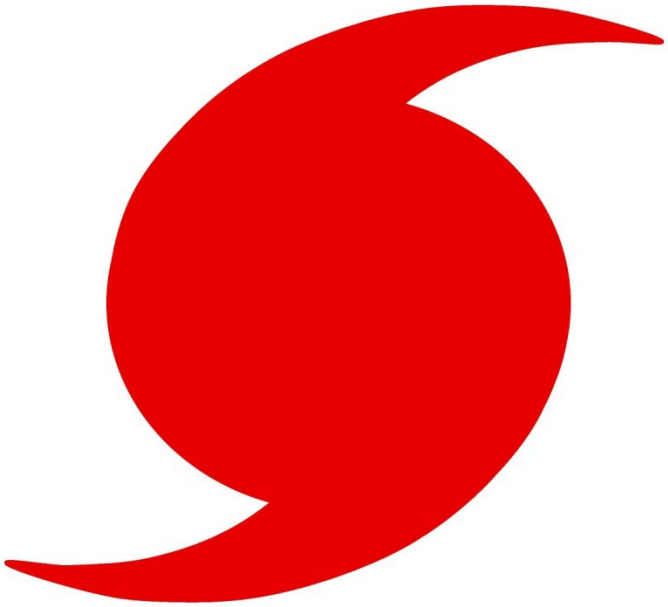


EXHIBIT F

DEP AGREEMENT NO. 23PLN64

CITY OF DESTIN

COMPREHENSIVE VULNERABILITY ASSESSMENT AND ADAPTATION PLAN

Okaloosa County

Final Project Report

May 2025

This report is funded in part through a grant agreement from the Florida Department of Environmental Protection. The views, statements, findings, conclusions, and recommendations expressed herein are those of the author(s) and do not necessarily reflect the views of the State of Florida or any of its subagencies.

Part I. Executive Summary

The City of Destin, located in the northwestern portion of the Florida Panhandle, spans approximately 8.74 square miles (or 4,825 acres) along the Gulf of Mexico. This coastal city is home to about 14,200 permanent residents and serves as a major tourism hub, attracting millions of visitors annually. Destin's way of life is tied to the water, but with terrain consisting of low-lying areas, coastal floodplains, and barrier island formations, water can be a source of both value and risk.

The city's geographic location and coastal topography make it particularly vulnerable to flooding from extreme weather events, including hurricanes and heavy rainfall. Destin has experienced multiple severe storms in recent years, with the frequency and intensity surpassing historical averages. While Hurricane Michael in 2018 primarily devastated community's further east, Destin has endured significant impacts from other major storms, including Hurricane Sally in 2020. Sally brought prolonged heavy rainfall and storm surge, causing widespread damage to homes, businesses, and infrastructure. The storm resulted in significant beach erosion, severely impacting critical dune systems and protective coastal barriers. Local businesses, particularly those dependent on tourism and waterfront access, faced extended closures due to property damage, power outages, and disruptions to the local economy. The city's marina facilities, boardwalks, and public spaces suffered significant losses, further straining recovery efforts.

The Vulnerability Assessment (VA) study assessed Coastal, Compound, and Pluvial flood impacts of all critical assets during current conditions and future extreme rainstorm events / Sea Level Rise (SLR) scenarios for years 2040 and 2070. The Adaptation plan identified adaptation capacities prioritized critical assets identified in the VA study that were most critical to protect, and identified projects to incorporate mitigation measures that will protect such assets.

Part II. Methodology

The process to complete the vulnerability assessment consists of four key technical steps:

1. The team created an inventory of critical and regionally significant assets primarily owned and/or maintained by the City of Destin. This task involved collecting geospatial data related to transportation assets and evacuation routes; critical infrastructure assets; community and emergency facilities; and natural, cultural, and historical assets.
2. The team used topographic and climate data to model potential flood events. This included modeling the depth of flooding that may result from both coastal and rainfall flood hazard sources. Flood exposure was evaluated for both current and future flood conditions under multiple climate change scenarios.
3. The results of the exposure analysis were combined with the asset inventory to evaluate how assets are likely to be impacted by flooding as well as their susceptibility to damage or disruption. Metrics like flood depth and area were used to assign vulnerability scores to individual assets and critical infrastructure systems.
4. In collaboration with City stakeholders, the vulnerability assessment results were used to identify important areas or clusters of highly vulnerable assets. These focus areas incorporate

community preferences and will be prioritized for the development of adaptation projects and actions.

Following the completion of this vulnerability assessment, an adaptation planning process will commence to lay out specific strategies and actions to reduce flood risk and adapt to long-term environmental changes.

Public outreach and stakeholder engagement were also essential throughout the process of developing the vulnerability analysis. Collaboration began with a kickoff meeting in October of 2023 with key staff and stakeholders. In November of 2023, stakeholders, City Staff, community representatives, and general members of the public gathered to discuss the project's progress and to lay the groundwork for asset prioritization, data collection efforts, and future public meetings. Critical asset data was obtained from various credible data sources for the City of Destin. Critical assets were compiled into a file geodatabase feature class containing point, line, and polygon features with the same geometric shapes. All data was projected into the appropriate Florida State Plan Coordinate system. Data Critical asset data was sourced from federal, state, and local sources.

Meetings and coordination via with the City allowed for first-hand knowledge transfer of critical asset data not originally identified in the source used. Additions and modifications to the dataset were made to the database as a result of this coordination. Significant modifications to private historical assets were made in each community, as several assets were private residences that did not have any specific community-wide use or purpose and were therefore not deemed a critical asset to the municipality.

Future rainfall data for Pluvial Analysis was derived from the University of South Florida's (USF) Flood Hub rainfall change factor dataset, available through the USGS open-source data portal. Per Section 380.093, Florida States, "to the extent practicable, rainfall analysis will be conducted….for coastal communities," extreme rainfall analysis for this study will be conducted for the 1% AEP event and not the 0.2% AEP event.

Sea Level Rise (SLR) scenarios will be identified for the community using the U.S. Army Corps of Engineers (USACE) Sea Level Analysis Tool (SLAT, USACE 2024). Scenarios for the NOAA 2017 projections for 2040 and 2070 will be used. Per the guidance, at least two National Oceanic and Atmospheric Administration (NOAA) long-term water level stations will be reviewed to gather and establish appropriate SLR scenarios for Destin. These include the Panama City (8729108) and Pensacola (8729840) locations, which are about 49 and 44 miles from the center of Destin, respectively. An initial review of the values shows that projections are similar at both locations, with the largest difference being less than 0.15 ft. Given the minimal difference, it is anticipated that interpolation is unnecessary; values may be simply averaged, or the Pensacola station may be used as the representative value as it has a more extended period of record (101 years versus 51 years at Panama City).

Tidal elevations for mean higher high water (MHHW) elevation across the study area will be sourced from the NOAA Office of Coastal Management Inundation Mapping Tidal Surfaces for Mean Higher High Water (MHHW, NOAA 2019). This produce provides a spatially continuous representation of MHHW derived from the VDatum tidal datum tool in meters relative to NAVD88. The surface will be converted to feet and validated against NOAA-published MHHW datum elevations in Pensacola and Panama City before use. This surface will be used along with the required two-foot threshold established by DEP to create an MHHW elevation and depth product for existing conditions and each

SLR scenario. The NOAA Inundation Analysis Tool will be used with the scenario-specific threshold tidal elevations to calculate tidal flood days for each scenario for select locations in the community.

To establish the scenario values, staff have also retrieved sea level rise projections from the US Army Corps of Engineers Sea Level Analysis Tool (SLAT). Per the statute requirements, projections were retrieved from the two closest National Oceanic and Atmospheric Administration (NOAA) long-term water levels to Destin, FL. The Panama City (8729108) and Pensacola (8729840) locations were identified as the two closest stations, which are about 49 and 44 miles from the center of Destin, respectively. Values for the NOAA 2017 projections, for the intermediate-low and intermediate-high scenarios are shown in the below table. Values for both stations were similar; however, the Pensacola gauge was selected as the source for the scenarios as it had the higher Mean Sea Level datum, also the longer record of sea level trends in the region of the study.

Current storm surge elevations for the 100-year and 500-year flood events will be sourced from the Federal Emergency Management Agency. Dewberry has sourced the storm surge stillwater elevation surfaces from the Technical Support Data Notebook for the latest Flood Insurance Study for Okaloosa County (FEMA 2021), which includes the City of Destin. These surfaces provide a spatially continuous surge and wave setup elevation that defines the boundaries of the official FEMA floodplain delineations as shown on the latest Flood Insurance Rate Maps. The sea level rise scenarios will be added to these surfaces. Next, the future floodplains and depth grids will be generated by analysis from the study DEM through a proprietary mapping toolbox created for FEMA, state, and community floodplain mapping applications.

Part III. Outcome

1. Projects' Ability to Meeting Goals, Expected Performance Measures and Quantifiable Metrics

This planning study successfully identified critical assets and asset groups (Focus Areas) most vulnerable to flooding and tidal surge in current and future time horizons for the 1% and 0.2% Annual Exceedance Probability Events for Years 2040 and 2070. All floodplains for each storm scenario were mapped in Geospatial software compatible with ESRI mapping products and are available for public consumption.

The study's quantifiable metrics included overall flood depths based on time horizon and flood scenario, as well as asset vulnerability. Vulnerability scores were categorized into classes ranging from no exposure to high exposure.

The Adaptation Plan also successfully met the goals and performance measures of the grant requirements by identifying adaptive capacities and needs of the community, and prioritized projects that are feasible to protect the most vulnerable and critical assets at risk.

2. Successful Outcomes

The city is better positioned and now in compliance with Section 380.093, Florida Statute, to receive funding under the Resilient Florida Implementation Grant Program for Design and Construction of mitigation projects, as well as multiple other programs through Federal Programs that require the completion of a Vulnerability Assessment to apply for design and construction funding.

Walton County Local Mitigation Strategy (LMS) Working Group is incorporating the City of Destin VA Report as a reference in the next update/iteration of the LMS Plan. Walton County LMS is utilizing the City of Destin VA Report in the next five (5) year-update planning process; and as an appendix to the Countywide LMS Plan.

The City also has an improved, updated list of projects that are focused on flood mitigation from stakeholder and City staff input.

3. Areas for Improvement

Future updates to this study will use available statewide data if it is published by the Florida Flood Hub in time for flood exposure analysis. As funding becomes available, an additional field survey of key prioritized assets is also recommended. The City may also choose to expand planning and conceptual design of prioritized projects in the Adaptation Plan, and expansion of siting conceptual mitigation strategies for stormwater master planning

Part IV. Further Recommendations

While the Resilient Florida Program provides significant guidance and standards for planning studies, future studies would benefit from more consistent standards in the development of flood raster data and improved consistency of vulnerability categories so that the state may be able to score and consider projects to be funded for design and construction with similar metrics.

Since 2024, the state and Program have begun deploying consistent statewide data for the consulting community. Program staff have taken significant measures to improve consistency in the approach for local studies, as the program has significantly evolved and matured in the past three years.

The Resilient Florida program should continue to be a prioritized, funded program for critical asset data collection and a source of funding for local communities to plan for future storm conditions. It has proven to provide a key resource for organizing and evaluating future hazards that may impact the overall health and economy of the city.

Dewberry



City of Destin, FL

Vulnerability Assessment

March 2025

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Introduction

The City of Destin, located in the northwestern portion of the Florida Panhandle, spans approximately 8.74 square miles (or 4,825 acres) along the Gulf of Mexico. This coastal city is home to about 14,200 permanent residents and serves as a major tourism hub, attracting millions of visitors annually. Destin's way of life is tied to the water, but with terrain consisting of low-lying areas, coastal floodplains, and barrier island formations, water can be a source of both value and risk.

The city's geographic location and coastal topography make it particularly vulnerable to flooding from extreme weather events, including hurricanes and heavy rainfall. Destin has experienced multiple severe storms in recent years, with the frequency and intensity surpassing historical averages. While Hurricane Michael in 2018 primarily devastated communities further east, Destin has endured significant impacts from other major storms, including Hurricane Sally in 2020. Sally brought prolonged heavy rainfall and storm surge, causing widespread damage to homes, businesses, and infrastructure. The storm resulted in significant beach erosion, severely impacting critical dune systems and protective coastal barriers. Local businesses, particularly those dependent on tourism and waterfront access, faced extended closures due to property damage, power outages, and disruptions to the local economy. The city's marina facilities, boardwalks, and public spaces suffered significant losses, further straining recovery efforts.

In recognition of the adverse impacts of flooding and sea level rise on communities all across the state, the Florida legislature has taken action to build local and regional resilience to flooding. This includes establishing the Resilient Florida Grant Program, which has provided funding for the City of Destin to conduct a Comprehensive Vulnerability Assessment. These foundational questions drive the vulnerability assessment:

1. What are the essential data on critical assets and flood risks to inform the City's decisions
2. Where are flood risks the greatest, and how do they change over time?
3. Where are current and future flooding impacts expected throughout the City, and where should action be taken?
4. Where should infrastructure investment decisions be made to mitigate current and future flood risks to critical City assets?

This report focuses on vulnerability assessments, which lay the foundation for adaptation planning to increase flood resilience by understanding what's at risk and where to focus risk-mitigating actions.

Process Overview



Figure 1. Illustration of the technical stages of the vulnerability assessment and adaptation planning process.

The process to complete the vulnerability assessment consists of four key technical steps:

1. The team created an inventory of critical and regionally significant assets primarily owned and/or maintained by the City of Destin. This task involved collecting geospatial data related to transportation assets and evacuation routes; critical infrastructure assets; community and emergency facilities; and natural, cultural, and historical assets.

2. The team used topographic and climate data to model potential flood events. This included modeling the depth of flooding that may result from both coastal and rainfall flood hazard sources. Flood exposure was evaluated for both current and future flood conditions under multiple climate change scenarios.

3. The results of the exposure analysis were combined with the asset inventory to evaluate how assets are likely to be impacted by flooding as well as their susceptibility to damage or disruption. Metrics like flood depth and area were used to assign vulnerability scores to individual assets and critical infrastructure systems.

4. In collaboration with City stakeholders, the vulnerability assessment results were used to identify important areas or clusters of highly vulnerable assets. These focus areas incorporate community preferences and will be prioritized for the development of adaptation projects and actions.

Following the completion of this vulnerability assessment, an adaptation planning process will commence to lay out specific strategies and actions to reduce flood risk and adapt to long-term environmental changes.

Public outreach and stakeholder engagement were also essential throughout the process of developing the vulnerability analysis. Collaboration began with a kickoff meeting in October of 2023 with key staff and stakeholders. In November of 2023, stakeholders, City Staff, community representatives, and general members of the public gathered to discuss the project's progress and to lay the groundwork for asset prioritization, data collection efforts, and future public meetings.

Critical Asset Inventory

Critical and regionally significant assets are those essential for the city's functioning and provision of public services. They include community and emergency facilities, critical infrastructure, natural, cultural, and historical resources, and transportation assets.



Critical community and emergency facilities include schools, colleges, universities, community centers, correctional facilities, disaster recovery centers, emergency medical service facilities, emergency operation centers, fire stations, health care facilities, hospitals, law enforcement facilities, local government facilities, logistical staging areas, affordable public housing, risk shelter inventory, and state government facilities.



Critical infrastructure includes wastewater treatment facilities and lift stations, stormwater treatment facilities and pump stations, drinking water facilities, water utility conveyance systems, electric production and supply facilities, solid and hazardous waste facilities, military installations, communications facilities, and disaster debris management sites.



Natural, cultural, and historical resources include conservation lands, parks, shorelines, surface waters, wetlands, and historical and cultural assets.



Transportation assets include airports, bridges, bus terminals, evacuation routes, ports, major roadways, marinas, rail facilities, and railroad bridges.

The first step in the vulnerability assessment process was collecting data to accurately identify and map these assets. Note this effort focuses on community-owned and maintained assets and infrastructure rather than private property and residences.

Data to create the Asset Inventory was sourced from federal, state, and local sources. Sources included the Florida Department of Transportation (FDOT), Florida Department of Emergency Management (FDEM), Florida Geographic Data Library (FGDL), U.S. Department of Urban Development (US HUD); Florida Natural Areas Inventory (FNAI), Florida Fish and Wildlife Conservation Commission (FWC); Florida Department of Environmental Protection (FDEP); and the Northwest Florida Water Management

District (NWFWMD). Critical assets were compiled into a file geodatabase feature classes containing point, line, and polygon features with the same geometric shapes. The project team undertook a large data cleanup task of the compiled dataset to ensure the accuracy and conformance of the database in alignment with Florida's GIS Data Standards. More information about data collection and inventory processes can be found in the Data Collection and Data Gap Analysis Technical Memorandum.

In total, 295 critical assets were identified, comprising 28 unique asset types (Table 1). The assets are organized into classes which were used as part of the sensitivity analysis presented later in this report.

Table 1. Summary and count of critical assets by class and type.

Asset Class	Asset Type	Count of Assets
Transportation and Evacuation Routes	Major Roadways	33
	Bridges	4
	Airports	18
	Marinas (Boat Ramp)	2
Natural, Cultural, and Historical Resources	Surface Waters	48
	Parks	36
	Historical and Cultural Assets	3
	Cemeteries	2
	Natural Dunes	2
	Wetlands	1
Critical Infrastructure	Communications Facilities	78
	Drinking Water Facilities	8
	Electric Production and Supply Facilities	3
	Wastewater Treatment Facilities and Lift Stations	3
	Disaster Debris Management Sites	1
	Stormwater Treatment Facilities and Pump Stations	3
	Shorelines (Breakwater)	3
	Major Traffic Signals	20
	Water Utility Conveyance Systems	2
	Military Installations	1
Community and Emergency Facilities	Fire Stations	3
	Health Care Facilities	1
	Local Government Facilities	7
	Community Centers	7
	Law Enforcement Facilities	1
	Schools	3
	Risk Shelter Inventory	1
	Emergency Medical Service Facilities	1

Meetings and coordination with the City of Destin allowed for first-hand knowledge transfer of critical asset data not originally identified. Additions and modifications were made to the database because of this coordination. The following list contains recommendations for the City to further refine the critical asset dataset in the future, for use during study updates.

1. Continue to consult across City staff to identify planned or newly constructed critical assets.

2. Stay up to date regarding FDEP publicly available critical asset dataset releases.
3. Request and review engineer drawings to verify locations of critical assets and potential impact thresholds.
4. Leverage regional planning councils for additional grant funding opportunities to support ongoing database improvement efforts.
5. Utilize updated available Digital Elevation Model (DEM) elevations to conflate elevations of critical assets as they become available.
6. Add additional impact thresholds for critical assets that are added to the database, as needed, for assets that have multiple impact thresholds. Survey impact thresholds of most critical assets when possible.
7. Incorporate as-built plan elevation data into the database once new assets are constructed.



Flood Hazard Exposure

Destin experiences multiple sources of flooding, including tidal flooding, storm surge flooding, extreme rainfall flooding, and compound flooding.



Tidal Flooding: Tidal flooding occurs when high tides inundate typically dry areas. As sea levels rise, tidal flooding will become more frequent, reaching further inland. This "sunny-day flooding" or “king tide flooding” may not pose immediate safety risks but can disrupt daily activities and damage infrastructure over time.



Storm Surge Flooding: Coastal storm surge occurs when winds from storms such as hurricanes and tropical storms push ocean waters inland. The height and extent of storm surge depend on factors like wind speed and atmospheric pressure, as well as the shape of the coastline. As sea levels rise, storm surges will likely become more destructive.



Rainfall Flooding: Prolonged or intense rainfall can inundate inland areas when runoff overwhelms natural or built drainage systems, leading to stormwater flooding and ponding. Extreme rainfall events are projected to worsen over time, leading to increased flooding challenges. As sea levels rise, elevated water levels can also impair drainage infrastructure, leading to increased flooding challenges.



Compound Flooding: Compound flooding occurs when extreme high tides or coastal storm surges happen at the same time as intense rainfall. Tidal waters can block stormwater drainage outfalls and even cause water to flow upstream into drainage ditches and pipes, resulting in more widespread flooding in both coastal and inland areas.

The exposure analysis considered these various flood processes separately. Each hazard was evaluated for both existing and future conditions, considering projected sea level rise and precipitation patterns for the 2040 and 2070 time horizons.

The following subsections provide a high-level summary of analysis methods and results. Additional technical details regarding all elements of the flood exposure analysis can be found in the Exposure and Sensitivity Analysis Technical Memorandum.

Future Climate Projections

Sea Level Rise

Projections around the magnitude and rate of sea level rise affect tidal, storm surge, and compound flood modeling. This study used coastal water elevation data from the National Oceanic and Atmospheric Administration (NOAA) and sea level rise projections from NOAA's Pensacola tide station, which is 44 miles from the center of Destin and has a record of over 100 years of sea level rise trends in the region. NOAA reports that sea level increased by 0.5 ft in the eastern Gulf region from 1993-2020. Both NOAA's intermediate-low and intermediate-high sea level rise scenarios were assessed, representing a moderate range of plausible outcomes, accounting for uncertainty around carbon emissions and other climate change factors. Sea level rise projections used in this effort are presented in Figure 2 and Table 2.

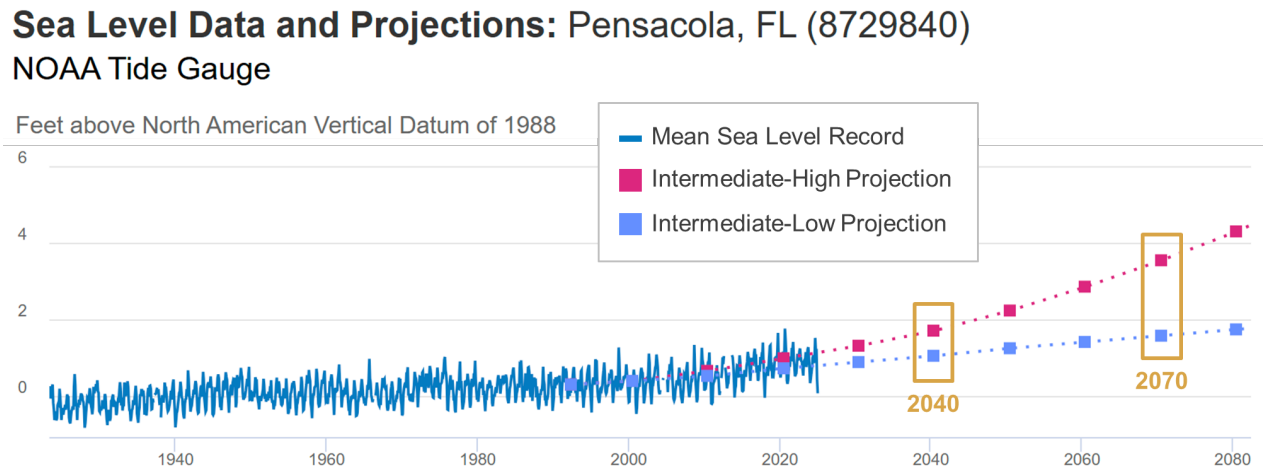


Figure 2. Historical record of sea levels and projected sea level trends at the Pensacola, FL tide gauge based on NOAA's intermediate-low and intermediate-high sea level rise projections. *Source: climate.sec.usace.army.mil/slat/.*

Table 2. Sea level rise projections used in the study.

Time Horizon	Sea Level Rise Scenario	Sea Level Change
Present Day	-	-
2040	Intermediate-Low	+ 0.8 ft
	Intermediate-High	+ 1.4 ft
2070	Intermediate-Low	+ 1.3 ft
	Intermediate-High	+ 3.2 ft

Historical observations have already shown increasing sea levels. If the linear trend from 1992 to 2025 is extrapolated out to 2040 and 2070, it provides for increases of 1 and 1.6 ft, respectively. These values are above the Intermediate-Low curve, which suggests that Destin should plan for the Intermediate or Intermediate-High scenario. For simplicity in this report, intermediate-high sea level rise projection is most often highlighted to show the potential impacts of more significant changes, but all assessed scenarios are included in the Exposure and Sensitivity Analysis Technical Memorandum.

Rainfall Patterns

According to climate change projections, North Florida is expected to see a slight to moderate increase in overall precipitation due to warmer temperatures and shifting weather patterns. This affects both

rainfall and compound flood types. This study used climate modeling from the National Aeronautics and Space Administration (NASA) and a higher-range climate scenario (known as SSP585), which represents projected rainfall changes under a high emissions condition with limited climate actions, leading to more significant rainfall changes.

Table 3 shows the rainfall values used in this study for both present and projected future scenarios. Modeling for rainfall and compound flooding focus on the 1% Annual Exceedance Probability (1% AEP) event—this represents a flood that has a 1% probability of occurring in any given year, also known as the "100-year flood."

Table 3. Change in rainfall depths for the 1% AEP 25-hour rainfall event in Destin, based on SSP585 projections.

Time Horizon	Rainfall Depth for 24-hour 1% AEP Event	Rainfall Change Factor
Present Day	16 inches	-
2040	18.08 inches	+13%
2070	19.36 inches	+21%

Flood Modeling

Tidal Flooding

Tidewaters have the potential to inundate normally dry land and assets. Tides are impacted by gravitational forces from the moon and sun, currents, and temperatures, and so tidal elevations fluctuate day to day and throughout the year. The elevation of the average daily high tide is known as Mean Higher High Water (MHHW). Given that spring and annual "king" tides can be greater than MHHW, notable tidal flooding events are defined for this study as when coastal waters exceed the threshold of 2 ft above mean higher high water. As sea levels rise, high tides will rise and move farther inland, increasing the risk of seasonal and daily tidal flooding.

To assess the potential for tidal flood exposure in Destin, elevations for MHHW across the study area were sourced from NOAA's Office of Coastal Management Inundation Mapping, and then an additional 2 feet was to meet FDEP guidance requirements. Five raster surfaces were created to represent the extents and depths of MHHW + 2 ft in each planning sea level scenario. A summary of the area covered in each scenario is presented in Table 4. In the most extreme scenario assessed (the 2070 intermediate-high scenario, shown in Figure 3), modeling shows the tidal floodplain would expand by nearly 300 acres compared to current conditions.

Table 4. Extent of the study area covered by the tidal floodplain (represented by MHHW + 2 ft) in each planning scenario.

Time Horizon	Sea Level Rise Scenario	Area Inundated (Acres)	Area Flooded (Percent)
Present Day	-	588	12%
2040	Intermediate-Low	595	12%
	Intermediate-High	648	13%
2070	Intermediate-Low	639	13%
	Intermediate-High	887	18%

Flood Depth – Tidal Flooding (MHHW + 2 ft), 2070 Intermediate-High Sea Level Rise Scenario

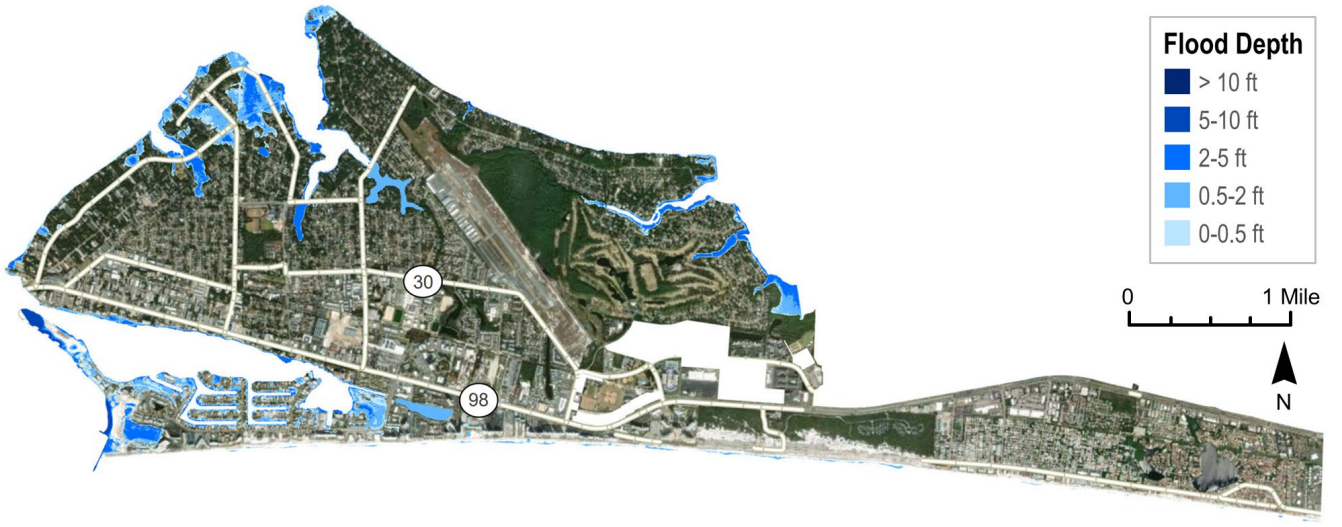


Figure 3. Modeled depth and extent of the tidal floodplain in the 2070 intermediate-high scenario.

In addition to this mapping, the study team estimated the amount of time in a given year that the tidal flooding would occur in a given year based on current and projected future conditions. Using NOAA's Inundation Analysis Tool, which leverages historical tidal elevation data, the analysis calculated how many hours per year tidal waters are likely to exceed the present-day MHHW + 2 ft threshold. The results of this analysis are presented in

Table 5 and indicate that while tidal flooding is a relatively rare occurrence today, it is likely to increase in frequency and duration as sea levels rise, particularly in areas around Joes Bayou and Destin Harbor.

Table 5. Estimated duration of tidal flooding (defined as water levels above current MHHW + 2 ft) per year.

Time Horizon	Sea Level Rise Scenario	Duration Per Year (Time)	Duration Per Year (Percent)
Present Day	-	96.5 hours (~4 days)	1%
2040	Intermediate-Low	146.1 hours (~6 days)	2%
	Intermediate-High	1126.5 hours (~days)	13%
2070	Intermediate-Low	850.1 hours (~35 days)	10%
	Intermediate-High	8430.7 hours (~351 days)	96%

Storm Surge Flooding

Coastal storm surge occurs when winds from a major storm push coastal waters inland. For this study, the 1% AEP coastal storm event was the focus of storm surge modeling. As part of the flood modeling process, storm surge elevations consisting of spatially varied water surface data were sourced from the Federal Emergency Management Agency (FEMA). The study team then created floodplains and depth grids for each sea level rise scenario by adding the respective values to the current conditions surface.

Between 27% to 37% of the city is expected to be inundated in any modeled storm surge scenario. As highlighted by the most extreme storm surge event analyzed, (the 2070 intermediate-high scenario, shown in Figure 4), areas around Choctawhatchee Bay and South of Destin Harbor are most exposed to storm surge flooding.

Table 6. Extent of the study area covered by the 1% AEP storm surge floodplain in each future planning scenario.

Time Horizon	Sea Level Rise Scenario	Area Inundated (Acres)	Area Flooded (Percent)
2040	Intermediate-Low	1,281	27%
	Intermediate-High	1,400	29%
2070	Intermediate-Low	1,385	29%
	Intermediate-High	1,780	37%

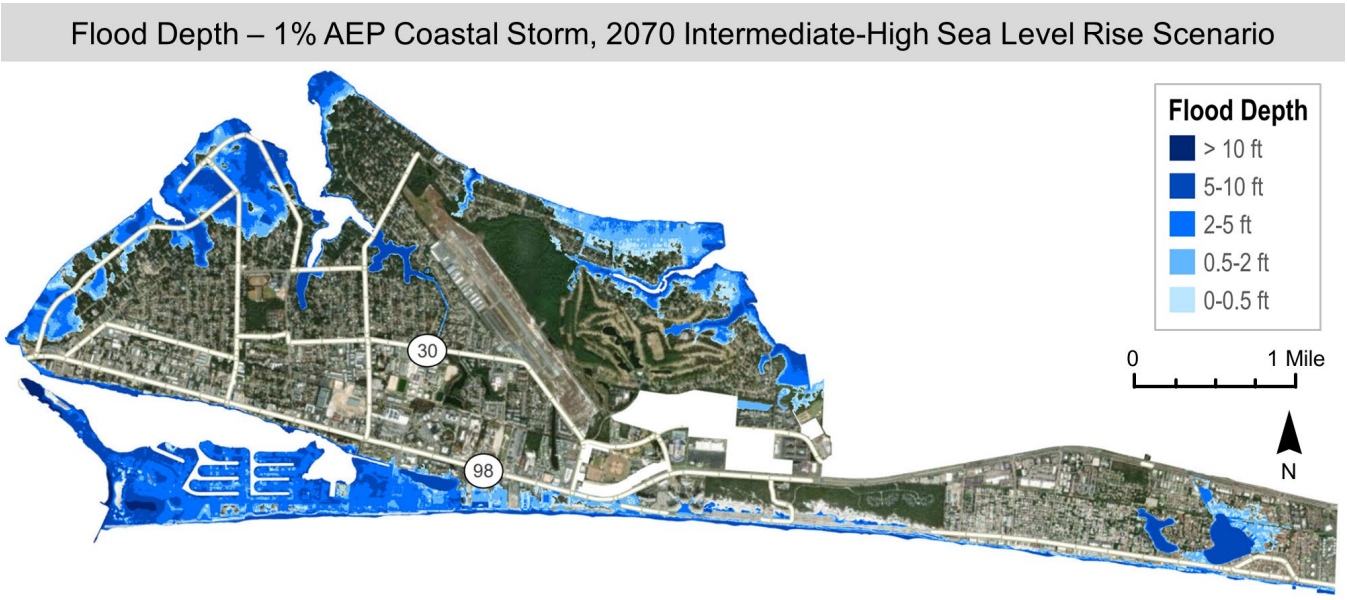


Figure 4. Modeled depth and extent of the 1% AEP storm surge floodplain in the 2070 intermediate-high scenario.

Rainfall Flooding

Extreme rainfall events can overwhelm natural and man-made drainage systems, leading to inland flooding. In order to understand the city's exposure to rainfall-driven flooding, the study team used HEC-RAS (Hydrologic Engineering Center's River Analysis System) software to simulate rainfall-driven water flow across the terrains. Similar to coastal storm surge flooding, this modeling also focused on the 1% AEP rainfall event over a 24-hour period of time. Rainfall data used to model flooding in the present-day scenario was sourced from NOAA's Atlas 14, future rainfall depths informed by NASA projections (as explained in the Rainfall Patterns section above), and rainfall accumulation patterns followed guidance from the National Engineering Handbook.

Between 29% and 35% of the city is expected to be inundated in any given rainfall-driven flood scenario. While tidal and storm surge flooding is concentrated on the coasts, rainfall-driven flooding is present throughout the city, including very inland areas. However, while more widespread, this type of flooding is generally less deep than storm surge flooding. In the most extreme rainfall-driven event analyzed (the 2070 scenario, shown in Figure 5), most modeled flooding is less than 2 ft deep.

Table 7. Extent of the study area covered by the 24-hour 1% AEP rainfall-driven floodplain in each planning scenario.

Time Horizon	Area Inundated (Acres)	Area Flooded (Percent)
Present Day	1,404	29%
2040	1,545	32%
2070	1,703	35%

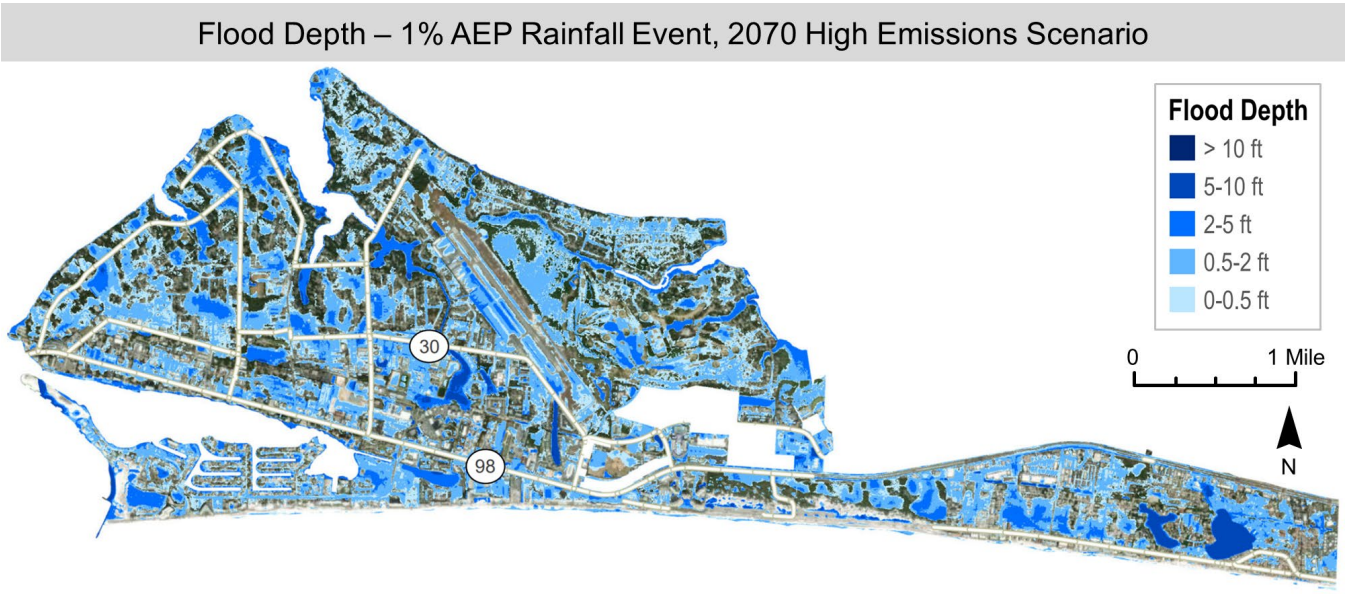


Figure 5. Modeled depth and extent of the 24-hour 1% AEP rainfall-driven floodplain in 2070.

Compound Flooding

Major storms often bring wind, high tides, and significant rainfall, so compound flooding was also assessed. Specifically, this study focused on what would occur if peak runoff from a 24-hour 1% AEP rainfall event coincides with peak surge from a 1% AEP coastal storm surge event. This effectively represents a worst-case scenario where both significant flood drivers are present. To model this, water surface elevations resulting in the coastal flood analysis were used as downstream tailwater conditions input into the modeling methods used in the rainfall flooding analysis.

Compound flooding leads to greater area and flood depths than either storm surge or rainfall flooding alone. In the most extreme compound event analyzed (the 2070 intermediate-high scenario, shown in Figure 8), about half the study area is projected to be inundated by flood waters with a wide range of depths.

Table 8. Extent of the study area covered by the 1% AEP compound floodplain in each planning scenario.

Time Horizon	Area Inundated (Acres)	Area Flooded (Percent)
Present Day	1,888	39%
2040	2,171	45%
2070	2,477	51%

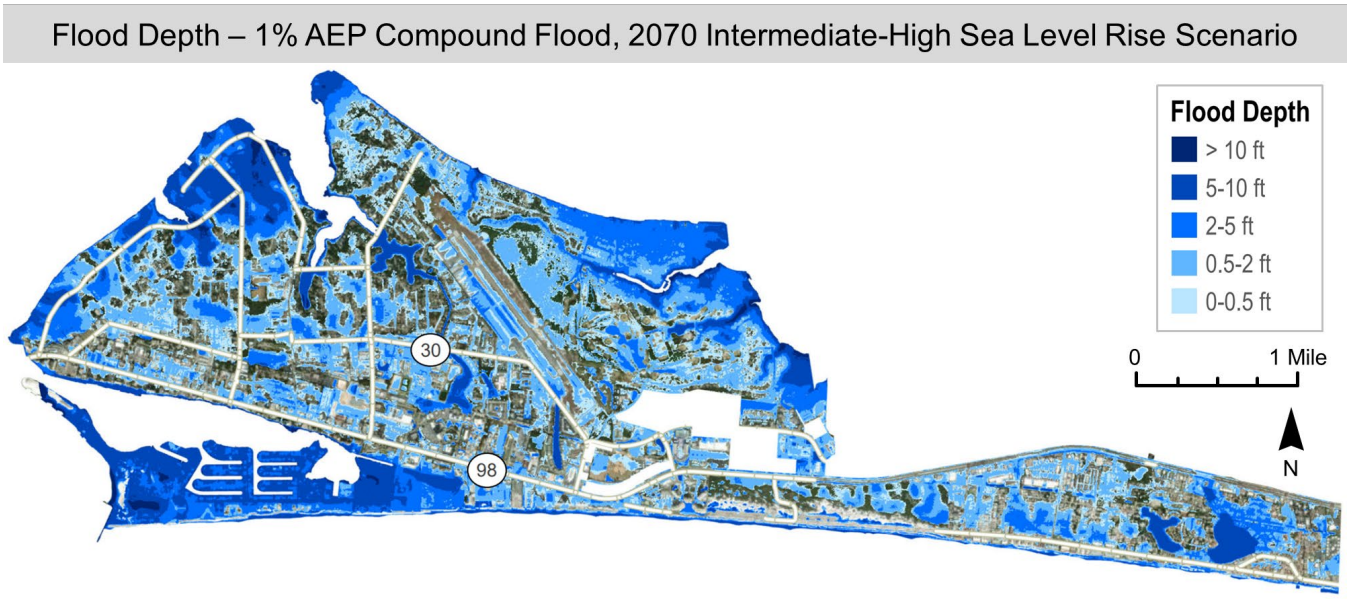


Figure 6. Modeled depth and extent of the 24-hour 1% AEP rainfall-driven floodplain in 2070.



Sensitivity Analysis

The sensitivity analysis aims to evaluate the potential impact of flooding on critical community and regional assets by considering their exposure to flood hazards and susceptibility to damage or disruption. To do this assessment, data from the critical asset inventory was combined with the results of the flood hazard exposure analysis to assess each asset's sensitivity to each modeled flood condition.

Assets were analyzed using different methods based on their geometry type in the geospatial database:

1. Point assets (such as buildings) were evaluated based on relative flood depth in feet.
2. Line assets (such as roads) were assessed based on the length of the asset in miles exposed to flooding above a disruptive threshold of 6 inches.
3. Area assets (such as parks) were analyzed based on the flooded area in acres above a disruptive threshold of 6 inches.

Vulnerability scores were assigned to each asset under each flood scenario based on the ranges presented in Table 9 below. Risk levels for each asset type are then assigned based on the percent of assets affected or the portion of length/area inundated across assets with the same classification, as shown in Table 10.

Table 9. Vulnerability scoring ranges for each asset type.

Vulnerability Score	Point Assets	Linear Assets	Area Assets
High	5+ ft depth	81-100% length exposed (>6 in)	81-100% area exposed (>6 in)
Moderate-High	3 to 5 ft depth	61-80% length exposed (>6 in)	61-80% area exposed (>6 in)
Moderate	1.5 to 3 ft depth	41-60% length exposed (>6 in)	41-60% area exposed (>6 in)
Moderate-Low	0.5 to 1.5 ft depth	21-40% length exposed (>6 in)	21-40% area exposed (>6 in)
Low	>0 to 0.5 ft depth	1-20% length exposed (>6 in)	1-20% area exposed (>6 in)
No Exposure	0 ft depth	0% exposure (>6 in)	0% exposure (>6 in)

Table 10. Risk scoring ranges for each asset type, based off aggregating exposure across assets. These colors correspond to the risk level summary tables below.

Risk Score	Point Assets	Linear Assets	Area Assets
High	81-100% assets exposed	81-100% total length exposed	81-100% total area exposed
Moderate-High	61-80% assets exposed	61-80% total length exposed	61-80% total area exposed
Moderate	41-60% assets exposed	41-60% total length exposed	41-60% total area exposed
Moderate-Low	21-40% assets exposed	21-40% total length exposed	21-40% total area exposed
Low	1-20% assets exposed	1-20% total length exposed	1-20% total area exposed
No Exposure	0% assets exposed	0% total length exposed	0% area exposed

This view of vulnerability helps show that as flood hazards worsen over time, not only will more assets be exposed, but the impact on exposed assets will worsen. Figure 7 graphs the count of point assets exposed to flooding across various event conditions and their associated vulnerability score. As sea levels rise and precipitation patterns change, not only will more assets be exposed to flooding, but floodwaters will deepen, leading to a greater likelihood of asset damage and disruption.

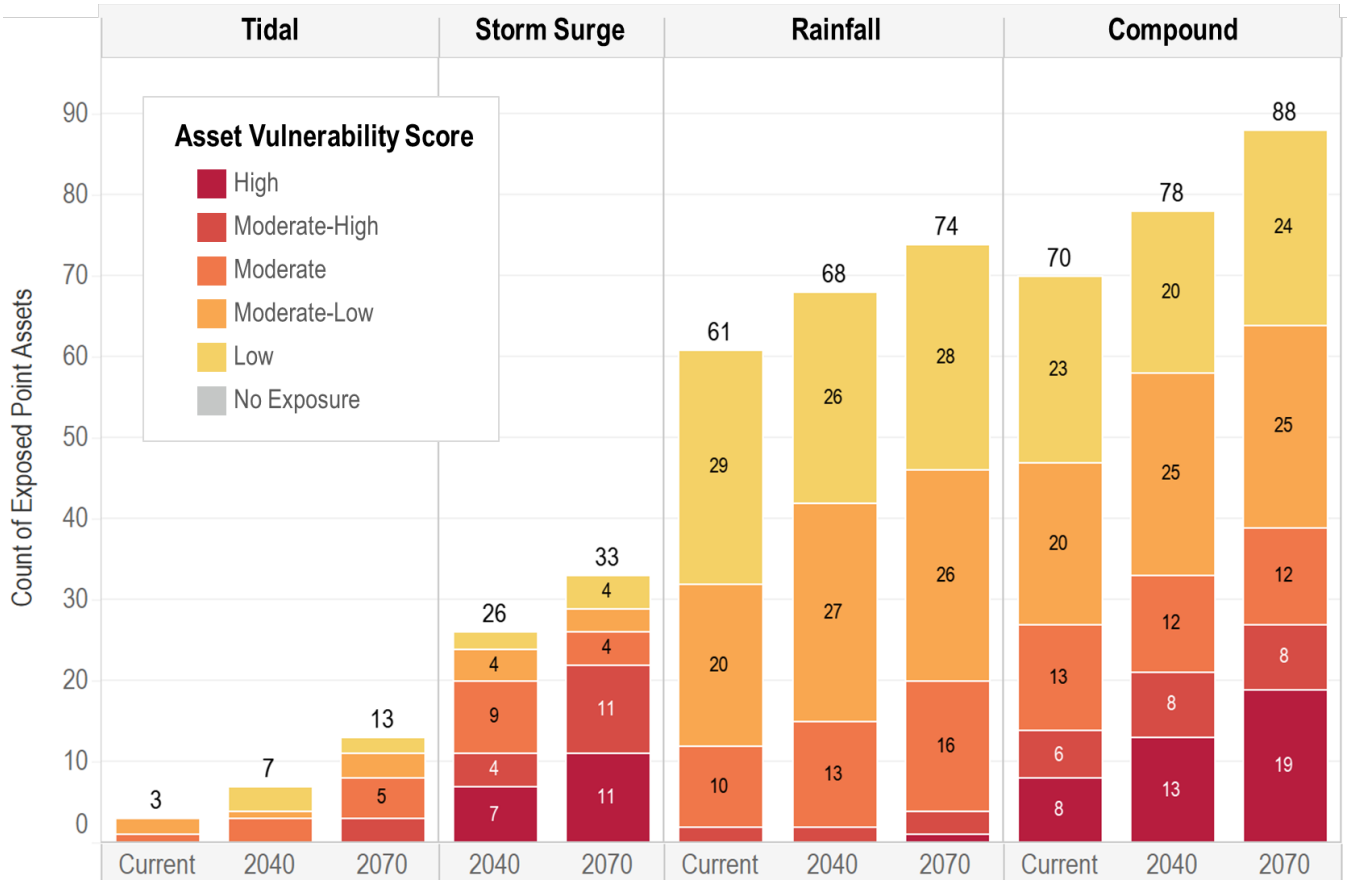


Figure 7. Stacked bar chart showing the count of point assets exposed to flooding across tidal, storm surge, rainfall, and compound flooding types and time horizons. Color indicates depth-based vulnerability score bucket that each exposed asset falls into.

Findings are summarized in the section below by asset class which includes Community and Emergency Facilities; Critical Infrastructure; Natural, Cultural, and Historical Assets; and Transportation Assets.

Results in this section focus on intermediate-high sea level rise projections to illustrate the potential impacts of more significant changes. The maps presented here focus on the 2040 1% AEP compound flood scenario, a moderate-term event that provides a good representation of the range of asset impacts. The Exposure and Sensitivity Analysis Technical Memorandum provides more scenario information as well as asset-specific impact details.

This analysis used high-level metrics and generalized assumptions. As such, results should be considered a preliminary assessment intended to identify areas and assets of concern and prioritize them for further evaluation with input from community stakeholders.

Community and Emergency Facilities

Community and emergency facilities include assets related to community gatherings, shelter, law enforcement, emergency response, healthcare, and government services. These kinds of buildings and areas play a critical role in ensuring the health and safety of residents, both during and outside of emergency situations. Across the City, 23 point-based assets and 2 area-based assets were identified as community and emergency facilities.

Table 11 below shows how each asset type is exposed to flooding across all 1% AEP flood event scenarios. Community and emergency facilities were not modeled to have any impacts from tidal flooding.

Table 11. Storm surge, rainfall, and compound flood asset risk level summary for community and emergency assets during a 1% AEP event across time horizons (using intermediate-high sea level rise projections). For point assets, metrics are count and percent of total assets flooded. For area assets, metrics are total area in acres and percent of total area flooded above 6 inches.

Asset Type	Storm Surge				Rainfall						Compound					
	2040		2070		Current		2040		2070		Current		2040		2070	
Point Assets (count exposed, percent exposed)																
Community Center	0	0%	0	0%	2	29%	2	29%	2	29%	2	29%	2	29%	2	29%
Fire Station	1	33%	1	33%	1	33%	1	33%	1	33%	1	33%	1	33%	1	33%
Schools	0	0%	0	0%	1	33%	1	33%	1	33%	1	33%	0	33%	0	33%
Area Assets (acres exposed, percent exposed)																
Local Gov. Facilities	0	0%	0	0%	0.5	73%	0.6	78%	0.6	78%	0.5	73%	0.6	78%	0.6	78%

One fire station, Station # 19, is impacted by storm surge, rainfall, and compound flooding alike in all time horizons. Two community centers and one school in the City of Destin are exposed to rainfall and compound flooding but with no impacts from coastal flooding. The City Hall Parking Lot is the one area-based community and emergency asset exposed to flooding in a 1% AEP event – flooding in the City Hall Parking Lot is primarily driven rainfall.

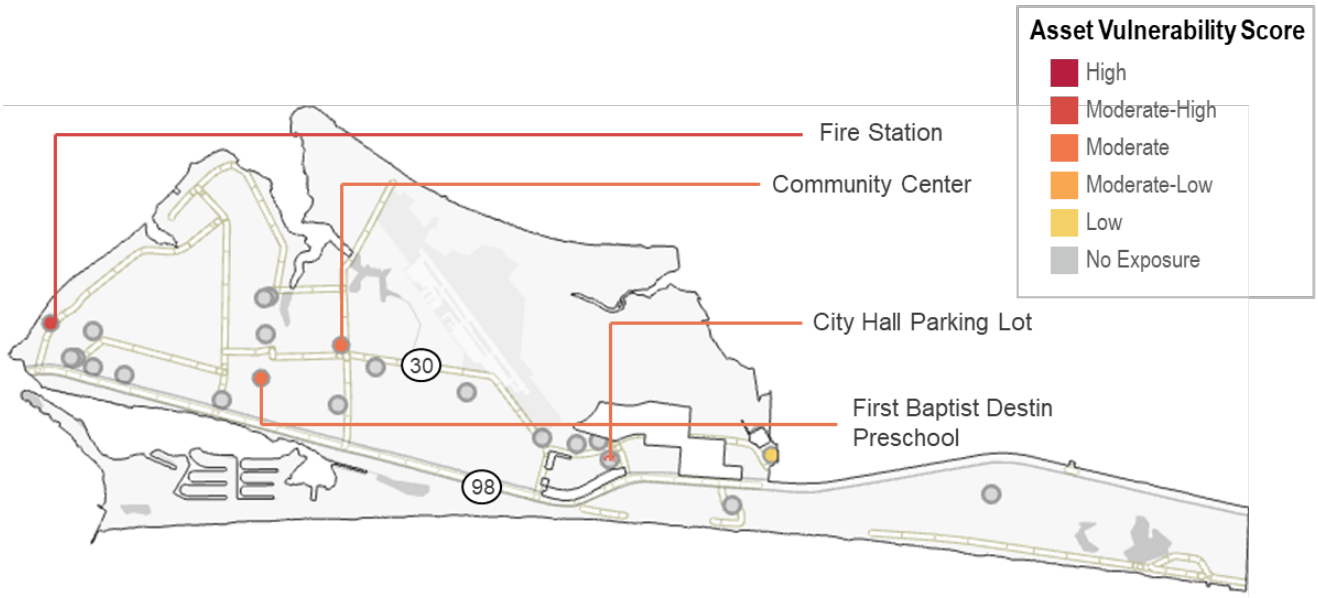


Figure 8. Map of community and emergency facilities asset vulnerability. Scores based on relative depth of flooding during a 2040 1% AEP compound flooding event with select assets labeled.

Community and emergency facility asset vulnerability for compound flooding during a 2040 1% AEP storm event is shown in Figure 8. Compound flooding represents a snapshot of impacts on assets from both coastal and rainfall-driven flooding. Fire Station #19 has the highest rate of exposure among community and emergency assets, with up to 5 ft of flooding during a 1% AEP major storm event, with the flood impacts primarily driven by coastal storm surge flooding. The First Baptist Destin Preschool and the American Legion Post 296 community center both are exposed to flood depths of around 2 ft driven by rainfall during a 1% major storm event, with the Aquatic Center at the YMCA in the City of Destin

exposed to relatively low rainfall-driven flood depths.

Critical Infrastructure

Critical infrastructure includes assets related to communications, energy, traffic navigation, waste management, and water management. These non-building infrastructure networks support all facets of daily life and are considered essential to the smooth functioning and safety of communities. Across the City of Destin, 116 point-based and 6 linear-based critical infrastructure assets were mapped and used in this analysis.

Table 12 shows the extent to which each asset type is exposed to tidal flooding and Table 13 shows exposure to flooding across all 1% AEP event scenarios.

Table 12. Tidal flood asset risk level summary for critical infrastructure assets across time horizons. As point assets, metrics are count and percent of total assets exposed to the MHHW + 2 ft threshold.

Asset Type	Tidal (MHHW + 2 ft)					
	Current		2040		2070	
Point Assets (count exposed, percent exposed)						
Communication Facility	0	0%	1	1%	6	8%
Stormwater Treatment Facility and Pump Station	1	33%	2	67%	3	100%

Table 13. Storm surge, rainfall, and compound flood asset risk level summary for critical infrastructure assets during a 1% AEP event across time horizons. For point assets, metrics are count and percent of total assets flooded. For linear assets, metrics are total length in miles and percent of total length flooded above 6 inches.

Asset Type	Storm Surge				Rainfall						Compound					
	2040		2070		Current		2040		2070		Current		2040		2070	
Point Assets (count exposed, percent exposed)																
Communication Facility	16	21%	21	27%	29	38%	30	39%	33	43%	36	47%	38	49%	45	58%
Drinking Water Facility	0	0%	0	0%	4	50%	4	50%	5	63%	4	50%	4	50%	5	63%
Major Traffic Signal Box	0	0%	1	5%	9	45%	12	60%	13	65%	9	45%	12	60%	13	65%
Military Installation	0	0%	1	100%	0	0%	0	0%	0	0%	0	0%	1	100%	1	100%
Stormwater Treatment	3	100%	3	100%	3	100%	3	100%	3	100%	3	100%	3	100%	3	100%
Wastewater Treatment	0	0%	0	0%	2	67%	2	67%	2	67%	2	67%	2	67%	2	67%
Water Utility Conveyance	0	0%	0	0%	1	50%	1	50%	1	50%	1	50%	1	50%	1	50%
Line Assets (miles exposed, percent exposed)																
Electric Prod. an Supply	0.23	2%	0.53	5%	3.34	34%	3.65	37%	3.84	39%	3.92	40%	3.92	40%	4.29	44%

As seen in Table 12, stormwater treatment facilities and pump stations are impacted by tidal flooding in all time horizons, with all 3 facilities in the City impacted by 2070.

Table 13 shows that in a 1% AEP major storm, the same 3 facilities are impacted in all scenarios by all flood types. While all stormwater treatment facilities and pump stations have impacts from all flood types, the majority of impacts come from coastal flooding, with the Destin Harbor Pump exposed to around 10 ft of flooding by 2070 in a 1% AEP storm surge event.

Communication Facilities are also impacted by tidal flooding in the 2040- and 2070-time horizon, with only one facility impacted in 2040 and up to 6 facilities impacted in 2070. These communication facilities are also impacted during a 1% AEP event by all three flood hazard types. While over 20% of communication facilities in the City of Destin are impacted by storm surge flooding in 2040 and 2070, rainfall-driven flooding impacts close to 40% of communication facilities in all time horizons, including current conditions. That being said, the flood depths these communication facilities are exposed to are, for the most part, higher from coastal flooding than rainfall-driven flooding.

Drinking water facilities, wastewater treatment facilities and lift stations, and water utility conveyance systems are solely impacted by rainfall-driven flooding, while military installations are solely impacted by coastal storm surge flooding in a 1% AEP event.

All major electricity supply power lines have some level of flood exposure across all events. Around a third of the length of all major electric power lines is exposed to at least 6 inches of flooding during all assessed rainfall-driven and compound flood scenarios, while only around 5% of the length is exposed in coastal storm surge scenarios. Their relative susceptibility to floodwaters may vary based on asset design and construction. Shoreline breakwaters were also assessed but not included in the below summary table since, as water-based assets, they are not considered directly sensitive to flood hazards.

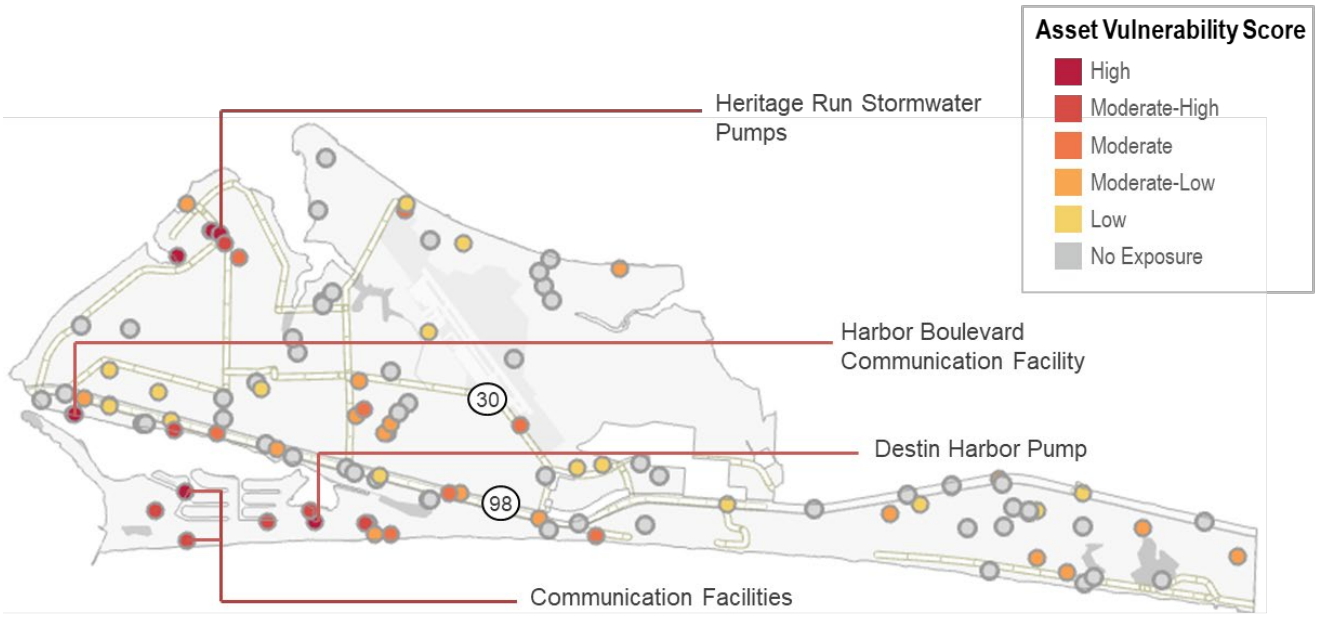


Figure 9. Map of critical infrastructure point-based asset vulnerability. Scores based on relative depth of flooding during a 2040 1% AEP compound flooding event with select assets labeled.

Critical infrastructure asset vulnerability for compound flooding during a 2040 1% AEP storm event is shown in Figure 9. The Destin Harbor Pump is exposed to the highest flood depth, with around 11 ft of

flooding in a 1% AEP event, primarily driven by coastal storm surge flooding. The Heritage Run Stormwater Pumps are other stormwater facilities with high exposure to flooding, with up to around 9 ft of flooding in a compound flood event primarily driven by coastal storm surge flooding. Communication facilities also have high exposure with flood depths up to 8 ft for select communication facilities primarily driven by coastal flooding.

Natural, Cultural, and Historical Resources

Natural, cultural, and historical assets include assets related to recreation, community gathering, and historic preservation. Many natural areas are designed to absorb or redirect floodwaters, but historical and cultural assets may be particularly vulnerable to flood-related damage. Across the City of Destin, 38 area-based polygon assets are considered natural, cultural, and historical assets—36 are parks and 2 are natural dunes. Additionally, 5 point-based assets fall into this category, 3 of which are designated historical assets and 2 of which are cemeteries. Surface water and wetland polygons are also included in this asset class; however, they are not included in these summaries since, as water-based assets, they are not considered directly sensitive to flood hazards.

Table 14 shows the extent to which each asset type is exposed to tidal flooding and Table 15 shows exposure to flooding across all 1% AEP event scenarios.

Table 14. Tidal flood asset risk level summary for natural, cultural, and historical area-based assets across time horizons. As area assets, metrics are total area in acres and percent of total area flooded above 6 inches.

Asset Type	Tidal (MHHW + 2 ft)					
	Current		2040		2070	
Area Assets (acres exposed, percent exposed)						
Park	16.3	14%	20.0	17%	28.2	24%

Table 15. Storm surge, rainfall, compound flood asset risk level summary for natural, cultural, and historical point-based assets during a 1% AEP event across time horizons. For point assets, metrics are count and percent of total assets flooded. For area assets, metrics are total area in acres and percent of total area flooded above 6 inches.

Asset Type	Storm Surge				Rainfall						Compound					
	2040		2070		Current		2040		2070		Current		2040		2070	
Point Assets (count exposed, percent exposed)																
Historical and Cultural	1	33%	1	33%	0	0%	0	0%	0	0%	1	33%	1	33%	1	33%
Cemetery	1	50%	1	50%	1	50%	1	50%	1	50%	1	50%	1	50%	1	50%
Area Assets (acres exposed, percent exposed)																
Park	40.8	35%	46.1	40%	39.6	34%	44.1	38%	50.2	43%	56.5	49%	66.4	57%	70.6	61%
Natural Dune	8.9	12%	20.9	29%	10.0	14%	10.4	15%	10.6	15%	11.6	16%	14.8	21%	20.6	29%
Wetland	0.0	0%	0.0	0%	0.9	100%	0.9	100%	0.9	100%	0.9	100%	0.9	100%	0.9	100%

Parks are the only asset type impacted by tidal flooding, with close to a quarter of the area of parks in the City exposed by 2070. That being said, parks are often designed to absorb floodwaters and are not as sensitive as other asset types may be. Parks are also impacted by storm surge, rainfall, and compound flooding in the 1% AEP major storm event in all assessed time horizons, with up to around 60% of all park area exposed to flooding in a compound 1% AEP flood event by 2070.

Natural infrastructure such as dunes and wetlands also show flood exposure but likely have natural resilience to infrequent flooding that limits their overall vulnerability. Dunes are impacted by storm surge, rainfall, and compound flooding in a 1% AEP flood event, with up to around 30% of all natural dunes exposed by 2070. All of the wetland area in the City is exposed to rainfall and compound flood events during a 1% AEP major storm event, but this is considered a healthy beneficial function as they naturally function to store rainwater and reduce flooding in adjacent areas.

One historical structure is exposed to both storm surge and compound flooding during a 1% AEP event but has no impacts from rainfall-driven flooding. The Destin Memorial Cemetery impacted is exposed to flooding from all sources during a 1% AEP event.

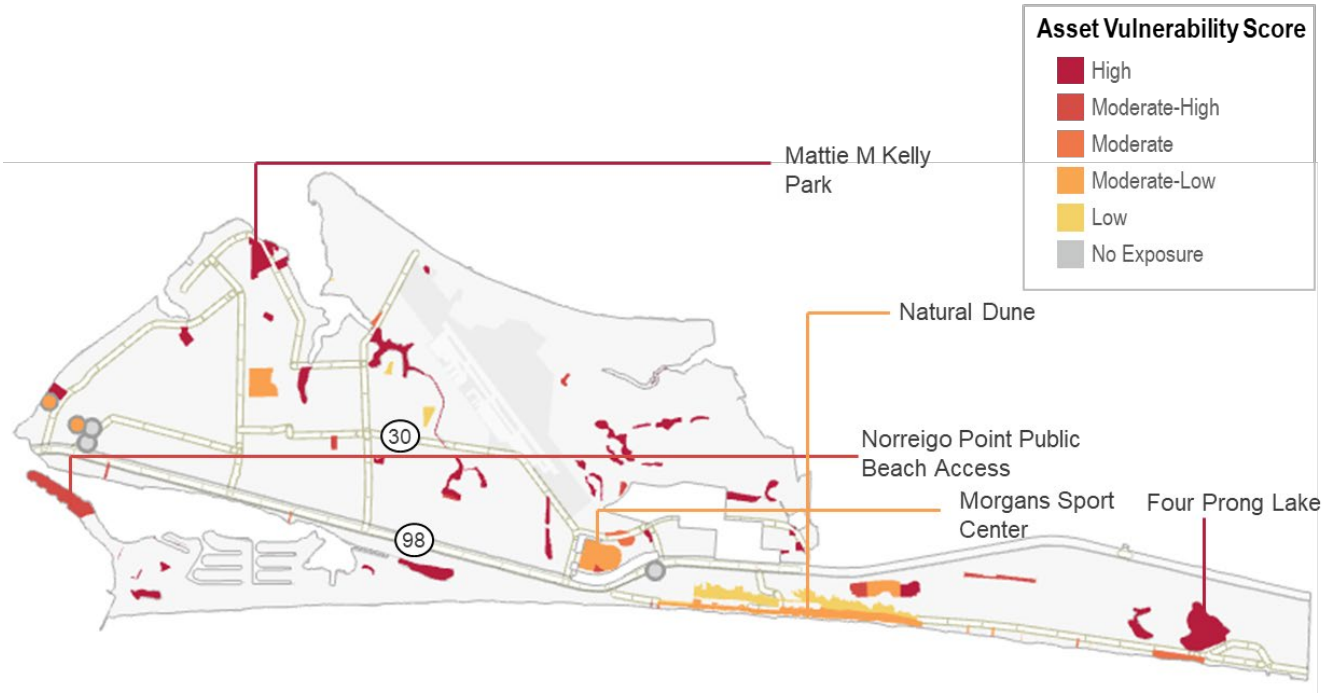


Figure 10. Map of natural, cultural, and historical asset vulnerability. Scores are based on the relative depth of flooding during a 2040 1% AEP compound flooding event, with select assets labeled.

Natural, Cultural, and Historical asset vulnerability for compound flooding during a 2040 1% AEP event is shown in Figure 10. Mattie M Kelly Park is 100% flooded in all compound and coastal storm surge flood scenarios during a 1% AEP major storm event, with all 11.5 acres of area exposed to flooding. Norreigo Point Public Beach Access also has high exposure to flooding, with up to 17 acres (87% of the total area) exposed to flooding from storm surge impacts. The Destin Memorial Cemetery Phase II is the point-based asset with the highest rate of exposure in the City, with up to around 3 ft of flooding during a 1% AEP major storm event. In 2040, these impacts to the cemetery come mostly from rainfall-driven flooding, but by 2070, the majority of flood impacts to the cemetery come from coastal storm surge.

Transportation Assets

Transportation assets include major roads, bridges, airports, and water access (such as boat ramps). These assets support the movement of goods and services and are intertwined with the delivery of other critical community and emergency response services.

Across the City of Destin, there are 35 linear transportation assets assessed (33 major roadways and 2

bridges), 20 point-based assets (16 airport points, 2 boat ramps, and 2 bridges), and one area-based asset (the airport). Roads and other surface-based assets are sensitive to water, as flooding and pooling can disrupt vehicle movement and service provision. However, bridges and boat ramps are usually designed to interact with water and are less sensitive to flooding. Note that while key assets were field verified during data collection efforts, the exact elevations (traditional survey grade) for all assets were largely not available; therefore, flood exposure depths calculated assume that the asset height is at ground level and is likely over-estimated for these asset types.

Table 16 shows the extent to which each asset type is exposed to tidal flooding and Table 17 shows exposure to flooding across all 1% AEP event scenarios.

Table 16. Tidal flood asset risk level summary for transportation assets across time horizons. As area assets, metrics are total area in acres and percent of total area flooded above 6 inches.

Asset Type	Tidal (MHHW + 2 ft)					
	Current		2040		2070	
Point Assets (count exposed, percent exposed)						
Bridge	1	50%	2	100%	2	100%
Boat Ramp	1	50%	2	100%	2	100%
Line Assets (miles exposed, percent exposed)						
Major Roadway	0	0%	0	0%	0.8	3%
Bridge	0.1	5%	0.1	5%	0.1	6%

Table 17. Storm surge, rainfall, compound flood asset risk level summary for transportation assets during a 1% AEP event across time horizons. For point assets, metrics are count and percent of total assets flooded. For area assets, metrics are total area in acres and percent of total area flooded above 6 inches. For linear assets, metrics are total length in miles and percent of total length flooded above 6 inches.

Asset Type	Storm Surge				Rainfall						Compound					
	2040		2070		Current		2040		2070		Current		2040		2070	
Point Assets (count exposed, percent exposed)																
Airport	0	0%	0	0%	5	31%	7	44%	8	50%	5	31%	7	44%	8	50%
Bridge	2	100%	2	100%	1	50%	2	100%	2	100%	2	100%	2	100%	2	100%
Boat Ramp	2	100%	2	100%	2	100%	2	100%	2	100%	2	100%	2	100%	2	100%
Area Assets (acres exposed, percent exposed)																
Airport	0	0%	0	0%	55.3	27%	61.2	30%	64.8	32%	55.3	27%	76.6	38%	80.3	40%
Line Assets (miles exposed, percent exposed)																
Major Roadway	3.9	16%	5	21%	5	21%	5.6	24%	6.5	28%	8.8	37%	8.8	37%	9.7	41%
Bridge	0.1	6%	0.1	7%	0.1	5%	0.1	5%	0.1	5%	0.1	6%	0.1	6%	0.1	6%

The airport assets in the City of Destin are exposed to rainfall and compound flooding but have no exposure to coastal flooding from tidal or storm surge flooding. The bridges and boat ramps in the City are exposed in most flood scenarios, however, as mentioned above, bridges and boat ramps are less sensitive to flooding as they are usually designed to interact with water.

No major roadway is projected to be exposed to tidal flooding until 2070 when close to a mile is exposed. Major roadways are exposed under all 1% AEP flood scenarios, with the slight majority of flood exposure coming from rainfall-driven flooding, which, in turn, is a greater contributor than coastal storm surge

flooding to the miles exposed due to compound flooding.



Figure 11. Map of transportation infrastructure asset vulnerability. Scores based on relative depth of flooding during a 2040 1% AEP compound flooding event with select assets labeled. Major roadways were evaluated and displayed using segments of 1,000 ft or less.

Transportation asset vulnerability for compound flooding during a 2040 1% AEP storm event is shown in Figure 11. The roadways with the highest vulnerability to all flood scenarios in the City are listed below.

1. **Gulf Shore Drive** – Up to around 2 miles of the 2.1-mile-long roadway is exposed to coastal surge flooding, while up to around a mile is exposed to rainfall-driven flooding.
2. **US Highway 98** – Up to around 1.2 miles of the 4.5-mile-long highway is exposed to rainfall-driven flooding with almost no impacts from coastal storm surge flooding.
3. **Calhoun Avenue** – Up to 1.1 miles of the 1.7-mile-long roadway are exposed to coastal storm surge flooding, while up to 0.3 miles are exposed to rainfall-driven flooding.
4. **Benning Drive** – Up to around 0.4 miles of the 1.4-mile-long roadway is exposed to coastal storm surge flooding, while up to around 0.3 miles are exposed to rainfall-driven flooding.
5. **Habor Boulevard** – Up to around 0.5 miles of the 1.1-mile-long roadway is exposed to rainfall-driven flooding with no impacts to the roadway from coastal flooding.
6. **Beach Drive** – Up to around 0.3 miles of the 0.9-mile-long roadway is exposed to both coastal storm surge and rainfall-driven flooding.
7. **Azalea Drive** – Up to around 0.4 miles of the 0.7-mile-long roadway is exposed to rainfall-driven flooding with no impacts to the roadway from coastal flooding.

Focus Areas

Areas with notably high flood impacts or clusters of vulnerable critical assets were identified as focus areas. The development of focus areas allows the city to target flood risk mitigation actions in locations that are particularly important to the community and most likely to generate a high return on investment for reducing flooding impacts.

The process of identifying focus areas started with the very first public meeting, where residents were asked to help articulate their vision for resilience and identify assets of importance. This information was then built on with the sensitivity analysis, where impacts to assets were mapped and quantified. This data was then presented back to the public in a second public meeting, where community members provided additional information about potentially affected entities and gave feedback regarding priority areas and concerns. Finally, a workshop with city staff took into consideration community input, data-driven insights, and ongoing planning initiatives to identify focus areas presented here. The integration of technical analysis and community feedback ensures that focus areas reflect the perspectives and values of the people who live and work in these areas.

Ten focus areas were selected through this process and are shown in Figure 12. They fell into two different categories: some consisted of polygons encompassing critical assets, and others were assets located within right-of-way areas owned by the city being considered for roadway construction. These areas will be prioritized for adaptation strategies based on their unique vulnerabilities, community priorities, and importance.

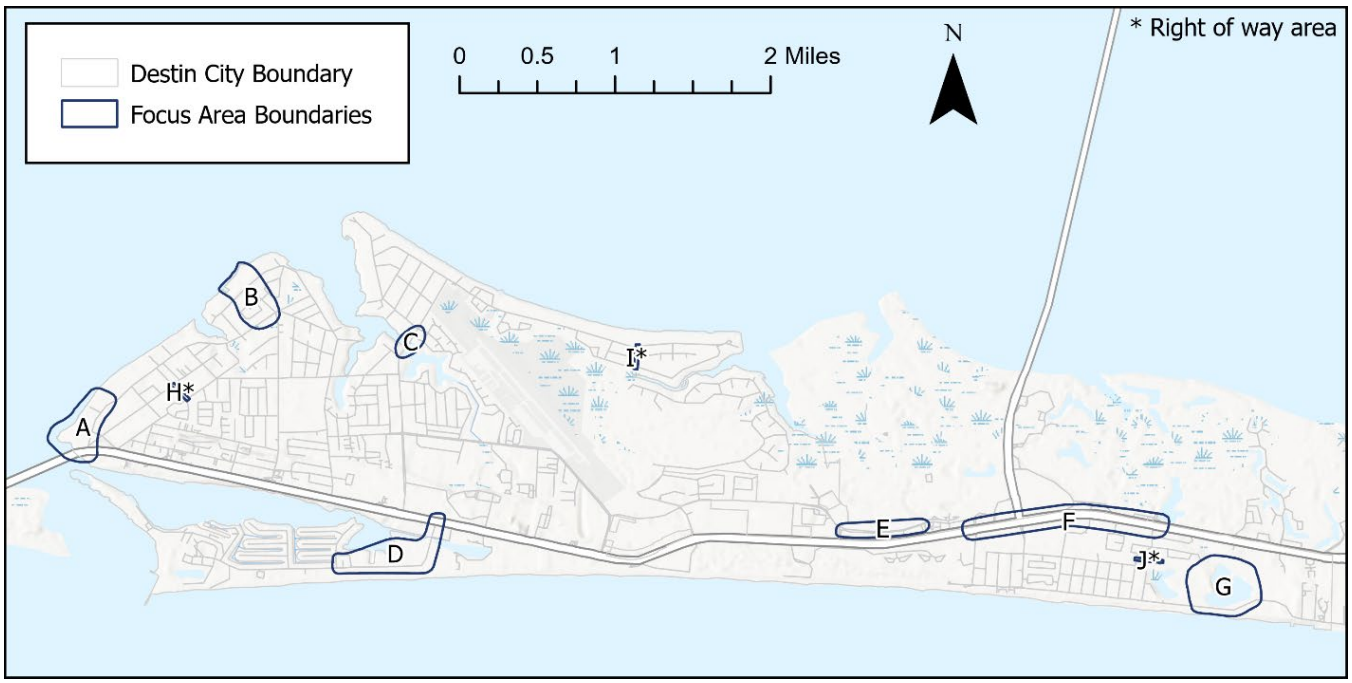
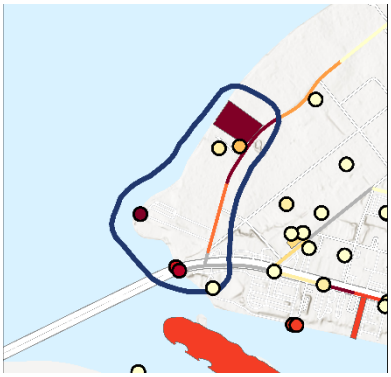
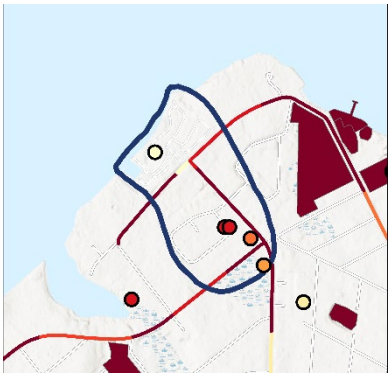


Figure 12. Overview map of the City of Destin Focus Area boundaries.

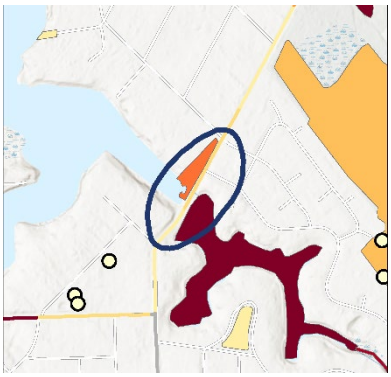
A profile was developed for each focus area that included relevant maps and statistics, along with a description of what the area is vulnerable to flooding and why it was chosen as a prioritized area for action. The focus areas are summarized below. The Focus Areas Technical Memorandum provides more detail about each, including larger and more detailed mapping.



Focus Area A is located along the shoreline on the west side of Destin, containing an area between the Miracle Strip Parkway Bridge and Clement E Taylor Park. Exposed include the Miracle Strip Parkway / Emerald Coast Parkway bridge, the East Pass Bridge Breakwater, Destin Fire Station #19, the Destin Harbor, Clement E. Taylor Park, one historical asset, a section of Miracle Strip Parkway / Emerald Coast Parkway, and approximately 2,000 ft of roadway along Calhoun Avenue. This location was indicated as a focus area by the city due to continuous erosion and shoaling caused by heavy boat traffic through the area.



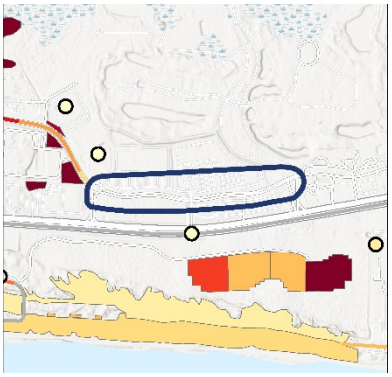
Focus Area B is in northwest Destin, containing the Heritage Run neighborhood and the Fort Benning Recreational area. Exposed assets include the Heritage Run stormwater pumps, Fort Benning Recreational Area, communications infrastructure on Siebert Avenue and Benning Drive, and a significant section of roadway on both Calhoun Avenue and Benning Drive. This area experiences chronic flooding during rainfall events, and critical stormwater pumps serving Heritage Run on Vintage Circle were identified as a high priority for mitigation.



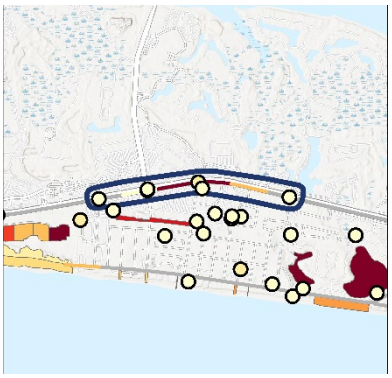
Focus Area C is located at the Main Street crossing of Joe's Bayou. This road serves as an access point for over 500 residents in the area. Assets exposed in this area include Main Street Park and the entirety of the Main Street crossing over Joe's Bayou. This bridge was overtopped by water from Joe's Bayou during Hurricane Sally, restricting evacuation options for residents. This area was identified as a focus area due to its high traffic volume and exposure during analysis.



Focus Area D is in the Holiday Isle area of Destin along Gulf Shore Drive. Exposed assets include the Destin Harbor stormwater pump, three communications assets, and one major traffic signal on Gulf Shore Drive. This location was identified as a focus area due to chronic flooding issues and the high assessed vulnerability of the Destin Harbor Pump and Gulf Shore Drive.



Focus Area E is located just north of Emerald Coast Parkway along Commons Drive West, spanning the area between the Home Depot roundabout and Kelly Plantation Drive. Exposure data for this section of Commons Drive West was not included in the vulnerability assessment, as this area is outside of the city limits. However, adjacent sections of Commons Drive West were identified as moderately exposed during the analysis, and this area is known to have chronic flooding issues.



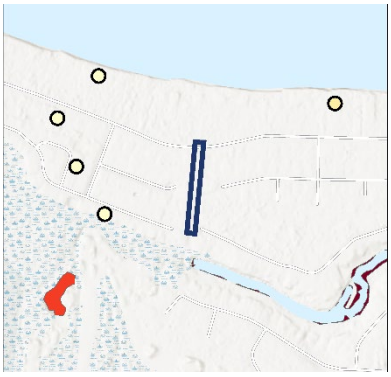
Focus Area F contains a .75-mile section of Emerald Coast Parkway between Matthew Boulevard and Regatta Bay Boulevard. Exposed assets include three major traffic signals along Emerald Coast Parkway at the intersections of Danny Wuerffel Way, Regatta Bay Boulevard, and Legendary Drive. This section of Emerald Coast Parkway was identified as highly exposed. This location was included as a focus area due to flooding that occurs on the roadway.



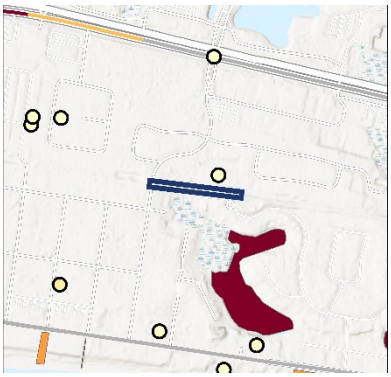
Focus Area G is located in southeast Destin and encompasses Four Prong Lake, the surrounding residences, and a section of SH-98. Exposed assets include a communications facility and two sets of electrical transmission lines. This location was selected as a focus area due to chronic flooding issues affecting the residents near Four Prong Lake and flooding, which threatens SH-98. An improvement plan has been drafted for this area, which is included in the Capital Improvement Plan and the Stormwater Master Plan.



Focus Area H is a right-of-way area on Pine Street between Sibert Avenue and Stahlman Avenue. Half of Pine Street has an existing improved surface on the side connecting to Stahlman Avenue, but the side connecting to Sibert Avenue is unfinished. Completing this roadway would provide an additional completed crossing point between Sibert Avenue and Stahlman Avenue, both of which are major thoroughfares providing access to Emerald Coast Parkway. There are no exposed assets in this area, but installing this roadway would provide an additional route for traffic to move between major roads in the event of an evacuation.



Focus Area I is a right-of-way area connecting Indian Trail and Indian Bayou North. There are no exposed assets included in this area, but there is an unimproved service road that does not fully connect in the center. Completing this roadway would provide an additional route for residents along the Indian Tail / Indian Bayou North loop, increasing evacuation options for residents living east of this location.



Focus Area J is a right-of-way area connecting Regatta Bay Boulevard and Paradise Isle. There are no exposed assets included in this area, but there is an unimproved service road off Regatta Bay Boulevard that does not connect to Paradise Isle. Completing this roadway would provide valuable, more direct access to SH-98 for a significant number of residents in the vicinity, allowing them to bypass the use of SH-98 to the south.

These focus areas will serve as the foundation for implementing tailored adaptation strategies. By directing efforts to these initial locations, communities can demonstrate early success, build capacity, and create scalable models for broader adaptation initiatives. This focused, stepwise approach allows communities to address their most pressing vulnerabilities while laying the groundwork for long-term resilience.

Additionally, focus areas should be regularly revisited and adjusted based on updated hazard assessments, demographic shifts, and feedback from the community. This iterative approach ensures that focus areas remain relevant, equitable, and aligned with evolving conditions and priorities.

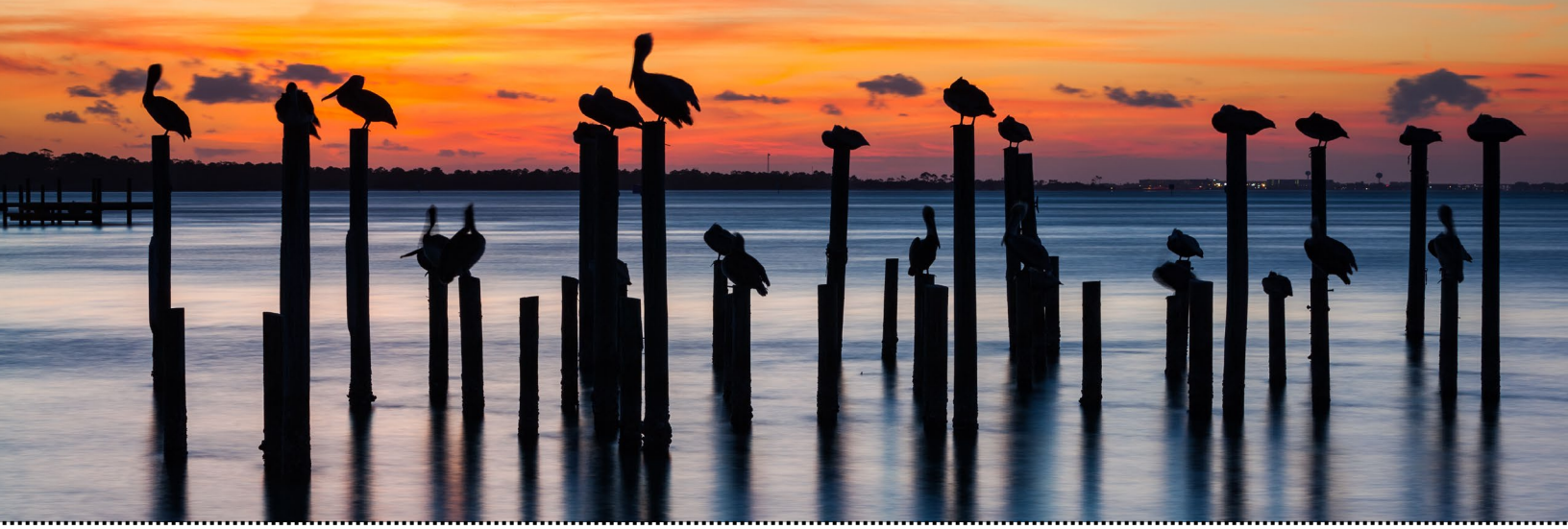
Actions focused on these identified areas should be part of a holistic approach to flood resilience, which may include large-scale flood protection investments as well as programmatic and policy-based interventions.



Path Forward

Within the framework of the Resilient Florida Grant program, Adaptation planning is noted as the subsequent step after the Vulnerability Assessment is complete to assess adaptive capacity and develop strategies (e.g., policies and projects) that mitigate vulnerable assets identified within the county.

Based on the results of this study, additional hazard mitigation projects will be identified for state and federal funding programs. With project conceptualization commencing during Adaptation Planning, the county is better situated to progress new and existing critical infrastructure improvement projects, apply for funding programs by showing documented need, and be prepared for future climate conditions.



Appendix I

Documented Flood Occurrences and Community Critical Assets from Public Meeting and Creation of GIS Database Memorandum

Dewberry

MEMORANDUM

DATE: January 31, 2024

TO: City of Destin

FROM: Dewberry Engineers, Inc.

SUBJECT: City of Destin Comprehensive Vulnerability Assessment: Documented Flood Occurrences and Community Critical Assets from Public Meeting; Creation of GIS Database

Purpose

This memorandum covers the discussions and product of the in-person public outreach meeting and the compiled GIS database of these areas.

Background

An in-person public meeting was hosted in Destin on January 24th, 2024 to gather information and feedback from the community members regarding areas that have experienced or are susceptible to flooding. Input from community members was captured on poster boards showing the location and any additional information associated with the flood event, such as flooding source. Using the markups from the boards, the areas were geolocated and converted into a digital database using Geographic Information System (GIS) software. This GIS database of documented occurrences will serve to effectively inform the results of the Vulnerability Assessment being performed by incorporating direct feedback and input from the community. Additional information related to critical community assets was also collected during the public outreach meeting to further inform the results of the Vulnerability Assessment.

Attachment A lists the flood occurrences that were documented from the public meeting in tabular format. Attachment B shows a map of the documented flood occurrences database. A total of six (6) flood occurrences were captured and incorporated into the database as point features. A brief description of each flood event is included for each flood occurrence. The digital file geodatabase of this data can also be provided upon request.

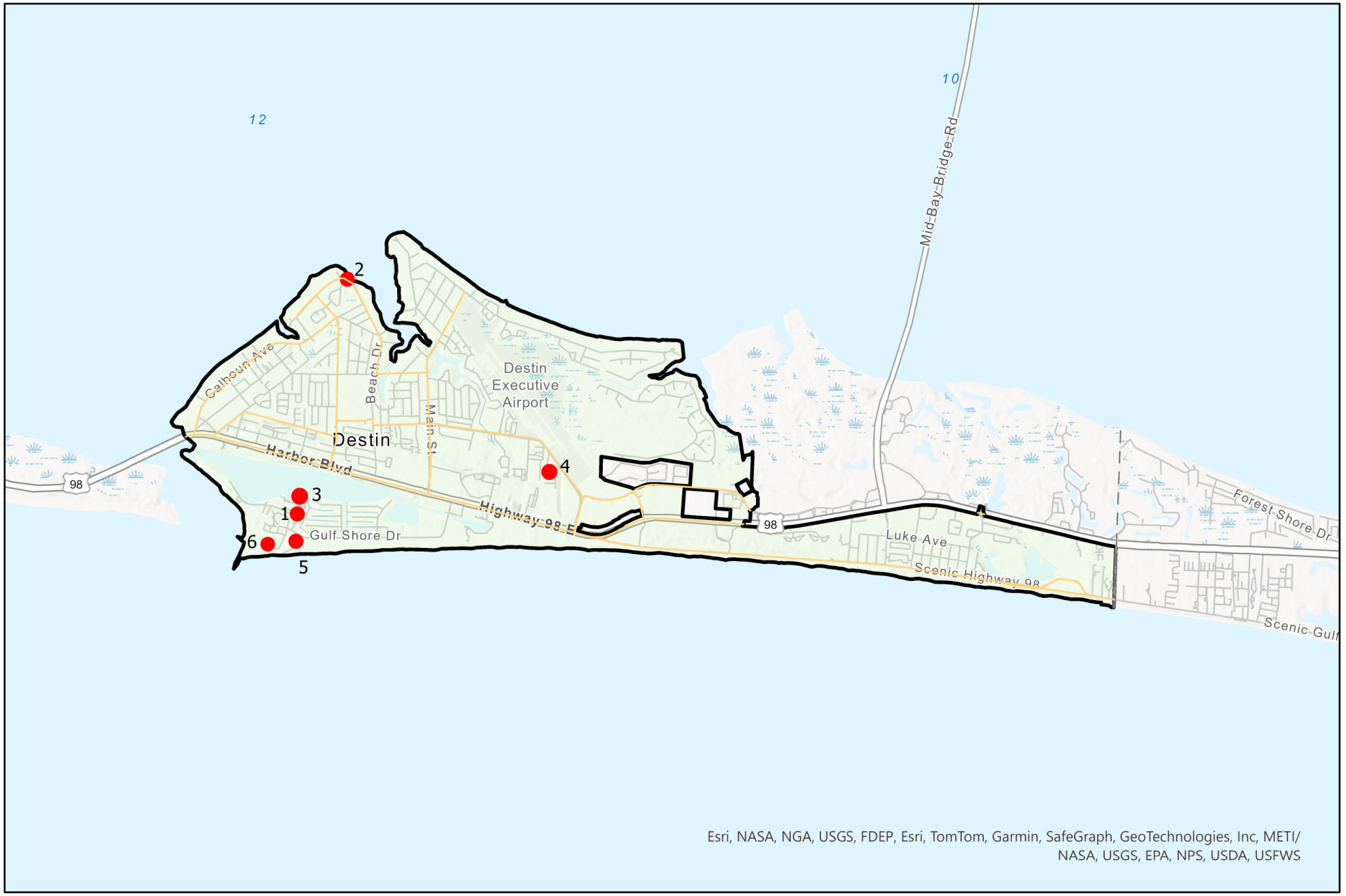
In addition to flood occurrences, several significant community assets were discussed and documented for some areas, and many of these assets overlap with locations where flooding concerns are documented.

This information will be key in preparing the final draft geodatabase for critical assets, based on the statutory guidelines and grant requirements.

Attachments

1. **Attachment A: City of Destin Flood Occurrences / Significant Community Assets Table**
2. **Attachment B: City of Destin Flood Occurrences / Significant Community Assets Map**

AOI	Point_Numb
Durango Road and Gulf Shore Drive (front of Isla Blanca Condos)	1
Mattie Kelly Park (Shoaling along shore of Joes Bayou)	2
Durango Road (Flooding observed, lack of stormwater facilities)	3
Quial Circle and Quial Lake area (private stormwater issues)	4
Gulf Shore Drive (Flooding in parking area)	5
Lands End Drive (Flooding contributed by pumped runoff, water is not going to the receiving wetland)	6



Flood AOIs
City of Destin Boundary

City of Destin



Appendix II

Data Collection and Data Gap Analysis
Summary Memorandum

Dewberry

TASK 3: DATA COLLECTION AND DATA GAP ANALYSIS

SUMMARY MEMORANDUM

DATES:

ORIGINAL SUBMITTAL: AUGUST 23, 2024

REVISED ADDITIONAL TEXT: OCTOBER 16, 2024, FEBRUARY 26, 2024

TO: City of Destin

FROM: Dewberry Engineers, Inc.

SUBJECT: City of Destin Comprehensive Vulnerability Assessment; Task 3: Data Collection Summary

Purpose

This memorandum summarizes the data collection to develop the updated geodatabase for the exposure and sensitivity analysis, including the Digital Elevation Model (DEM) and critical asset data compiled for the City of Destin. It also provides a detailed approach and findings of the data gap analysis.

Critical Asset Data and Digital Elevation Model (DEM) Compilation

The Dewberry team compiled elevation and critical asset data defined in Section 380.093, Florida Statutes.

Critical asset data was obtained from various credible data sources for the City of Destin. Critical assets were compiled into a file geodatabase feature class containing point, line, and polygon features with the same geometric shapes. All data was projected into the appropriate Florida State Plan Coordinate system. Data Critical asset data was sourced from federal, state, and local sources, including:

- **Florida Department of Transportation (FDOT):** Major Roadways, and Bridges were obtained from FDOT datasets, which can be found here: https://gis-fdot.opendata.arcgis.com/. The GIS Open Data Hub is a public platform for downloading open geospatial data, such as State Roads, Interstates, and more.
- **Florida Department of Emergency Management (FDEM):** Disaster Debris Management Sites were obtained from FDEM datasets, which can be found here: https://sertgis1-floridadisaster.opendata.arcgis.com/ This Open Data Portal can be explored by geospatial data category.
- **Florida Geographic Data Library (FGDL):** Affordable Public Housing, Airports, Communications Facilities, Community Centers, Conservation Lands, Electric Production and Supply Facilities, Emergency Medical Service Facilities, Emergency Operation Centers, Fire Stations, Health Care Facilities, Historical and Cultural Assets, Hospitals, Law Enforcement Facilities, Local Government Facilities, Marinas (Boat Ramps), Military Installations, Parks, Schools, Shorelines, Solid and Hazardous Waste Facilities, Wastewater Treatment Facilities and Lift Stations and Water Utility Conveyance Systems were obtained from FGDL datasets, which can be found here: https://fgdl.org/ords/r/prod/fgdl-current/catalog The FGDL Current Data Catalog contains multiple layers of data with metadata available to download.
- **Florida Department of Environmental Protection (FDEP):** Stormwater Treatment Facilities, and Drinking Water Facilities were obtained from FDEP datasets found here: https://geodata.dep.state.fl.us/ This Open Data portal is explorable by GIS data category.

- **Northwest Florida Water Management District (NWFWMD):** Surface water features and Wetlands were obtained from the Land Use Land Cover NWFWMD dataset, which can be found here: https://nwfwmd-open-data-nwfwmd.hub.arcgis.com/ This Open Data portal can be explored by data category, and in this case, the Hydrology category was utilized.

A countywide post-Hurricane Michael raster digital elevation model (DEM) was created by obtaining multiple raster DEMs from USGS's The National Map data viewer located at http://nationalmap.gov/viewer.html. Metadata for the DEM can be found at: USGS 1/3 Arc Second n31w087 20230306 - ScienceBase-Catalog The digital elevation model (DEM) was produced through USGS's 3D Elevation Program (3DEP). The elevations in this DEM represent the topographic bare-earth surface. All bare earth elevation values are referenced to the North American Vertical Datum of 1988 (NAVD88). Areas of of 12-digit HUC areas that covered the extent of the county boundary were merged into one raster using ESRI ArcGIS software's "Mosaic" tool. The spatial resolution of the downscaled final DEM was a cell size of 2.5 x 2.5 feet. The elevation data in the DEM was then used to populate the Ground Elevation field in the county database. Using the "Extract Values to Points" tool, the DEM and the countywide "Critical_Asset_Points" shapefiles were entered as inputs, and a new point shapefile containing elevation data was generated. The new points were joined with the "Critical_Asset_Points," and the elevation values were copied into the appropriate attribute field.

Meetings and coordination via with the City allowed for first-hand knowledge transfer of critical asset data not originally identified in the source used. Additions and modifications to the dataset were made to the database as a result of this coordination. Significant modifications to private historical assets were made in each community, as several assets were private residences that did not have any specific community-wide use or purpose and were therefore not deemed a critical asset to the municipality. An overview of the edits and additions to the database are described in the subsequent section.

In total, **290** critical assets were identified, comprising **33** unique asset types. Figure 1 below illustrates the composition of critical assets by asset class.

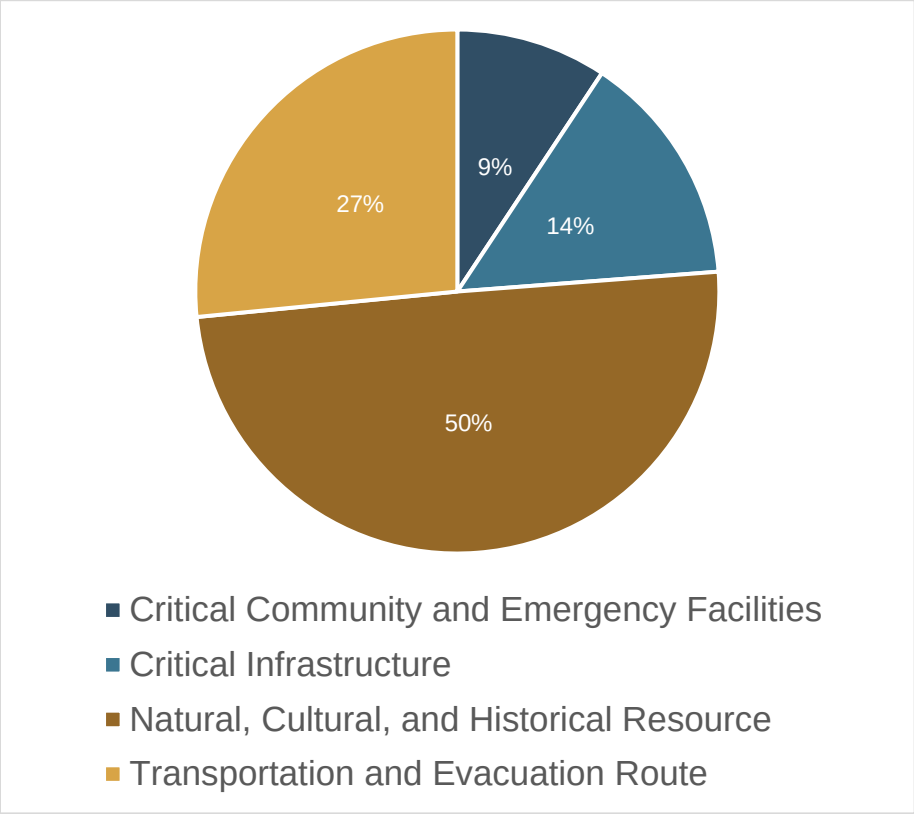


Figure 1. Composition of critical assets by asset class for the City of Destin.

Critical Asset Data Updates

The Dewberry team undertook a large data cleanup task of the compiled dataset to ensure the accuracy and conformance of the database in alignment with the 'GIS Data Standards'. As part of this effort, key fields were added and populated based on source background, feedback from cities/towns, and local institutional knowledge. The following attributes were included in the database pursuant to 380.093(2):

- Entity Name – Name of entity (i.e., County, city, local government, etc).
- Asset Name – Asset label or description (i.e., hydrant, stormwater pipe, cell tower, etc).
- Asset Type – Statutory asset type (i.e., airports, bridges, roadways, marinas, etc).
- Asset Class – Statutory asset group (i.e., transportation and evacuation route, critical infrastructure, critical community and emergency facilities, etc).
- Asset Owner/Operator – The owner or maintainer of the asset.
- Asset Elevation – Elevation of the asset.
- Asset Size/Capacity Data (i.e., capacity for wastewater facilities, acres, etc.)
- Asset Unique ID – Unique identifier of the asset

An asset-by-asset review of critical assets was performed for each point, line, and polygon feature, totaling **290**. This number reflects the total number of features (point, line, and polygon) contained in the database. The review consisted of reviewing features for missing or omitted critical assets, misclassified asset types, verification of existing critical assets, and removal of duplicates. Out of the **290** total features there are **38** line features categorized into **4** asset types (2 bridges, 3 electric production and supply facilities, **30** major roadways, and **3** shorelines). In a similar fashion there are **89** polygon features in the dataset, some of which are smaller areas within a larger area, but are considered a significant

component to the the polygons they relate to (i.e. a campground or specially designated park area within a larger park boundary). The dataset consisted of over 290 attributes deemed unnecessary or not useful to the study; these assets were, therefore, cleansed from the final dataset. A total of **163** additional data points were also included in the City of Destin database that represent **22** different asset types. These points were not included in the database that provided the source data but are structures or facilities confirmed by city and town officials in City of Destin as critical to their respective communities. Wastewater treatment facilities and lift stations consisted of the most additional points added, followed by drinking water facilities, and these two asset types comprise 19 of the 29 additional points. The remaining 10 points include points representing buildings used as community-critical assets as well as proposed future locations for a law enforcement facility and emergency medical services. Two fire stations, two health care facilities, and two schools were each identified and added to the database. Additionally, some public buildings added store community equipment. Lastly, an additional point representing a public transportation hub next to a senior center was also added.

The feature points for bridges in the City were initially located in varying positions on the bridge or along the route containing it within a 100-foot distance. These point positions were adjusted to be located on one of the abutments of the bridge that the point represents. This adjustment was made to create consistency in identifying and locating each bridge. Ground elevation values from where the structure of the bridge connects to the land surface were extracted, representing where flooding hazards could occur.

Hazard Data Collection

Pluvial Data and Flood Analysis:

Given recent heavy precipitation-driven flooding in Florida, the City of Destin sought to improve understanding of both the potential flood extent and impacts from such events. As such, rainfall-driven (pluvial) flooding and compound flooding were assessed, and flood depths and vulnerability for the 1% AEP rainfall and compound flood event are included. The rainfall analysis presented here is aligned with state requirements, as Section 380.093, Florida States, "***to the extent practicable***, rainfall analysis will be conducted….for coastal communities." Future rainfall data for Pluvial Analysis was derived from the University of South Florida's (USF) Flood Hub rainfall change factor dataset, available through the USGS open-source data portal.

Coastal Data for Flood Analysis:

Coastal flood data, comprised of sea level rise scenarios, tidal elevations, and storm surge flood data, was gathered to meet the FDEP guidance and statutory requirements. Data sources are described in the following sub-sections.

Sea Level Rise Scenarios and Tidal Elevations

Sea Level Rise (SLR) scenarios will be identified for the community using the U.S. Army Corps of Engineers (USACE) Sea Level Analysis Tool (SLAT, USACE 2024). Scenarios for the NOAA 2017 projections for 2040 and 2070 will be used. Per the guidance, at least two National Oceanic and Atmospheric Administration (NOAA) long-term water level stations will be reviewed to gather and establish appropriate SLR scenarios for Destin. These include the Panama City (8729108) and Pensacola (8729840) locations, which are about 49 and 44 miles from the center of Destin, respectively. An initial review of the values shows that projections are similar at both locations, with the largest difference being less than 0.15 ft. Given the minimal difference, it is anticipated that interpolation is unnecessary; values may be simply averaged or the Pensacola station may be used as the representative value as it has a more extended period of record (101 years versus 51 years at Panama City).

Tidal elevations for mean higher high water (MHHW) elevation across the study area will be sourced from the NOAA Office of Coastal Management Inundation Mapping Tidal Surfaces for Mean Higher High Water (MHHW, NOAA 2019). This produce provides a spatially continuous representation of MHHW derived from the VDatum tidal datum tool in meters relative to NAVD88. The surface will be converted to feet and validated against NOAA-published MHHW datum elevations in Pensacola and Panama City before use. This surface will be used along with the required two-foot threshold established by DEP to create an MHHW elevation and depth product for existing conditions and each SLR scenario. The NOAA Inundation Analysis Tool will be used with the scenario-specific threshold tidal elevations to calculate tidal flood days for each scenario for select locations in the community.

To establish the scenario values, staff have also retrieved sea level rise projections from the US Army Corps of Engineers Sea Level Analysis Tool (SLAT). Per the statute requirements, projections were retrieved from the two closest National Oceanic and Atmospheric Administration (NOAA) long-term water levels to Destin, FL. The Panama City (8729108) and Pensacola (8729840) locations were identified as the two closest stations, which are about 49 and 44 miles from the center of Destin, respectively. Values for the NOAA 2017 projections, for the intermediate-low and intermediate-high scenarios are shown in the below table. Values for both stations were similar; however, the Pensacola gauge was selected as the source for the scenarios as it had the higher Mean Sea Level datum, and also the longer record of sea level trends in the region of the study.

Station	**Mean Sea Level (ft, relative to NAVD88)[1]**	**Scenario[2]**	**Change in MSL, ft**	
			2040	2070
Pensacola, FL (8729840)	0.3	Intermediate-Low	0.8	1.3
		Intermediate-High	1.4	3.2
Panama City (8729108)	0.1	Intermediate-Low	0.7	1.2
		Intermediate-High	1.3	3.2

[1]Source: NOAA CO-OPS, https://tidesandcurrents.noaa.gov/

[2]Soruce: U.S. Army Corps of Engineers, Sea Level Analysis Tool, https://climate.sec.usace.army.mil/slat/

As seen in the table above, the approach for setting the scenario values includes the Intermediate-Low and Intermediate High scenarios.

Storm Surge Elevations

Current storm surge elevations for the 100-year and 500-year flood events will be sourced from the Federal Emergency Management Agency. Dewberry has sourced the storm surge stillwater elevation surfaces from the Technical Support Data Notebook for the latest Flood Insurance Study for Okaloosa County (FEMA 2021), which includes the City of Destin. These surfaces provide a spatially continuous surge and wave setup elevation that defines the boundaries of the official FEMA floodplain delineations as shown on the latest Flood Insurance Rate Maps. The sea level rise scenarios will be added to these surfaces. Next, the future floodplains and depth grids will be generated by analysis from the study DEM through a proprietary mapping toolbox created for FEMA, state, and community floodplain mapping applications.

Gap Analysis

The Dewberry team reviewed the compiled critical asset inventory in GIS for the City of Destin to identify missing critical asset types as defined in 380.093(2)(a) 1-4, F.S. Existing data from the Apalachee Regional Planning Council served as a basis to be built upon for the inventory. Key updates of the dataset include but are not limited to identifying critical assets missing or omitted, misclassified asset types, removing duplicated assets, and verifying existing critical assets. Meeting with local municipalities significantly contributed to updating and refining the City of Destin critical asset database. City input led to the overall dataset comprising **290** critical assets and **33** unique asset types. A breakdown of the number of critical assets by asset type is listed below:

- Major Roadway – **30**
- Bridge – **4**
- Drinking Water Facility – **8**
- Park – **36**
- Communications Facility – **21**
- Wastewater Treatment Facility and Lift Stations – **3**
- Boat Ramp – **26**
- Conservation Land – **2**
- Electric Production and Supply Facility – **3**
- Community Center – **8**
- Fire Station – **3**
- School – **2**
- Local Government Facility – **7**
- Affordable Public Housing – **2**
- Health Care Facility – **1**
- Historical and Cultural Asset – **55**
- Law Enforcement Facility – **1**
- Risk Shelter Inventory – **1**
- Emergency Medical Services – **1**
- Disaster Debris Management Site – **1**
- Surface Waters – **46**
- Airport – **17**
- Military Installation – **1**
- Stormwater Facilities and Pump Stations – **1**
- Natural Dunes – **2**
- Water Utility Conveyance Systems – **2**
- Shorelines (Breakwater) – **3**
- Wetlands – **1**

For the entire critical asset dataset, a review of missing critical assets by asset type was performed. The gap analysis results are shown in Table 1, which identifies critical asset gaps in the dataset based on the critical asset type.

Table 1. Gap Analysis Critical Asset Inventory

Asset Type	Asset Group	Identified in City of Destin Dataset
Affordable Public Housing	Critical Community and Emergency Facilities	Y
Airports	Transportation and Evacuation Route	Y

Bridges	Transportation and Evacuation Route	Y
Bus Terminals	Transportation and Evacuation Route	N
Colleges and Universities	Critical Community and Emergency Facilities	N
Communications Facilities	Critical Infrastructure	Y
Community Centers	Critical Community and Emergency Facilities	Y
Conservation Lands	Natural, Cultural, and Historical Resource	Y
Correctional Facilities	Critical Community and Emergency Facilities	N
Dams	Critical Infrastructure	N
Disaster Debris Management Sites	Critical Infrastructure	Y
Disaster Recovery Centers	Critical Community and Emergency Facilities	N
Drinking Water Facilities	Critical Infrastructure	Y
Electric Production and Supply Facilities	Critical Infrastructure	Y
Emergency Medical Service Facilities	Critical Community and Emergency Facilities	Y
Emergency Operation Centers	Critical Community and Emergency Facilities	Y
Fire Stations	Critical Community and Emergency Facilities	Y
Health Care Facilities	Critical Community and Emergency Facilities	Y
Historical and Cultural Assets	Natural, Cultural, and Historical Resource	Y
Hospitals	Critical Community and Emergency Facilities	Y
Law Enforcement Facilities	Critical Community and Emergency Facilities	Y
Local Government Facilities	Critical Community and Emergency Facilities	Y
Logistical Staging Areas	Critical Community and Emergency Facilities	N
Major Roadways	Transportation and Evacuation Route	Y
Marinas (Boat Ramp)	Transportation and Evacuation Route	Y
Military Installations	Critical Infrastructure	Y
Parks	Natural, Cultural, and Historical Resource	Y
Ports	Transportation and Evacuation Route	N

Rail Facilities	Transportation and Evacuation Route	N
Railroad Bridges	Transportation and Evacuation Route	N
Risk Shelter Inventory	Critical Community and Emergency Facilities	Y
Schools	Critical Community and Emergency Facilities	Y
Shorelines	Natural, Cultural, and Historical Resource	Y
Solid and Hazardous Waste Facilities	Critical Infrastructure	Y
State Government Facilities	Critical Community and Emergency Facilities	N
Stormwater Treatment Facilities and Pump Stations	Critical Infrastructure	N
Surface Waters	Natural, Cultural, and Historical Resource	Y
Wastewater Treatment Facilities and Lift Stations	Critical Infrastructure	Y
Water Utility Conveyance Systems	Critical Infrastructure	Y
Wetlands	Natural, Cultural, and Historical Resource	Y
Natural Dunes	Natural, Cultural, and Historical Resource	Y

The gap analysis identified twelve (12) asset types not included in the City of Destin critical asset database: Bus Terminals, Colleges and Universities, Correctional Facilities, Dams, Disaster Recovery Centers, Logistical Staging Areas, Ports, Rail Facilities, Railroad Bridges, Risk Shelter Inventory, State Government Facilities, Stormwater Treatment Facilities and Pump Stations.

- Bus Terminals/Bus Stops (City of Destin does not have a bus system)
- Colleges and Universities (There are no commercial or private colleges or universities within the City of Destin boundary)
- Correctional Facilities (There are no correctional facilities within the City of Destin boundary)
- Dams (There are no rivers or significant waterways within the City of Destin boundary, so no Dams are present)
- Disaster Recovery Centers (No listed Disaster Recovery Centers within the City of Destin boundary)
- Logistical Staging Areas (There is a military installation but it's not significant enough for a Logistical Staging Area to be applicable within the City of Destin Boundary)
- Ports (City of Destin is not big enough for a port, only Marina (Boat Ramps) are present in this coastal area)
- Rail Facilities (No Railways pass through the City of Destin)
- Railroad Bridges (No Railways pass through the City of Destin)
- Risk Shelter Inventory (No listed Risk Shelter Inventory within the City of Destin boundary)
- State Government Facilities (No listed State Government Facilities with the City of Destin boundary)
- Stormwater Treatment Facilities and Pump Stations (No listed Stormwater facilities or Pump Stations within the City of Destin boundary)

Data Gap Recommendations

Meetings with local municipalities proved vital to significantly improve the critical asset dataset by helping to identify missing or obsolete critical assets in the dataset. The following list contains recommendations for the City to further refine the critical asset dataset in the future, for use during study updates.

- Continue to consult across City staff to identify planned or newly constructed critical assets.
- Stay up to date regarding FDEP publicly available critical asset dataset releases.
- Request and review engineer drawings to verify locations of critical assets and potential impact thresholds.
- Leverage regional planning councils for additional grant funding opportunities to support ongoing database improvement efforts.
- Utilize updated available Digital Elevation Model (DEM) elevations to conflate elevations of critical assets as they become available.
- Add additional impact thresholds for critical assets that are added to the database, as needed, for assets that have multiple impact thresholds. Survey impact thresholds of most critical assets when possible
- Incorporate as-built plan elevation data into the database once new assets are constructed.

Reference Material

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Appendix A. Critical Community and Emergency Facilities Inventory

GEOMETRY	ENTITY_NAME	ASSET_NAME	ASSET_TYPE	ASSET_GRP	ASSET_OWN	ASSET_ID
Point	City of Destin	HENDERSON BEACH STATE RECREATION AREA	Affordable Public Housing	Critical Community and Emergency Facilities	DEPT. OF ENVIRONMENTAL PROTECTION	DES0113
Point	City of Destin	DESTIN MARINA TRAILER PARK	Affordable Public Housing	Critical Community and Emergency Facilities	WILLIAM T. MING JR.	DES0115
Point	City of Destin	Destin Post Office	Communications Facilities	Critical Community and Emergency Facilities	USPS	DES04
Point	City of Destin	ELKS LODGE 2688	Community Centers	Critical Community and Emergency Facilities	DESTIN LODGE NO 2688 B&P ORDER	DES079
Point	City of Destin	DESTIN COMMUNITY CENTER	Community Centers	Critical Community and Emergency Facilities	CITY OF DESTIN	DES080
Point	City of Destin	YMCA - DESTIN FAMILY CENTER	Community Centers	Critical Community and Emergency Facilities	MATTIE KELLY ARTS FOUNDATION	DES081
Point	City of Destin	KNIGHTS OF COLUMBUS 11893 - EMERALD COAST	Community Centers	Critical Community and Emergency Facilities	DIOCESE OF PENSACOLA-TALLAHASS	DES082
Point	City of Destin	BOYS & GIRLS CLUB - DESTIN	Community Centers	Critical Community and Emergency Facilities	SCHOOL BOARD OF OKAL CNTY	DES083
Point	City of Destin	AMERICAN LEGION POST 296	Community Centers	Critical Community and Emergency Facilities	DAVIS-SIKES POST NO 296	DES084

Point	City of Destin	MARINE CORPS LEAGUE DETACHMENT 915	Community Centers	Critical Community and Emergency Facilities	DESTIN RESTAURANT LLC	DES085
Point	City of Destin	AMVETS POST 29	Community Centers	Critical Community and Emergency Facilities	PELICAN ADVENTURES INC	DES086
Point	City of Destin	Okaloosa County Emergency Medical Services Station 10	Emergency Medical Service Facilities	Critical Community and Emergency Facilities	Okaloosa County Emergency Medical Services	DES01
Point	City of Destin	Destin Fire Control District Headquarters Station 9	Fire Stations	Critical Community and Emergency Facilities	DESTIN FIRE CONTROL DISTRICT	DES02
Point	City of Destin	Destin Fire Control District Station 10	Fire Stations	Critical Community and Emergency Facilities	DESTIN FIRE CONTROL DISTRICT	DES03
Point	City of Destin	Destin Station #19 Destin Fire Control District	Fire Stations	Critical Community and Emergency Facilities	DESTIN FIRE CONTROL DISTRICT	DES0152
Point	City of Destin	HCA Florida Northwest Rehabilitation Center	Health Care Facilities	Critical Community and Emergency Facilities	HCA Florida Healthcare	DES07
Point	City of Destin	Okaloosa County Sheriff's Office Destin Substation	Law Enforcement Facilities	Critical Community and Emergency Facilities	Okaloosa County Sheriff's Office (CITY OF DESTIN)	DES05
Point	City of Destin	Destin City Hall	Local Government Facilities	Critical Community and Emergency Facilities	CITY OF DESTIN	DES06
Point	City of Destin	City of Destin Annex Building	Local Government Facilities	Critical Community and Emergency Facilities	CITY OF DESTIN	DES0150

Point	City of Destin	Friends of Emerald Coast State Parks Admission Building	Local Government Facilities	Critical Community and Emergency Facilities	CITY OF DESTIN	DES0151
Point	City of Destin	Destin Library	Local Government Facilities	Critical Community and Emergency Facilities	CITY OF DESTIN	DES0288
Point	City of Destin	City Maintenance Facility	Local Government Facilities	Critical Community and Emergency Facilities	CITY OF DESTIN	DES0289
Polygon	City of Destin	City Hall Parking Lot (Impervious Surface)	Local Government Facilities	Critical Community and Emergency Facilities	CITY OF DESTIN	DES0235
Polygon	City of Destin	City Hall HVAC Units	Local Government Facilities	Critical Community and Emergency Facilities	CITY OF DESTIN	DES0236
Point	City of Destin	HARVEST HOUSE	Risk Shelter Inventory	Critical Community and Emergency Facilities	PROTESTANT EPISCOPAL CHURCH	DES087
Point	City of Destin	Destin Elementary School	Schools	Critical Community and Emergency Facilities	Okaloosa County School District	DES00
Point	City of Destin	First Baptist Destin Preschool	Schools	Critical Community and Emergency Facilities	FIRST BAPTIST CHURCH OF DESTIN	DES088

Appendix B. Critical Infrastructure Inventory

GEOMETRY	ENTITY_NAME	ASSET_NAME	ASSET_TYPE	ASSET_GRP	ASSET_OWN	ASSET_ID
Point	City of Destin	WDES-CD BEACH TV PROPERTIES, INC.	Communications Facilities	Critical Infrastructure	WDES-CD BEACH TV PROPERTIES, INC.	DES091
Point	City of Destin	WZLB, JVC MEDIA OF FLORIDA, LLC	Communications Facilities	Critical Infrastructure	WZLB, JVC MEDIA OF FLORIDA, LLC	DES092
Point	City of Destin	ALLTEL CORPORATION CELLUAR TOWER	Communications Facilities	Critical Infrastructure	ALLTEL CORPORATION	DES093
Point	City of Destin	ALLTEL CORPORATION BEACH TV SITE CELLUAR TOWER	Communications Facilities	Critical Infrastructure	ALLTEL CORPORATION	DES094
Point	City of Destin	NEW CINGULAR WIRELESS PCS, LLC CELLUAR TOWER	Communications Facilities	Critical Infrastructure	NEW CINGULAR WIRELESS PCS, LLC	DES095
Point	City of Destin	POWERTEL/ MEMPHIS, INC.	Communications Facilities	Critical Infrastructure	POWERTEL/MEMPHIS, INC.	DES096
Point	City of Destin	DESTIN WATER USERS INC	Communications Facilities	Critical Infrastructure	DESTIN WATER USERS INC	DES097
Point	City of Destin	PELICAN BEACH RESORT OWNERS ASSOCIATION	Communications Facilities	Critical Infrastructure	PELICAN BEACH RESORT OWNERS ASSOCIATION	DES098
Point	City of Destin	FLORIDA POWER & LIGHT COMPANY	Communications Facilities	Critical Infrastructure	FLORIDA POWER & LIGHT COMPANY	DES099
Point	City of Destin	VERIZON WIRELESS PERSONAL COMMUNICATIONS LP	Communications Facilities	Critical Infrastructure	VERIZON WIRELESS PERSONAL COMMUNICATIONS LP	DES0100

Point	City of Destin	DESTIN EXECUTIVE AIRPORT	Communications Facilities	Critical Infrastructure	DESTIN EXECUTIVE AIRPORT	DES0101
Point	City of Destin	OCTAGON TOWERS, LLC	Communications Facilities	Critical Infrastructure	OCTAGON TOWERS, LLC	DES0102
Point	City of Destin	BEACH TV PROPERTIES, INC.	Communications Facilities	Critical Infrastructure	BEACH TV PROPERTIES, INC.	DES0103
Point	City of Destin	NEW CINGULAR WIRELESS PCS, LLC	Communications Facilities	Critical Infrastructure	NEW CINGULAR WIRELESS PCS, LLC	DES0104
Point	City of Destin	ALLTEL CORPORATION	Communications Facilities	Critical Infrastructure	ALLTEL CORPORATION	DES0105
Point	City of Destin	ALLTEL CORPORATION	Communications Facilities	Critical Infrastructure	ALLTEL CORPORATION	DES0106
Point	City of Destin	ALLTEL CORPORATION	Communications Facilities	Critical Infrastructure	ALLTEL CORPORATION	DES0107
Point	City of Destin	OKALOOSA COUNTY	Communications Facilities	Critical Infrastructure	OKALOOSA COUNTY	DES0108
Point	City of Destin	NEW CINGULAR WIRELESS PCS, LLC	Communications Facilities	Critical Infrastructure	NEW CINGULAR WIRELESS PCS, LLC	DES0110
Point	City of Destin	ELECTRIC BULK POWER TRANSMISSION AND CONTROL SUBSTATION	Communications Facilities	Critical Infrastructure	USEIA	DES0111
Point		CITY OF DESTIN HURRICANE DEBRIS STAGING AREA	Disaster Debris Management Sites	Critical Infrastructure	CITY OF DESTIN	DES0288
Point	City of Destin	COMMUNITY WATER SYSTEM (>100,000 GALLONS/DAY)	Drinking Water Facilities	Critical Infrastructure	DESTIN WATER USERS # 2	DES0116
Point	City of Destin	COMMUNITY WATER SYSTEM (>100,000	Drinking Water Facilities	Critical Infrastructure	DESTIN WATER USERS	DES0117

		GALLONS/DAY)				
Point	City of Destin	COMMUNITY WATER SYSTEM (>100,000 GALLONS/DAY)	Drinking Water Facilities	Critical Infrastructure	SOUTH WALTON UTILITY COMPANY	DES0118
Point	City of Destin	COMMUNITY WATER SYSTEM (>100,000 GALLONS/DAY)	Drinking Water Facilities	Critical Infrastructure	DESTIN WATER USERS #4	DES0119
Point	City of Destin	COMMUNITY WATER SYSTEM (>100,000 GALLONS/DAY)	Drinking Water Facilities	Critical Infrastructure	DESTIN WATER USERS #7	DES0120
Point	City of Destin	LIMITED USE PUBLIC WATER SYSTEM (64E-8)	Drinking Water Facilities	Critical Infrastructure	BIG KAHUNA'S SECONDARY/ SOUTH	DES0121
Point	City of Destin	COMMUNITY WATER SYSTEM (>100,000 GALLONS/DAY)	Drinking Water Facilities	Critical Infrastructure	DESTIN WATER USERS INC #5	DES0122
Point	City of Destin	COMMUNITY WATER SYSTEM (>100,000 GALLONS/DAY)	Drinking Water Facilities	Critical Infrastructure	DESTIN WATER USERS	DES0123
Line	City of Destin	ELECTRIC BULK POWER TRANSMISSION AND CONTROL	Electric Production and Supply Facilities	Critical Infrastructure	GULF POWER CO	DES0189
Line	City of Destin	ELECTRIC BULK POWER TRANSMISSION AND CONTROL	Electric Production and Supply Facilities	Critical Infrastructure	GULF POWER CO	DES0190
Line	City of Destin	ELECTRIC BULK POWER TRANSMISSI	Electric Production and Supply Facilities	Critical Infrastructure	GULF POWER CO	DES0191

		ON AND CONTROL				
Point	City of Destin	FT. BENNING RECREATIONAL AREA	Military Installations	Critical Infrastructure	U S GOVT (EGLIN AIR FORCE BASE)	DES0291
Line	City of Destin	Norriego Point Breakwater	Shorelines (Breakwater)	Critical Infrastructure	CITY OF DESTIN	DES0192
Line	City of Destin	Destin East Jetty Breakwater	Shorelines (Breakwater)	Critical Infrastructure	CITY OF DESTIN	DES0193
Line	City of Destin	Destin East Pass Bridge Concrete Structure Breakwater	Shorelines (Breakwater)	Critical Infrastructure	CITY OF DESTIN	DES0284
Point	City of Destin	Destin Harbor Pump	Stormwater Treatment Facilities and Pump Stations	Critical Infrastructure	BDM DESTIN HOLDINGS LLC	DES0286
Point	City of Destin	George W. French Wastewater Treatment Facility	Wastewater Treatment Facilities and Lift Stations	Critical Infrastructure	WALTON/OKALOOSA REG UTLY AUTH (DESTIN WATER USERS)	DES0287
Point	CITY OF DESTIN	Lift Station	Wastewater Treatment Facilities and Lift Stations	Critical Infrastructure	CITY OF DESTIN	DES0287
Point	CITY OF DESTIN	Lift Station	Wastewater Treatment Facilities and Lift Stations	Critical Infrastructure	CITY OF DESTIN	DES0286
Point	City of Destin	WELL 1 TANK	Water Utility Conveyance Systems	Critical Infrastructure	DESTIN WATER USERS, INC.	DES0284
Point	City of Destin	GROUND STORAGE NEAR WELL WELL 3	Water Utility Conveyance Systems	Critical Infrastructure	DESTIN WATER USERS, INC.	DES0285

Appendix C. Natural, Cultural, and Historic Resources Inventory

GEOMETRY	ENTITY_NAME	ASSET_NAME	ASSET_TYPE	ASSET_GRP	ASSET_OWN	ASSET_ID
Polygon	City of Destin	JAMES LEE PARK	Parks	Natural, Cultural, and Historical Resource	BCC OKALOOSA COUNTY	DES0194
Polygon	City of Destin	CLEMENT E TAYLOR PARK	Parks	Natural, Cultural, and Historical Resource	CITY OF DESTIN	DES0195
Polygon	City of Destin	JOES BAYOU RECREATION AREA & BOAT RAMP	Parks	Natural, Cultural, and Historical Resource	CITY OF DESTIN	DES0196
Polygon	City of Destin	MATTIE M KELLY PARK	Parks	Natural, Cultural, and Historical Resource	CITY OF DESTIN	DES0197
Polygon	City of Destin	SILVER SHELLS BEACH ACCESS	Parks	Natural, Cultural, and Historical Resource	CITY OF DESTIN	DES0198
Polygon	City of Destin	THE SHORES AT CRYSTAL BEACH PARK	Parks	Natural, Cultural, and Historical Resource	CITY OF DESTIN	DES0199
Polygon	City of Destin	CALHOUN BEACH ACCESS	Parks	Natural, Cultural, and Historical Resource	CITY OF DESTIN	DES0200
Polygon	City of Destin	NORRIEGO POINT PUBLIC BEACH ACCESS	Parks	Natural, Cultural, and Historical Resource	CITY OF DESTIN/POINTE RESORT LLC & POINTE	DES0201
Polygon	City of Destin	SHIRAH STREET BEACH ACCESS	Parks	Natural, Cultural, and Historical Resource	CITY OF DESTIN	DES0202

Polygon	City of Destin	POMPANO STREET BEACH ACCESS	Parks	Natural, Cultural, and Historical Resource	ABBOTT RESORTS INC	DES0203
Polygon	City of Destin	CRYSTAL BEACH DRIVE BEACH ACCESS	Parks	Natural, Cultural, and Historical Resource	DESTIN PALAZZO LLC	DES0204
Polygon	City of Destin	HARBOR LANE PARK	Parks	Natural, Cultural, and Historical Resource	CITY OF DESTIN	DES0205
Polygon	City of Destin	DEWEY BUCK DESTIN PARK	Parks	Natural, Cultural, and Historical Resource	CITY OF DESTIN	DES0206
Polygon	City of Destin	DALTON THREADGILL PARK	Parks	Natural, Cultural, and Historical Resource	CITY OF DESTIN	DES0207
Polygon	City of Destin	KELLY STREET DUCK POND	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0208
Polygon	City of Destin	KELL-AIRE PARK NORTH	Parks	Natural, Cultural, and Historical Resource	CITY OF DESTIN	DES0209
Polygon	City of Destin	MAIN STREET PARK	Parks	Natural, Cultural, and Historical Resource	CITY OF DESTIN	DES0210
Polygon	City of Destin	KELL-AIRE NATURE WALK	Parks	Natural, Cultural, and Historical Resource	CITY OF DESTIN	DES0211
Polygon	City of Destin	CAPTAIN ROYAL MELVIN HERITAGE PARK	Parks	Natural, Cultural, and Historical Resource	CITY OF DESTIN	DES0212
Polygon	City of Destin	JUNE WHITE DECKER PARK	Parks	Natural, Cultural, and	CITY OF DESTIN	DES0213

				Historical Resource		
Polygon	City of Destin	OSTEEN BEACH ACCESS	Parks	Natural, Cultural, and Historical Resource	CITY OF DESTIN	DES0214
Polygon	City of Destin	BARRACUDA STREET BEACH ACCESS	Parks	Natural, Cultural, and Historical Resource	CRYSTAL PIER COURTYARD T/H	DES0215
Polygon	City of Destin	TARPON STREET BEACH ACCESS	Parks	Natural, Cultural, and Historical Resource	CITY OF DESTIN	DES0216
Polygon	City of Destin	HARBORVIEW PARK	Parks	Natural, Cultural, and Historical Resource	CITY OF DESTIN	DES0217
Polygon	City of Destin	DESTIN SPORTS FIELDS	Parks	Natural, Cultural, and Historical Resource	SCHOOL BOARD OF OKALOOSA COUNTY	DES0218
Polygon	City of Destin	JEWEL MELVIN PARK	Parks	Natural, Cultural, and Historical Resource	CITY OF DESTIN	DES0219
Polygon	City of Destin	MORINO POINT BEACH ACCESS	Parks	Natural, Cultural, and Historical Resource	EG BEACH LLC	DES0220
Polygon	City of Destin	HENDERSON BEACH STATE PARK (MAIN ENTRANCE)	Parks	Natural, Cultural, and Historical Resource	TIITF/DNR	DES0221
Polygon	City of Destin	DESTIN COMMUNITY CENTER PLAYGROUND	Parks	Natural, Cultural, and Historical Resource	CITY OF DESTIN	DES0222
Polygon	City of Destin	HENDERSON BEACH STATE PARK - A CAMPGROUND	Parks	Natural, Cultural, and Historical Resource	TIITF/DNR	DES0223

Polygon	City of Destin	HENDERSON BEACH STATE PARK - B CAMPGROUND	Parks	Natural, Cultural, and Historical Resource	TIITF/DNR	DES0224
Polygon	City of Destin	HENDERSON BEACH STATE PARK - C CAMPGROUND	Parks	Natural, Cultural, and Historical Resource	TIITF/DNR	DES0225
Polygon	City of Destin	HENDERSON BEACH STATE PARK - D CAMPGROUND	Parks	Natural, Cultural, and Historical Resource	TIITF/DNR	DES0226
Polygon	City of Destin	HENDERSON BEACH STATE PARK - BEACH ACCESS	Parks	Natural, Cultural, and Historical Resource	TIITF/DNR	DES0227
Polygon	City of Destin	HENDERSON BEACH STATE PARK - NATURE TRAIL TRAILHEAD	Parks	Natural, Cultural, and Historical Resource	TIITF/DNR	DES0228
Polygon	City of Destin	Public Pinelands in Florida - Areas for Prescribed Burning	Conservation Lands	Natural, Cultural, and Historical Resource	TIITF/DNR	DES0229
Polygon	City of Destin	Public Pinelands in Florida - Areas for Prescribed Burning	Conservation Lands	Natural, Cultural, and Historical Resource	TIITF/DNR	DES0230
Polygon	City of Destin	Stormwater Pond City Hall	Wetlands	Natural, Cultural, and Historical Resource	CITY OF DESTIN	DES0231
Polygon	City of Destin	Morgans Sport Center	Parks	Natural, Cultural, and Historical Resource	DESTIN WATER USERS INC	DES0232
Polygon	City of Destin	Primary Dune	Natural Dunes	Natural, Cultural, and Historical Resource	TIITF/DNR	DES0233
Polygon	City of Destin	Secondary Dune	Natural Dunes	Natural, Cultural, and	TIITF/DNR	DES0234

				Historical Resource		
Polygon	City of Destin	Morgans Sport Center	Parks	Natural, Cultural, and Historical Resource	CITY OF DESTIN	DES0237
Polygon	City of Destin	UNNAMED	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0239
Polygon	City of Destin	DESTIN HARBOR	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0240
Polygon	City of Destin	DESTIN HARBOR	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0241
Polygon	City of Destin	DESTIN HARBOR	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0242
Polygon	City of Destin	DESTIN HARBOR	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0243
Polygon	City of Destin	DESTIN HARBOR	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0244
Polygon	City of Destin	UNNAMED	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0245
Polygon	City of Destin	UNNAMED	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0246
Polygon	City of Destin	UNNAMED	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0247

Polygon	City of Destin	UNNAMED	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0248
Polygon	City of Destin	JOES BAYOU	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0250
Polygon	City of Destin	UNNAMED	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0251
Polygon	City of Destin	UNNAMED	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0252
Polygon	City of Destin	UNNAMED	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0253
Polygon	City of Destin	UNNAMED	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0254
Polygon	City of Destin	UNNAMED	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0255
Polygon	City of Destin	INDIAN BAYOU	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0256
Polygon	City of Destin	UNNAMED	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0257
Polygon	City of Destin	UNNAMED	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0258
Polygon	City of Destin	UNNAMED	Surface Waters	Natural, Cultural, and	NWFWMD	DES0259

				Historical Resource		
Polygon	City of Destin	UNNAMED	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0260
Polygon	City of Destin	UNNAMED	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0261
Polygon	City of Destin	UNNAMED	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0262
Polygon	City of Destin	UNNAMED	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0263
Polygon	City of Destin	UNNAMED	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0264
Polygon	City of Destin	UNNAMED	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0265
Polygon	City of Destin	UNNAMED	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0266
Polygon	City of Destin	UNNAMED	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0267
Polygon	City of Destin	UNNAMED	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0268
Polygon	City of Destin	UNNAMED	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0269

Polygon	City of Destin	FOUR PRONG LAKE	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0270
Polygon	City of Destin	UNNAMED	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0271
Polygon	City of Destin	UNNAMED	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0272
Polygon	City of Destin	UNNAMED	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0273
Polygon	City of Destin	UNNAMED	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0274
Polygon	City of Destin	UNNAMED	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0275
Polygon	City of Destin	UNNAMED	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0276
Polygon	City of Destin	UNNAMED	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0277
Polygon	City of Destin	UNNAMED	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0278
Polygon	City of Destin	UNNAMED	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0279
Polygon	City of Destin	UNNAMED	Surface Waters	Natural, Cultural, and	NWFWMD	DES0280

				Historical Resource		
Polygon	City of Destin	UNNAMED	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0281
Polygon	City of Destin	UNNAMED	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0282
Polygon	City of Destin	CHOCTAWHATCHEE BAY	Surface Waters	Natural, Cultural, and Historical Resource	NWFWMD	DES0283

Appendix D. Transportation and Evacuation Routes Inventory

GEOMETRY	ENTITY_NAME	ASSET_NAME	ASSET_TYPE	ASSET_GRP	ASSET_OWN	ASSET_ID
Point	City of Destin	Atlantic Aviation (DTS)	Airports	Transportation and Evacuation Route	OKALOOSA CO AIRPORT & INDUSTRIAL AUTHORITY	DES063
Point	City of Destin	Destin Executive Airport (DTS)	Airports	Transportation and Evacuation Route	OKALOOSA CO AIRPORT & INDUSTRIAL AUTHORITY	DES064
Point	City of Destin	Airport Hanger	Airports	Transportation and Evacuation Route	OKALOOSA CO AIRPORT & INDUSTRIAL AUTHORITY	DES065
Point	City of Destin	Airport Hanger	Airports	Transportation and Evacuation Route	OKALOOSA CO AIRPORT & INDUSTRIAL AUTHORITY	DES066
Point	City of Destin	Airport Hanger	Airports	Transportation and Evacuation Route	OKALOOSA CO AIRPORT & INDUSTRIAL AUTHORITY	DES067
Point	City of Destin	Airport Hanger	Airports	Transportation and Evacuation Route	OKALOOSA CO AIRPORT & INDUSTRIAL AUTHORITY	DES068
Point	City of Destin	Airport Hanger	Airports	Transportation and Evacuation Route	OKALOOSA CO AIRPORT & INDUSTRIAL AUTHORITY	DES069
Point	City of Destin	Airport Hanger	Airports	Transportation and Evacuation Route	OKALOOSA CO AIRPORT & INDUSTRIAL AUTHORITY	DES070
Point	City of Destin	Airport Hanger	Airports	Transportation and Evacuation Route	OKALOOSA CO AIRPORT & INDUSTRIAL AUTHORITY	DES071
Point	City of Destin	Airport Hanger	Airports	Transportation and Evacuation Route	OKALOOSA CO AIRPORT & INDUSTRIAL AUTHORITY	DES072
Point	City of Destin	Airport Hanger	Airports	Transportation and Evacuation Route	OKALOOSA CO AIRPORT & INDUSTRIAL AUTHORITY	DES073
Point	City of Destin	Airport Hanger	Airports	Transportation and Evacuation Route	OKALOOSA CO AIRPORT & INDUSTRIAL AUTHORITY	DES074

Point	City of Destin	Airport Hanger	Airports	Transportation and Evacuation Route	OKALOOSA CO AIRPORT & INDUSTRIAL AUTHORITY	DES075
Point	City of Destin	Airport Hanger	Airports	Transportation and Evacuation Route	OKALOOSA CO AIRPORT & INDUSTRIAL AUTHORITY	DES076
Point	City of Destin	Airport Hanger	Airports	Transportation and Evacuation Route	OKALOOSA CO AIRPORT & INDUSTRIAL AUTHORITY	DES077
Point	City of Destin	Destin Flight Works and JSX	Airports	Transportation and Evacuation Route	OKALOOSA CO AIRPORT & INDUSTRIAL AUTHORITY	DES078
Polygon	City of Destin	Destin Executive Airport (DTS)	Airports	Transportation and Evacuation Route	OKALOOSA CO AIRPORT &	DES0238
Point	City of Destin	EAST PASS BRIDGE [US98 SR30 - WEST END OF DESTIN]	Bridges	Transportation and Evacuation Route	Florida State Road Department	DES089
Point	City of Destin	EAST PASS BRIDGE [US98 SR30 - WEST END OF DESTIN]	Bridges	Transportation and Evacuation Route	Florida State Road Department	DES090
Point	City of Destin	JOE'S BAYOU BOAT LAUNCH	Marinas (Boat Ramp)	Transportation and Evacuation Route	GOVERNMENT OWNED FOR GENERAL PUBLIC USE	DES0124
Point	City of Destin	DESTIN HARBOR	Marinas (Boat Ramp)	Transportation and Evacuation Route	DESTIN HARBOR	DES0125
Point	City of Destin	FT. BENNING RECREATIONAL AREA	Marinas (Boat Ramp)	Transportation and Evacuation Route	FT. BENNING RECREATIONAL AREA	DES0126
Point	City of Destin	DEWEY DESTIN SEAFOOD & RESTAURANT	Marinas (Boat Ramp)	Transportation and Evacuation Route	DEWEY DESTIN SEAFOOD & RESTAURANT	DES0127
Point	City of Destin	THE ULTIMATE MARINA	Marinas (Boat Ramp)	Transportation and Evacuation Route	THE ULTIMATE MARINA	DES0128
Point	City of Destin	SANDESTIN YACHT CLUB	Marinas (Boat Ramp)	Transportation and Evacuation Route	SANDESTIN YACHT CLUB	DES0129

Point	City of Destin	DESTIN HARBOR RESORT	Marinas (Boat Ramp)	Transportation and Evacuation Route	DESTIN HARBOR RESORT	DES0130
Point	City of Destin	HARBOR LANDING	Marinas (Boat Ramp)	Transportation and Evacuation Route	HARBOR LANDING	DES0131
Point	City of Destin	WATERVIEW TOWERS	Marinas (Boat Ramp)	Transportation and Evacuation Route	WATERVIEW TOWERS	DES0132
Point	City of Destin	TRANQUIL HARBOR	Marinas (Boat Ramp)	Transportation and Evacuation Route	TRANQUIL HARBOR CONDO	DES0133
Point	City of Destin	HARBORWALK MARINA	Marinas (Boat Ramp)	Transportation and Evacuation Route	HARBORWALK MARINA	DES0134
Point	City of Destin	EAST PASS TOWERS	Marinas (Boat Ramp)	Transportation and Evacuation Route	EAST PASS TOWERS	DES0135
Point	City of Destin	DOLPHIN POINT	Marinas (Boat Ramp)	Transportation and Evacuation Route	DOLPHIN POINT	DES0136
Point	City of Destin	HARBOR DOCKS	Marinas (Boat Ramp)	Transportation and Evacuation Route	HARBOR DOCKS	DES0137
Point	City of Destin	MARBELLA CONDO	Marinas (Boat Ramp)	Transportation and Evacuation Route	MARBELLA CONDO	DES0138
Point	City of Destin	SIDES MORENO POINT WEST	Marinas (Boat Ramp)	Transportation and Evacuation Route	SIDES MORENO POINT WEST	DES0139
Point	City of Destin	SANDPIPER COVE MARINA	Marinas (Boat Ramp)	Transportation and Evacuation Route	SANDPIPER COVE MARINA	DES0140
Point	City of Destin	MARINA CAFE YACHT CLUB	Marinas (Boat Ramp)	Transportation and Evacuation Route	MARINA CAFE YACHT CLUB	DES0141
Point	City of Destin	WATERSIDE TOWERS YACHT CLUB	Marinas (Boat Ramp)	Transportation and Evacuation Route	WATERSIDE TOWERS YACHT CLUB	DES0142

Point	City of Destin	THE SHIP CHANDLER	Marinas (Boat Ramp)	Transportation and Evacuation Route	THE SHIP CHANDLER	DES0143
Point	City of Destin	DESTIN MARINA	Marinas (Boat Ramp)	Transportation and Evacuation Route	DESTIN MARINA	DES0144
Point	City of Destin	CENTURY PARK WEST	Marinas (Boat Ramp)	Transportation and Evacuation Route	CENTURY PARK WEST	DES0145
Point	City of Destin	DESTIN CHOPS CAFE MARINA	Marinas (Boat Ramp)	Transportation and Evacuation Route	DESTIN CHOPS CAFE MARINA	DES0146
Point	City of Destin	SUN KING YACHT CLUB	Marinas (Boat Ramp)	Transportation and Evacuation Route	SUN KING YACHT CLUB	DES0147
Point	City of Destin	SAILFISH YACHT CLUB	Marinas (Boat Ramp)	Transportation and Evacuation Route	SAILFISH YACHT CLUB	DES0148
Point	City of Destin	GRAND HARBOR DESTIN	Marinas (Boat Ramp)	Transportation and Evacuation Route	GRAND HARBOR DESTIN	DES0149
Line	City of Destin	EAST PASS BRIDGE [US	Bridge	Transportation and Evacuation Routes	Florida State Road Department	DES0187
Line	City of Destin	EAST PASS BRIDGE [US	Bridge	Transportation and Evacuation Routes	Florida State Road Department	DES0188
Line	City of Destin	CR-30F/AIRPORT RD	Major Roadway	Transportation and Evacuation Routes	CITY OF DESTIN	DES0154
Line	City of Destin	US HWY 98	Major Roadway	Transportation and Evacuation Routes	Florida Department of Transportation (FDOT)	DES0155
Line	City of Destin	LEGION DR	Major Roadway	Transportation and Evacuation Routes	CITY OF DESTIN	DES0156
Line	City of Destin	COMMONS DR W	Major Roadway	Transportation and Evacuation Routes	CITY OF DESTIN	DES0158

Line	City of Destin	STAHLMAN AVE	Major Roadway	Transportation and Evacuation Routes	CITY OF DESTIN	DES0159
Line	City of Destin	SCENIC HWY 98	Major Roadway	Transportation and Evacuation Routes	CITY OF DESTIN	DES0161
Line	City of Destin	BENNING DR	Major Roadway	Transportation and Evacuation Routes	CITY OF DESTIN	DES0162
Line	City of Destin	CALHOUN AVE	Major Roadway	Transportation and Evacuation Routes	CITY OF DESTIN	DES0164
Line	City of Destin	COMMONS DR W	Major Roadway	Transportation and Evacuation Routes	CITY OF DESTIN	DES0165
Line	City of Destin	BEACH DR	Major Roadway	Transportation and Evacuation Routes	CITY OF DESTIN	DES0166
Line	City of Destin	LEGION DR	Major Roadway	Transportation and Evacuation Routes	CITY OF DESTIN	DES0167
Line	City of Destin	Henderson Beach Rd	Major Roadway	Transportation and Evacuation Routes	CITY OF DESTIN	DES0168
Line	City of Destin	BEACH DR	Major Roadway	Transportation and Evacuation Routes	CITY OF DESTIN	DES0169
Line	City of Destin	MAIN ST	Major Roadway	Transportation and Evacuation Routes	CITY OF DESTIN	DES0170
Line	City of Destin	OCEAN BLVD	Major Roadway	Transportation and Evacuation Routes	CITY OF DESTIN	DES0171
Line	City of Destin	MAIN ST	Major Roadway	Transportation and Evacuation Routes	CITY OF DESTIN	DES0172
Line	City of Destin	US HWY 98	Major Roadway	Transportation and Evacuation Routes	Florida Department of Transportation (FDOT)	DES0173

Line	City of Destin	SCENIC HWY 98	Major Roadway	Transportation and Evacuation Routes	CITY OF DESTIN	DES0174
Line	City of Destin	SCENIC HWY 98	Major Roadway	Transportation and Evacuation Routes	CITY OF DESTIN	DES0175
Line	City of Destin	HARBOR BLVD	Major Roadway	Transportation and Evacuation Routes	CITY OF DESTIN	DES0176
Line	City of Destin	SCENIC HWY 98	Major Roadway	Transportation and Evacuation Routes	CITY OF DESTIN	DES0177
Line	City of Destin	CALHOUN AVE	Major Roadway	Transportation and Evacuation Routes	CITY OF DESTIN	DES0178
Line	City of Destin	SIBERT AVE	Major Roadway	Transportation and Evacuation Routes	CITY OF DESTIN	DES0179
Line	City of Destin	CALHOUN AVE	Major Roadway	Transportation and Evacuation Routes	CITY OF DESTIN	DES0180
Line	City of Destin	BENNING DR	Major Roadway	Transportation and Evacuation Routes	CITY OF DESTIN	DES0181
Line	City of Destin	BEACH DR	Major Roadway	Transportation and Evacuation Routes	CITY OF DESTIN	DES0182
Line	City of Destin	AZALEA DR	Major Roadway	Transportation and Evacuation Routes	CITY OF DESTIN	DES0183
Line	City of Destin	INDIAN BAYOU TR	Major Roadway	Transportation and Evacuation Routes	CITY OF DESTIN	DES0184
Line	City of Destin	KELLY ST	Major Roadway	Transportation and Evacuation Routes	CITY OF DESTIN	DES0185
Line	City of Destin	EMERALD COAST PKWY	Major Roadway	Transportation and Evacuation Routes	CITY OF DESTIN	DES0186



Appendix III

Exposure and Sensitivity Analysis
Technical Memorandum

CITY OF DESTIN VULNERABILITY ASSESSMENT TECHNICAL MEMO

Exposure Analysis

An exposure analysis was conducted to evaluate potential flooding risks within the City of Destin per the state requirements. The analysis encompassed the City's primary flood hazard sources, including 1) coastal flood hazards from storm surge and tidal flooding; 2) extreme rainfall, and 3) compound flooding (combined coastal and rainfall events). These flood hazards were evaluated for existing and future conditions complying with the Florida Department of Environmental Protection (DEP) Vulnerability Assessment (VA) guidance. The following subsections provide a summary of the source data, methods, and products of the analyses.

Coastal Flood Analysis

Coastal flood analysis consisted of establishing sea level rise (SLR) scenarios, defining tidal flooding thresholds, and gathering storm surge data. Analysis was then performed to produce required products meeting FDEP guidance and statutory requirements.

Sea Level Rise Projections

SLR projections were identified using the U.S. Army Corps of Engineers (USACE) Sea Level Analysis Tool (SLAT, USACE 2024). This study was initiated prior to the 2024 guidance update, and as such, values for the National Oceanic and Atmospheric Administration (NOAA) 2017 projections for 2040 and 2070 were used. Per the statute requirements, projections were retrieved from the two closest NOA long-term water levels to Destin, FL. The Panama City (8729108) and Pensacola (8729840) locations were identified as the two closest stations, which are about 49 and 44 miles from the center of Destin, respectively. Values for the NOAA 2017 projections, for the intermediate-low and intermediate-high scenarios, as required by the guidance, are shown in Table 1. Values for both stations were similar; however, the Pensacola gauge was selected as the single source for the scenarios as it had the higher mean sea level (MSL) datum, and also the longer record of sea level trends (101 years) in the region of the study.

Table 1. SLR projections for selected stations, Pensacola (in bold) was used given the higher MSL value.

STATION	MSL	SCENARIO[1]	CHANGE IN MSL, FT[2]	
			2040	2070
Pensacola, FL (8729840)	**0.3 ft (relative to NAVD88)**	**Intermediate-Low**	**0.8**	**1.3**
		Intermediate-High	**1.4**	**3.2**
Panama City (8729108)	0.1 ft (relative to NAVD88)	Intermediate-Low	0.7	1.2
		Intermediate-High	1.3	3.2

Tidal Flooding Elevations and Threshold

Tidal elevations for mean higher high water (MHHW) elevation across the study area were sourced from the NOAA Office of Coastal Management Inundation Mapping[3]. This product provides a spatially continuous representation of MHHW derived from the tidal datum tool in meters relative to NAVD88. The surface was prepared for analysis by converting vertical units to feet and validated against published MHHW datum elevations from the NOAA Tides and Currents website. Next, the required two-foot threshold established by DEP was added to the surface. Finally, surfaces were created for present-day (2024) conditions and each discreet SLR scenario. An adjustment of 0.68 ft was also added to the present-day surface to adjust for relative SLR between the mid-point of the National Tidal Datum Epoch (NTDE, 1992) and current conditions in 2024, based on the observed SLR retrieved from the USACE SLAT tool. Floodplains and depth grids for each projection were generated from the study digital elevation model (DEM) through a proprietary mapping toolbox created for FEMA, state, and community floodplain mapping applications.

Tidal flood days were also calculated for each projection, based on the MHHW +2ft Threshold. Tidal flood days for the study were estimated using the NOAA Inundation Analysis Tool[4]. The tool returns a count and duration of events above a user-provided threshold elevation – in this application, the MHHW +2ft Threshold was used. A 10-year period was sampled (September 24, 2014 to September 23, 2024) and results were returned using hourly observational data. Equivalent days of tidal inundation, and percent of year inundated were then calculated for each scenario. A summary of the changes in tidal flood days for the MHHW +2ft Threshold across the scenarios is shown in Table 2.

Table 2. Tidal flood days per year for the MHHW +2ft Threshold for Existing Conditions and each SLR projection.

SCENARIO	TIDAL FLOOD DAYS METRIC	TIDAL FLOOD DAYS VALUE
Existing Conditions	Equivalent Days of Inundation per Year	4
	Percent of Year Inundated	1%
2040, Intermediate-Low, 0.8ft	Equivalent Days of Inundation per Year	6
	Percent of Year Inundated	2%
2040, Intermediate-High, 1.3ft	Equivalent Days of Inundation per Year	35

[1] Source: U.S. Army Corps of Engineers, Sea Level Analysis Tool, https://climate.sec.usace.army.mil/slat/

[2] Relative to the mid-point (1992) for the National Tidal Datum Epoch of 1983-2001.

[3] NOAA (2019). Inundation Mapping Tidal Surface - Mean Higher High Water. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service, Office for Coastal Management, published October 24, 2019.

[4] https://tidesandcurrents.noaa.gov/inundation/

	Percent of Year Inundated	10%
2070, Intermediate-Low, 1.4ft	Equivalent Days of Inundation	47
	Percent of Year Inundated	13%
2070, Intermediate-High, 3.2ft	Equivalent Days of Inundation	351
	Percent of Year Inundated	96%

Tidal flood days were also calculated for a range of land elevations from 1 to 6ft NAVD88. The product of this analysis was a lookup table that was related to the elevations of the point-based critical assets across Destin to describe changes in the tidal day flooding across planning horizons

RESULTS

Point-based critical assets were assessed across the community for tidal flood days with a 2 ft threshold above MHHW. The following sites had exposure to this flood hazard presented in Table 3 below.

Table 3. **Tidal Inundation Results for MHHW with 2 ft Threshold.** Equivalent Days of Inundation and Percent of the Year Inundated per each assess tidal flood scenario.

Asset Name	Asset Type	Existing Conditions		2040, Intermediate-Low, 0.8ft SLR		2040, Intermediate-High, 1.3ft SLR		2070, Intermediate-Low, 1.4ft SLR		2070, Intermediate-High, 3.2ft SLR	
Joe's Bayou Boat Launch	Boat Ramp	0	0%	0	0%	0	0%	0	0%	3	1%
Destin Marina	Boat Ramp	0	0%	0	0%	1	0.2%	1	0.2%	135	37%
Destin Harbor Pump	Stormwater Treatment Facilities and Pump Stations	3	1%	5	1%	29	8%	40	11%	348	95%
5000GPM Discharge Stormwater Pump, Heritage Run	Stormwater Treatment Facilities and Pump Stations	0	0%	0	0%	0	0%	0	0%	2	0.4%
500GPM Maintenance Pump, Heritage Run	Stormwater Treatment Facilities and Pump Stations	0	0%	0	0%	0	0%	0	0%	1	0.3%
Cross Street	Communications Facilities	0	0%	0	0%	0	0%	0	0%	1	0.3%

Given the limited vulnerability of assets with the 2 ft threshold applied, the point-based critical assets with exposure to tidal flooding at MHHW conditions without the 2 ft threshold are presented in Table 4 below.

Table 4. **Tidal Inundation Results for MHHW.** Equivalent Days of Inundation and Percent of the Year Inundated per each assess tidal flood scenario.

Asset Name	Asset Type	Existing Conditions		2040, Intermediate-Low, 0.8ft SLR		2040, Intermediate-High, 1.3ft SLR		2070, Intermediate-Low, 1.4ft SLR		2070, Intermediate-High, 3.2ft SLR	
Joe's Bayou Boat Launch	Boat Ramp	1	0.2%	1	0.3%	5	1%	7	2%	292	80%

Asset Name	Asset Type	Existing Conditions		2040, Intermediate-Low, 0.8ft SLR		2040, Intermediate-High, 1.3ft SLR		2070, Intermediate-Low, 1.4ft SLR		2070, Intermediate-High, 3.2ft SLR	
Destin Marina	Boat Ramp	4	1%	6	2%	35	10%	47	13%	351	96%
Alltel Corporation	Communications Facilities	0	0%	0	0%	0	0%	0	0%	1	0.3%
Destin Harbor Pump	Stormwater Treatment Facilities and Pump Stations	4	1%	6	2%	35	10%	47	13%	351	96%
5000 GPM Discharge Stormwater Pump, Heritage Run	Stormwater Treatment Facilities and Pump Stations	1	0.1%	1	0.2%	2	1%	3	1%	247	68%
500GPM Maintenance Pump, Heritage Run	Stormwater Treatment Facilities and Pump Stations	0	0%	0	0%	1	0.3%	1	0.4%	192	53%
Harbor Boulevard	Communications Facilities	0	0%	0	0%	0	0%	0	0%	46	13%
Harbor Boulevard	Communications Facilities	0	0%	0	0%	0	0%	0	0%	21	6%
Sibert Avenue	Communications Facilities	0	0%	0	0%	0	0%	0	0%	9	2%
Cross Street	Communications Facilities	0	0%	0	0%	1	0.3%	1	0.4%	192	53%

Storm Surge Elevations

Storm surge elevations were sourced from the Federal Emergency Management Agency (FEMA) to model the 1% annual exceedance probability (AEP) coastal storm event. AEP describes the likelihood of a flood occurring in any given year; an AEP of 1% corresponds to a 1-in-100-year flood, which is considered a major event. Raster water surface elevation data were retrieved from the Technical Support Data Notebook for the latest Flood Insurance Study for Okaloosa County[5], which includes the City of Destin. These surfaces provided a spatially continuous surge and wave setup elevation that defines the boundaries of the official FEMA coastal floodplain delineations as shown on the latest Flood Insurance Rate Maps (FIRMs). A set of surfaces was created for present-day (2024) conditions and each discreet SLR scenario by adding the respective values to the existing surface. The source FEMA storm surge study completed modeling in mean sea level and converted to NAVD88 using existing tidal datum relationships, relative to the 1998-2001 NTDE. Similar to the tidal elevation surface adjustment, 0.68 ft was also added to the existing surface to adjust the elevations to current 2024 conditions. Finally, updated existing and future

[5] FEMA (2021). Flood Insurance Study, Okaloosa County, Florida and incorporated areas. Federal Emergency Management Agency. Revised March 9, 2021.

floodplains and depth grids for each projection were generated from the study DEM through a proprietary mapping toolbox created for FEMA, state, and community floodplain mapping applications.

Rainfall Flooding Analysis

To estimate current flooding scenarios, rainfall data from NOAA's Atlas 14 was used to model the major 1% AEP rainfall event. Rainfall accumulation over a 24-hour period was patterned following guidance from the National Engineering Handbook.

For future scenarios, rainfall projections were derived from the NEX-GDDP-CMIP6 climate models. The analysis focused on the high-emission climate scenario (SSP585)—which represents high emissions with limited climate actions, leading to more significant rainfall increases. Rainfall projections were modeled for the years 2040 and 2070. Change factors were applied to the original NOAA Atlas 14 values to reflect increases in rainfall. For the 2040-time horizon, a rainfall change factor of 1.13 was applied, while for the 2070-time horizon, a change factor of 1.21 was applied. Due to these relatively minor change factors applied in the analysis, rainfall flood extents and severity change minimally over time. Table 1 shows the rainfall factors used in the 2040 and 2070 scenarios. Table 5 shows the NOAA Rainfall depths and adjusted future scenarios.

Table 5. Future Rainfall change factors and depths for the 1% AEP rainfall event in City of Destin, using SSP585 projections.

RAINFALL EVENT	CURRENT	2040	2070
Change Factor		1.13	1.21
Rainfall Depths	16 inches	18.08 inches	19.36 inches

Modeling Process

The flood modeling used HEC-RAS (Hydrologic Engineering Center's River Analysis System) software to simulate rainfall-driven water flow in rivers and streams and across different terrains. Key steps included:

- **Foundational Data:** First, foundational datasets to use in modeling are gathered from best available sources. This includes data related to terrain, land use, soil hydrologic groups. Recent LiDAR from the 2019-2020 NOAA NGS Topobathy LiDAR DEM: Hurricane Michael (NW Florida) was used to obtain at 1 meter resolution terrain grids.
- **Model Set-Up:**
    - The overland roughness coefficient, known as the Manning's N, was developed for the city. The National Land Cover Database (NLCD) Land Use 2024 Dataset was used to create the spatial roughness coefficient grid.
    - The SCS Curve Number method was used to determine the infiltration in within the study area. The NLCD Land Use Dataset along with the Soil Survey Geographic Database (SSURGO) hydrologic soil groups to determine the curve number. In HEC-RAS, direct rain-on-grid modeling is used to determine the infiltration and excess run-off.
    - Hydraulic modeling includes several boundary conditions to input rainfall depths and manage the coastal water surface elevations that could affect modeling.
    - The NOAA rainfall depths and distributions determined in hydrology were input into the model.
    - Stillwater boundary conditions representing the inner and outer coastline MHHW and 1% AEP Surge elevations as rainfall runs off land within the study area.
- **Simulation:** HEC-RAS rain-on-grid modeling was used to estimate water surface elevations, flow velocities, and flood extents for each scenario. This modeling shows the areas at risk for flooding

and how high the water might get in various rainfall events.

Results were visualized using Geographic Information System (GIS) software, creating floodplain boundaries, depth grids, and hazard maps. These maps illustrate potential flood extents and severities, providing critical inputs for the impact assessment in Task 4.2.

Compound Flooding Analysis

Compound flooding occurs when the peak rainfall runoff interacts with the tidal conditions or peak surge. This is modeled with two separate methods. Normal rainfall conditions are modeled with the MHHW water surface elevations to represent the average backwater for the rainfall run-off. To determine the compound flooding that could occur in the study area, the 1% AEP coastal water surface elevations were used with the rainfall. This represents a worst-case scenario where the rainfall run-off is timed to interact with the highest surge elevation from the coast.

For this analysis, the MHHW and Surge elevations used are shown in Table 6 and Table 7 below for their corresponding scenarios. Water Surface elevations below are shown in NAVD88 Feet.

Table 6. Mean-High-High-Water Elevations (NAVD88) used along the inner and outer coastline boundaries.

	CURRENT	2040	2070
Outer Coastline	3.63	4.35	6.15
Inner Bay Coastline	3.33	4.05	5.85

Table 7. 1% AEP Coastal Surge Elevations (NAVD88) used along the inner and outer coastline boundaries.

	CURRENT	2040	2070
Outer Coastline	9.39	10.79	12.59
Inner Bay Coastline	7.34	8.74	10.54

Flood Hazard Results

Mapping results of all modeled scenarios are shown in Appendix A – Flood Hazard Exposure. Table 8 below shows acres exposed by flood scenario. Differences between present-day and 2070 flood extents are relatively minor, with an increase of between 400-600 acres for both compounding and non-compounding pluvial 1% AEP storm events. Similarly coastal MHHW + 2 ft flood events increase by around 100 to 300 acres for the intermediate low and intermediate high sea level rise scenarios respectively from present-day to 2070, and the coastal 1% AEP flood events increase by around 100 to 400 acres for the intermediate low and intermediate high sea level rise scenarios respectively from 2040 to 2070. Destin covers about 4,825 acres. Between 29% and 51% of the city is expected to be inundated in any given rainfall driven flood scenario, and between 12% to 37% of the city is expected to be inundated in any given coastal driven flood scenario.

Table 8. **Flood Exposure Summary.** Acres and percent of the City of Destin area inundated for each assessed flood scenario.

FLOOD SCENARIO				AREA INUNDATED IN ACRES	AREA FLOODED AS A PERCENT
TIME HORIZON	FLOOD TYPE	EVENT TYPE	SEA LEVEL RISE SCENARIO		
Current	Rainfall	1% AEP	-	1,404	29%
	Compound	1% AEP	-	1,888	39%

	Coastal	MHHW + 2ft	-	588	12%
2040	Rainfall	1% AEP	-	1,545	32%
	Compound	1% AEP	-	2,171	45%
	Coastal	MHHW + 2ft	Intermediate Low	595	12%
	Coastal	1% AEP	Intermediate Low	1,281	27%
	Coastal	MHHW + 2ft	Intermediate High	648	13%
	Coastal	1% AEP	Intermediate High	1,400	29%
2070	Rainfall	1% AEP	-	1,703	35%
	Compound	1% AEP	-	2,477	51%
	Coastal	MHHW + 2ft	Intermediate Low	639	13%
	Coastal	1% AEP	Intermediate Low	1,385	29%
	Coastal	MHHW + 2ft	Intermediate High	887	18%
	Coastal	1% AEP	Intermediate High	1,780	37%

Flood depth is also a critical factor in assessing severity and damage. Maximum depths in future time horizons. Maximum flood depths for the 1% AEP compound event in 2040 are shown in Figure 1 below. Larger scale maps and depth grids for all events are included in Appendix A.

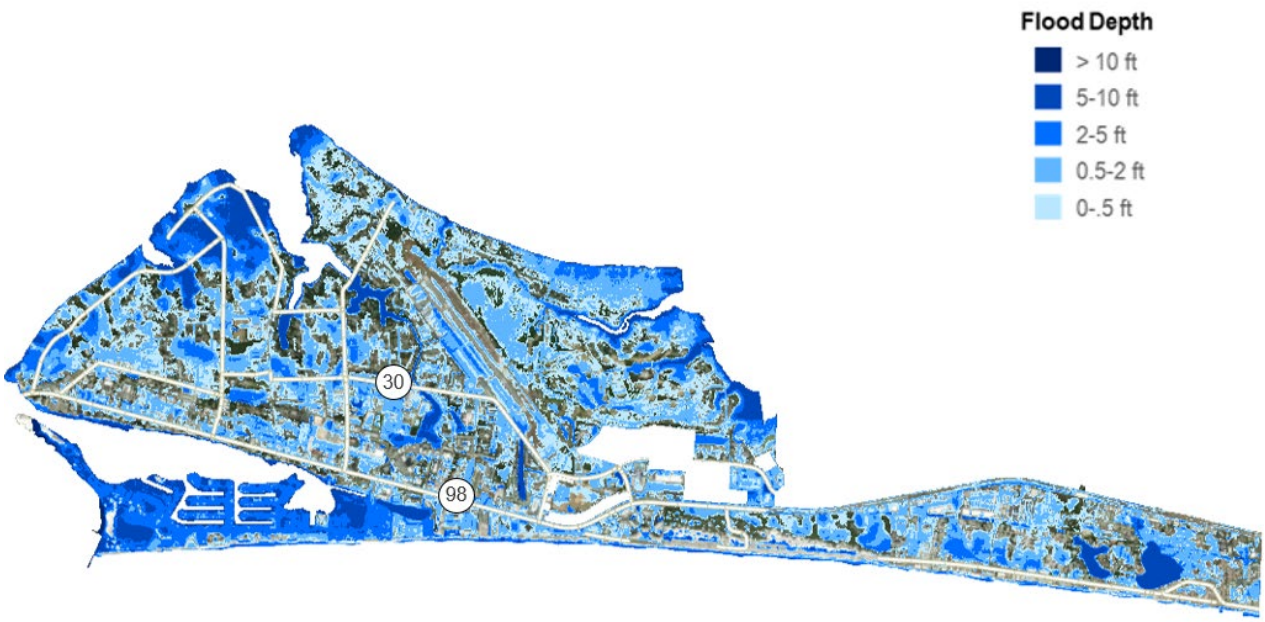


Figure 1. Map showing depth of flooding in feet during a 2040 1% AEP compound rainfall and coastal flood event across the City of Destin.

Sensitivity Analysis

The goal of the sensitivity analysis is to evaluate the potential impact of flooding on critical community and regional assets by considering not only their exposure but also their susceptibility to damage or disruption. This builds on the exposure analysis conducted in Task 4.1 by incorporating metrics that assess how flood depths, lengths, and areas translate to vulnerability for different asset types. This also leverages the asset Inventory created in Task 3.1. Results of this task will be used to identify Focus Areas with input from community stakeholders in Task 4.4.

Calculation Process

Critical assets were analyzed based on their geometry type (point, line, or polygon) in the geospatial database:

- Point assets (e.g., buildings) were evaluated based on flood depth in feet.
- Linear assets (e.g., roads) were assessed based on the length of asset exposed to flooding above a disruptive threshold.
- Polygon assets (e.g., parks) were analyzed based on the flooded area above a disruptive threshold.

Point Assets

Most buildings and structures are represented in the data as point-based assets. For these assets, the sensitivity analysis focused on depth of flooding in feet as the primary metric, with greater depths associated with higher levels of damage and disruption.

To assign depth to each of these assets in GIS, the flood rasters for each of the scenarios created in Task 4.1 Exposure Analysis were intersected with the point asset data using a function in ArcGIS Pro called “Extract Multi Values to Point” which extracts the depth value from the flood raster at the at the point location and assigns it to each critical asset point.

Vulnerability is measured based on the depth of water the asset takes on. Vulnerability scores were assigned to each asset under each scenario based on the ranges presented in Table 9 below.

Table 9. Vulnerability Scoring for Point Assets Based on Relative Depth of Flooding

VULNERABILITY SCORE	DEPTH RANGE
High	5+ ft
Moderate-High	>3-5 ft
Moderate	>1.5 -3 ft
Moderate-Low	>0.5-1.5 ft
Low	>0-0.5 ft
No Exposure	0 ft (or less if water is below the impact threshold)

Linear Assets

Linear assets primarily included transportation-related assets such as roads and railways. For these assets, the sensitivity analysis focused on the length of the asset flooded at a depth greater than 6 inches (a common threshold for disruptive impacts on roads and other infrastructure).

The linear assets were separated into 1,000-ft segments for a more granular analysis of where the flood is impacting the lines. To segment the linear assets in ArcGIS Pro, the tool "Generate Points Along Lines" was used at 1,000-ft increments (or less). These generated points were used to separate the lines at the points into segments using the tool "Split Line At Point."

In order to determine the length of flooding the linear assets were exposed to under each scenario, the flood rasters were converted to polygon layers. While raster images can be used to estimate length exposed using the "Zonal Statistics as a Table" ESRI tool, the exact length cannot be calculated with that method. By converting the raster to a polygon, covering only the area of the raster that has greater than 6 inches of flooding which was the threshold used for this analysis, the ESRI tool "Intersect" was used to calculate the exact length of each linear asset intersecting with the flood layers. This was accomplished for both the linear asset layers not split into segments (such as length of exposure on the whole road or railway) and completed for the linear asset layers that were segmented to obtain a more granular analysis. This tool ultimately created an estimate of the length in feet of flooding for each flood scenario.

For each linear asset, and generated linear asset segment, vulnerability scores were assigned based on the relative length of flood exposure above 6 inches. The percentage of the linear asset exposed was calculated by comparing the exposed length to the total length of the asset. Vulnerability scores were then assigned based on these percentages using the thresholds presented in Table 10 below.

Table 10. Vulnerability scoring for linear assets based on percent of length inundated above 6-inches.

VULNERABILITY SCORE	PERCENT EXPOSED RANGES
High	81-100% length exposed
Moderate-High	61-80% length exposed
Moderate	41-60% length exposed
Moderate-Low	21-40% length exposed
Low	1-20% length exposed
No Exposure	0% exposure

Polygon Assets

Polygon, or area-based assets, largely consisted of publicly owned lands and natural resources. For these assets, the sensitivity analysis focused on the area of the asset flooded at a depth greater than 6 inches.

The flood polygon layers used in the linear asset sensitivity analysis were also leveraged for the polygon asset sensitivity analysis so that the area (measured in square feet) exposed could be calculated in GIS. A 6-inch threshold for notable impacts could be applied. The tool "Intersect" was used on the polygon asset layer. This approach created a new polygon shapefile that assigned the calculated area of the polygon asset that intersected with the flood polygon layer, which was then joined back to the polygon asset layer to show the area exposed per flood scenario.

For each polygon asset, vulnerability scores were assigned based on the relative area of flood exposure above 6 inches, in order to focus on areas with notable flood impacts, not just low-lying ponding. The percentage of the polygon asset exposed was calculated by comparing the exposed area to the total area of the asset. Vulnerability scores were then assigned based on these percentages using the thresholds presented in Table 11 below.

Table 11. Vulnerability scoring for polygon assets based on the percent of the area inundated above 6 inches.

VULNERABILITY SCORE	PERCENT EXPOSED RANGES
High	81-100% area exposed
Moderate-High	61-80% area exposed
Moderate	41-60% area exposed
Moderate-Low	21-40% area exposed
Low	1-20% area exposed
No Exposure	0% exposure

Data Review and Consolidation

For all asset types, results were packaged in an ESRI geodatabase. Additionally, the tool "Table to Excel" was then used on each of the critical asset geometry types to export the data into an Excel document for a quality control review and further analysis. The quality control review entailed running checks in the data to ensure the depth/length exposed/area exposed either increased or stayed the same from less extreme to more extreme flood scenarios and from current conditions to 2070. Additionally, the length and area exposed were reviewed to ensure that the exposure statistics were not found to be greater than the length or area of the asset itself. The geospatial database and the associated Excel documents were imported into Tableau to assess and produce additional graphics showing the results of the sensitivity analysis.

Sensitivity Analysis Results

The sensitivity analysis provided detailed insights into how different asset types may respond to varying flood conditions. Findings are summarized by asset class below.

- Community and Emergency Facilities
- Critical Infrastructure
- Natural, Cultural, and Historical Assets
- Transportation Assets

For each asset class, assets with notable exposure and trends across the city are highlighted. Risk levels for each asset type are assigned based on percent of assets affected or portion of length/area inundated across assets with the same classification. Maps focus on the 2040 major (1% AEP) flood scenario, as a moderate-term event that provides a good representation of the range of asset impacts. While this section focuses on summaries and highlights of findings, detailed, asset-specific results across all event scenarios are provided in Appendix B – Asset Flood Vulnerability.

This analysis used high-level metrics and generalized assumptions. As such, results should be considered a preliminary assessment intended to identify areas and assets of concern and prioritize them for further evaluation with input from community stakeholders.

Community and Emergency Facilities

Community and emergency facilities include assets related to community gatherings, shelter, law enforcement, emergency response, healthcare, and government services. These kinds of buildings and areas play a critical role in ensuring the health and safety of City of Destin residents, both during and outside of emergency situations. Across the City, 23 point-based assets and 2 area-based assets were identified as community and emergency facilities. The sensitivity of point-based assets varies based on first floor elevation and other building characteristics, but those were not included in this analysis due to limited availability, leading to the potential for over-estimation of asset vulnerability.

PLUVIAL RESULTS

Across the City of Destin, 4 community and emergency facility point-based assets (17%) were mapped as being exposed to flooding during the most extreme rainfall event modeled (2070 1% AEP). These assets include two community centers, a fire station, and a school. Additionally, 2 area-based assets fall into this category, both of which are local government facilities.

Table 12 below shows how many of each point-based asset type is exposed to flooding across event scenarios. Notably, around a third of community centers, fire stations, and schools are exposed to flooding across all time horizons in the 1% AEP rainfall-induced flood event. The American Legion Post 296 community center has a high relative rate of exposure with around 2 ft of depth projected in all time horizons with a 1% AEP rainfall-induced flood event. Additionally, the Fire Baptist Destin Preschool is projected to be exposed to nearly 2 ft of flood depth by 2070.

Table 13 shows the acres and percent of the total area exposed to flooding for community and emergency area-based assets across event scenarios. One of the two local government facilities, the City Hall Parking Lot, is exposed under all scenarios. The other local government facility asset is the City Hall HVAC Unit, which was not found to be exposed.

Table 12. **Point-Based Community and Emergency Facilities Risk Level Summary**. Count and percent of total assets flooded during each assessed flood scenario.

ASSET TYPE	CURRENT 1% AEP		2040 1% AEP		2070 1% AEP	
Community Center	2	29%	2	29%	2	29%
Fire Station	1	33%	1	33%	1	33%
Schools	1	33%	1	33%	1	33%

Table 13. **Area-Based Community and Emergency Facilities Risk Level Summary.** Total area (in acres) and percent of total area flooded above 6 inches during each assessed flood scenario.

ASSET TYPE	CURRENT 1% AEP		2040 1% AEP		2070 1% AEP	
Local Government Facility	0.5	73%	0.6	78%	0.6	78%

Figure 2 below illustrates the location of all mapped community and emergency facilities and shows each asset's vulnerability score to a 2040 1% AEP rainfall induced flood event. The highest flood depth measured for this asset class is 2.2 ft, which occurs at the American Legion Post 296 Community Center. This Community Center and the Fire Baptist Destin Preschool are the only point-based assets in the community and emergency services category assigned a moderate vulnerability score.

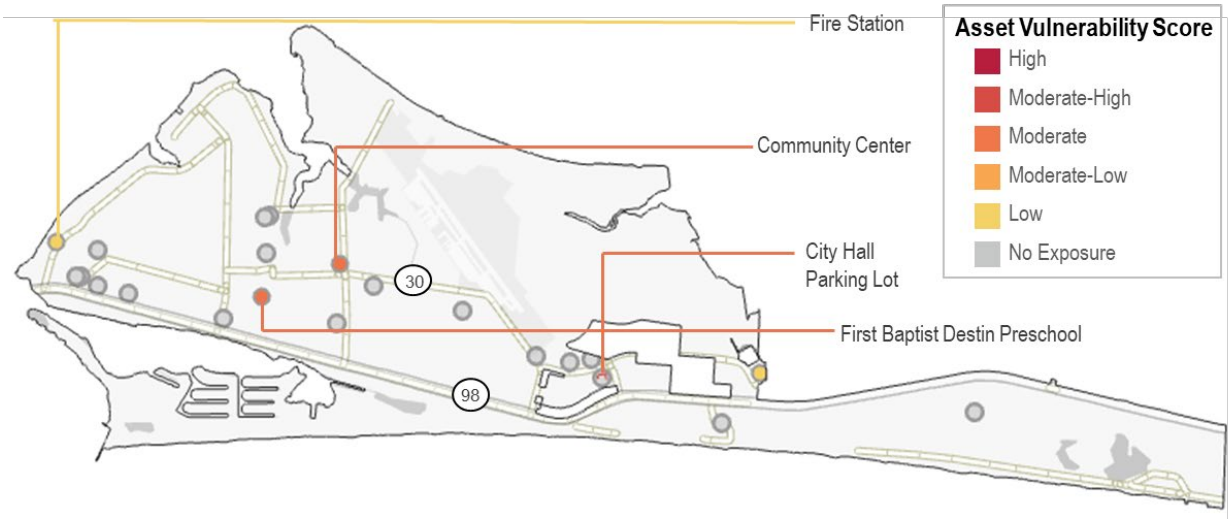


Figure 2. **Map of Community and Emergency Facilities Asset Vulnerability.** Scores based on relative depth of flooding during a 2040 1% AEP rainfall event with select assets labeled. Representative key assets that are highlighted; for a cumulative list of vulnerable assets based on asset class, see Appendix B and individual community sections below.

COASTAL RESULTS

Across the City of Destin, only 1 community and emergency facility point-based asset (4%), the Destin Station #19 Destin Fire Control District fire station, was mapped as being exposed to flooding during the most extreme coastal event modeled (2070 1% AEP Intermediate High SLR scenario). Additionally, 2 area-based assets fall into this category, both of which are local government facilities. Neither of these local government facilities are exposed to flooding during the selected coastal flood events.

Table 14 below shows coastal flood exposures for the Destin Station #19 Destin Fire Control District fire station. The fire station is exposed in all 1% AEP storm events starting in 2040. No assets were exposed to the MHHW plus 2 ft threshold.

Table 14. **Point-Based Community and Emergency Facilities Risk Level Summary**. Count and percent of total assets flooded during each assessed flood scenario.

ASSET TYPE	CURRENT		2040								2070							
	MHHW + 2FT		INT-LOW				INT-HIGH				INT- LOW				INT- HIGH			
			MHHW + 2FT		1% AEP		MHHW + 2FT		1% AEP		MHHW + 2FT		1% AEP		MHHW + 2FT		1% AEP	
Fire Station	0	0%	0	0%	1	33%	0	0%	1	33%	0	0%	1	33%	0	0%	1	33%

Figure 3 below illustrates the location of all mapped community and emergency facilities and shows each asset's vulnerability score for a 2040 1% AEP Intermediate High SLR Scenario coastal flood event. The Destin Station #19 Destin Fire Control District fire station has a depth of 1.8 ft in this scenario, which has a moderate vulnerability score.



Figure 3. **Map of Community and Emergency Facilities Asset Vulnerability.** Scores based on relative depth of flooding during a 2040 1% AEP Intermediate High SLR Scenario coastal event with select assets labeled. Representative key assets that are highlighted; for a cumulative list of vulnerable assets based on asset class, see Appendix B and individual community sections below.

COMPOUND FLOODING RESULTS

Across the City of Destin, 4 (17%) community and emergency facility point-based assets were mapped as being exposed to flooding during the most extreme compound flooding event modeled (2070 1% AEP). Additionally, 2 area-based assets fall into this category, both of which are local government facilities.

Table 15 below shows how many of each point-based asset type is exposed to flooding across event scenarios. Notably, around a third of community centers, fire stations, and schools are exposed to flooding across all time horizons in the 1% AEP compound flooding event. The Destin Station #19 Destin Fire Control District fire station has a high relative rate of exposure with around 5 ft of depth projected in the 2070 1% AEP compound flood event. Additionally, the American Legion Post 296 community center is projected to be exposed to around 2 ft of flood depth by 2070.

Table 16 shows the acres and percent of the total area exposed to flooding for community and emergency area-based assets across event scenarios. One of the two local government facilities is exposed under all scenarios, the City Hall Parking Lot. The other local government facility asset, the City Hall HVAC Unit, was not found to be exposed.

Table 15. **Point-Based Community and Emergency Facilities Risk Level Summary**. Count and percent of total assets flooded during each assessed flood scenario.

ASSET TYPE	CURRENT 1% AEP		2040 1% AEP		2070 1% AEP	
Community Center	2	29%	2	29%	2	29%
Fire Station	1	33%	1	33%	1	33%
Schools	1	33%	1	33%	1	33%

Table 16. **Area-Based Community and Emergency Facilities Risk Level Summary.** Total area (in acres) and percent of total area flooded above 6 inches during each assessed flood scenario.

ASSET TYPE	CURRENT 1% AEP		2040 1% AEP		2070 1% AEP	
Local Government Facility	0.5	73%	0.6	78%	0.6	78%

Figure 4 below illustrates the location of all mapped community and emergency facilities and shows each asset's vulnerability score to a 2040 1% AEP compound flooding event. The highest flood depth measured for this asset class is 3.2 ft (at the Destin Station #19 Destin Fire Control District fire station), which has a moderate-high vulnerability score in 2040.

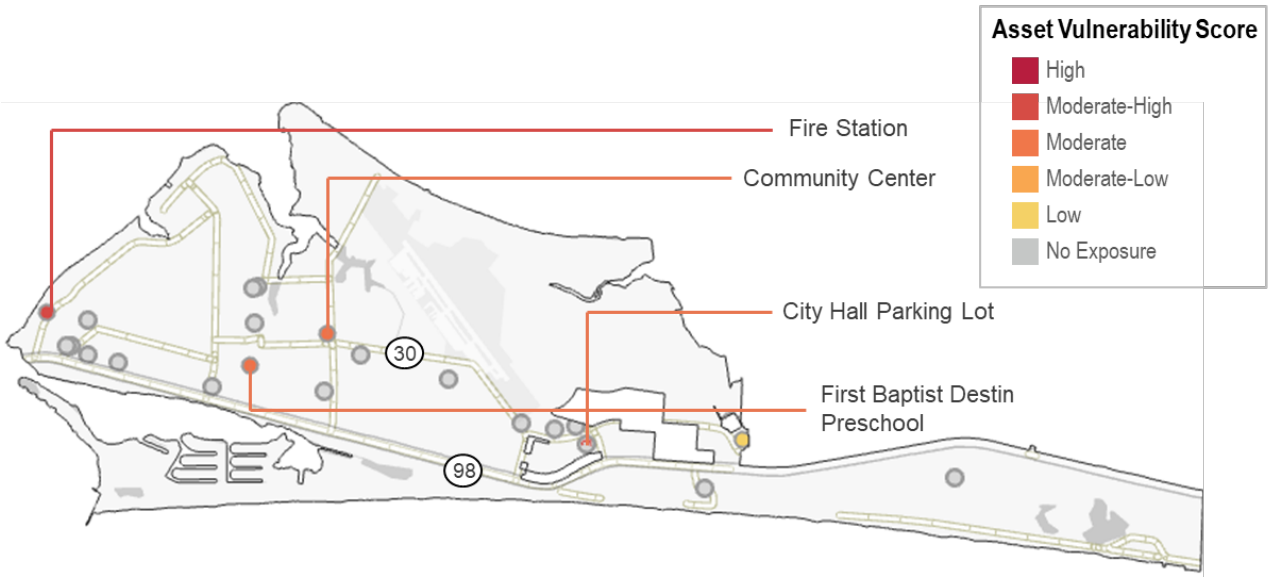


Figure 4. **Map of Community and Emergency Facilities Asset Vulnerability.** Scores based on relative depth of flooding during a 2040 1% AEP compound flooding event with select assets labeled. Representative key assets that are highlighted; for a cumulative list of vulnerable assets based on asset class, see Appendix B and individual community sections below.

Critical Infrastructure

Critical infrastructure includes assets related to communications, energy, traffic navigation, waste management, and water management. Thesenon-building infrastructure networks support all facets of daily life and are considered essential to the smooth functioning and safety of communities. Across the City of Destin, 116 point-based and 6 linear-based critical infrastructure assets were mapped and used in this analysis.

PLUVIAL RESULTS

Of the critical infrastructure point-based assets, 57 (49%) were mapped as being exposed to flooding during the most extreme rainfall event modeled (2070 1% AEP). All 6 linear-based assets are exposed to rainfall flooding as well.

Table 17 below shows how many of each point-based asset type is exposed to flooding across scenarios. Notably, communication facilities represent the asset type with the highest number of exposed assets, followed by major traffic signal boxes, drinking water facilities, and stormwater treatment facilities and pump stations. While there are only three stormwater treatment facilities and pump stations, those infrastructure systems show the highest overall system-wide exposure as all of them are exposed in all scenarios. 100% of all evaluated linear critical infrastructure assets, shown in Table 18 below, which include major electricity supply power lines and shoreline breakwaters, have some level of flood exposure across all events. Around a third of the length of major electric power lines and around two-thirds of the length of all shoreline breakwaters are in areas exposed to at least 6 inches of flooding during all assessed flood scenarios, but their relative susceptibility to floodwaters may vary based on asset design and construction.

Table 17. **Point-Based Critical Infrastructure Risk Level Summary.** Count and percent of total assets flooded during each assessed flood scenario.

Asset Type	Current 1% AEP		2040 1% AEP		2070 1% AEP	
Communication Facility	29	38%	30	39%	33	43%
Drinking Water Facility	4	50%	4	50%	5	63%
Major Traffic Signal Box	9	45%	12	60%	13	65%
Stormwater Treatment Facility and Pump Station	3	100%	3	100%	3	100%
Wastewater Treatment Facility and Lift Station	2	67%	2	67%	2	67%
Water Utility Conveyance System	1	50%	1	50%	1	50%

Table 18. **Line-Based Critical Infrastructure Risk Level Summary.** Total length (in miles) and percent of total length flooded above 6 inches during each assessed flood scenario.

Asset Type	Current 1% AEP		2040 1% AEP		2070 1% AEP	
Electric Production and Supply Facility	3.34	34%	3.65	37%	3.84	39%
Shoreline (Breakwaters)	0.51	67%	0.52	68%	0.53	70%

Figure 5 below illustrates the location of all mapped critical infrastructure and shows each asset's vulnerability score as determined by the 2040 major (1% AEP) rainfall event. The Destin Harbor Pump station has the highest relative flood depth in this asset class as it is exposed to close to 4 ft of flood depth in this scenario and is considered to have moderate-high vulnerability.

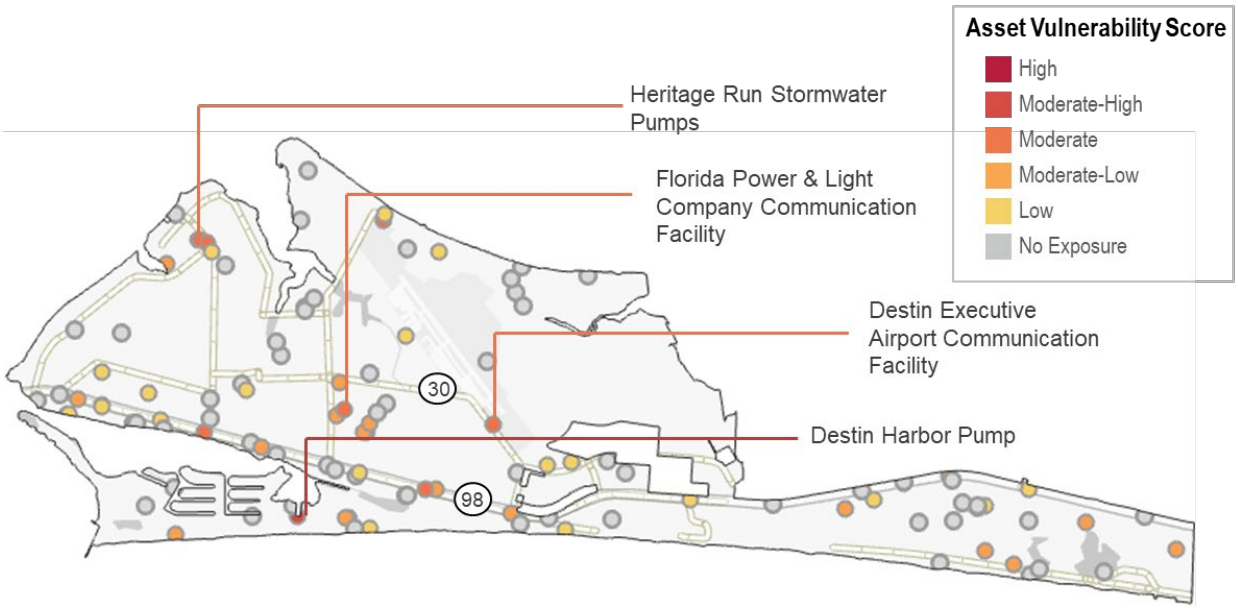


Figure 5. **Map of Critical Infrastructure Point-Based Asset Vulnerability.** Scores based on relative depth of flooding during a 2040 1% AEP rainfall event with select assets labeled. Representative key assets that are highlighted; for a cumulative list of vulnerable assets based on asset class, see Appendix B and individual community sections below.

COASTAL RESULTS

Of the point-based critical infrastructure assets, 26 (49%) point-based assets were mapped as being exposed to flooding during the most extreme coastal event modeled (2070 1% AEP Intermediate High SLR Scenario). All 6 linear-based assets are exposed to coastal flooding as well.

Table 19 and Table 20 below shows how many of each point-based asset type is exposed to flooding across scenarios. Notably, communication facilities represent the asset type with the highest number of exposed assets, followed by major traffic signal boxes, drinking water facilities, and stormwater treatment facilities and pump stations. While there are only three stormwater treatment facilities and pump stations, those infrastructure systems show the highest overall system-wide exposure as all of them are exposed in all scenarios. Linear-based asset exposure is shown in Table 21 below, which include major electricity supply power lines and shoreline breakwaters. All shoreline breakwaters are in areas exposed to at least 6 inches of flooding during all assessed coastal flood scenarios, but their relative susceptibility to floodwaters may vary based on asset design and construction.

Table 19. **Point-Based Critical Infrastructure Risk Level Summary.** Count and percent of total assets flooded during each assessed flood scenario.

Asset Type	Current 1% AEP		2040 1% AEP		2070 1% AEP	
Communication Facility	29	38%	30	39%	33	43%
Drinking Water Facility	4	50%	4	50%	5	63%
Major Traffic Signal Box	9	45%	12	60%	13	65%
Stormwater Treatment Facility and Pump Station	3	100%	3	100%	3	100%
Wastewater Treatment Facility and Lift Station	2	67%	2	67%	2	67%
Water Utility Conveyance System	1	50%	1	50%	1	50%

Table 20. **Line-Based Critical Infrastructure Risk Level Summary.** Total length (in miles) and percent of total length flooded above 6 inches during each assessed flood scenario.

ASSET TYPE	CURRENT		2040								2070							
	MHHW + 2FT		INT-LOW				INT-HIGH				INT-LOW				INT-HIGH			
			MHHW + 2FT		1% AEP		MHHW + 2FT		1% AEP		MHHW + 2FT		1% AEP		MHHW + 2FT		1% AEP	
Electric Production and Supply Facility	0	0%	0	0%	0	0%	0	0%	0.23	2%	0	0%	0.22	2%	0	0%	0.53	5%
Shoreline (Breakwaters)	0.72	95%	0.73	95%	0.76	100%	0.75	98%	0.76	100%	0.75	98%	0.76	100%	0.76	100%	0.76	100%

Figure 6 below illustrates the location of all mapped critical infrastructure and shows each asset's vulnerability score as determined by the 2040 major (1% AEP) coastal event in an Intermediate High SLR scenario. The Destin Harbor Pump station has the highest relative flood depth in this asset class as it is exposed to close to 8.6 ft of flood depth in this scenario and is, one of three critical infrastructure point-based assets considered to have high vulnerability. The other two are the 500GPM Heritage Run stormwater discharge and maintenance pumps with around 5 ft of projected flood depth in this scenario.

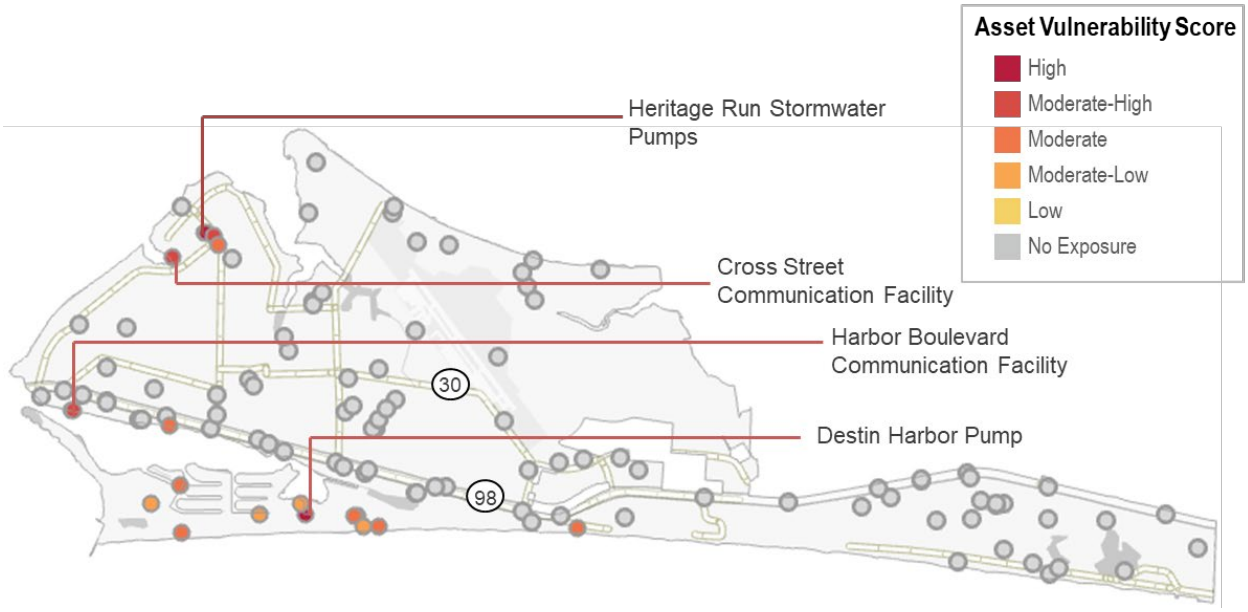


Figure 6. **Map of Critical Infrastructure Point-Based Asset Vulnerability.** Scores based on relative depth of flooding during a 2040 1% AEP Intermediate High SLR Scenario coastal event with select assets labeled. Representative key assets that are highlighted; for a cumulative list of vulnerable assets based on asset class, see Appendix B and individual community sections below.

COMPOUND FLOODING RESULTS

Of the point-based critical infrastructure assets, 57 (49%) assets were mapped as being exposed to flooding during the most extreme compound flooding event modeled (2070 1% AEP). and all linear-based assets are exposed as well.

Table 21 below shows how many of each point-based asset type is exposed to flooding across scenarios. Notably, communication facilities represent the asset type with the highest number of exposed assets, followed by major traffic signal boxes, drinking water facilities, and stormwater treatment facilities and pump stations. While there are only three stormwater treatment facilities and pump stations, those infrastructure systems show the highest overall system-wide exposure as all of them are exposed in all scenarios. 100% of all evaluated linear critical infrastructure assets, shown in Table 22 below, which include major electricity supply power lines and shoreline breakwaters, have some level of flood exposure across all events. Around a third of major electric power lines and around two-thirds of all shoreline breakwaters are in areas exposed to at least 6 inches of flooding during all assessed flood scenarios, but their relative susceptibility to floodwaters may vary based on asset design and construction.

Table 21. **Point-Based Critical Infrastructure Risk Level Summary.** Count and percent of total assets flooded during each assessed flood scenario.

Asset Type	Current 1% AEP		2040 1% AEP		2070 1% AEP	
Communication Facility	36	47%	38	49%	45	58%
Drinking Water Facility	4	50%	4	50%	5	63%
Major Traffic Signal Box	9	45%	12	60%	13	65%
Military Installation	0	0%	1	100%	1	100%
Stormwater Treatment Facility and Pump Station	3	100%	3	100%	3	100%
Wastewater Treatment Facility and Lift Station	2	67%	2	67%	2	67%
Water Utility Conveyance System	1	50%	1	50%	1	50%

Table 22. **Line-Based Critical Infrastructure Risk Level Summary.** Total length (in miles) and percent of total length flooded above 6 inches during each assessed flood scenario.

Asset Type	Current 1% AEP		2040 1% AEP		2070 1% AEP	
Electric Production and Supply Facility	3.92	40%	3.92	40%	4.29	44%
Shoreline (Breakwaters)	0.53	70%	0.53	70%	0.53	70%

Figure 7 below illustrates the location of all mapped critical infrastructure and shows each asset's vulnerability score as determined by the 2040 major (1% AEP) compound flooding event. The Destin Harbor Pump station has the highest relative flood depth in this asset class as it is exposed to close to 9.5 ft of flood depth in this scenario and is considered to have high vulnerability. Some other stormwater treatment facilities and pump stations, along with some communication facilities (such as the ones on Harbor Blvd and Cross St), are also considered to have high vulnerability for a 2040 major compound flooding event.

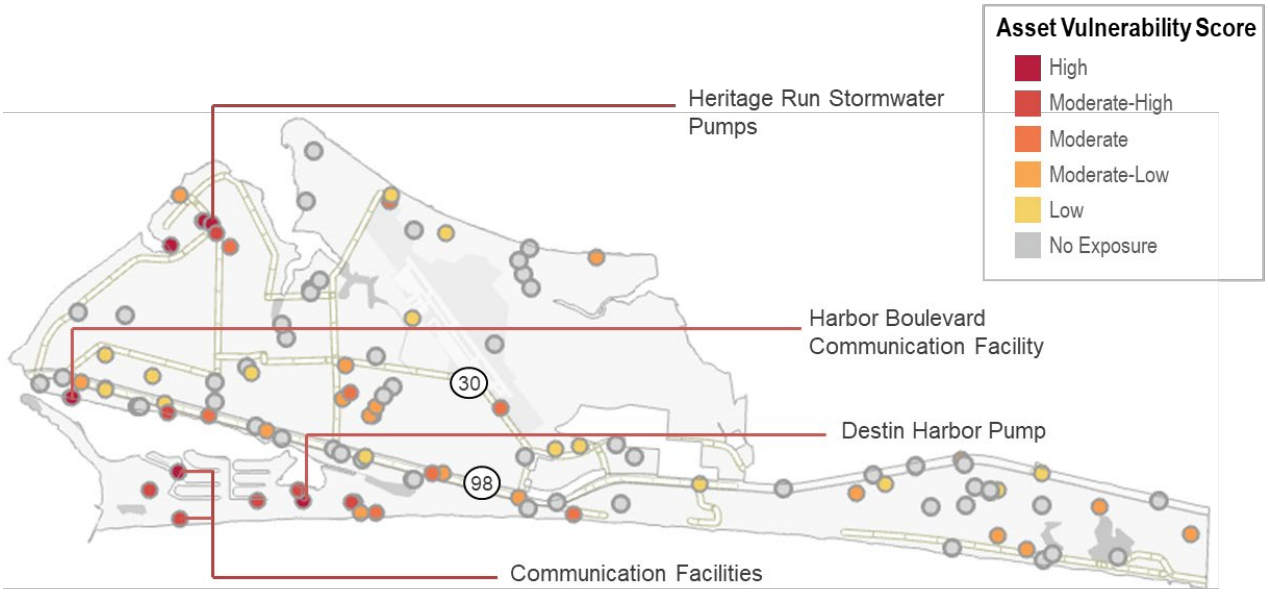


Figure 7. **Map of Critical Infrastructure Point-Based Asset Vulnerability.** Scores based on relative depth of flooding during a 2040 1% AEP compound flooding event with select assets labeled. Representative key assets that are highlighted; for a cumulative list of vulnerable assets based on asset class, see Appendix B and individual community sections below.

Natural, Cultural, and Historical Assets

Natural, cultural, and historical assets include assets related to recreation, community gathering, and historic preservation. Many natural areas are designed to absorb or redirect floodwaters, but historical and cultural assets may be particularly vulnerable to flood-related damage. Across the City of Destin, 38 area-based polygon assets are considered natural, cultural, and historical assets— 36 are parks and 2 are natural dunes. Additionally, 5 point-based assets fall into this category, 3 of which are designated historical assets and 2 of which are cemeteries. Surface water and wetland polygons are also included in this asset class; however, they are not included in these summaries since, as water-based assets, they are not considered directly sensitive to flood hazards.

PLUVIAL RESULTS

Of the area-based polygon natural assets, 35 have at least some exposure to flooding above 6 inches in a rainfall induced flood events. Only 1 of the point-based assets, a cemetery, has a risk of flooding under any scenarios.

Table 23 below shows how many of each asset type are exposed to flooding across event scenarios, and Table 24 shows the exposed area of polygon assets by type and flood scenario. Notably, over a third of all parks in the City of Destin are exposed to flooding in all scenarios. Flooding in park-designated areas may or may not lead to damaging impacts. Flooding is a natural and expected process, especially near creeks and rivers, but it can cause damage to built-up areas, such as hiking trails and sports fields.

Table 23. **Point-Based Natural, Cultural, and Historical Asset Risk Level Summary.** Count and percent of total assets flooded during each assessed flood scenario.

Asset Type	Current 1% AEP		2040 1% AEP		2070 1% AEP	
Cemetery	1	50%	1	50%	1	50%

Table 24. **Area-Based Natural, Cultural, and Historical Asset Risk Level Summary.** Total area (in acres) and percent of total area flooded during each assessed flood scenario.

Asset Type	Current 1% AEP		2040 1% AEP		2070 1% AEP	
Park	39.6	34%	44.1	38%	50.2	43%
Natural Dune	10.0	14%	10.4	15%	10.6	15%

Figure 8 below illustrates the location of all mapped natural, cultural, and historical assets and shows each asset's vulnerability score as determined by the 2040 major (1% AEP) rainfall event. The Destin Memorial Cemetery (Phase 2 only) is projected to have a little over 6 inches of flooding from a rainfall driven storm event and is considered to have moderate-low vulnerability.

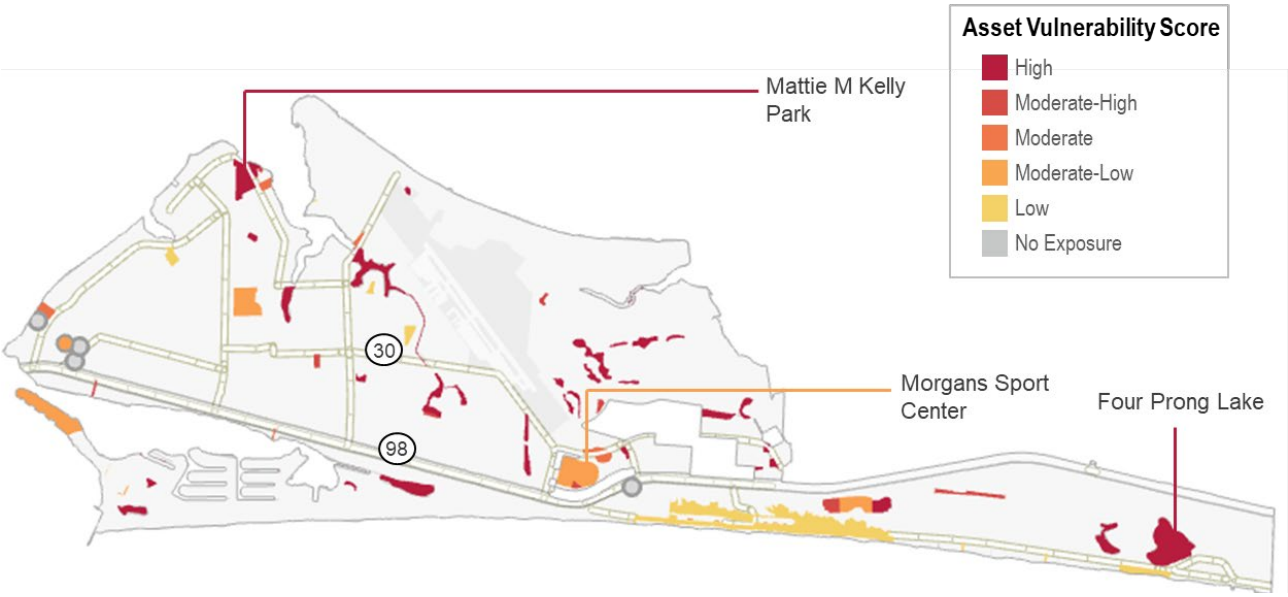


Figure 8. **Map of Natural, Cultural, and Historical Asset Vulnerability.** Scores based on relative depth of flooding during a 2040 1% AEP rainfall event with select assets labeled. Representative key assets that are highlighted; for a cumulative list of vulnerable assets based on asset class, see Appendix B and individual community sections below.

COASTAL RESULTS

Of the area-based polygon natural assets, 22 have at least some exposure to flooding above 6 inches in a coastal flood event. Only 2 of the point-based assets, a cemetery and a historic asset, have a risk of flooding under any scenarios.

Table 25 below shows how many of each asset type are exposed to flooding across event scenarios, and Table 26 shows the exposed area of polygon assets by type and flood scenario. Notably, over half of all parks in the City of Destin are exposed to flooding in the most extreme modeled coastal flood scenario (2070 1% AEP Intermediate High SLR scenario). Flooding in park-designated areas may or may not lead to damaging impacts. Flooding is a natural and expected process, especially near creeks and rivers, but it can cause damage to built-up areas, such as hiking trails and sports fields across the City of Destin.

Table 25. **Point-Based Natural, Cultural, and Historical Asset Risk Level Summary.** Count and percent of total assets flooded during each assessed flood scenario.

Asset Type	Current		2040								2070							
	MHHW + 2ft		Intermediate Low				Intermediate High				Intermediate Low				Intermediate High			
			MHHW + 2ft		1% AEP		MHHW + 2ft		1% AEP		MHHW + 2ft		1% AEP		MHHW + 2ft		1% AEP	
Cemetery	0	0%	0	0%	0	0%	0	0%	1	50%	0	0%	1	50%	0	0%	1	50%
Historical and Cultural Asset	0	0%	0	0%	0	0%	0	0%	1	33%	0	0%	0	0%	0	0%	1	33%

Table 26. **Area-Based Natural, Cultural, and Historical Asset Risk Level Summary.** Total area (in acres) and percent of total area flooded during each assessed flood scenario.

Asset Type	Current		2040								2070							
	MHHW + 2ft		Intermediate Low				Intermediate High				Intermediate Low				Intermediate High			
			MHHW + 2ft		1% AEP		MHHW + 2ft		1% AEP		MHHW + 2ft		1% AEP		MHHW + 2ft		1% AEP	
Park	16.3	14%	16.9	14%	38.7	33%	20.0	17%	40.8	35%	19.6	17%	40.5	35%	28.2	24%	46.1	40%
Natural Dune	0.0	0%	0.0	0%	5.3	7%	0.0	0%	8.9	12%	0.0	0%	8.5	12%	0.0	0%	20.9	29%

Figure 9 below illustrates the location of all mapped natural, cultural, and historical assets and shows each asset's vulnerability score as determined by the 2040 1% AEP Intermediate High SLR scenario coastal storm event. The Destin Memorial Cemetery (Phase 2 only) and a historical asset are projected to have a low flood depth with coastal events, and each asset has a low vulnerability score.

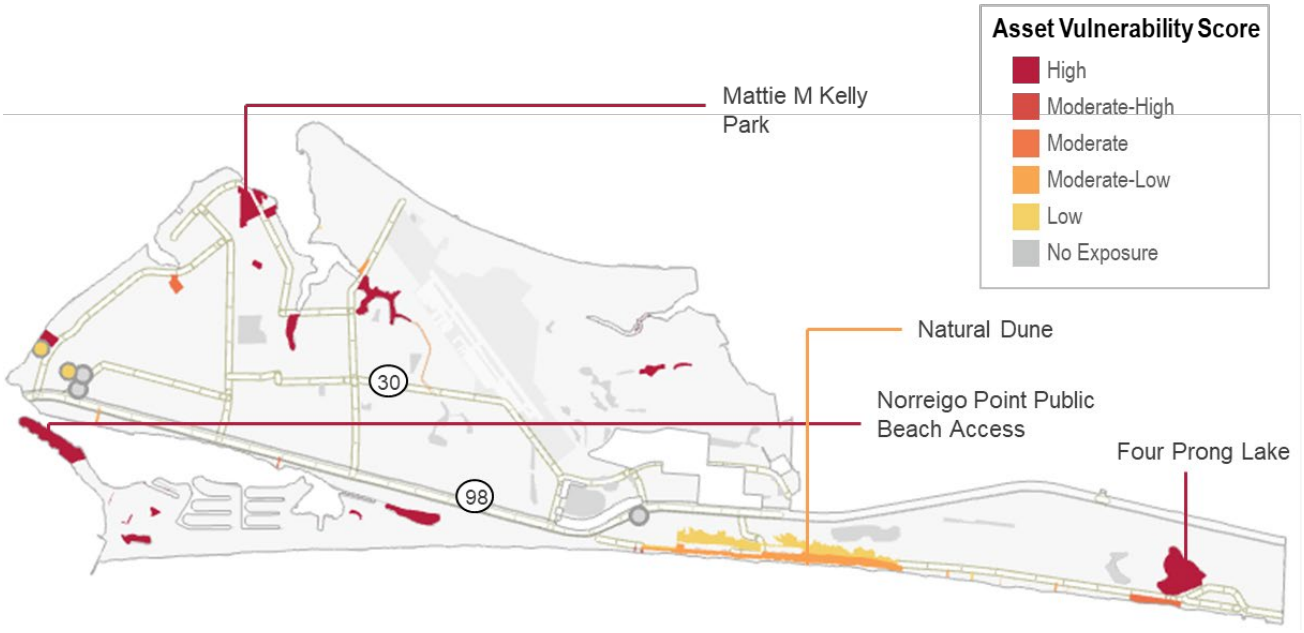


Figure 9. **Map of Natural, Cultural, and Historical Asset Vulnerability.** Scores based on relative depth of flooding during a 2040 1% AEP Intermediate High SLR Scenario coastal event with select assets labeled. Representative key assets that are highlighted; for a cumulative list of vulnerable assets based on asset class, see Appendix B and individual community sections below.

COMPOUND FLOODING RESULTS

Of the area-based polygon natural assets, 37 have at least some exposure to flooding above 6 inches in a compound flooding event. Only 2 of these point-based assets, a cemetery and a historic asset, have a risk of flooding under any scenarios.

Table 27 below shows how many of each asset type are exposed to flooding across event scenarios, and Table 28Table 30 shows the exposed area of polygon assets by type and flood scenario. Notably, around half of all park area in the City of Destin is exposed to flooding in all scenarios. Flooding in park-designated areas may or may not lead to damaging impacts. Flooding is a natural and expected process, especially near creeks and rivers, but it can cause damage to built-up areas, such as hiking trails and sports fields across the City of Destin.

Table 27. **Point-Based Natural, Cultural, and Historical Asset Risk Level Summary.** Count and percent of total assets flooded during each assessed flood scenario.

Asset Type	Current 1% AEP		2040 1% AEP		2070 1% AEP	
Historical and Cultural Asset	1	33%	1	33%	1	33%
Cemetery	1	50%	1	50%	1	50%

Table 28. **Area-Based Natural, Cultural, and Historical Asset Risk Level Summary.** Total area (in acres) and percent of total area flooded during each assessed flood scenario.

Asset Type	Current 1% AEP		2040 1% AEP		2070 1% AEP	
Park	56.5	49%	66.4	57%	70.6	61%
Natural Dune	11.6	16%	14.8	21%	20.6	29%

Figure 10 below illustrates the location of all mapped natural, cultural, and historical assets and shows each asset's vulnerability score as determined by the 2040 major (1% AEP) compound flooding event. The Destin Memorial Cemetery (Phase 2 only) and a historical structure are both projected to have around 1.5 ft of flooding due to a compound flooding event and are considered to have moderate-low vulnerability.

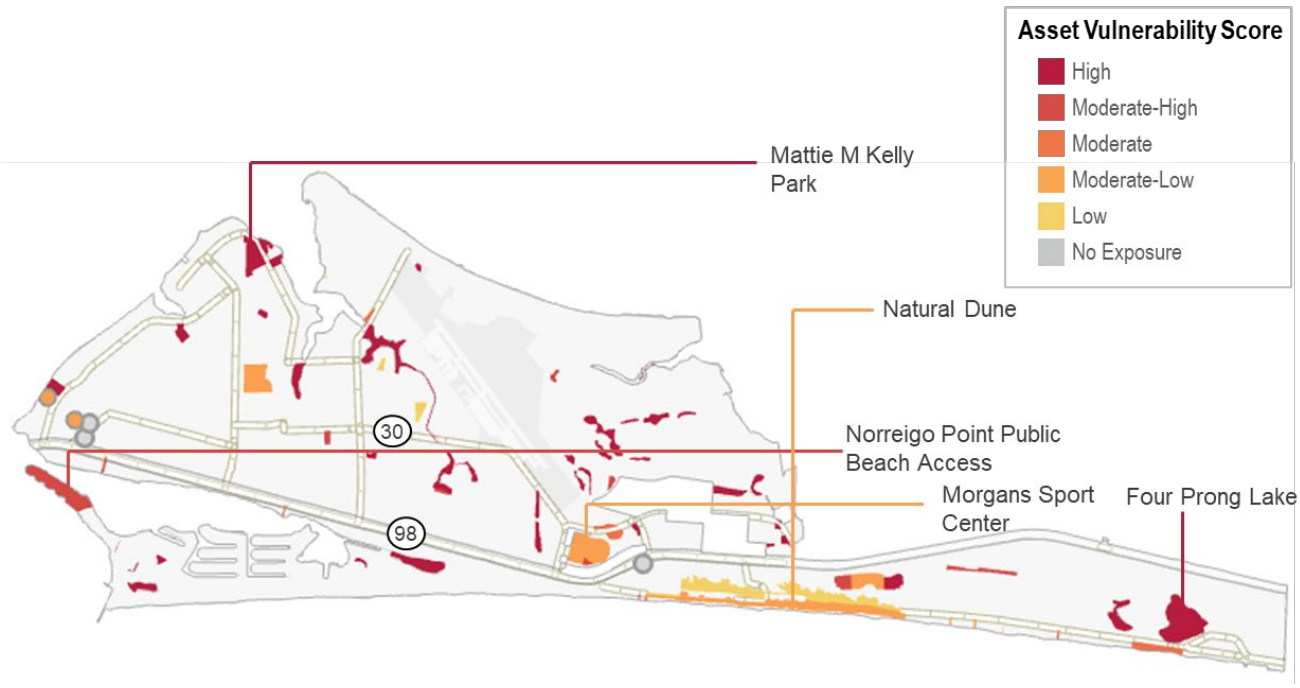


Figure 10. **Map of Natural, Cultural, and Historical Asset Vulnerability.** Scores based on relative depth of flooding during a 2040 1% AEP compound flooding event with select assets labeled. Representative key assets that are highlighted; for a cumulative list of vulnerable assets based on asset class, see Appendix B and individual community sections below.

Transportation Assets

Transportation assets include roads (including evacuation routes and railroads), bridges, airports, and water access (e.g., boat ramps). These assets support the movement of goods and services and are intertwined with the delivery of other critical community and emergency response services.

Across the City of Destin, there are 35 linear transportation assets assessed (33 major roadways and 2 bridges), 20 point-based assets (16 airport points, 2 boat ramps, and 2 bridges), and one area-based asset (the airport). Roads and other surface-based assets are sensitive to water as flooding and pooling can disrupt vehicle movement and service provision. However, bridges and boat ramps are usually designed to interact with water and are less sensitive to flooding. Note that while key assets were field verified during data collection efforts, the exact elevations (traditional survey grade) for all assets were largely not available; therefore, flood exposure depths calculated assume that the asset height is at ground level and is likely over-estimated for these asset types.

PLUVIAL RESULTS

Table 29 below shows how many of each point-based transportation asset type is mapped as exposed to flooding across event scenarios. Table 30 shows the total area of area-based assets exposed to flooding. Table 31 shows the total length of linear assets exposed to flooding. Notably, 12 (or 60%) of point-based assets are exposed to flooding while approximately 81% of linear assets are flooded during the most extreme rainfall event modeled (2070 1% AEP). Additionally, the area-based asset (the airport) is exposed with over a fourth of the area exposed under each rainfall scenario modeled.

Table 29. **Point-Based Transportation Infrastructure Risk Level Summary**. Count and percent of total assets flooded during each assessed flood scenario.

Asset Type	Current 1% AEP		2040 1% AEP		2070 1% AEP	
Airport	5	31%	7	44%	8	50%
Bridge	1	50%	2	100%	2	100%
Boat Ramp	2	100%	2	100%	2	100%

Table 30. **Area-Based Transportation Infrastructure Risk Level Summary.** Total area (in acres) and percent of total area flooded during each assessed flood scenario.

Asset Type	Current 1% AEP		2040 1% AEP		2070 1% AEP	
Airport	55.3	27%	61.2	30%	64.8	32%

Table 31. **Line-Based Transportation Infrastructure Risk Level Summary**. Total length (in miles) and percent of total length flooded during each assessed flood scenario.

Asset Type	Current 1% AEP		2040 1% AEP		2070 1% AEP	
Major Roadway	5.0	21%	5.6	24%	6.5	28%
Bridge	0.1	5%	0.1	5%	0.1	5%

Figure 11 below illustrates the location of all mapped transportation infrastructure and shows each asset's vulnerability score. As shown on the map, transportation, and roadway impacts exist all across the city. US Highway 98, Airport Road (County Road 30), and Harbor Boulevard have some of the highest total flood exposure, with over half a mile flooded above 6 inches during a major rainfall event in the near-term (2040 1% AEP). Those roads are labeled in Figure 11 Below. The highest flood depth measured for point-based assets is found with the bridges and boat ramps in the city, which are shown as vulnerable on the map. However, due to incomplete elevation information, especially at the location of bridge structures, flood depths at these assets may be an overestimation of impacts.

While model results did not show specific flooding at the roadway surface limits, residents and city staff have observed portions of the Scenic US 98 route right-of-way (ROW), just south of Four Prong Lake, flood during 25YR+ rain events, and the lake overtops on a regular basis during annual rain events. Residents report that challenges associated with flooding in this area were exacerbated post-Hurricane Michael reconstruction efforts of Scenic 98. Four Prong Lake receives a portion of stormwater runoff from US 98.



Figure 11. **Map of Transportation Infrastructure Asset Vulnerability.** Scores based on relative depth of flooding during a 2040 1% AEP rainfall event with select assets labeled. Major roadways were evaluated and displayed using segments of 1,000 ft or less. Representative key assets that are highlighted; for a cumulative list of vulnerable assets based on asset class, see Appendix B and individual community sections below.

COASTAL RESULTS

Table 32 below shows how many of each point-based transportation asset type is mapped as exposed to flooding across event scenarios. Table 33 shows the total length of linear assets exposed to flooding. Notably, 4 (or 20%) of point-based assets are exposed to flooding while approximately 54% of linear assets are flooded during the most extreme rainfall event modeled (2070 1% AEP Intermediate High SLR scenario). Additionally, the area-based asset (the airport) is not exposed in a coastal flooding scenario.

Table 32. **Point-Based Transportation Infrastructure Risk Level Summary**. Count and percent of total assets flooded during each assessed flood scenario.

Asset Type	Current		2040								2070							
	MHHW + 2ft		Intermediate Low				Intermediate High				Intermediate Low				Intermediate High			
			MHHW + 2ft		1% AEP		MHHW + 2ft		1% AEP		MHHW + 2ft		1% AEP		MHHW + 2ft		1% AEP	
Bridge	1	50%	1	50%	2	100%	2	100%	2	100%	2	100%	2	100%	2	100%	2	100%
Boat Ramp	1	50%	2	100%	2	100%	2	100%	2	100%	2	100%	2	100%	2	100%	2	100%

Table 33. **Line-Based Transportation Infrastructure Risk Level Summary**. Total length (in miles) and percent of total length flooded during each assessed flood scenario.

Asset Type	Current		2040								2070							
	MHHW + 2ft		Intermediate Low				Intermediate High				Intermediate Low				Intermediate High			
			MHHW + 2ft		1% AEP		MHHW + 2ft		1% AEP		MHHW + 2ft		1% AEP		MHHW + 2ft		1% AEP	
Major Roadway	0	0%	0	0%	3.6	16%	0.0	0%	3.9	16%	0	0%	3.8	16%	0.8	3%	5.0	21%
Bridge	0.1	5%	0.1	5%	0.1	6%	0.1	5%	0.1	6%	0.1	5%	0.1	6%	0.1	6%	0.1	7%

Figure 12 below illustrates the location of all mapped transportation infrastructure and shows each asset's vulnerability score. As shown on the map, transportation, and roadway impacts exist all across the city. Gulf Shore Drive, Calhoun Avenue, Beach Drive, and Benning Drive have some of the highest total flood exposure, with over half a mile flooded above 6 inches during a major coastal storm event in the near-term (2040 1% AEP Intermediate High SLR scenario). Those roads are labeled in Figure 11 below. Gulf Shore Drive has the highest coastal flood depth measured for a major roadway in the city with nearly 2 miles exposed in the 2040 1% AEP Intermediate High SLR scenario.

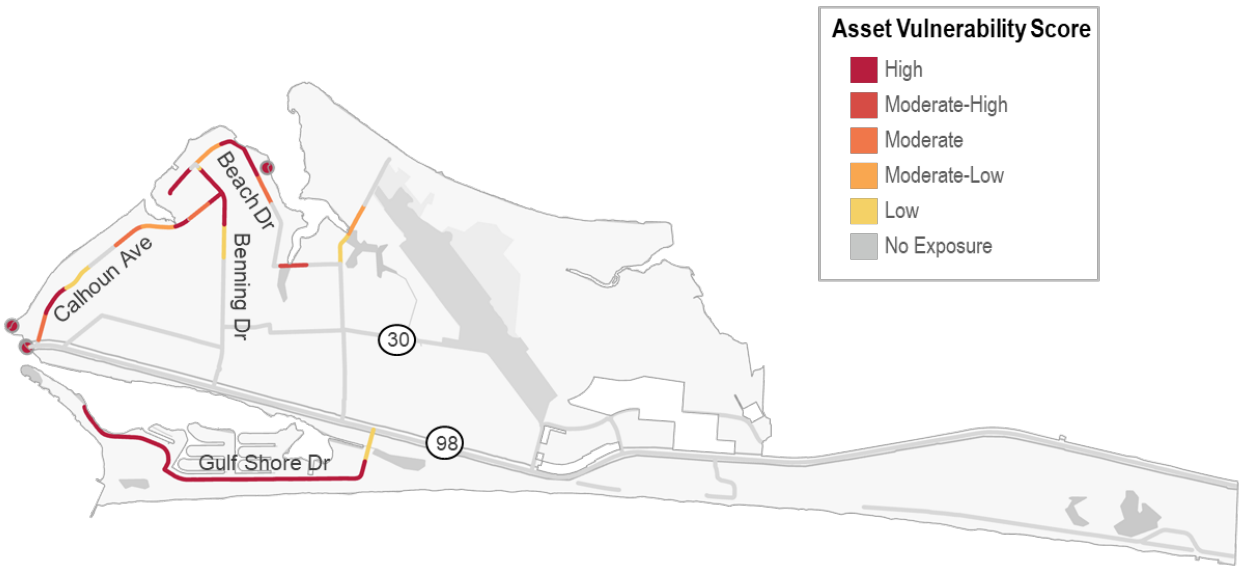


Figure 12. **Map of Transportation Infrastructure Asset Vulnerability.** Scores based on relative depth of flooding during a 2040 1% AEP Intermediate High SLR Scenario coastal event with select assets labeled. Major roadways were evaluated and displayed using segments of 1,000 ft or less. Representative key assets that are highlighted; for a cumulative list of vulnerable assets based on asset class, see Appendix B and individual community sections below.

COMPOUND FLOODING RESULTS

Table 34 below shows how many of each point-based transportation asset type is mapped as exposed to compound flooding across event scenarios. Table 35 shows the total area of area-based assets exposed to flooding. Table 36 shows the total length of linear assets exposed to flooding. Notably, 12 (or 60%) of point-based assets are exposed to flooding while approximately 86% of linear assets are flooded during the most extreme compound flood event modeled (2070 1% AEP). Additionally, the area-based asset (the airport) is exposed with over a fourth of the area exposed under each rainfall scenario modeled.

Table 34. **Point-Based Transportation Infrastructure Risk Level Summary**. Count and percent of total assets flooded during each assessed flood scenario.

Asset Type	Current 1% AEP		2040 1% AEP		2070 1% AEP	
Airport	5	31%	7	44%	8	50%
Bridge	2	100%	2	100%	2	100%
Boat Ramp	2	100%	2	100%	2	100%

Table 35. **Area-Based Transportation Infrastructure Risk Level Summary.** Total area (in acres) and percent of total area flooded during each assessed flood scenario.

Asset Type	Current 1% AEP		2040 1% AEP		2070 1% AEP	
Airport	55.3	27%	76.6	38%	80.3	40%

Table 36. **Line-Based Transportation Infrastructure Risk Level Summary**. Total length (in miles) and percent of total length flooded during each assessed flood scenario.

Asset Type	Current 1% AEP		2040 1% AEP		2070 1% AEP	
Major Roadway	8.8	37%	8.8	37%	9.7	41%
Bridge	0.1	6%	0.1	6%	0.1	6%

Figure 13 below illustrates the location of all mapped transportation infrastructure and shows each asset's vulnerability score. As shown on the map, transportation, and roadway impacts exist all across the city. US Highway 98, Gulf Shore Drive, Airport Road, and Calhoun Avenue have some of the highest total flood exposure, with over half a mile flooded above 6 inches during a major compound flood event in the near-term (2040 1% AEP). Those roads are labeled in Figure 13 below.

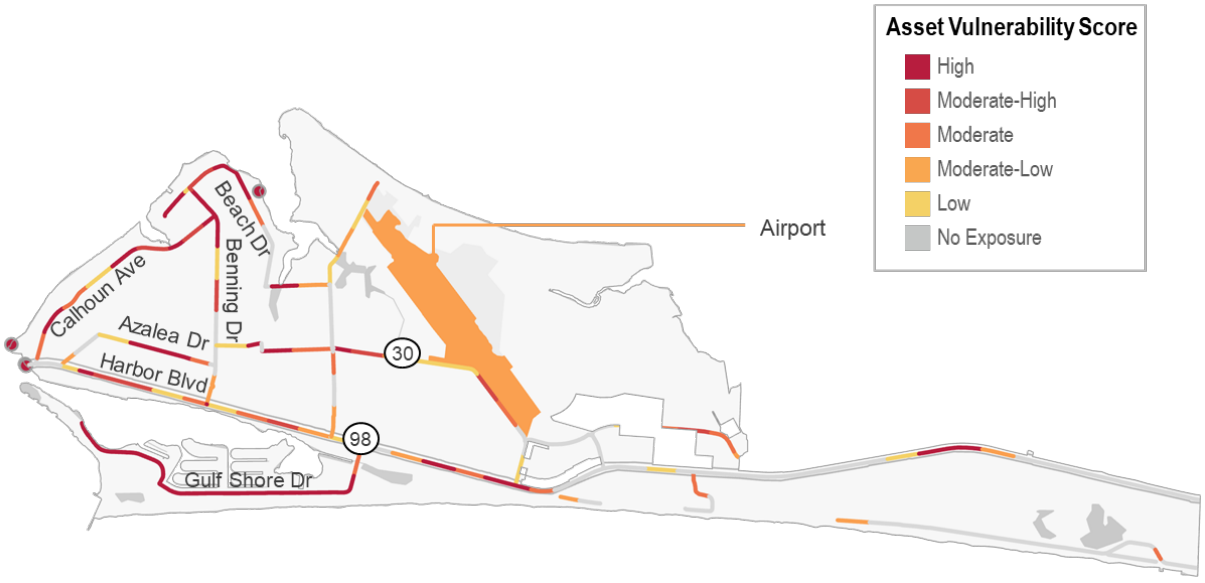


Figure 13. **Map of Transportation Infrastructure Asset Vulnerability.** Scores based on relative depth of flooding during a 2040 1% AEP compound flooding event with select assets labeled. Major roadways were evaluated and displayed using segments of 1,000 ft or less. Representative key assets that are highlighted; for a cumulative list of vulnerable assets based on asset class, see Appendix B and individual community sections below.14

List of Appendices

Appendix A – Flood Hazard Exposure

Appendix A contains maps illustrating flood depths and extents for each modeled flood scenario.

Appendix B – Asset Flood Vulnerability

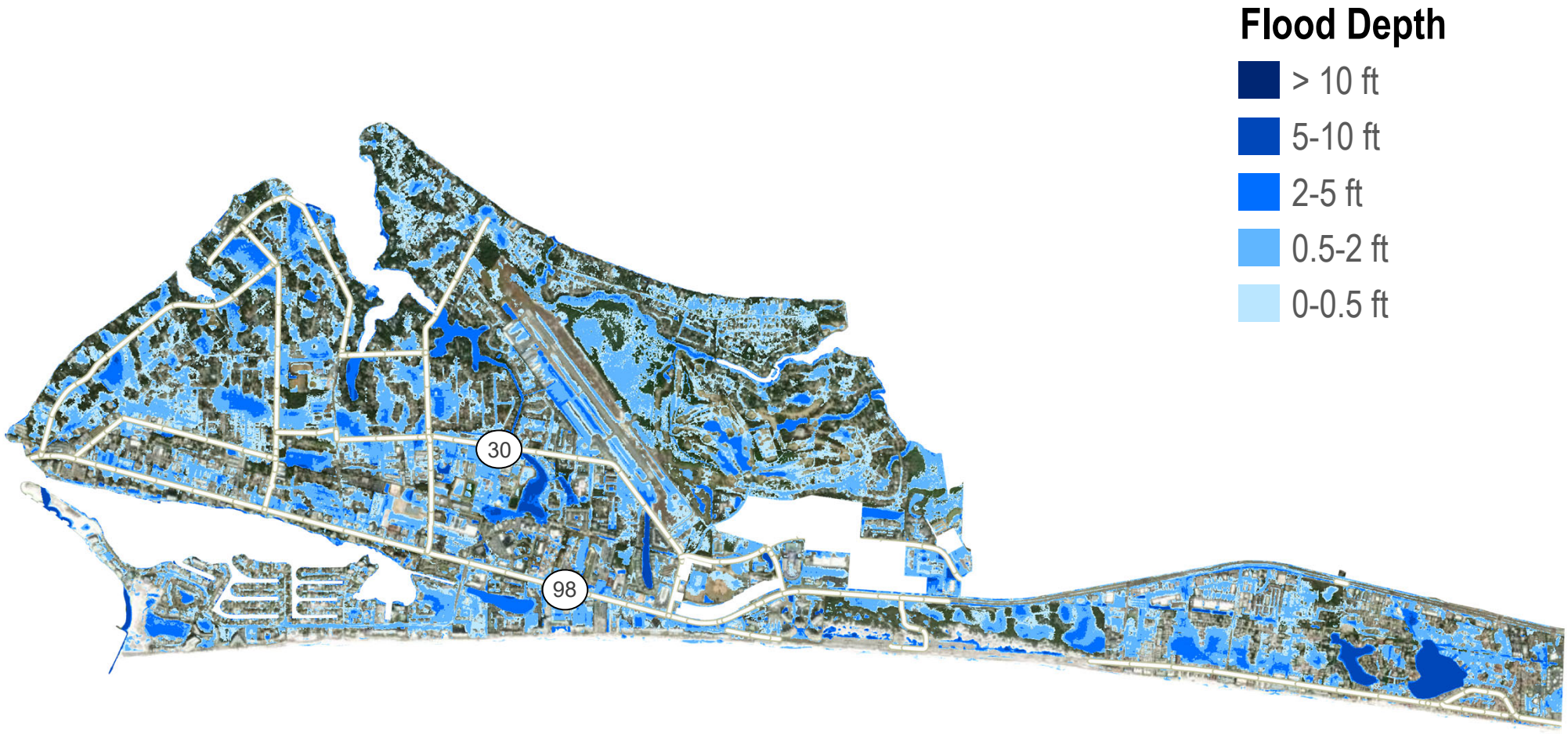
Appendix B contains an initial list of critical and regionally significant assets impacted by flooding, prioritized within each category based on the level of modeled vulnerability. The table specifies for each asset which flood scenario(s) it was impacted by, detailing either the depth or extent of flooding that the asset would experience for each scenario.



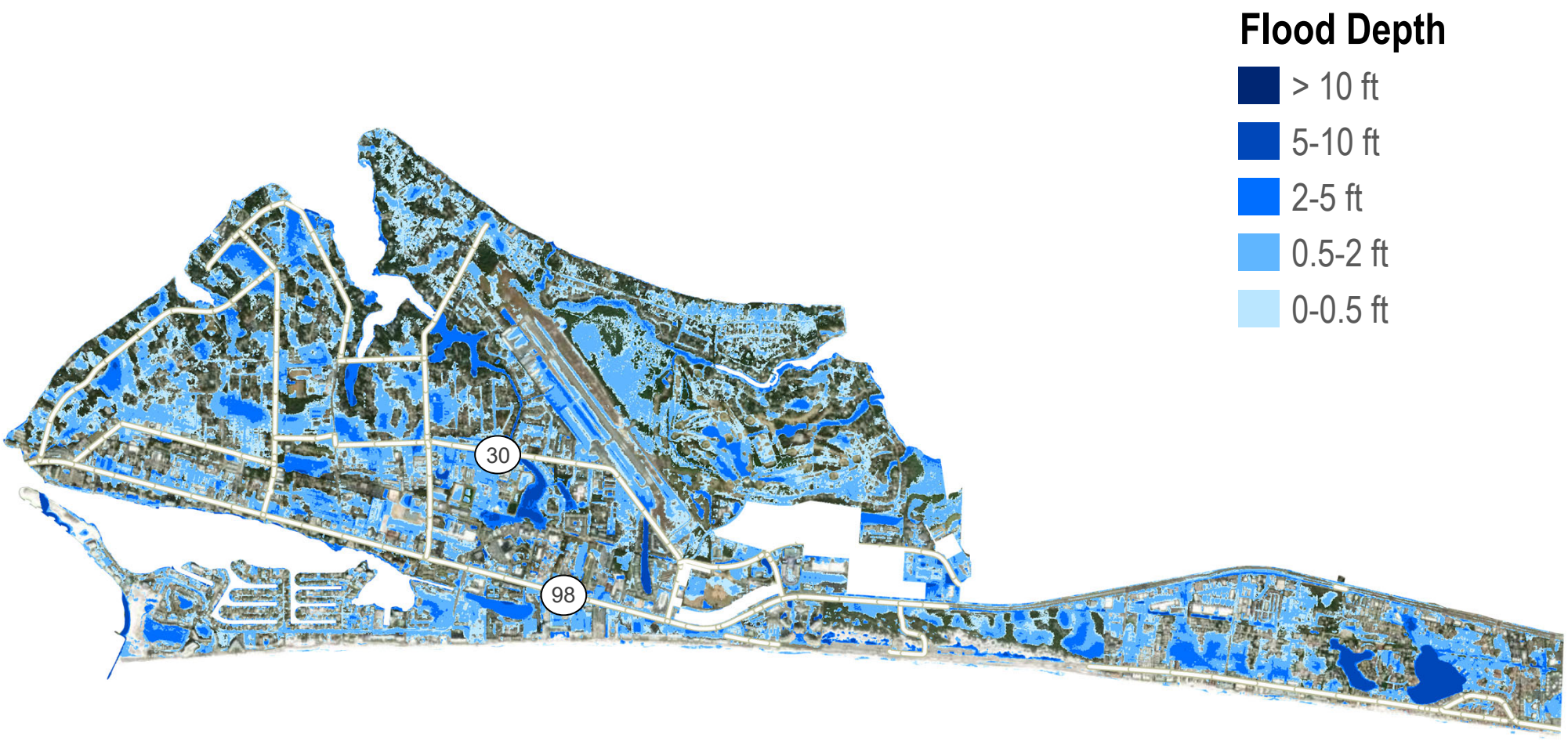
Appendix IV

Flood Hazard Exposure Maps

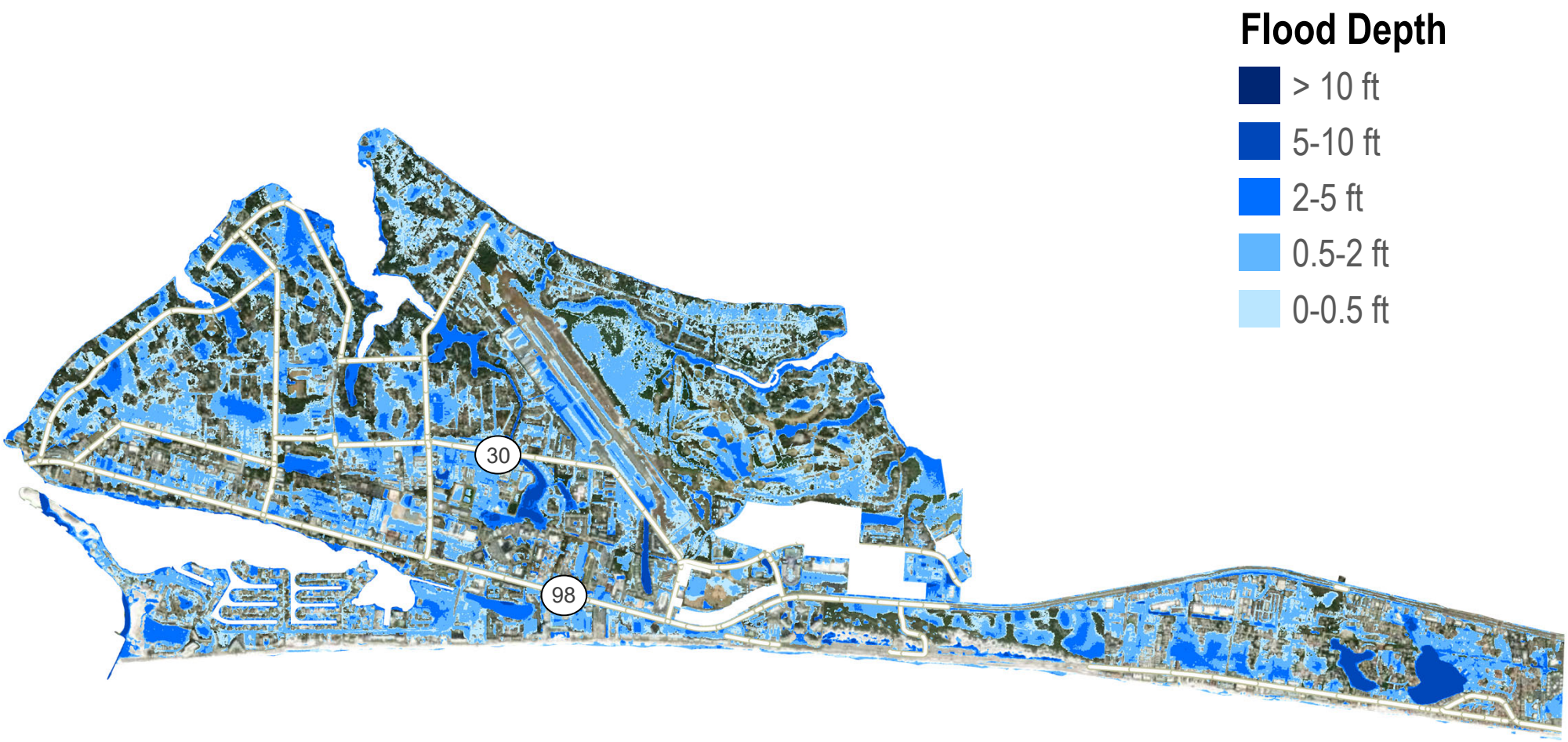
Flood Depth – Current 1% AEP Pluvial



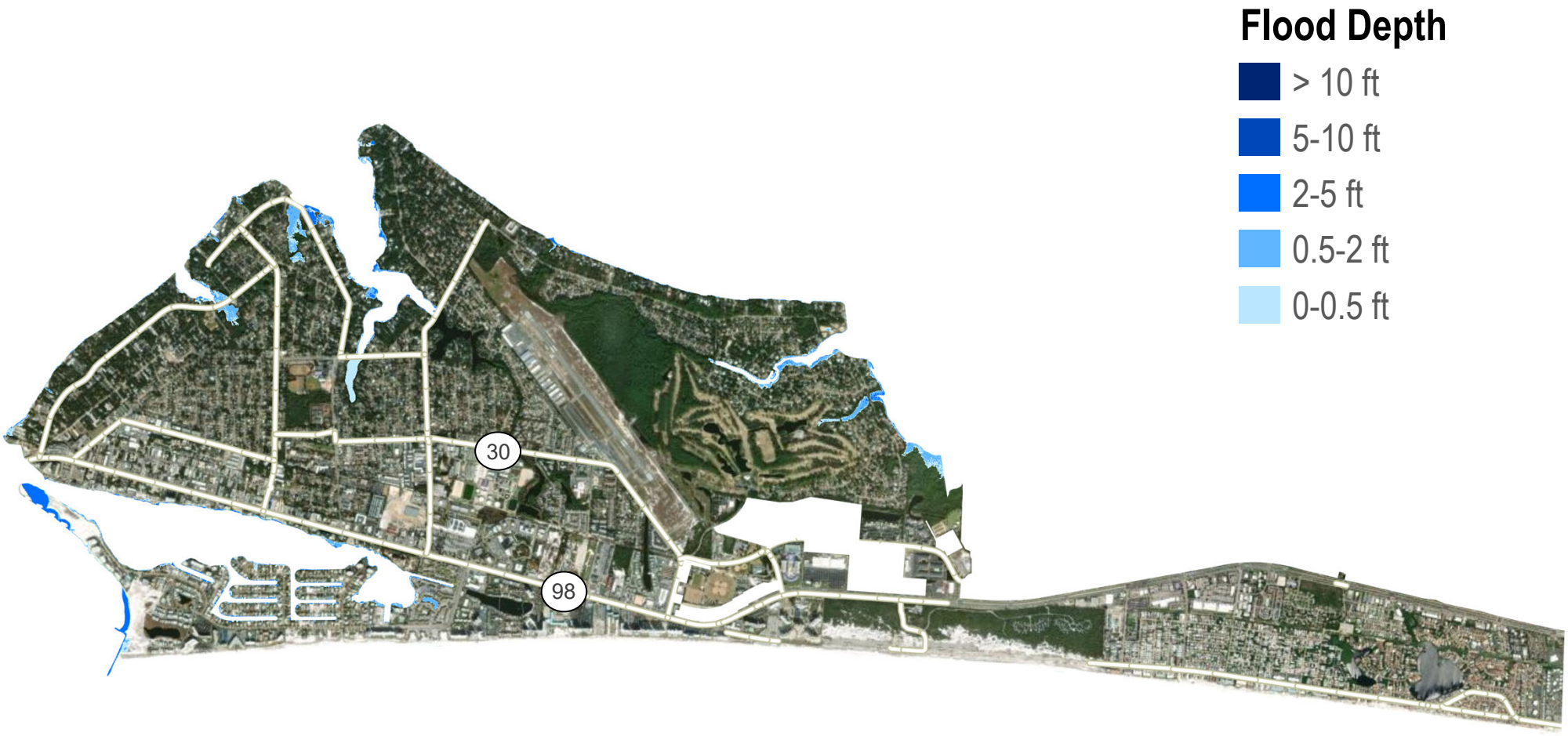
Flood Depth – 2040 1% AEP Pluvial



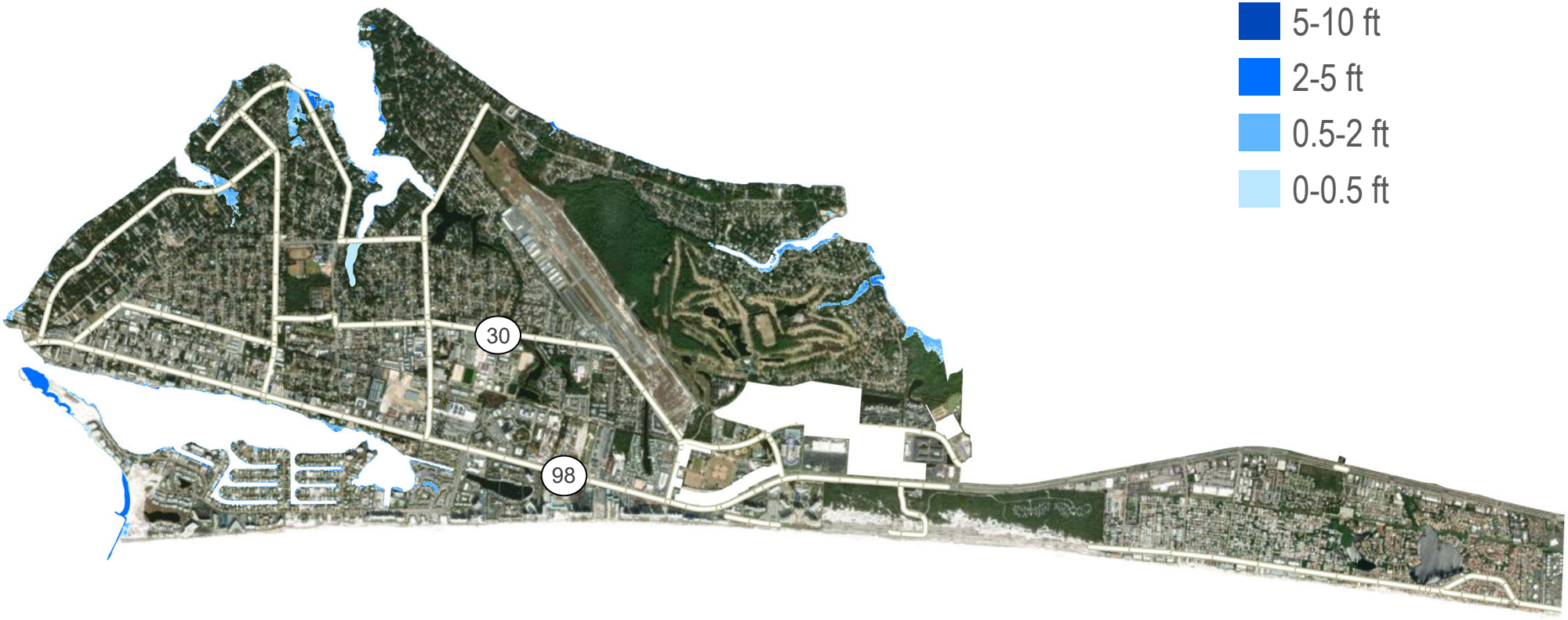
Flood Depth – 2070 1% AEP Pluvial



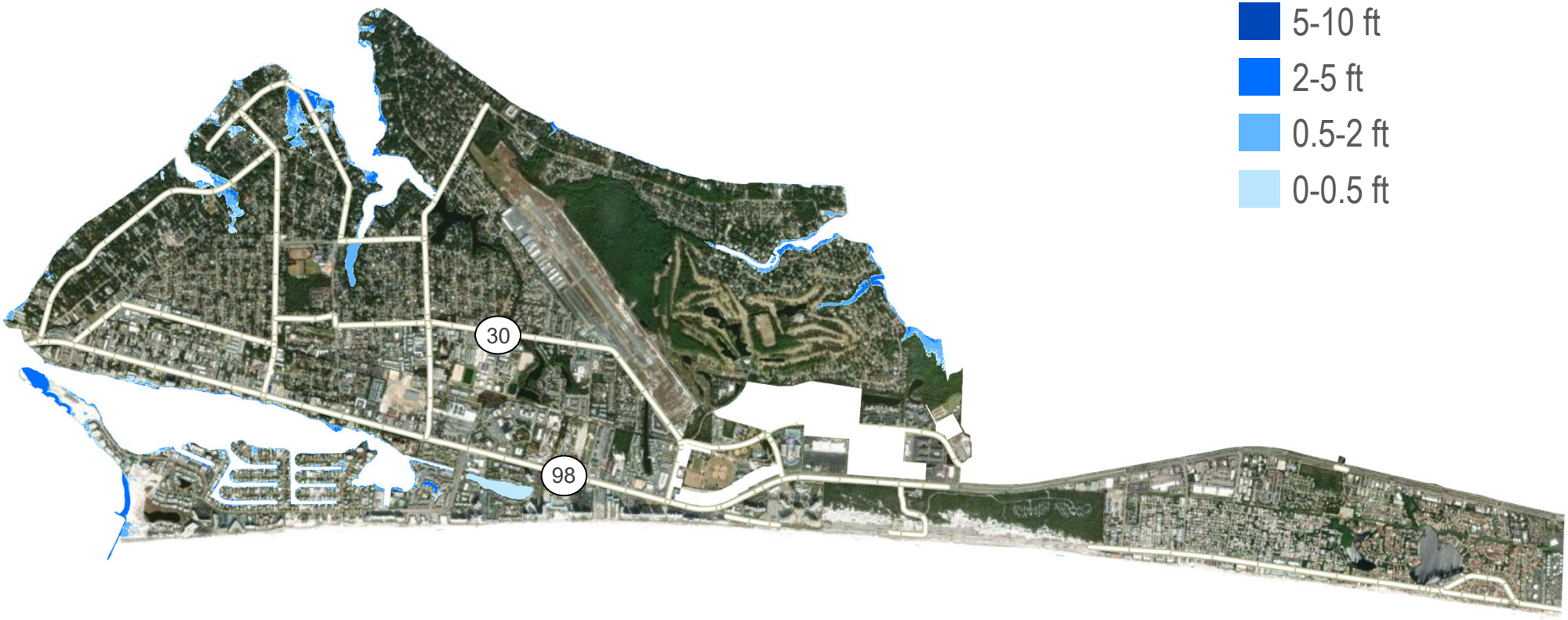
Flood Depth – Current MHHW +2ft Coastal



Flood Depth – 2040 MHHW +2ft Intermediate-Low SLR Scenario Coastal



Flood Depth – 2040 MHHW +2ft Intermediate-High SLR Scenario Coastal



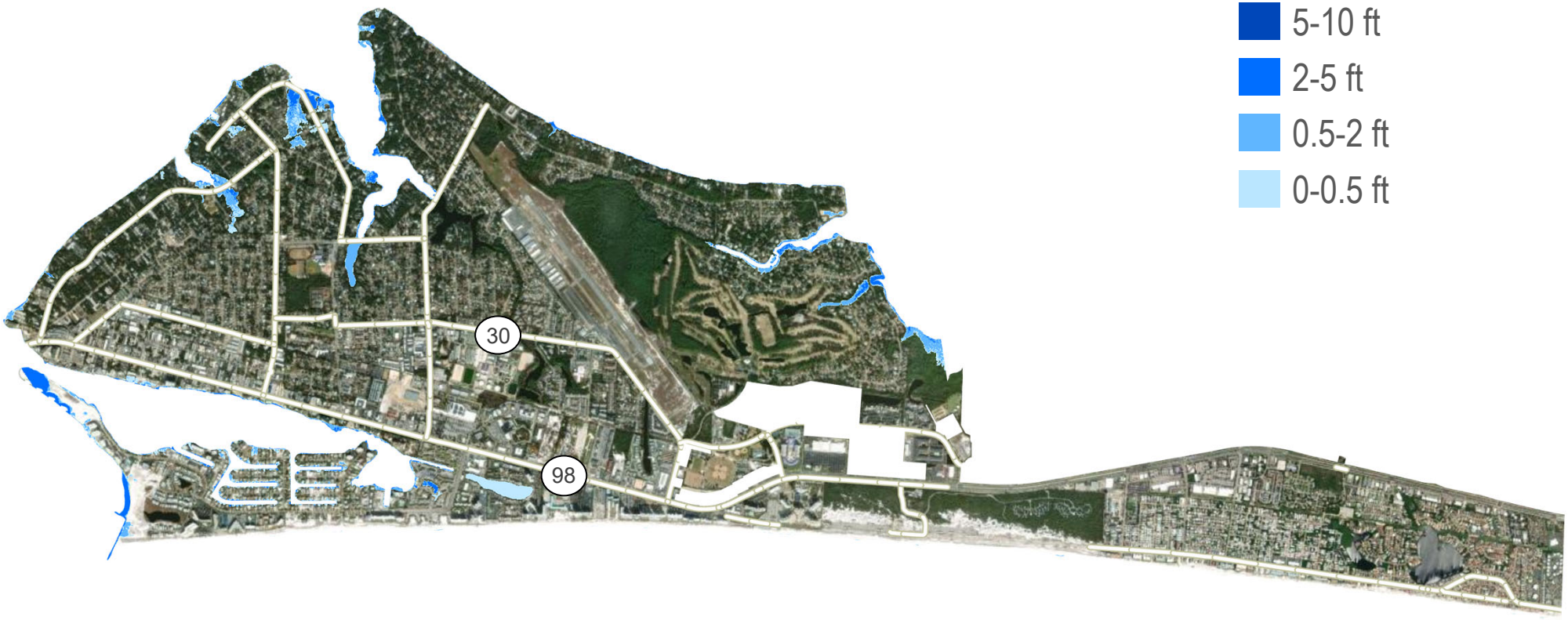
Flood Depth – 2040 1% AEP Intermediate-Low SLR Scenario Coastal



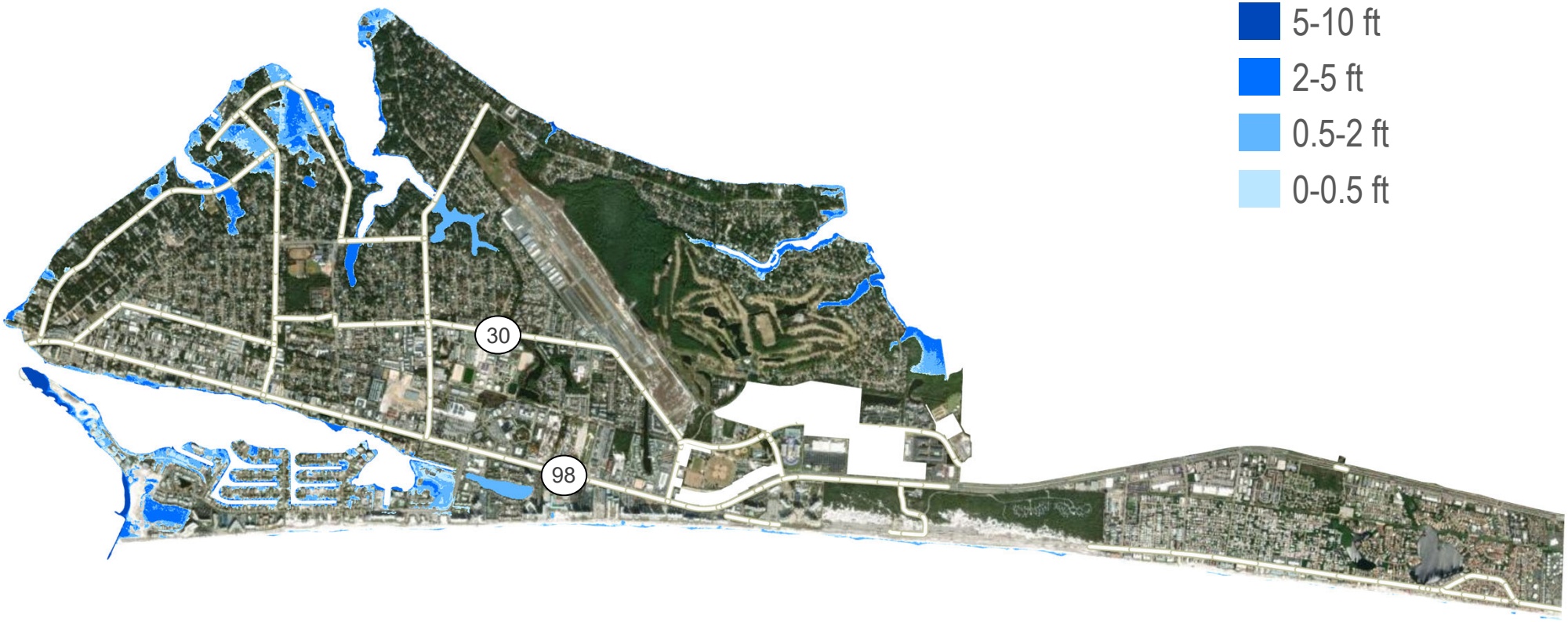
Flood Depth – 2040 1% AEP Intermediate-High SLR Scenario Coastal



Flood Depth – 2070 MHHW +2ft Intermediate-Low SLR Scenario Coastal



Flood Depth – 2070 MHHW +2ft Intermediate-High SLR Scenario Coastal



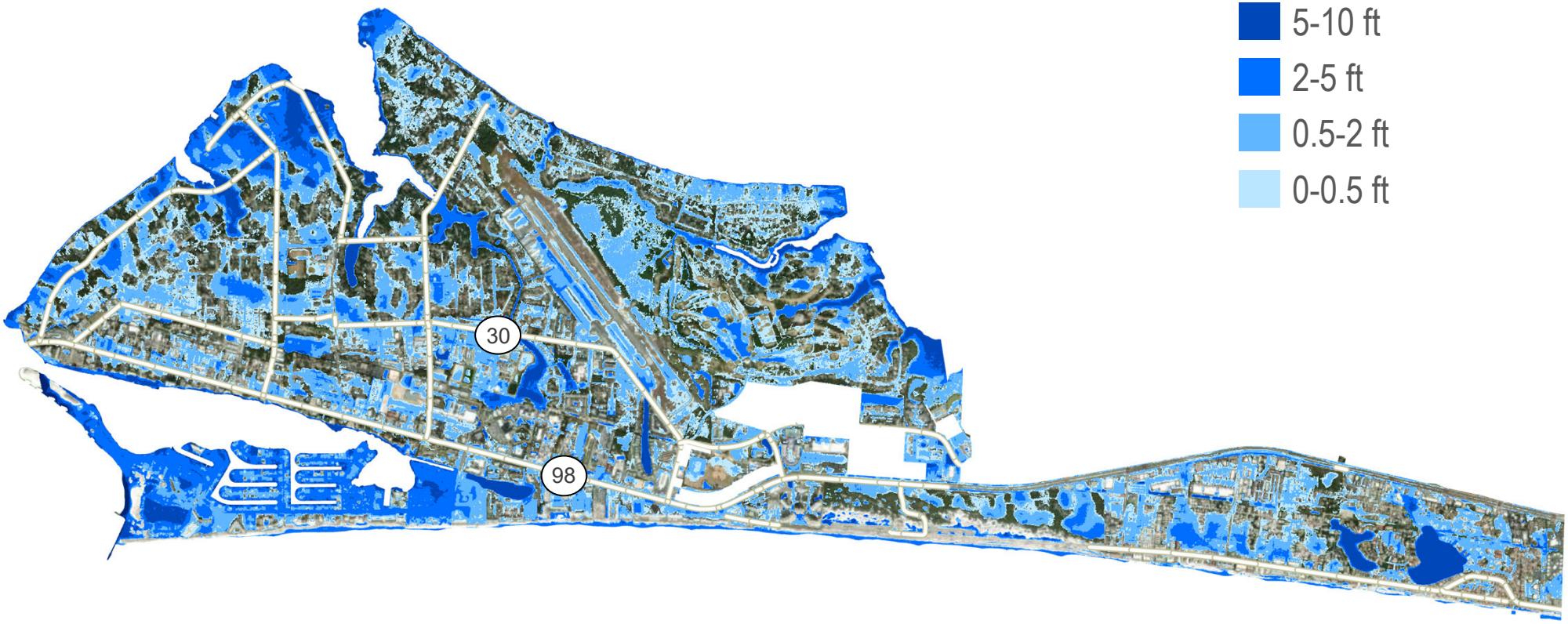
Flood Depth – 2070 1% AEP Intermediate-Low SLR Scenario Coastal



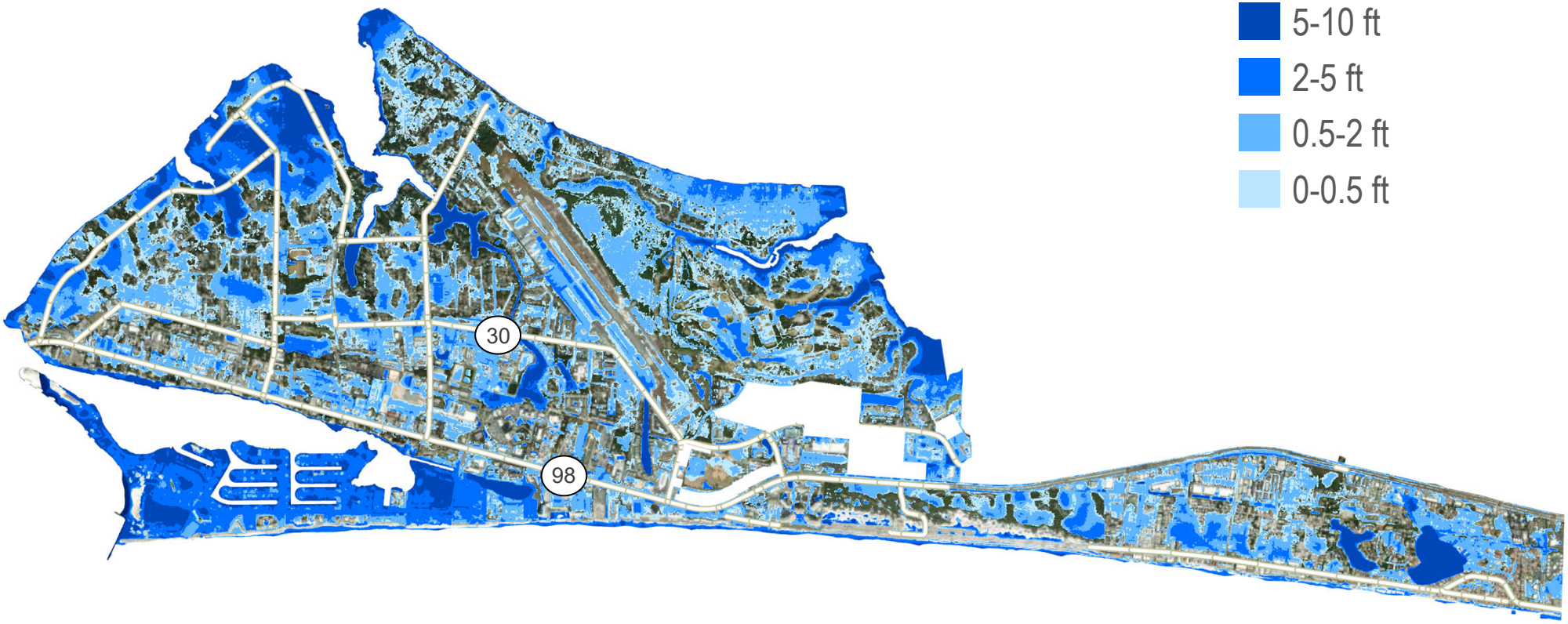
Flood Depth – 2070 1% AEP Intermediate-High SLR Scenario Coastal



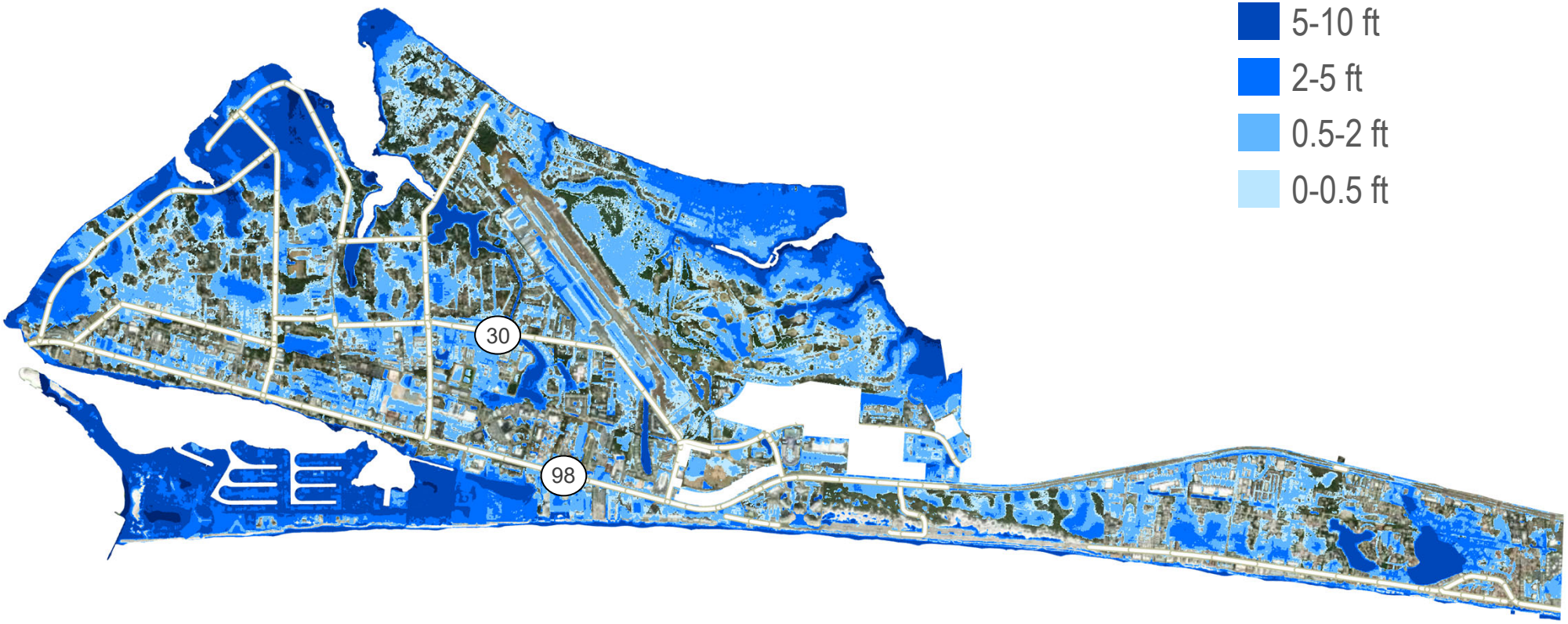
Flood Depth – Current 1% AEP Compound Flooding

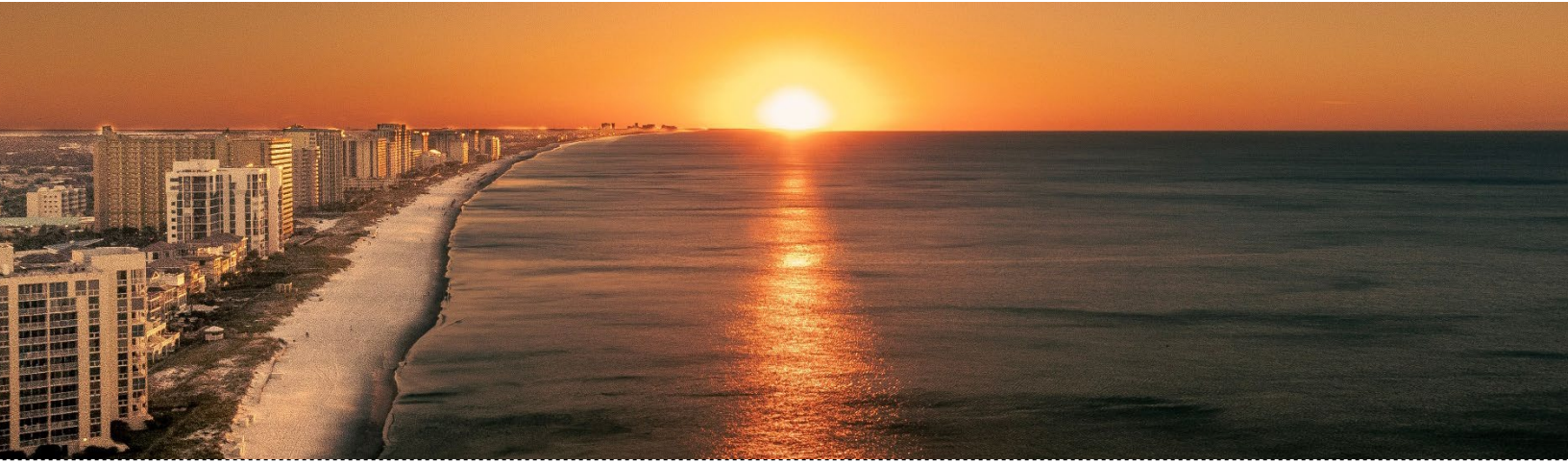


Flood Depth – 2040 1% AEP Compound Flooding



Flood Depth – 2070 1% AEP Compound Flooding





Appendix V

Asset Flood Vulnerability Tables

City of Destin | **Point Asset Flood Exposure**

Depth of flooding in feet. Color dot indicates assigned vulnerability score.

		Coastal									Rainfall			Compound		
		Base	Intermediate-Low SLR Projection				Intermediate-High SLR Projection				Intermediate-High SLR Projection			Intermediate-High SLR Projection		
		Current	2040		2070		2040		2070		Current	2040	2070	Current	2040	2070
Asset	Asset Type		MHHW	1% AEP	MHHW	1% AEP	MHHW	1% AEP	MHHW	1% AEP	1% AEP	1% AEP	1% AEP	1% AEP	1% AEP	1% AEP
DES0286 - Destin Harbor Pump	Stormwater Treat..	2.2	2.3	8.0	2.8	8.5	2.9	8.6	4.7	10.4	3.3	3.7	5.1	8.1	9.5	11.2
DES090 - EAST PASS BRIDGE [..	Bridges	1.1	1.3	7.0	1.8	7.5	1.9	7.6	3.7	9.4	1.9	2.5	4.1	7.0	8.2	9.8
DES0295 - Destin Marina	Boat Ramp	1.1	1.3	6.7	1.8	7.2	1.9	7.3	3.7	9.1	1.6	2.3	4.1	7.3	8.7	10.5
DES0292 - 5000GPM DISCHAR..	Stormwater Treat..	0.0	0.0	4.7	0.0	5.2	0.3	5.3	2.1	7.1	3.2	3.3	3.3	5.6	7.0	8.8
DES0293 - 500GPM MAINTENA..	Stormwater Treat..	0.0	0.0	4.5	0.0	5.0	0.0	5.1	1.8	6.9	2.9	3.0	3.0	5.3	6.7	8.5
DES0294 - Joe's Bayou Boat Lau..	Boat Ramp	0.0	0.1	4.8	0.6	5.3	0.7	5.4	2.5	7.2	0.1	0.8	2.6	5.8	7.2	9.0
DES089 - EAST PASS BRIDGE [..	Bridges	0.0	0.0	5.1	0.1	5.6	0.1	5.7	1.7	7.5	0.0	0.6	2.4	5.6	7.0	8.8
DES0360 - CROSS ST	Communications ..	0.0	0.0	4.1	0.1	4.6	0.1	4.7	1.9	6.5	0.4	1.0	2.4	5.6	7.0	8.8
DES0319 - HARBOR BLVD	Communications ..	0.0	0.0	4.3	0.0	4.8	0.0	4.9	1.0	6.7	0.1	0.4	1.5	4.5	5.9	7.6
DES0318 - HARBOR BLVD	Communications ..	0.0	0.0	4.2	0.0	4.7	0.0	4.8	0.9	6.6	0.1	0.4	1.7	4.6	5.9	7.6
DES0346 - SIBERT AVE	Communications ..	0.0	0.0	3.3	0.0	3.8	0.0	3.9	0.6	5.7	1.7	1.8	1.8	4.1	5.5	7.3
DES096 - POWERTEL/MEMPHIS..	Communications ..	0.0	0.0	2.1	0.0	2.6	0.0	2.7	0.5	4.5	1.2	1.3	1.4	3.7	5.0	6.8
DES0322 - DURANGO RD	Communications ..	0.0	0.0	2.0	0.0	2.5	0.0	2.6	0.0	4.4	0.0	0.0	0.6	3.6	5.0	6.8
DES0105 - ALLTEL CORPORATI..	Communications ..	0.0	0.0	1.8	0.0	2.3	0.0	2.4	0.1	4.2	0.5	0.6	0.8	3.5	4.8	6.6
DES0364 - GULF SHORE DR	Communications ..	0.0	0.0	1.9	0.0	2.4	0.0	2.5	0.0	4.3	1.0	1.0	1.0	2.2	3.5	5.3
DES0342 - HARBOR BLVD	Communications ..	0.0	0.0	1.8	0.0	2.3	0.0	2.4	0.0	4.2	0.0	0.0	0.1	2.9	4.1	5.8
DES0366 - GULF SHORE DR	Communications ..	0.0	0.0	2.1	0.0	2.6	0.0	2.7	0.0	4.5	0.4	0.4	0.4	0.9	2.2	4.0
DES0349 - BENNING DR	Communications ..	0.0	0.0	1.1	0.0	1.6	0.0	1.7	0.0	3.5	0.0	0.1	0.1	2.4	3.8	5.6
DES0152 - Destin Station #19 De..	Fire Stations	0.0	0.0	1.2	0.0	1.7	0.0	1.8	0.0	3.6	0.1	0.2	0.2	1.8	3.2	5.0
DES0334 - MELROSE AVE	Communications ..	0.0	0.0	0.9	0.0	1.4	0.0	1.5	0.0	3.3	0.0	0.0	0.0	1.7	3.1	4.9
DES0353 - GULF SHORE DR	Communications ..	0.0	0.0	0.4	0.0	0.9	0.0	1.0	0.0	2.8	0.0	0.0	0.0	2.2	3.6	5.4
DES0348 - GULF SHORE DR	Communications ..	0.0	0.0	0.7	0.0	1.2	0.0	1.3	0.0	3.1	0.0	0.0	0.0	1.8	3.2	4.9
DES0101 - DESTIN EXECUTIVE ..	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	2.7	2.7	2.6	2.7	2.7
DES0363 - SCENIC HIGHWAY 98	Communications ..	0.0	0.0	1.3	0.0	1.8	0.0	1.9	0.0	3.7	0.3	0.3	0.4	0.9	1.7	3.2
DES0299 - BENNING DRIVE Maj..	Major Traffic Sign..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	2.3	2.3	2.2	2.3	2.3
DES0108 - OKALOOSA COUNTY	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	2.3	2.3	2.1	2.3	2.3
DES084 - AMERICAN LEGION P..	Community Cent..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.1	2.2	2.0	2.1	2.2
DES0104 - NEW CINGULAR WIR..	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	1.7	1.8	1.6	1.7	1.8
DES0300 - E OF PELICAN BEAC..	Major Traffic Sign..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	1.7	1.7	1.6	1.7	1.7
DES068 - Airport Hanger	Airports	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.6	1.8	1.4	1.6	1.8
DES0283 - Destin Memorial Cem..	Cemeteries	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.0	2.0	0.6	0.7	0.7	0.6	1.5	3.3
DES088 - First Baptist Destin Pre..	Schools	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.6	1.8	1.3	1.6	1.8
DES065 - Airport Hanger	Airports	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.6	1.7	1.4	1.6	1.7
DES0368 - GULF SHORE DR	Communications ..	0.0	0.0	0.2	0.0	0.7	0.0	0.8	0.0	2.6	0.0	0.0	0.0	0.1	1.4	3.2
DES0351 - POMPANO ST	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.3	1.2	1.2	1.3
DES0311 - WEST OF MARLAR S..	Major Traffic Sign..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.2	1.3	1.1	1.2	1.3

City of Destin | **Point Asset Flood Exposure**

Depth of flooding in feet. Color dot indicates assigned vulnerability score.

		Coastal									Rainfall			Compound		
		Base	Intermediate-Low SLR Projection				Intermediate-High SLR Projection				Intermediate-High SLR Projection			Intermediate-High SLR Projection		
		Current	2040		2070		2040		2070		Current	2040	2070	Current	2040	2070
Asset	Asset Type		MHHW	1% AEP	MHHW	1% AEP	MHHW	1% AEP	MHHW	1% AEP	1% AEP	1% AEP	1% AEP	1% AEP	1% AEP	1% AEP
DES0123 - COMMUNITY WATE..	Drinking Water F..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.2	1.3	1.1	1.2	1.3
DES067 - Airport Hanger	Airports	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.2	1.3	1.0	1.2	1.3
DES0314 - CR30F @ AIRPORT ..	Major Traffic Sign..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	1.0	1.1	1.2	1.0	1.1	1.1
DES066 - Airport Hanger	Airports	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.2	1.3	1.0	1.2	1.3
DES0153 - Historical Structure	Historical and Cul..	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	1.9	0.0	0.0	0.0	0.2	1.4	3.2
DES0305 - BEACH DRIVE Major ..	Major Traffic Sign..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.1	1.1	1.0	1.1	1.1
DES0301 - WEST OF SPALMET..	Major Traffic Sign..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.1	1.1	1.0	1.1	1.2
DES0347 - THIRD AVE	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.2	1.5	3.3
DES0310 - LEGENDARY DRIVE ..	Major Traffic Sign..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.1	1.1	1.0	1.1	1.1
DES0370 - HENDERSON RESO..	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	1.0	1.1	0.9	1.0	1.1
DES093 - ALLTEL CORPORATI..	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.9	1.0	0.7	0.9	1.0
DES0118 - COMMUNITY WATE..	Drinking Water F..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.9	1.0	0.7	0.9	1.0
DES0285 - GROUND STORAGE ..	Water Utility Con..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.9	1.0	0.8	0.9	1.0
DES0121 - LIMITED USE PUBLI..	Drinking Water F..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.9	0.8	0.8	0.9
DES0341 - INDIAN TRL	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	1.1	2.9
DES0345 - SEASTAR VISTA	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.6	0.7	0.4	0.6	1.6
DES0291 - FT. BENNING RECR..	Military Installatio..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.9	2.7
DES0117 - COMMUNITY WATE..	Drinking Water F..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.7	0.7	0.5	0.7	0.7
DES0330 - SCENIC HIGHWAY 98	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.6	0.6	0.5	0.6	0.6
DES069 - Airport Hanger	Airports	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.5	0.7	0.4	0.5	0.7
DES0358 - AIRPORT RD	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.5	0.6	0.4	0.5	0.6
DES099 - FLORIDA POWER & LI..	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.6	0.5	0.5	0.6
DES0328 - MOUNTAIN DR	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.5	0.5	0.4	0.5	0.5
DES0323 - KEL WEN CIR	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.5	0.3	0.4	0.5
DES091 - WDES-CD BEACH TV ..	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4
DES0324 - HARBOR BLVD	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.5	0.3	0.4	0.5
DES0110 - NEW CINGULAR WIR..	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.4	0.3	0.4	0.4
DES0287 - Lift Station	Wastewater Trea..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.4	0.2	0.4	0.4
DES0286 - Lift Station	Wastewater Trea..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.4	0.3	0.4	0.4
DES0103 - BEACH TV PROPER..	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.4	0.3	0.3	0.4
DES092 - WZLB, JVC MEDIA OF..	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	1.4
DES0102 - OCTAGON TOWERS,..	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.3	0.2	0.3	0.3
DES0350 - SANDALWOOD DR	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.0	0.2	0.4
DES0339 - INDIAN TRL	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	1.0
DES081 - Aquatic Center in Desti..	Community Cent..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.0	0.2	0.3
DES0337 - HARBOR WIND CT	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.2	0.2

City of Destin | **Point Asset Flood Exposure**

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		Coastal									Rainfall			Compound		
		Base	Intermediate-Low SLR Projection				Intermediate-High SLR Projection				Intermediate-High SLR Projection			Intermediate-High SLR Projection		
		Current	2040		2070		2040		2070		Current	2040	2070	Current	2040	2070
Asset	Asset Type		MHHW	1% AEP	MHHW	1% AEP	MHHW	1% AEP	MHHW	1% AEP	1% AEP	1% AEP	1% AEP	1% AEP	1% AEP	1% AEP
DES0340 - LAUREN CT	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
DES0307 - GULF SHORE DRIVE..	Major Traffic Sign..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.2	0.2
DES0338 - INDIAN TRL	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
DES0303 - REGATTA BAY BLVD..	Major Traffic Sign..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2
DES0122 - COMMUNITY WATE..	Drinking Water F..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.6
DES0336 - INDIAN TRL	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.1	0.2
DES063 - Atlantic Aviation (DTS)	Airports	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.1	0.2
DES0335 - INDIGO CIR	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
DES0361 - COBBS POINT RD	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
DES070 - Airport Hanger	Airports	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.2
DES0313 - HENDERSON BEAC..	Major Traffic Sign..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1
DES0298 - SR 293 WHITE POIN..	Major Traffic Sign..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1
DES0312 - WEST OF MELVIN S..	Major Traffic Sign..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0359 - SPANISH MOSS TRL	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0308 - CR 2387 Major Traffic..	Major Traffic Sign..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES071 - Airport Hanger	Airports	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES00 - Destin Elementary School	Schools	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES01 - Okaloosa County Emerg..	Emergency Medi..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0100 - VERIZON WIRELESS..	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0106 - ALLTEL CORPORATI..	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0107 - ALLTEL CORPORATI..	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0111 - ELECTRIC BULK PO..	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0113 - HENDERSON BEAC..	Historical and Cul..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0116 - COMMUNITY WATE..	Drinking Water F..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0119 - COMMUNITY WATE..	Drinking Water F..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0120 - COMMUNITY WATE..	Drinking Water F..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0150 - City of Destin Annex B..	Local Governme..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0151 - Friends of Emerald Co..	Local Governme..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES02 - Destin Fire Control Distri..	Fire Stations	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0284 - Destin Memorial Cem..	Cemeteries	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0284 - WELL 1 TANK	Water Utility Con..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0285 - Destin History & Fishi..	Historical and Cul..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0287 - George W. French Wa..	Wastewater Trea..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0288 - CITY OF DESTIN HU..	Disaster Debris ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0288 - Destin Library	Local Governme..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0289 - City Maintenance Faci..	Local Governme..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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		Coastal									Rainfall			Compound		
		Base	Intermediate-Low SLR Projection				Intermediate-High SLR Projection				Intermediate-High SLR Projection			Intermediate-High SLR Projection		
		Current	2040		2070		2040		2070		Current	2040	2070	Current	2040	2070
Asset	Asset Type		MHHW	1% AEP	MHHW	1% AEP	MHHW	1% AEP	MHHW	1% AEP	1% AEP	1% AEP	1% AEP	1% AEP	1% AEP	1% AEP
DES0290 - East Pass Inlet	Surface Waters	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0296 - STALHAM AVENUE ..	Major Traffic Sign..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0297 - TRISTA TERRACE C..	Major Traffic Sign..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES03 - Destin Fire Control Distri..	Fire Stations	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0302 - MATTHEW BLVD Maj..	Major Traffic Sign..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0304 - WEST OF SILVER D..	Major Traffic Sign..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0306 - HOME DEPOT Major ..	Major Traffic Sign..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0309 - Major Traffic Signal	Major Traffic Sign..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0315 - MAIN STREET Major ..	Major Traffic Sign..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0316 - Destin Executive Airp..	Airports (ATC)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0317 - Destin High School	Schools	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0320 - BENNING DR	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0321 - EMERALD COAST P..	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0325 - KONO WAY	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0326 - GRAND KEY LOOP W	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0327 - KONO WAY	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0329 - LOUISE CIR	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0331 - SCENIC HIGHWAY 98	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0332 - SCENIC HIGHWAY 98	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0333 - EMERALD COAST P..	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0343 - INDIAN BAYOU TRL	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0344 - CLIPPER CV	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0352 - SPRING LAKE DR	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0354 - HERON CIR	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0355 - BAYOU DR	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0356 - SPRING LAKE DR	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0357 - PINE ST	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0362 - GULF SHORE DR	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0365 - SCENIC HIGHWAY 98	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0367 - EMERALD COAST P..	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0369 - HWY 98 E	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0371 - SCENIC HIGHWAY 98	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0372 - HWY 98 E	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0373 - HARBOR BLVD	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES0374 - HARBOR BLVD	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES04 - Destin Post Office	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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		Coastal									Rainfall			Compound		
		Base	Intermediate-Low SLR Projection				Intermediate-High SLR Projection				Intermediate-High SLR Projection			Intermediate-High SLR Projection		
		Current	2040		2070		2040		2070		Current	2040	2070	Current	2040	2070
Asset	Asset Type		MHHW	1% AEP	MHHW	1% AEP	MHHW	1% AEP	MHHW	1% AEP	1% AEP	1% AEP	1% AEP	1% AEP	1% AEP	1% AEP
DES05 - Okaloosa County Sheriff'..	Law Enforcement..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES06 - Destin City Hall	Local Governme..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES064 - Destin Executive Airpor..	Airports	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES07 - HCA Florida Northwest ..	Health Care Facil..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES072 - Airport Hanger	Airports	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES073 - Airport Hanger	Airports	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES074 - Airport Hanger	Airports	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES075 - Airport Hanger	Airports	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES076 - Airport Hanger	Airports	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES077 - Airport Hanger	Airports	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES078 - Destin Flight Works an..	Airports	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES079 - ELKS LODGE 2688	Community Cent..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES080 - DESTIN COMMUNITY ..	Community Cent..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES082 - KNIGHTS OF COLUM..	Community Cent..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES083 - BOYS & GIRLS CLUB -..	Community Cent..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES086 - AMVETS POST 29	Community Cent..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES087 - HARVEST HOUSE	Risk Shelter Inve..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES094 - ALLTEL CORPORATI..	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES095 - NEW CINGULAR WIR..	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES097 - DESTIN WATER USE..	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DES098 - PELICAN BEACH RES..	Communications ..	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

City of Destin | **Linear Asset Flood Exposure**

Length of segment exposed to flooding in miles and as a percent of total. Color indicates assigned vulnerability score.

		Coastal																Rainfall						Compound					
		Base		Intermediate-Low SLR Projection								Intermediate-High SLR Projection						Intermediate-High SLR Projection						Intermediate-High SLR Projection					
		Current		2040			2070					2040			2070			Current	2040		2070			Current	2040		2070		
Asset	Asset Type	MHHW		MHHW		1% AEP	MHHW		1% AEP			MHHW		1% AEP	MHHW		1% AEP	1% AEP	1% AEP		1% AEP			1% AEP	1% AEP		1% AEP		
DES0189 - GULF SHORE DR	Major Roadway	0.00	0%	0.00	0%	1.93	91%	0.00	0%	1.96	93%	0.00	0%	1.96	93%	0.22	10%	2.01	95%	0.52	25%	0.64	30%	0.88	42%	1.99	94%	2.03	96%	2.04	97%
DES0190 - ELECTRIC BULK PO..	Electric Product..	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	1.75	42%	1.92	46%	2.02	48%	1.75	42%	1.92	46%	2.02	48%
DES0191 - ELECTRIC BULK PO..	Electric Product..	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.14	8%	0.00	0%	0.15	8%	0.00	0%	0.35	20%	0.82	46%	0.90	50%	0.95	53%	0.96	54%	1.16	65%	1.32	74%
DES0155 - US HWY 98	Major Roadway	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.27	14%	0.90	45%	0.96	49%	1.00	51%	0.90	45%	0.97	49%	1.00	50%
DES0178 - CALHOUN AVE	Major Roadway	0.00	0%	0.00	0%	0.46	37%	0.00	0%	0.54	44%	0.01	1%	0.55	45%	0.06	5%	0.79	64%	0.17	14%	0.20	16%	0.27	22%	0.60	49%	0.76	62%	1.07	87%
DES0192 - Norriego Point Breakw..	Shorelines (Bre..	0.44	98%	0.44	98%	0.45	100%	0.45	100%	0.45	100%	0.45	100%	0.45	100%	0.45	100%	0.45	100%	0.23	53%	0.24	54%	0.24	55%	0.24	55%	0.24	55%	0.24	55%
DES0189 - ELECTRIC BULK PO..	Electric Product..	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.08	2%	0.00	0%	0.08	2%	0.00	0%	0.18	5%	0.77	20%	0.83	22%	0.88	23%	0.77	20%	0.84	22%	0.95	25%
DES0154 - CR-30F/AIRPORT RD	Major Roadway	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.03	2%	0.61	37%	0.65	40%	0.66	41%	0.61	37%	0.65	40%	0.66	41%
DES0193 - Destin East Jetty Brea..	Shorelines (Bre..	0.26	100%	0.26	100%	0.27	100%	0.27	100%	0.27	100%	0.27	100%	0.27	100%	0.27	100%	0.27	100%	0.24	89%	0.24	89%	0.24	90%	0.24	90%	0.24	90%	0.24	90%
DES0176 - HARBOR BLVD	Major Roadway	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.43	40%	0.45	42%	0.48	44%	0.43	40%	0.46	42%	0.48	45%
DES0187 - EMERALD COAST P..	Major Roadway	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.42	23%	0.44	25%	0.46	26%	0.42	23%	0.44	25%	0.46	26%
DES0162 - BENNING DR	Major Roadway	0.00	0%	0.00	0%	0.18	16%	0.00	0%	0.19	17%	0.00	0%	0.19	17%	0.00	0%	0.22	20%	0.18	16%	0.23	21%	0.26	23%	0.31	28%	0.38	34%	0.42	37%
DES0183 - AZALEA DR	Major Roadway	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.37	51%	0.39	55%	0.40	57%	0.37	51%	0.39	55%	0.40	57%
DES0182 - BEACH DR	Major Roadway	0.00	0%	0.00	0%	0.24	100%	0.00	0%	0.24	100%	0.00	0%	0.24	100%	0.24	100%	0.24	100%	0.00	0%	0.01	5%	0.24	100%	0.24	100%	0.24	100%	0.24	100%
DES0158 - COMMONS DR W	Major Roadway	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.28	29%	0.35	36%	0.38	38%	0.28	29%	0.35	36%	0.38	38%
DES0179 - SIBERT AVE	Major Roadway	0.00	0%	0.00	0%	0.17	73%	0.00	0%	0.18	74%	0.00	0%	0.18	74%	0.15	62%	0.21	86%	0.16	68%	0.16	68%	0.16	68%	0.18	77%	0.20	85%	0.24	100%
DES0181 - BENNING DR	Major Roadway	0.00	0%	0.00	0%	0.18	79%	0.00	0%	0.19	84%	0.00	0%	0.19	84%	0.00	0%	0.22	97%	0.04	16%	0.07	30%	0.08	34%	0.19	84%	0.22	98%	0.23	100%
DES0156 - LEGION DR	Major Roadway	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.25	60%	0.26	62%	0.27	64%	0.25	60%	0.26	62%	0.27	64%
DES0164 - CALHOUN AVE	Major Roadway	0.00	0%	0.00	0%	0.12	46%	0.00	0%	0.14	53%	0.00	0%	0.14	54%	0.05	20%	0.19	75%	0.00	0%	0.01	5%	0.05	20%	0.14	55%	0.20	78%	0.25	100%
DES0185 - KELLY ST	Major Roadway	0.00	0%	0.00	0%	0.08	22%	0.00	0%	0.09	24%	0.00	0%	0.10	25%	0.03	8%	0.13	35%	0.05	14%	0.10	26%	0.12	31%	0.13	34%	0.20	52%	0.22	57%
DES0180 - CALHOUN AVE	Major Roadway	0.00	0%	0.00	0%	0.15	69%	0.00	0%	0.16	72%	0.00	0%	0.16	73%	0.00	0%	0.19	85%	0.00	0%	0.00	0%	0.00	0%	0.17	75%	0.19	83%	0.22	100%
DES0170 - MAIN ST	Major Roadway	0.00	0%	0.00	0%	0.04	6%	0.00	0%	0.05	7%	0.00	0%	0.05	7%	0.00	0%	0.07	11%	0.07	11%	0.08	11%	0.11	17%	0.13	19%	0.15	23%	0.19	28%
DES0166 - BEACH DR	Major Roadway	0.00	0%	0.00	0%	0.07	13%	0.00	0%	0.08	14%	0.00	0%	0.08	14%	0.05	9%	0.09	16%	0.00	0%	0.00	0%	0.05	8%	0.08	15%	0.10	17%	0.12	21%
DES0284 - Destin East Pass Brid..	Shorelines (Bre..	0.02	39%	0.02	47%	0.05	100%	0.04	77%	0.05	100%	0.04	78%	0.05	100%	0.05	100%	0.05	100%	0.04	81%	0.05	89%	0.05	98%	0.05	100%	0.05	100%	0.05	100%
DES0168 - Henderson Beach Rd	Major Roadway	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.11	24%	0.11	25%	0.11	25%	0.11	24%	0.11	25%	0.11	25%
DES0167 - LEGION DR	Major Roadway	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.10	38%	0.11	40%	0.11	41%	0.10	38%	0.11	40%	0.11	41%
DES0186 - EMERALD COAST P..	Major Roadway	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.08	6%	0.08	6%	0.09	7%	0.10	8%	0.08	6%	0.08	6%	0.10	8%
DES0172 - MAIN ST	Major Roadway	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.09	10%	0.09	10%	0.10	11%	0.09	10%	0.09	10%	0.10	11%
DES0188 - EAST PASS BRIDGE ..	Bridge	0.03	5%	0.03	5%	0.04	6%	0.03	6%	0.04	6%	0.03	6%	0.04	6%	0.03	6%	0.04	6%	0.03	6%	0.03	6%	0.04	6%	0.04	6%	0.04	6%	0.04	6%
DES0177 - SCENIC HWY 98	Major Roadway	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.09	6%	0.06	4%	0.06	4%	0.06	4%	0.06	4%	0.06	4%	0.14	9%
DES0187 - EAST PASS BRIDGE ..	Bridge	0.03	5%	0.03	5%	0.04	6%	0.03	5%	0.04	6%	0.03	5%	0.04	6%	0.03	5%	0.04	7%	0.03	4%	0.03	4%	0.03	5%	0.03	6%	0.04	6%	0.04	6%
DES0175 - SCENIC HWY 98	Major Roadway	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.13	54%	0.04	15%	0.04	16%	0.04	17%	0.03	13%	0.03	13%	0.11	47%
DES0161 - SCENIC HWY 98	Major Roadway	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.03	7%	0.03	7%	0.04	7%	0.03	7%	0.03	7%	0.04	7%
DES0173 - US HWY 98	Major Roadway	0.01	33%	0.01	34%	0.01	51%	0.01	36%	0.01	53%	0.01	36%	0.01	53%	0.01	42%	0.01	59%	0.01	47%	0.01	49%	0.01	54%	0.01	59%	0.01	61%	0.01	63%
DES0159 - STAHLMAN AVE	Major Roadway	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.02	8%	0.03	9%	0.03	9%	0.02	8%	0.03	9%	0.03	9%
DES0188 - EMERALD COAST P..	Major Roadway	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.02	2%
DES0165 - COMMONS DR W	Major Roadway	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%
DES0169 - BEACH DR	Major Roadway	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%
DES0171 - OCEAN BLVD	Major Roadway	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%
DES0174 - SCENIC HWY 98	Major Roadway	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%

City of Destin | **Linear Asset Flood Exposure**

Length of segment exposed to flooding in miles and as a percent of total. Color indicates assigned vulnerability score.

		Coastal																Rainfall						Compound					
		Base		Intermediate-Low SLR Projection						Intermediate-High SLR Projection								Intermediate-High SLR Projection						Intermediate-High SLR Projection					
		Current		2040				2070				2040				2070		Current		2040		2070		Current		2040		2070	
Asset	Asset Type	MHHW		MHHW		1% AEP		MHHW		1% AEP		MHHW		1% AEP		MHHW		1% AEP		1% AEP		1% AEP		1% AEP		1% AEP		1% AEP	
DES0184 - INDIAN BAYOU TR	Major Roadway	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%

City of Destin | **Polygon Asset Flood Exposure**

Area of polygon exposed to flooding in acres and as a percent of total. Color indicates assigned vulnerability score.

		Coastal																		Rainfall						Compound					
		Base		Intermediate-Low SLR Projection						Intermediate-High SLR Projection										Intermediate-High SLR Projection						Intermediate-High SLR Projection					
		Current		2040				2070				2040				2070				Current		2040		2070		Current		2040		2070	
Asset	Asset Type	MHHW		MHHW		1% AEP		MHHW		1% AEP		MHHW		1% AEP		MHHW		1% AEP		1% AEP		1% AEP		1% AEP		1% AEP		1% AEP		1% AEP	
DES0238 - Destin Executive Airp..	Airports	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	55.3	27%	61.2	30%	64.8	32%	55.3	27%	76.6	38%	80.3	40%
DES0270 - FOUR PRONG LAKE	Surface Waters	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	26.1	99%	26.3	100%	26.1	99%	26.2	99%	26.2	99%	26.3	100%	26.2	99%	26.3	100%	26.4	100%
DES0201 - NORRIEGO POINT P..	Parks	8.3	44%	8.5	45%	16.1	85%	9.3	49%	12.3	65%	9.5	50%	16.2	85%	16.5	87%	16.2	85%	5.0	26%	5.7	30%	8.0	42%	11.8	62%	12.2	64%	12.6	66%
DES0197 - MATTIE M KELLY PA..	Parks	7.2	62%	7.5	65%	11.5	100%	9.0	78%	11.5	100%	9.1	79%	11.5	100%	11.5	100%	11.5	100%	9.9	86%	10.5	91%	11.5	100%	11.5	100%	11.5	100%	11.5	100%
DES0250 - JOES BAYOU	Surface Waters	0.0	0%	0.0	0%	12.8	100%	0.0	0%	12.7	99%	0.0	0%	12.8	100%	12.9	100%	12.8	100%	12.8	100%	12.9	100%	12.9	100%	12.9	100%	12.9	100%	12.9	100%
DES0268 - UNNAMED	Surface Waters	0.0	0%	0.0	0%	9.5	99%	9.2	96%	9.3	98%	9.2	96%	9.5	100%	9.5	100%	9.5	100%	9.5	100%	9.5	100%	9.5	100%	9.5	100%	9.5	100%	9.5	100%
DES0208 - KELLY STREET DUC..	Surface Waters	4.5	88%	4.6	90%	5.1	100%	4.8	94%	5.1	99%	4.8	94%	5.1	100%	5.1	100%	5.1	100%	5.1	100%	5.1	100%	5.1	100%	5.1	100%	5.1	100%	5.1	100%
DES0233 - Primary Dune	Natural Dunes	0.0	0%	0.0	0%	4.8	14%	0.0	0%	0.0	0%	0.0	0%	6.9	21%	15.5	47%	6.7	20%	3.5	10%	3.7	11%	3.8	11%	5.0	15%	7.7	23%	13.2	40%
DES0234 - Secondary Dune	Natural Dunes	0.0	0%	0.0	0%	0.6	1%	0.0	0%	0.0	0%	0.0	0%	2.0	5%	5.4	14%	1.9	5%	6.5	17%	6.7	18%	6.8	18%	6.5	17%	7.1	19%	7.4	19%
DES0269 - UNNAMED	Surface Waters	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	6.5	100%	0.0	0%	6.5	100%	6.5	100%	6.5	100%	6.5	100%	6.5	100%	6.5	100%
DES0245 - UNNAMED	Surface Waters	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	7.0	100%	7.0	100%	7.0	100%	7.0	100%	7.0	100%	7.0	100%
DES0239 - UNNAMED	Surface Waters	0.0	0%	0.0	0%	3.7	100%	0.0	0%	3.7	100%	0.0	0%	3.7	100%	3.7	100%	3.7	100%	3.7	100%	3.7	100%	3.7	100%	3.7	100%	3.7	100%	3.7	100%
DES0264 - UNNAMED	Surface Waters	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	5.7	100%	5.7	100%	5.7	100%	5.7	100%	5.7	100%	5.7	100%
DES0232 - Morgans Sport Center	Parks	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	4.4	22%	5.4	27%	5.7	28%	4.4	22%	6.5	32%	6.8	34%
DES0195 - CLEMENT E TAYLOR..	Parks	0.2	5%	0.2	5%	3.3	93%	0.2	7%	1.0	27%	0.3	7%	3.5	98%	3.5	100%	3.5	97%	1.6	45%	1.9	53%	2.0	57%	3.3	94%	3.5	99%	3.5	100%
DES0246 - UNNAMED	Surface Waters	0.0	0%	0.0	0%	2.8	85%	0.0	0%	0.0	0%	0.0	0%	2.9	88%	3.2	96%	2.9	88%	3.0	91%	3.0	92%	3.1	93%	3.1	93%	3.2	98%	3.3	100%
DES0256 - INDIAN BAYOU	Surface Waters	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	4.1	96%	0.0	0%	4.3	99%	4.3	99%	4.3	99%	4.3	99%	4.3	99%	4.3	100%
DES0226 - HENDERSON BEAC..	Parks	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	4.4	89%	4.5	91%	4.5	92%	4.4	89%	4.8	96%	4.8	97%
DES0194 - JAMES LEE PARK	Parks	0.0	0%	0.0	0%	2.8	37%	0.0	0%	0.2	3%	0.0	0%	3.6	48%	5.9	78%	3.5	46%	0.1	1%	0.1	1%	0.2	3%	1.9	25%	3.4	45%	5.0	66%
DES0196 - JOES BAYOU RECR..	Parks	0.3	14%	0.3	15%	2.3	100%	0.6	27%	2.3	100%	0.7	32%	2.3	100%	2.3	100%	2.3	100%	0.7	32%	1.1	51%	2.3	100%	2.3	100%	2.3	100%	2.3	100%
DES0218 - DESTIN SPORTS FIE..	Parks	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	2.8	20%	3.1	23%	3.4	25%	2.8	20%	4.7	35%	5.2	38%
DES0274 - UNNAMED	Surface Waters	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	3.3	70%	3.4	72%	3.4	74%	3.3	70%	3.6	78%	3.7	80%
DES0207 - DALTON THREADGI..	Parks	0.0	0%	0.0	0%	0.7	23%	0.0	0%	0.1	2%	0.0	0%	1.6	49%	3.1	97%	1.4	45%	0.4	14%	0.5	17%	0.6	18%	2.7	86%	3.1	98%	3.2	100%
DES0254 - UNNAMED	Surface Waters	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	2.9	100%	2.9	100%	2.9	100%	2.9	100%	2.9	100%	2.9	100%
DES0223 - HENDERSON BEAC..	Parks	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	2.4	56%	2.7	63%	2.9	68%	2.4	56%	3.4	80%	3.5	82%
DES0253 - UNNAMED	Surface Waters	1.2	100%	1.2	100%	1.2	100%	1.2	100%	1.2	100%	1.2	100%	1.2	100%	1.2	100%	1.2	100%	1.2	100%	1.2	100%	1.2	100%	1.2	100%	1.2	100%	1.2	100%
DES0247 - UNNAMED	Surface Waters	0.8	77%	0.8	78%	1.1	100%	0.9	84%	1.0	98%	0.9	85%	1.1	100%	1.1	100%	1.1	100%	1.1	100%	1.1	100%	1.1	100%	1.1	100%	1.1	100%	1.1	100%
DES0257 - UNNAMED	Surface Waters	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	2.1	86%	0.0	0%	2.0	80%	2.0	84%	2.1	85%	2.1	86%	2.3	96%	2.4	99%
DES0267 - UNNAMED	Surface Waters	0.8	93%	0.8	94%	0.9	100%	0.9	96%	0.9	100%	0.9	97%	0.9	100%	0.9	100%	0.9	100%	0.9	100%	0.9	100%	0.9	100%	0.9	100%	0.9	100%	0.9	100%
DES0271 - UNNAMED	Surface Waters	0.0	0%	0.0	0%	1.2	100%	0.0	0%	1.2	97%	0.0	0%	1.2	100%	1.2	100%	1.2	100%	1.2	98%	1.2	99%	1.2	99%	1.2	100%	1.2	100%	1.2	100%
DES0265 - UNNAMED	Surface Waters	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	2.1	100%	2.1	100%	2.1	100%	2.1	100%	2.1	100%	2.1	100%
DES0283 - CHOCTAWHATCHEE..	Surface Waters	0.7	91%	0.7	91%	0.8	100%	0.7	93%	0.8	100%	0.7	93%	0.8	100%	0.8	100%	0.8	100%	0.8	95%	0.8	97%	0.8	100%	0.8	100%	0.8	100%	0.8	100%
DES0255 - UNNAMED	Surface Waters	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	1.9	99%	1.9	99%	1.9	99%	1.9	99%	1.9	99%	1.9	99%
DES0279 - UNNAMED	Surface Waters	0.0	0%	0.0	0%	1.1	100%	0.0	0%	0.0	0%	0.0	0%	1.1	100%	1.1	100%	1.1	100%	1.1	99%	1.1	99%	1.1	100%	1.1	100%	1.1	100%	1.1	100%
DES0260 - UNNAMED	Surface Waters	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	1.8	100%	1.8	100%	1.8	100%	1.8	100%	1.8	100%	1.8	100%
DES0285 - UNNAMED	Surface Waters	0.0	0%	0.0	0%	0.4	24%	0.0	0%	0.0	0%	0.0	0%	0.5	32%	1.1	70%	0.5	30%	1.3	86%	1.3	88%	1.4	90%	1.3	86%	1.4	95%	1.4	96%
DES0224 - HENDERSON BEAC..	Parks	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	1.5	30%	1.6	32%	1.7	35%	1.5	30%	2.1	43%	2.2	45%
DES0259 - UNNAMED	Surface Waters	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	1.5	96%	1.5	97%	1.5	97%	1.5	96%	1.5	98%	1.5	98%
DES0237 - Morgans Sport Center	Parks	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	1.4	56%	1.4	60%	1.5	61%	1.4	56%	1.5	63%	1.6	65%
DES0225 - HENDERSON BEAC..	Parks	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	1.3	32%	1.3	33%	1.4	33%	1.3	32%	1.5	36%	1.5	37%

City of Destin | **Polygon Asset Flood Exposure**

Area of polygon exposed to flooding in acres and as a percent of total. Color indicates assigned vulnerability score.

		Coastal																		Rainfall						Compound					
		Base		Intermediate-Low SLR Projection						Intermediate-High SLR Projection										Intermediate-High SLR Projection						Intermediate-High SLR Projection					
		Current		2040				2070				2040				2070				Current		2040		2070		Current		2040		2070	
Asset	Asset Type	MHHW		MHHW		1% AEP		MHHW		1% AEP		MHHW		1% AEP		MHHW		1% AEP		1% AEP		1% AEP		1% AEP		1% AEP		1% AEP		1% AEP	
DES0206 - DEWEY BUCK DESTI..	Parks	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	1.1	66%	1.2	76%	1.3	80%	1.1	66%	1.4	89%	1.5	91%
DES0258 - UNNAMED	Surface Waters	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	1.2	97%	1.2	98%	1.2	98%	1.2	97%	1.2	99%	1.2	99%
DES0263 - UNNAMED	Surface Waters	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	1.1	100%	1.1	100%	1.1	100%	1.1	100%	1.1	100%	1.1	100%
DES0281 - UNNAMED	Surface Waters	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	1.1	100%	1.1	100%	1.1	100%	1.1	100%	1.1	100%	1.1	100%
DES0276 - UNNAMED	Surface Waters	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	1.1	100%	1.1	100%	1.1	100%	1.1	100%	1.1	100%	1.1	100%
DES0262 - UNNAMED	Surface Waters	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	1.0	92%	1.1	93%	1.1	94%	1.0	92%	1.1	95%	1.1	95%
DES0210 - MAIN STREET PARK	Parks	0.2	15%	0.2	15%	0.3	26%	0.2	16%	0.2	20%	0.2	17%	0.3	27%	0.4	32%	0.3	27%	0.5	42%	0.6	45%	0.6	47%	0.6	50%	0.7	57%	0.8	61%
DES0261 - UNNAMED	Surface Waters	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	1.0	100%	1.0	100%	1.0	100%	1.0	100%	1.0	100%	1.0	100%
DES0231 - Stormwater Pond City ..	Wetlands	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.9	100%	0.9	100%	0.9	100%	0.9	100%	0.9	100%	0.9	100%
DES0273 - UNNAMED	Surface Waters	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.9	69%	0.9	71%	0.9	72%	0.9	69%	0.9	74%	0.9	74%
DES0280 - UNNAMED	Surface Waters	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.9	56%	0.9	57%	0.9	58%	0.9	56%	0.9	60%	0.9	60%
DES0248 - UNNAMED	Surface Waters	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.6	60%	0.0	0%	0.7	64%	0.7	65%	0.7	65%	0.7	64%	0.7	68%	0.9	82%
DES0252 - UNNAMED	Surface Waters	0.2	59%	0.3	77%	0.4	100%	0.3	82%	0.4	100%	0.3	83%	0.4	100%	0.4	100%	0.4	100%	0.2	56%	0.3	71%	0.4	100%	0.4	100%	0.4	100%	0.4	100%
DES0266 - UNNAMED	Surface Waters	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.7	86%	0.8	88%	0.8	91%	0.7	86%	0.8	96%	0.8	98%
DES0219 - JEWEL MELVIN PARK	Parks	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.7	75%	0.7	76%	0.7	76%	0.7	75%	0.7	78%	0.8	79%
DES0212 - CAPTAIN ROYAL ME..	Parks	0.0	1%	0.0	1%	0.2	26%	0.0	1%	0.1	18%	0.0	1%	0.2	26%	0.2	27%	0.2	26%	0.5	60%	0.5	66%	0.5	67%	0.5	66%	0.5	71%	0.6	73%
DES0251 - UNNAMED	Surface Waters	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.7	100%	0.7	100%	0.7	100%	0.7	100%	0.7	100%	0.7	100%
DES0242 - DESTIN HARBOR	Surface Waters	0.2	92%	0.2	93%	0.3	100%	0.3	98%	0.3	100%	0.3	99%	0.3	100%	0.3	100%	0.3	100%	0.3	97%	0.3	100%	0.3	100%	0.3	100%	0.3	100%	0.3	100%
DES0278 - UNNAMED	Surface Waters	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.6	68%	0.6	68%	0.6	69%	0.6	68%	0.6	70%	0.6	70%
DES0235 - City Hall Parking Lot (I..	Local Governme..	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.5	75%	0.6	80%	0.6	80%	0.5	75%	0.6	80%	0.6	80%
DES0213 - JUNE WHITE DECKE..	Parks	0.0	0%	0.0	0%	0.2	10%	0.0	0%	0.0	0%	0.0	0%	0.3	14%	1.1	49%	0.3	13%	0.0	1%	0.0	2%	0.1	3%	0.0	1%	0.2	7%	0.9	40%
DES0275 - UNNAMED	Surface Waters	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.5	100%	0.5	100%	0.5	100%	0.5	100%	0.5	100%	0.5	100%
DES0217 - HARBORVIEW PARK	Parks	0.2	36%	0.2	37%	0.2	48%	0.2	38%	0.2	44%	0.2	39%	0.2	49%	0.2	50%	0.2	49%	0.2	49%	0.2	49%	0.2	50%	0.2	51%	0.2	53%	0.2	53%
DES0282 - UNNAMED	Surface Waters	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.5	100%	0.5	100%	0.5	100%	0.5	100%	0.5	100%	0.5	100%
DES0220 - MORINO POINT BEA..	Parks	0.0	0%	0.0	0%	0.3	100%	0.0	0%	0.1	36%	0.0	0%	0.3	100%	0.3	100%	0.3	100%	0.1	20%	0.1	22%	0.2	49%	0.3	100%	0.3	100%	0.3	100%
DES0243 - DESTIN HARBOR	Surface Waters	0.2	100%	0.2	100%	0.2	100%	0.2	100%	0.2	100%	0.2	100%	0.2	100%	0.2	100%	0.2	100%	0.2	98%	0.2	99%	0.2	100%	0.2	100%	0.2	100%	0.2	100%
DES0241 - DESTIN HARBOR	Surface Waters	0.1	93%	0.1	94%	0.1	100%	0.1	96%	0.1	100%	0.1	97%	0.1	100%	0.1	100%	0.1	100%	0.1	97%	0.1	99%	0.1	100%	0.1	100%	0.1	100%	0.1	100%
DES0244 - DESTIN HARBOR	Surface Waters	0.1	73%	0.1	75%	0.1	100%	0.1	82%	0.1	100%	0.1	84%	0.1	100%	0.1	100%	0.1	100%	0.1	91%	0.1	98%	0.1	100%	0.1	100%	0.1	100%	0.1	100%
DES0198 - SILVER SHELLS BEA..	Parks	0.0	0%	0.0	0%	0.2	58%	0.0	3%	0.1	27%	0.0	4%	0.2	63%	0.2	69%	0.2	62%	0.0	6%	0.0	10%	0.1	24%	0.1	48%	0.2	54%	0.2	63%
DES0240 - DESTIN HARBOR	Surface Waters	0.0	41%	0.0	42%	0.1	97%	0.1	58%	0.1	87%	0.1	62%	0.1	98%	0.1	100%	0.1	98%	0.1	49%	0.1	62%	0.1	82%	0.1	94%	0.1	100%	0.1	100%
DES0211 - KELL-AIRE NATURE ..	Parks	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.2	5%	0.2	7%	0.2	9%	0.2	5%	0.3	10%	0.3	10%
DES0203 - POMPANO STREET ..	Parks	0.0	0%	0.0	0%	0.1	23%	0.0	0%	0.0	0%	0.0	0%	0.1	27%	0.2	41%	0.1	26%	0.0	9%	0.0	9%	0.0	9%	0.2	45%	0.2	48%	0.2	50%
DES0284 - UNNAMED	Surface Waters	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.2	96%	0.2	97%	0.2	97%	0.2	96%	0.2	99%	0.2	99%
DES0277 - UNNAMED	Surface Waters	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.2	81%	0.2	83%	0.2	84%	0.2	81%	0.2	87%	0.2	88%
DES0227 - HENDERSON BEAC..	Parks	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.2	32%	0.2	32%	0.2	32%	0.2	32%	0.2	33%	0.2	33%
DES0209 - KELL-AIRE PARK NO..	Parks	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.2	12%	0.2	13%	0.2	13%	0.2	12%	0.2	15%	0.2	16%
DES0200 - CALHOUN BEACH A..	Parks	0.0	0%	0.0	0%	0.1	83%	0.0	0%	0.0	32%	0.0	2%	0.1	86%	0.1	94%	0.1	85%	0.0	0%	0.0	3%	0.0	19%	0.1	74%	0.1	81%	0.1	92%
DES0214 - OSTEEN BEACH AC..	Parks	0.0	0%	0.0	0%	0.1	100%	0.0	1%	0.0	24%	0.0	1%	0.1	100%	0.1	100%	0.1	100%	0.0	2%	0.0	3%	0.0	25%	0.1	100%	0.1	100%	0.1	100%
DES0202 - SHIRAH STREET BE..	Parks	0.0	0%	0.0	0%	0.1	26%	0.0	0%	0.0	0%	0.0	0%	0.1	31%	0.1	40%	0.1	30%	0.0	0%	0.0	0%	0.0	1%	0.1	21%	0.1	37%	0.2	46%
DES0222 - DESTIN COMMUNIT..	Parks	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.1	28%	0.1	29%	0.1	30%	0.1	28%	0.1	31%	0.1	32%

City of Destin | **Polygon Asset Flood Exposure**

Area of polygon exposed to flooding in acres and as a percent of total. Color indicates assigned vulnerability score.

		Coastal																Rainfall						Compound					
		Base		Intermediate-Low SLR Projection						Intermediate-High SLR Projection								Intermediate-High SLR Projection						Intermediate-High SLR Projection					
		Current		2040			2070			2040			2070					Current		2040		2070		Current		2040		2070	
Asset	Asset Type	MHHW		MHHW		1% AEP		MHHW	1% AEP			MHHW	1% AEP			MHHW	1% AEP			1% AEP		1% AEP		1% AEP		1% AEP		1% AEP		1% AEP	
DES0199 - THE SHORES AT CR..	Parks	0.0	0%	0.0	0%	0.1	14%	0.0	0%	0.0	0%	0.0	0%	0.1	19%	0.1	29%	0.1	18%	0.0	0%	0.0	0%	0.0	0%	0.1	19%	0.1	27%	0.1	30%
DES0205 - HARBOR LANE PARK	Parks	0.0	6%	0.0	6%	0.0	13%	0.0	7%	0.0	9%	0.0	7%	0.0	13%	0.0	16%	0.0	13%	0.0	10%	0.0	11%	0.0	13%	0.0	17%	0.0	19%	0.0	21%
DES0204 - CRYSTAL BEACH D..	Parks	0.0	0%	0.0	0%	0.0	26%	0.0	0%	0.0	5%	0.0	0%	0.0	30%	0.0	42%	0.0	29%	0.0	0%	0.0	0%	0.0	0%	0.0	23%	0.0	35%	0.0	41%
DES0221 - HENDERSON BEAC..	Parks	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	100%	0.0	100%	0.0	100%	0.0	100%	0.0	100%	0.0	100%
DES0272 - UNNAMED	Surface Waters	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.1	41%
DES0216 - TARPON STREET BE..	Parks	0.0	0%	0.0	0%	0.0	20%	0.0	0%	0.0	0%	0.0	0%	0.0	24%	0.0	32%	0.0	24%	0.0	0%	0.0	0%	0.0	0%	0.0	15%	0.0	33%	0.0	36%
DES0215 - BARRACUDA STREE..	Parks	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	2%
DES0228 - HENDERSON BEAC..	Parks	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%
DES0236 - City Hall HVAC Units	Local Governme..	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%

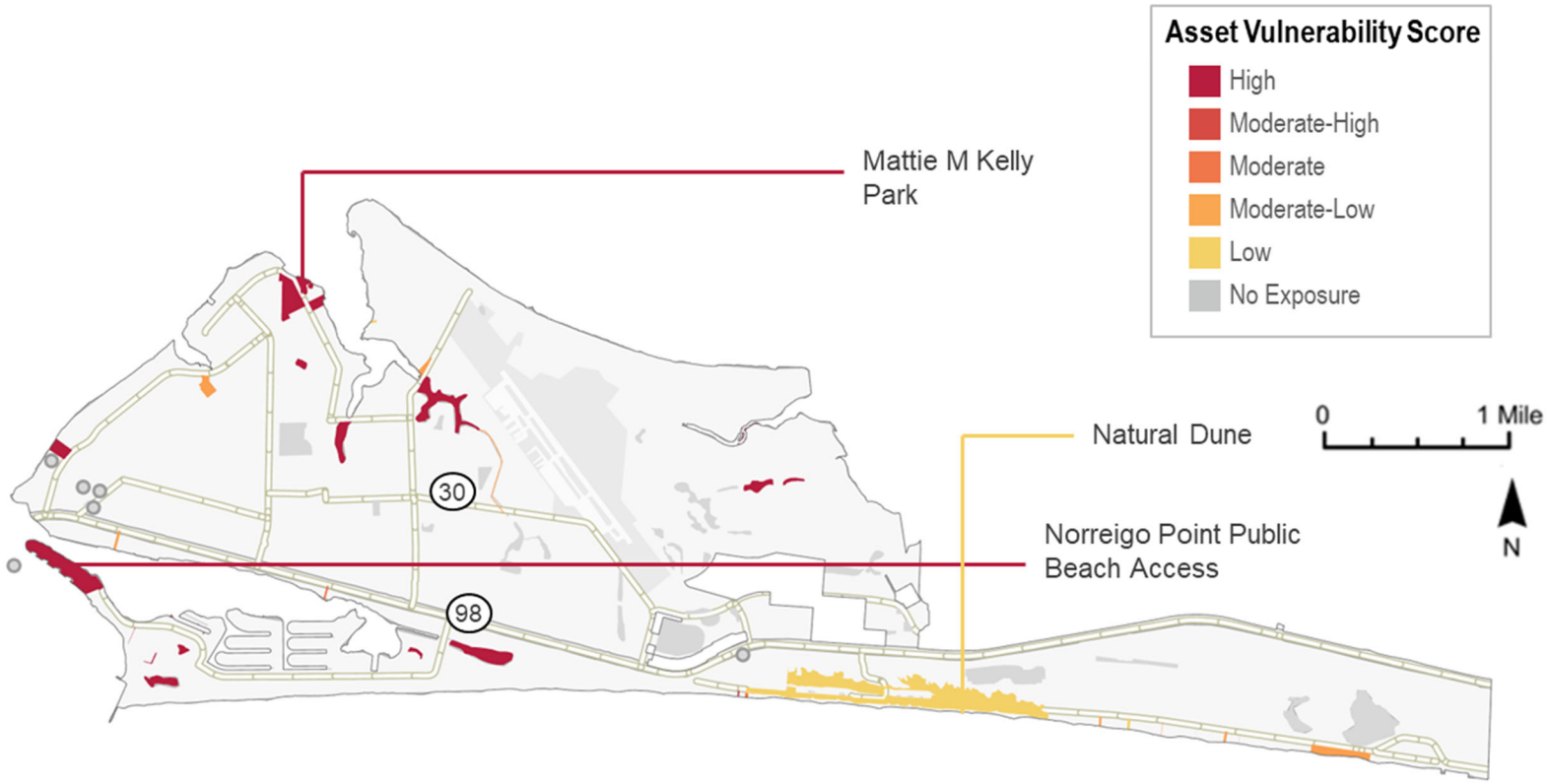


Appendix VI

Flood Vulnerability Maps

Natural, Cultural, Historical Asset Vulnerability

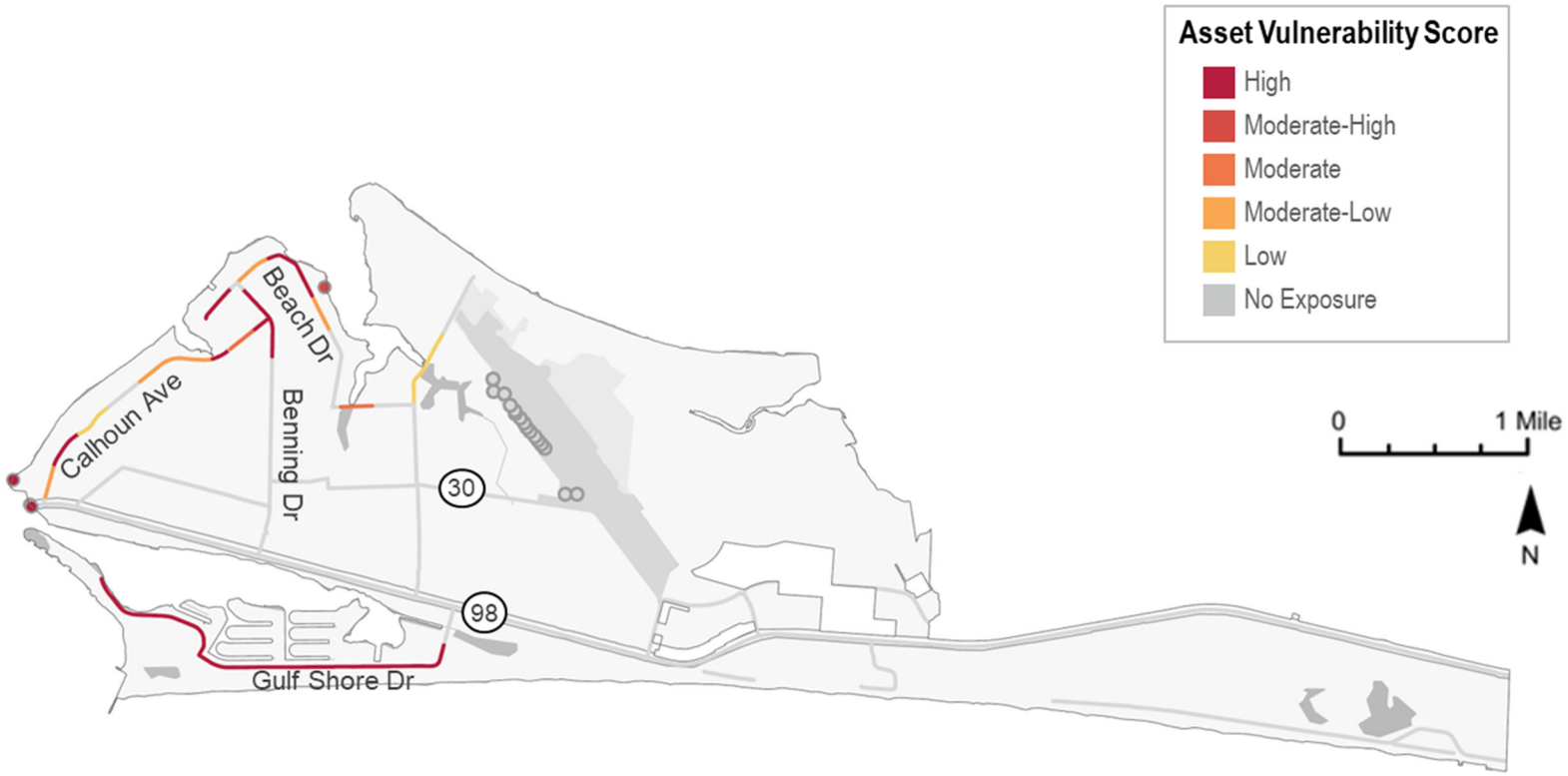
Assets flooded during a 2040 major
(1% AEP) coastal event with Intermediate Low SLR



Dewberry

Transportation Infrastructure Asset Vulnerability

Assets flooded during a 2040 major
(1% AEP) coastal event with Intermediate Low SLR



Dewberry

Critical Infrastructure Asset Vulnerability

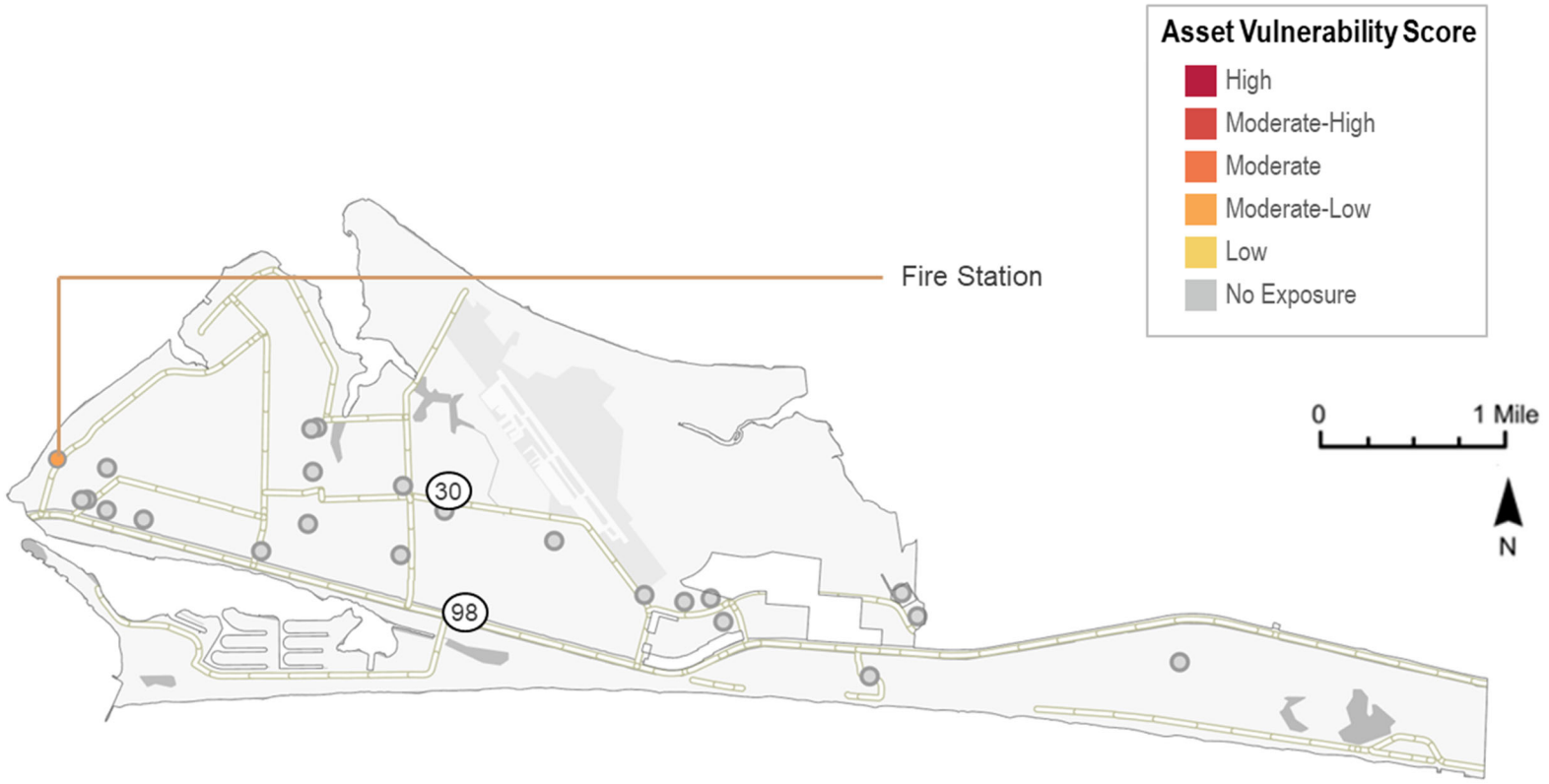
Assets flooded during a 2040 major
(1% AEP) coastal event with Intermediate Low SLR



Dewberry

Community & Emergency Asset Vulnerability

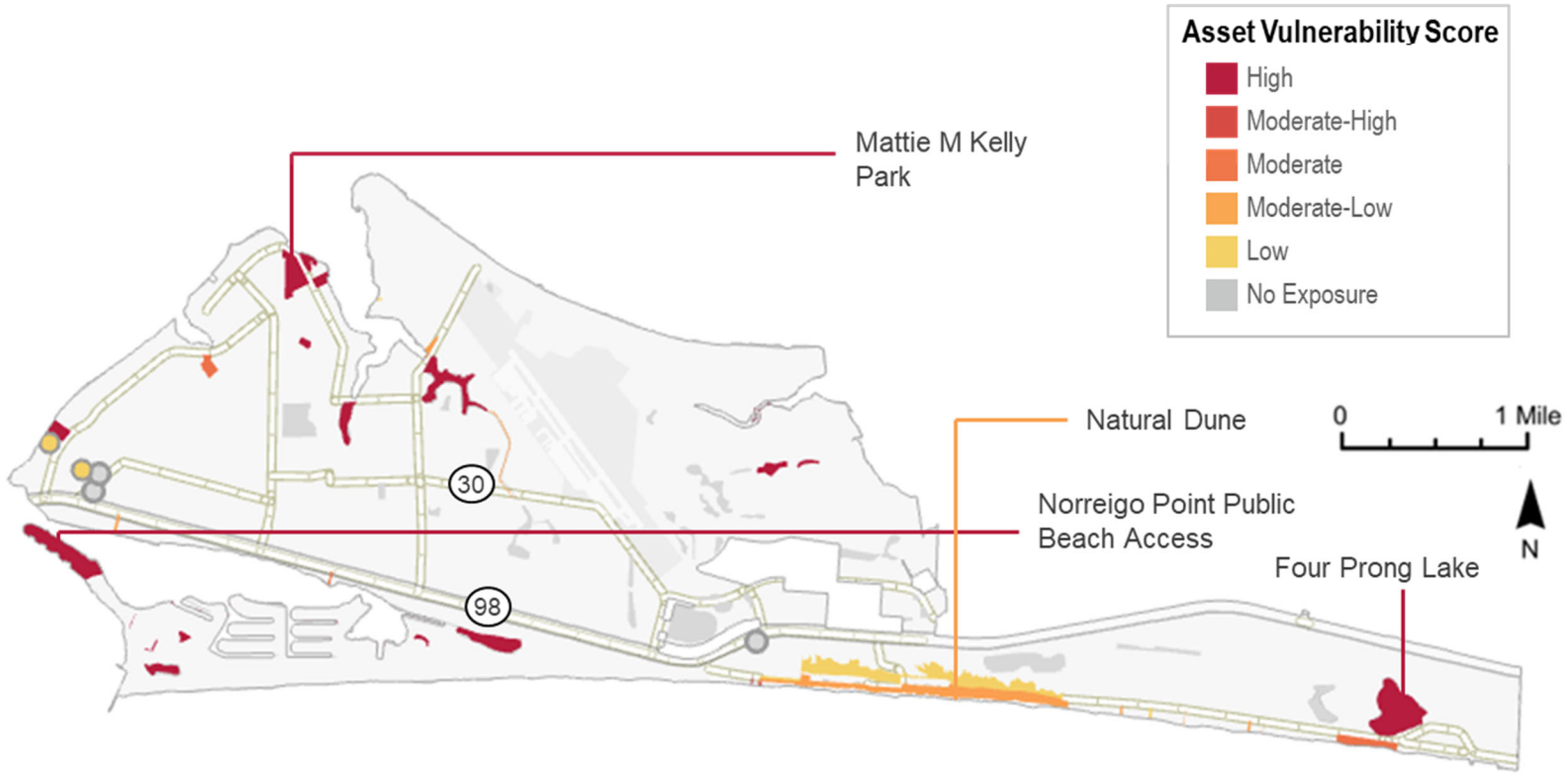
Assets flooded during a 2040 major
(1% AEP) coastal event with Intermediate Low SLR



Dewberry

Natural, Cultural, Historical Asset Vulnerability

Assets flooded during a 2040 major
(1% AEP) coastal event with Intermediate High SLR



Dewberry

Transportation Infrastructure Asset Vulnerability

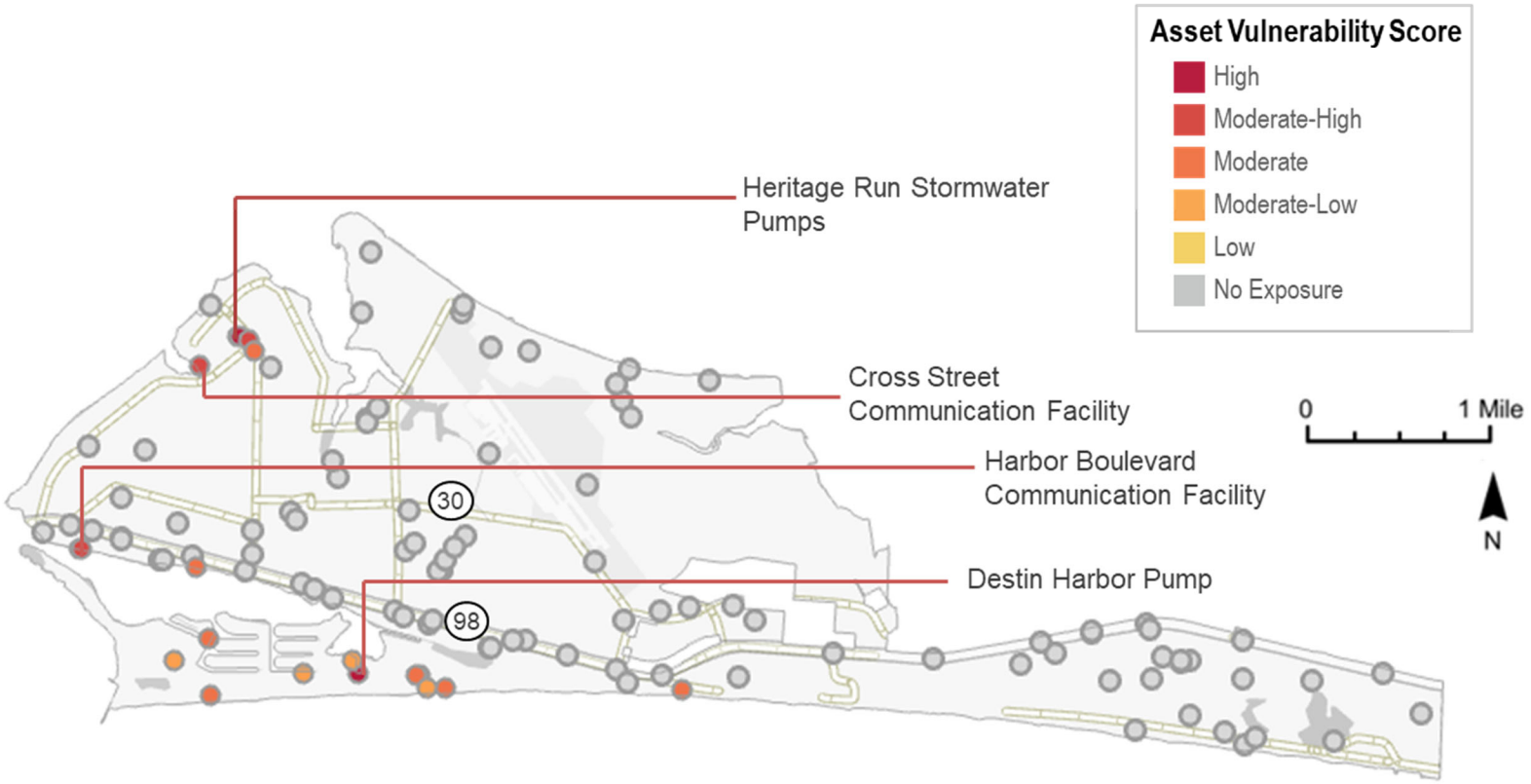
Assets flooded during a 2040 major
(1% AEP) coastal event with Intermediate High SLR



Dewberry

Critical Infrastructure Asset Vulnerability

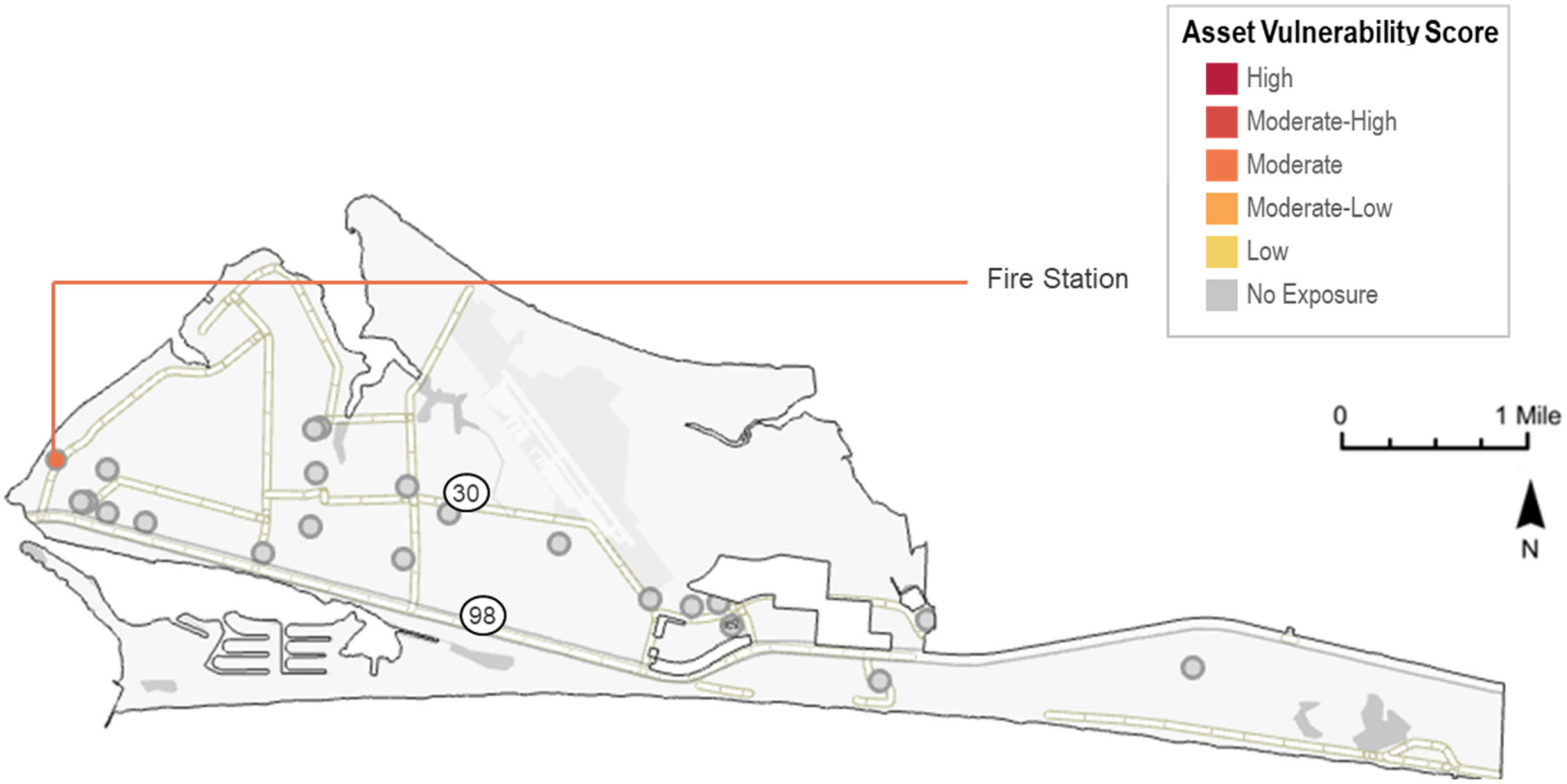
Assets flooded during a 2040 major
(1% AEP) coastal event with Intermediate High SLR



Dewberry

Community & Emergency Asset Vulnerability

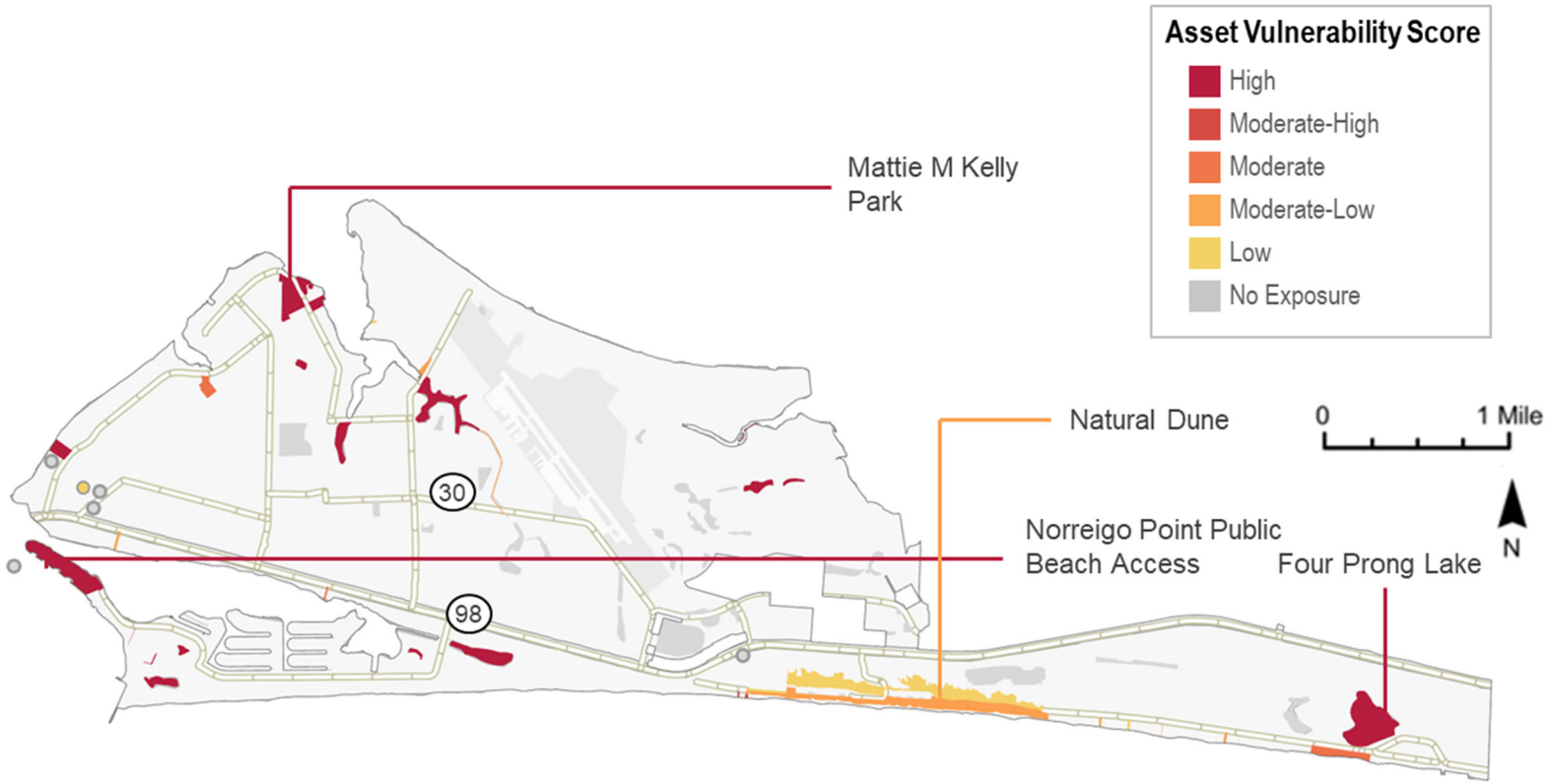
Assets flooded during a 2040 major
(1% AEP) coastal event with Intermediate High SLR



Dewberry

Natural, Cultural, Historical Asset Vulnerability

Assets flooded during a 2070 major
(1% AEP) coastal event with Intermediate Low SLR



Dewberry

Transportation Infrastructure Asset Vulnerability

Assets flooded during a 2070 major
(1% AEP) coastal event with Intermediate Low SLR



Dewberry

Critical Infrastructure Asset Vulnerability

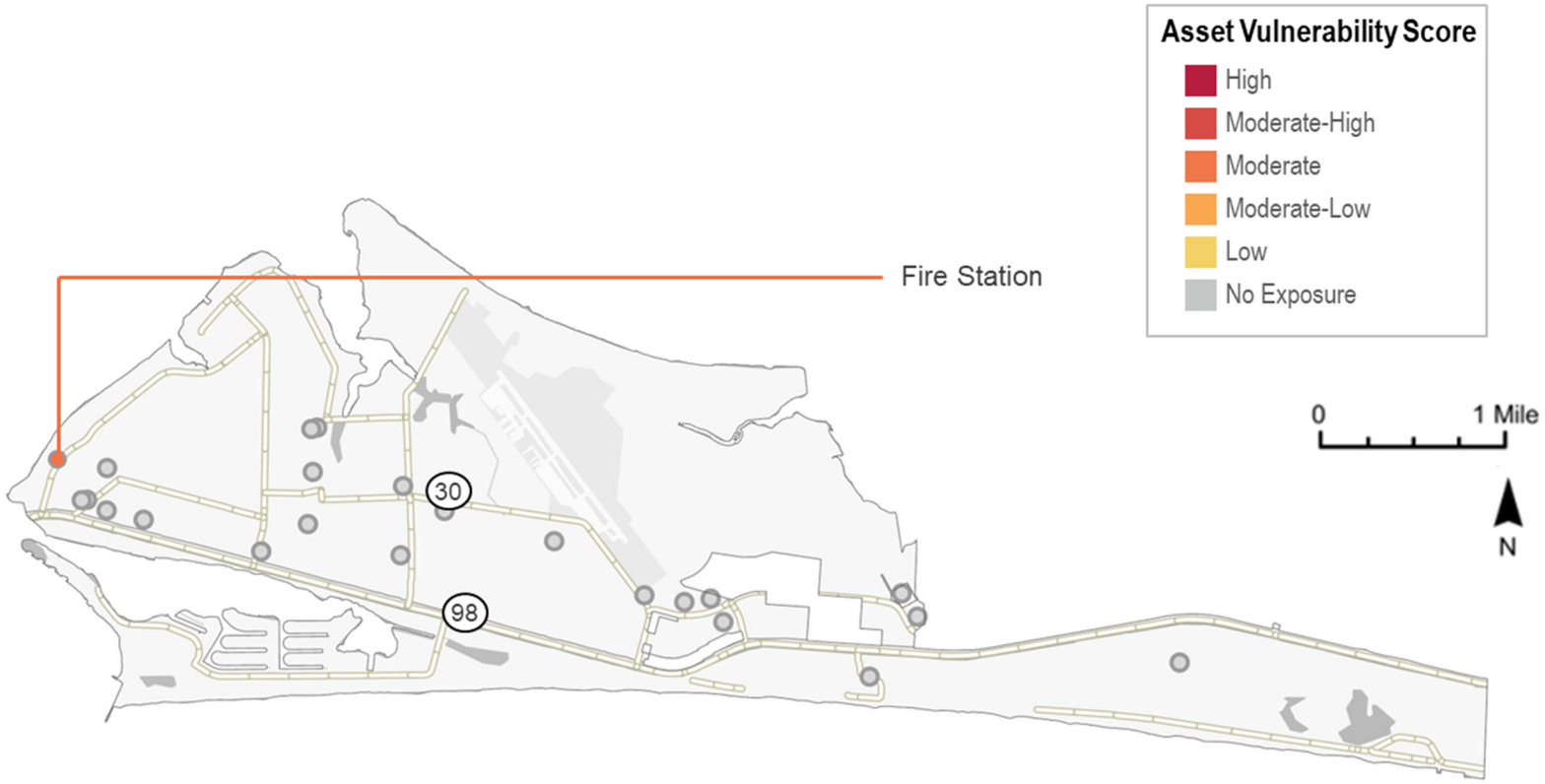
Assets flooded during a 2070 major
(1% AEP) coastal event with Intermediate Low SLR



Dewberry

Community & Emergency Asset Vulnerability

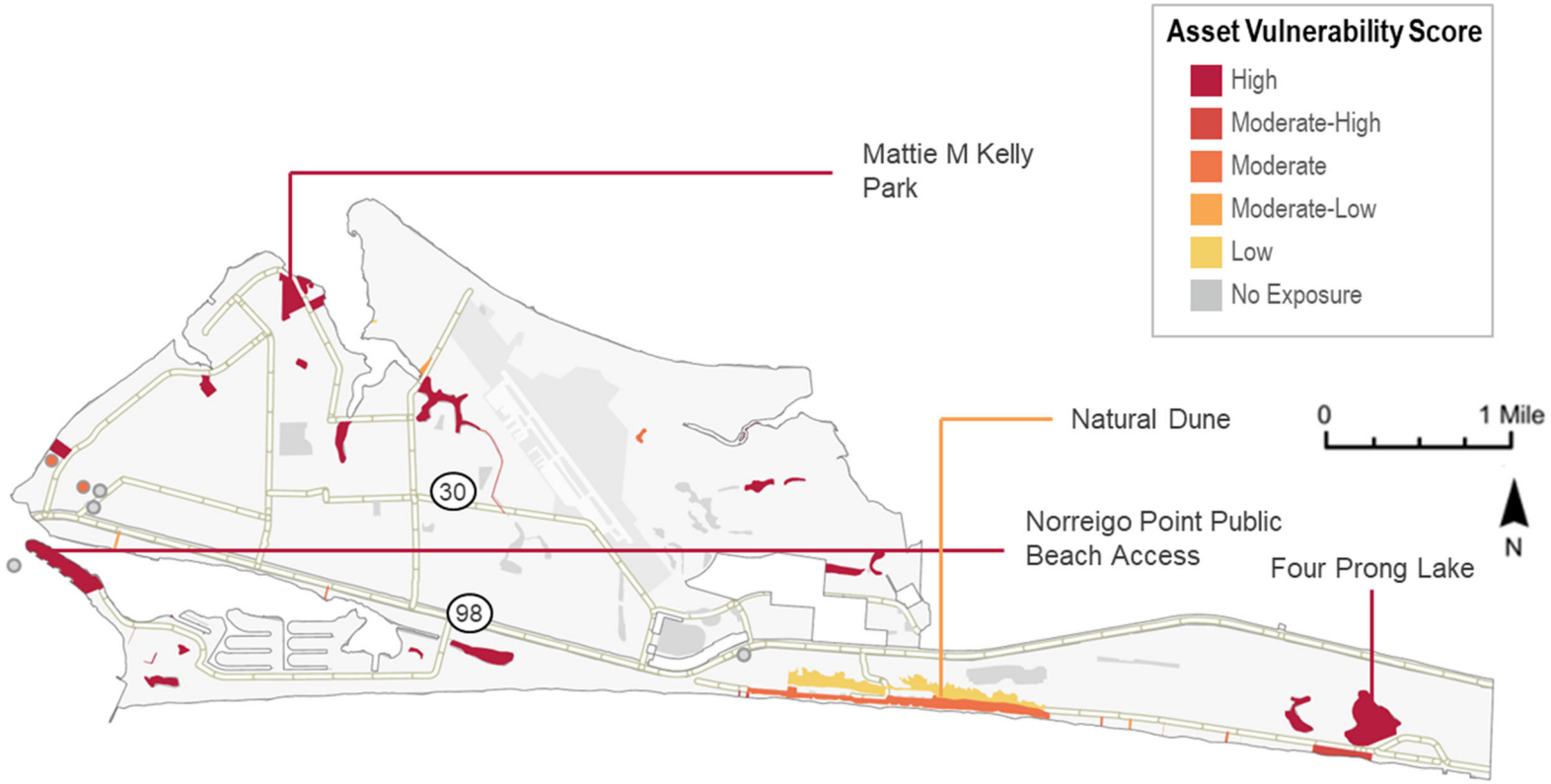
Assets flooded during a 2070 major
(1% AEP) coastal event with Intermediate Low SLR



Dewberry

Natural, Cultural, Historical Asset Vulnerability

Assets flooded during a 2070 major
(1% AEP) coastal event with Intermediate High SLR



Dewberry

Transportation Infrastructure Asset Vulnerability

Assets flooded during a 2070 major
(1% AEP) coastal event with Intermediate High SLR



Dewberry

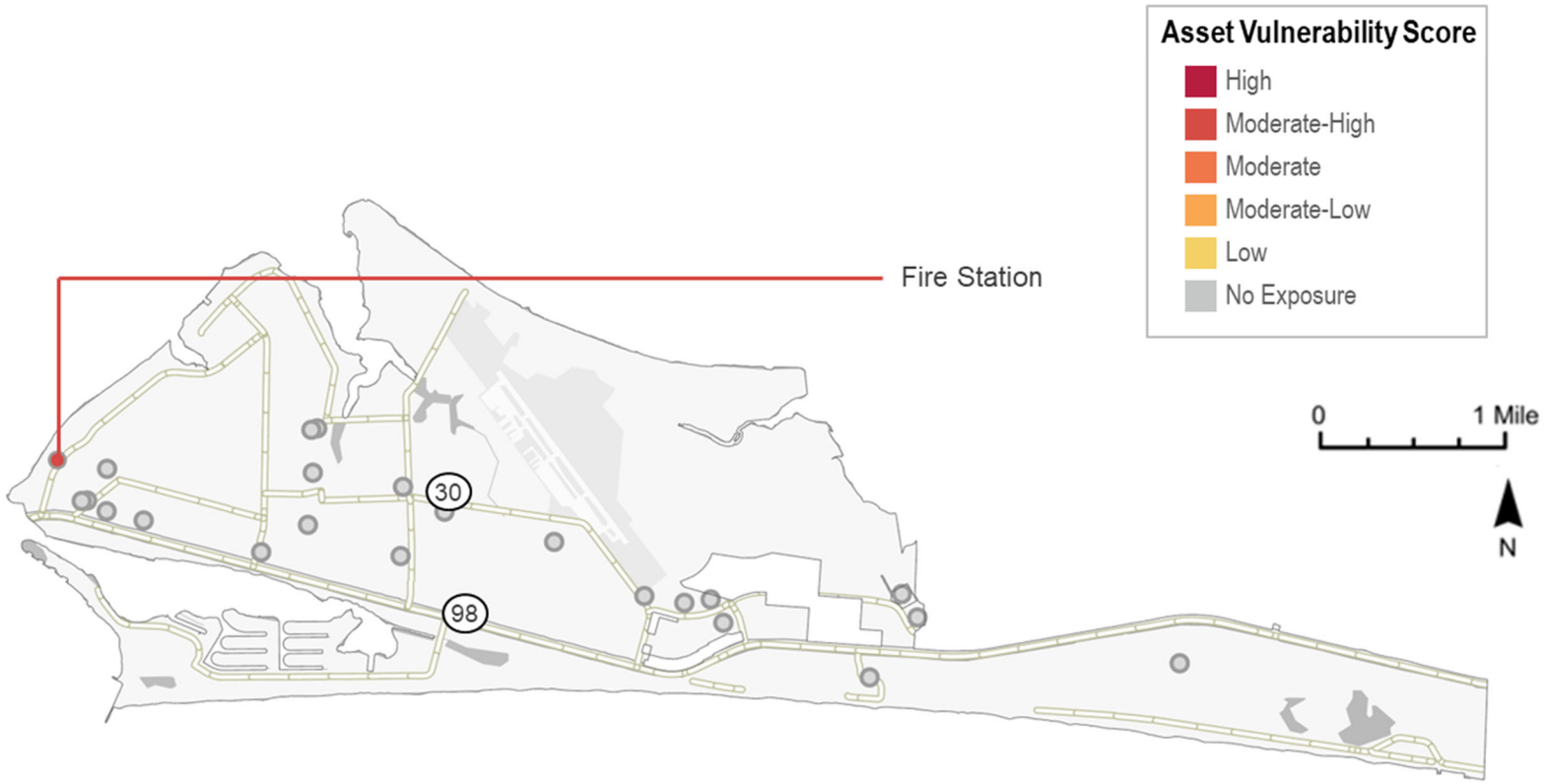
Critical Infrastructure Asset Vulnerability

Assets flooded during a 2070 major
(1% AEP) coastal event with Intermediate High SLR



Community & Emergency Asset Vulnerability

Assets flooded during a 2070 major
(1% AEP) coastal event with Intermediate High SLR



Dewberry



Appendix VII

Focus Areas Summary Memorandum

Dewberry

CITY OF DESTIN FOCUS AREA IDENTIFICATION

SUMMARY MEMORANDUM

DATE: February 13, 2025

TO: Florida Department of Environmental Protection – Resilient Florida Program

FROM: Dewberry Engineers Inc.

SUBJECT: City of Destin Comprehensive Vulnerability Assessment; Task 6: Identify Focus Areas

Introduction

In conjunction with community stakeholder feedback, the planning team assigned Focus Areas containing groupings of key critical assets. This step builds on the identification of vulnerable assets and incorporates community preferences to prioritize areas that will receive focused adaptation strategies. Aligned with the principles of the *Florida Adaptation Planning Guidebook* (FDEP, 2018), this approach ensures that the community's input, combined with data-driven insights, guides decision-making.

The identification of Focus Areas allows communities to target specific clusters of critical assets that are both vulnerable to current or future flood conditions, and begin their adaptation efforts towards mitigating critical assets' vulnerability through the formation of hazard mitigation projects. Doing so will help to maximize flood reduction benefits in a particular area while also minimizing construction-related mobilization costs and ingress/egress impedance.

Focus Area Identification and Justification

Public outreach and Geographic Information System (GIS) analyses play a vital role in identifying and validating these Focus Areas. GIS tools provide spatial data that help map exposure to flood hazards, locate sensitive entities, and highlight areas of heightened vulnerability. By combining this technical analysis with meaningful public engagement, the planning team can ensure that community knowledge and lived experiences are integrated into the decision-making process.

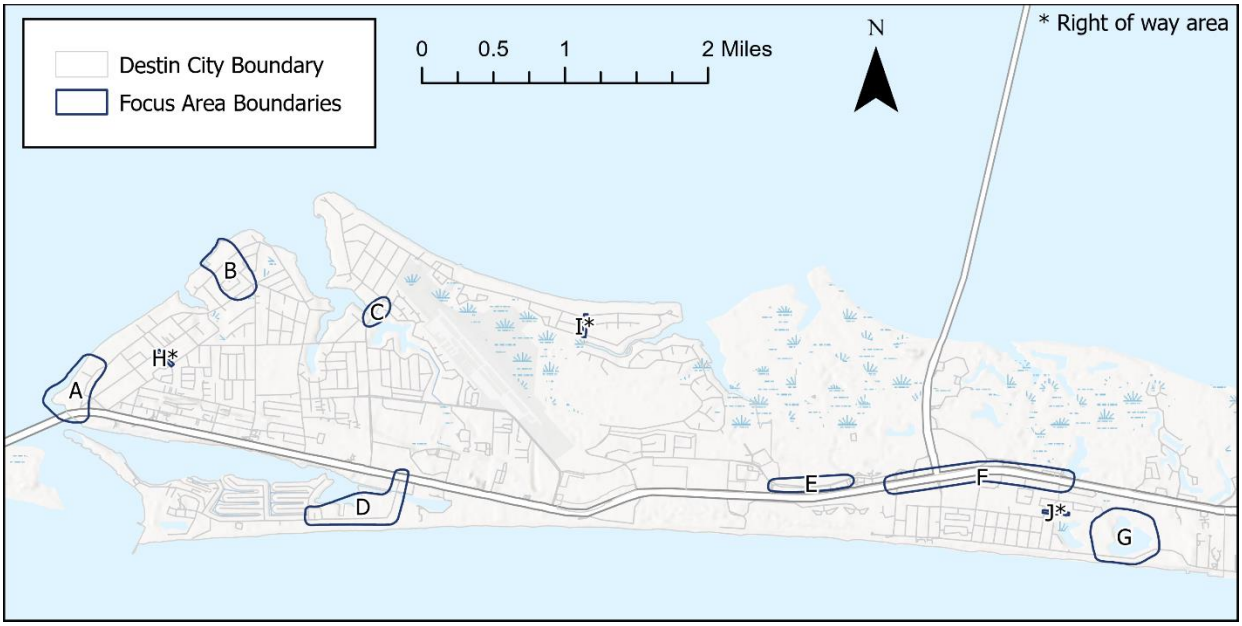
Outreach efforts, including workshops, surveys, and discussions with community members and stakeholders, help convey important information about potentially affected entities and gather critical feedback regarding priority areas and concerns. This feedback ensures that Focus Areas reflect not only technical needs but also the perspectives and values of the people who live and work in these areas. Throughout the project's timeframe, Liberty County hosted two in-person public meetings (January 2024 and January 2025) to engage with the public and stakeholders regarding the initial and final flood exposure information. Milestone meetings for City staff were held throughout 2023 and 2024 to participate and provide input after major task completions.

Focus Area Summaries

The Focus Area summaries below provide an overview of the specific locations prioritized for adaptation strategies based on their unique vulnerabilities, community priorities, and importance. These summaries outline the key characteristics of each area, including flooding concerns, critical facilities and infrastructure, and community importance as the rationale for their selection. By focusing on these areas, the descriptions create a roadmap for targeted interventions, allowing communities to direct resources efficiently and ensure measurable outcomes. Additionally, these summaries serve as a communication tool, helping stakeholders and decision-makers understand why certain areas have been prioritized and fostering support for the adaptation strategies planned for each location.

Detailed maps of each focus area and tables of the critical assets contained in each area are included in Appendix A and Appendix B respectively. Please note that assets listed as "exposed" have a non-zero flood depth based on the depth grid analysis of a 2040 1% AEP compound flood event. Compound flooding occurs when the peak rainfall runoff interacts with the tidal conditions or peak surge. Flood depths for points, roadway/line features inundation length, and area inundation coverage values from this analysis are available as tables in Appendix A. Focus area letter designations marked with an asterisk ('*') are right-of-way areas owned by City of Destin which were identified for potential road construction or improvement and do not contain any critical assets. Constructing roads in these locations would provide alternative access to primary roads for many residents.

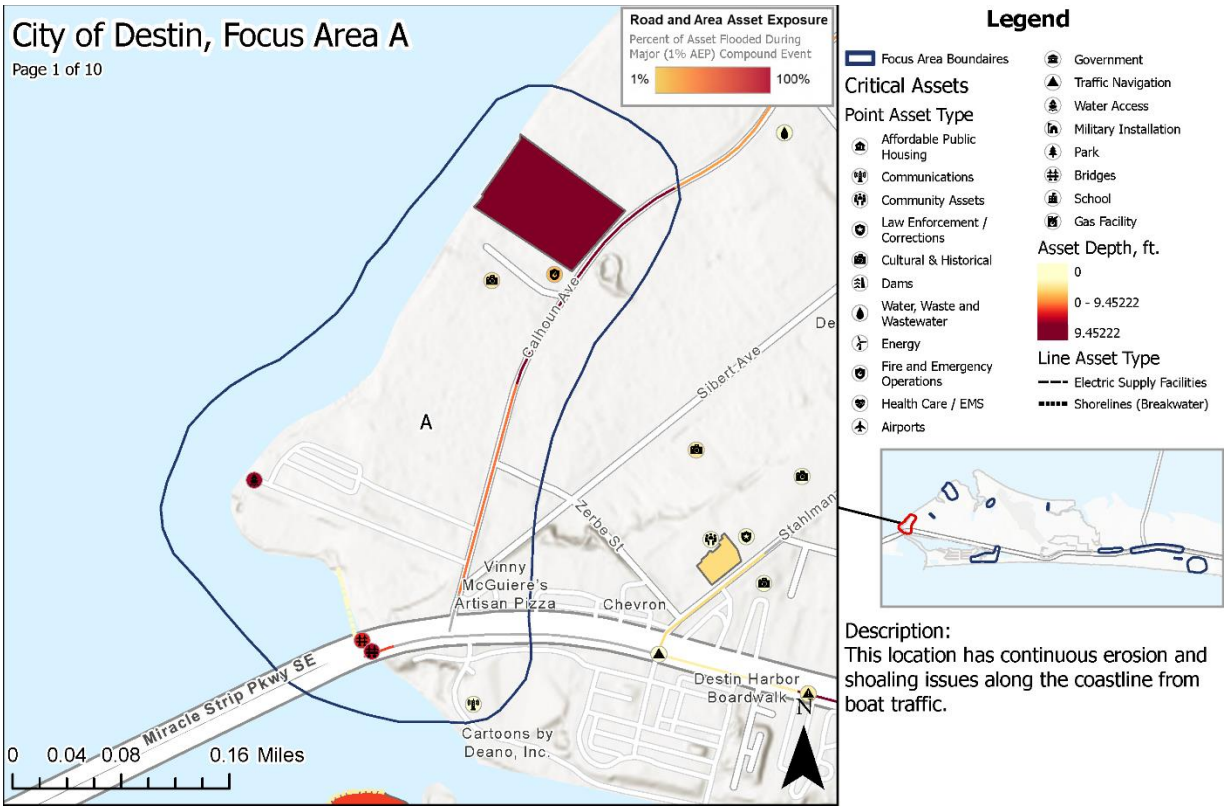
Figure 1. Overview map of the City of Destin Focus Areas boundaries



Focus Area A

Focus area A is located along the shoreline on the west side of Destin, containing an area between the Miracle Strip Parkway Bridge and Clement E Taylor Park. This location was indicated as a focus area by the city due to continuous erosion and shoaling caused by heavy boat traffic through the area.

Exposed assets in the area based on an analysis of a major (1% AEP) 2040 compound flooding event include the Miracle Strip Parkway / US-98 bridge, the East Pass Bridge Breakwater, Destin Fire Station #19, the Destin Marina, Clement E. Taylor Park, one historical asset, a section of Miracle Strip Parkway / US-98, and approximately 2,000 ft of roadway along Calhoun Avenue.

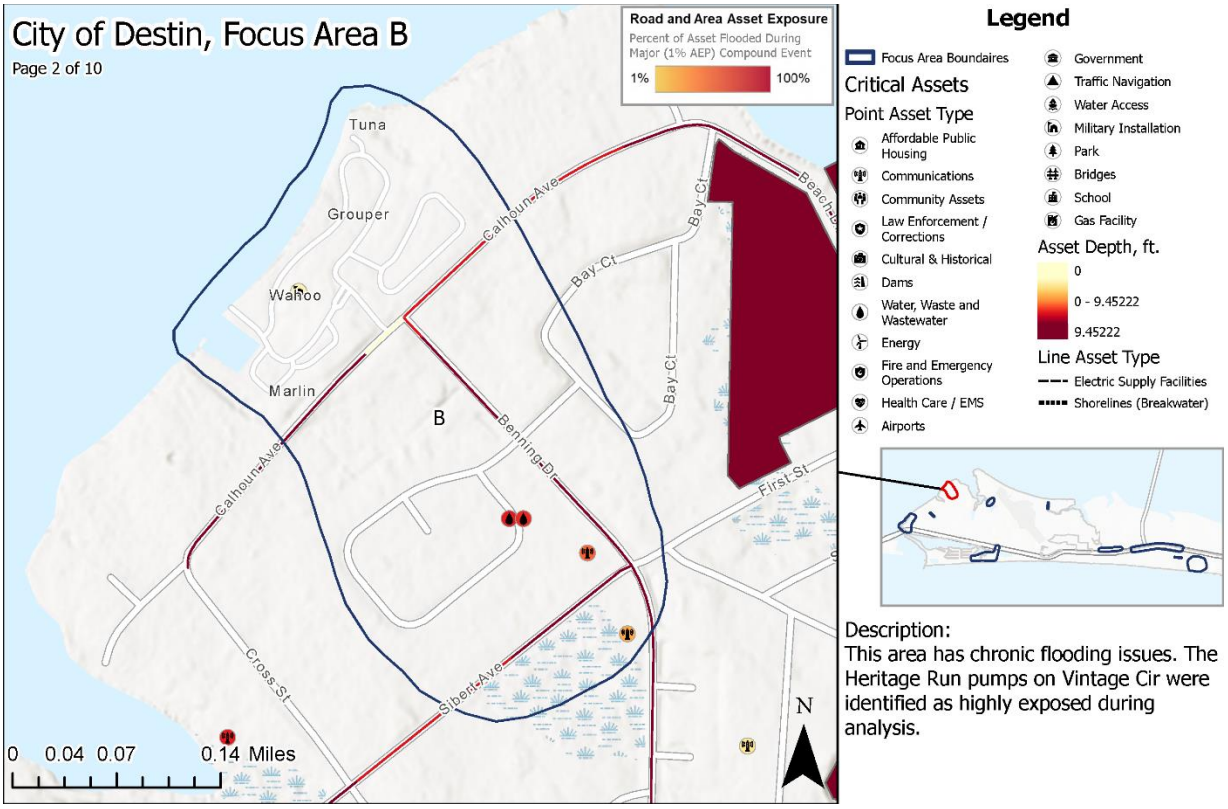


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Focus Area B

Focus area B is in northwest Destin, containing the Heritage Run neighborhood and the Fort Benning Recreational area. This area experiences chronic flooding during rainfall events. Critical stormwater pumps serving Heritage Run on Vintage Circle were identified as highly exposed during analysis.

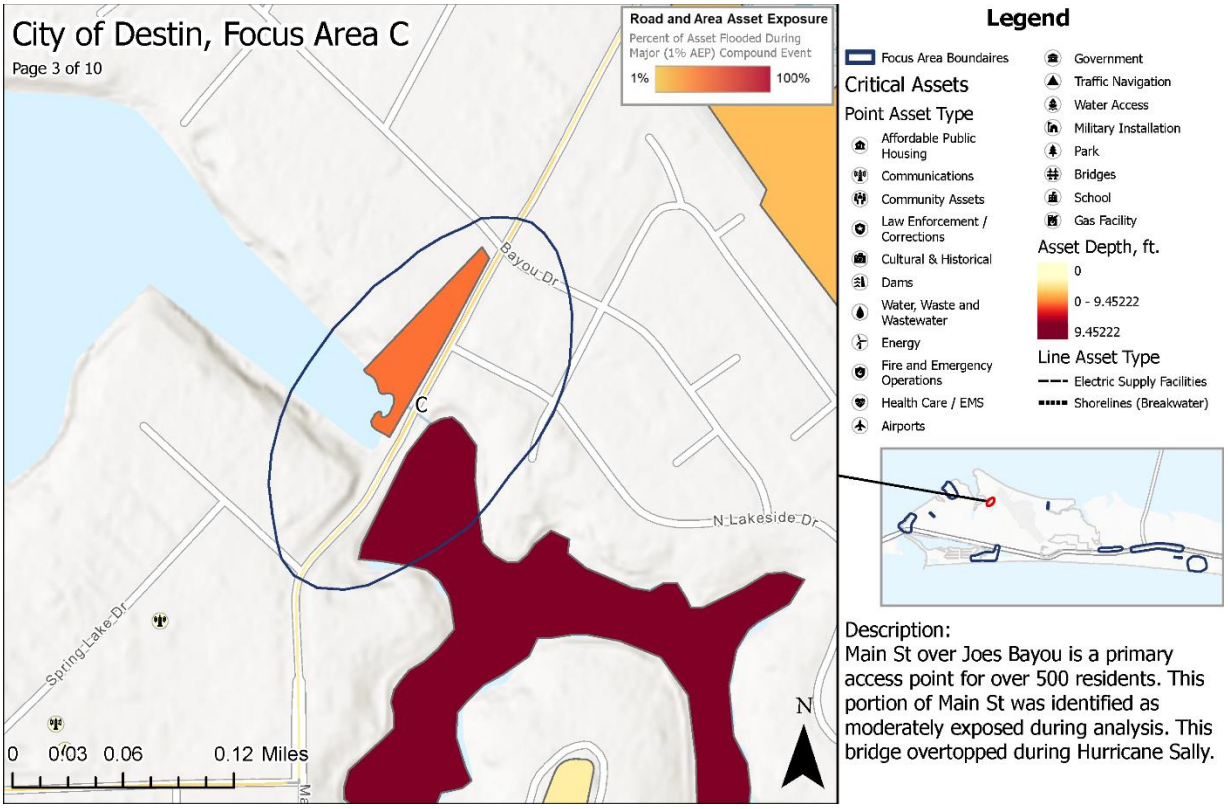
Assets exposed in this focus area include the Heritage Run stormwater pumps, Fort Benning Recreational Area, communications infrastructure on Siebert Avenue and Benning Drive, and a significant section of roadway on both Calhoun Avenue and Benning Drive.



Focus Area C

Focus area C is located at the Main Street crossing of Joe's Bayou. This road serves as an access point for over 500 residents in the area. This area was identified as a focus area due to its high traffic volume and exposure during analysis. This bridge was overtopped by water from Joe's Bayou during Hurricane Sally, restricting evacuation options for residents.

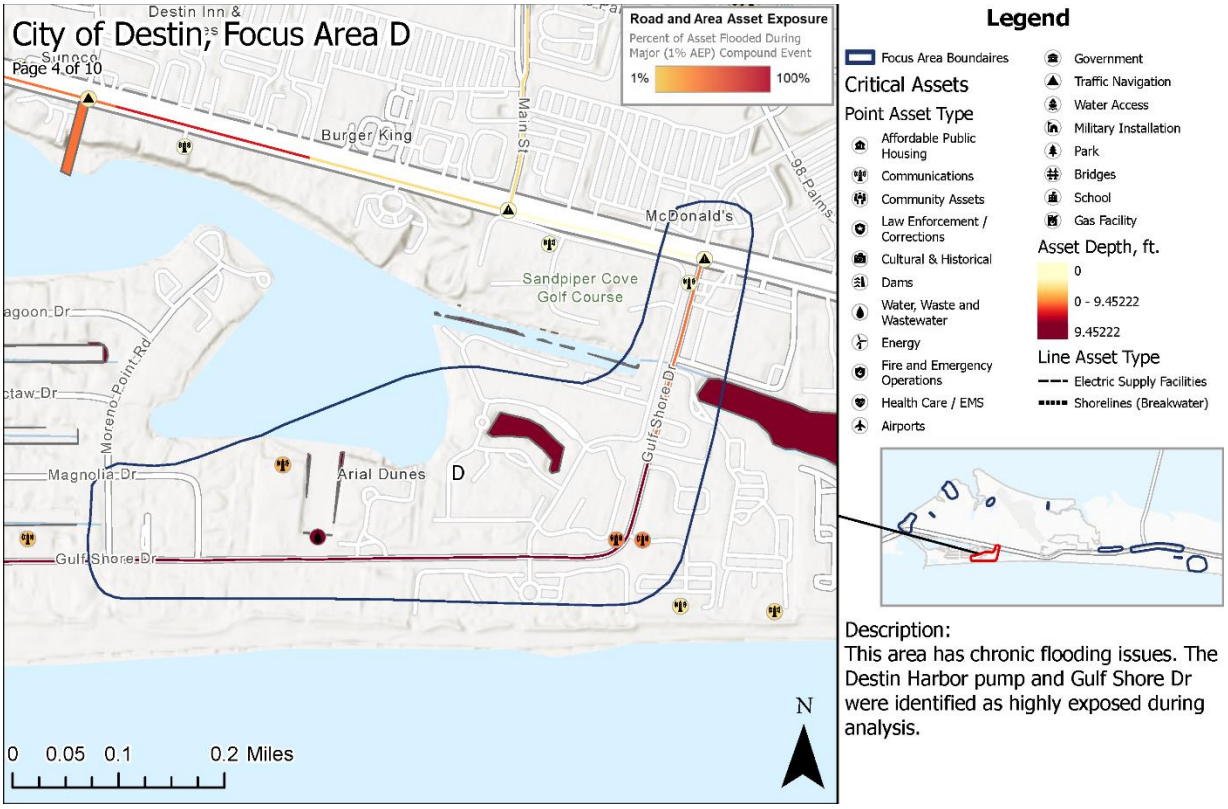
Assets exposed in this area include Main Street Park and the entirety of the Main Street crossing over Joe's Bayou.



Focus Area D

Focus area D is in the Holiday Isle area of Destin along Gulf Shore Drive. This location was identified as a focus area due to chronic flooding issues. The vulnerability analysis indicated that the Destin Harbor Pump in this area is highly exposed to flooding.

Assets exposed in this area include the Destin Harbor stormwater pump, three communications assets, and one major traffic signal on Gulf Shore Drive. Gulf Shore Drive was identified as highly exposed during the vulnerability assessment.

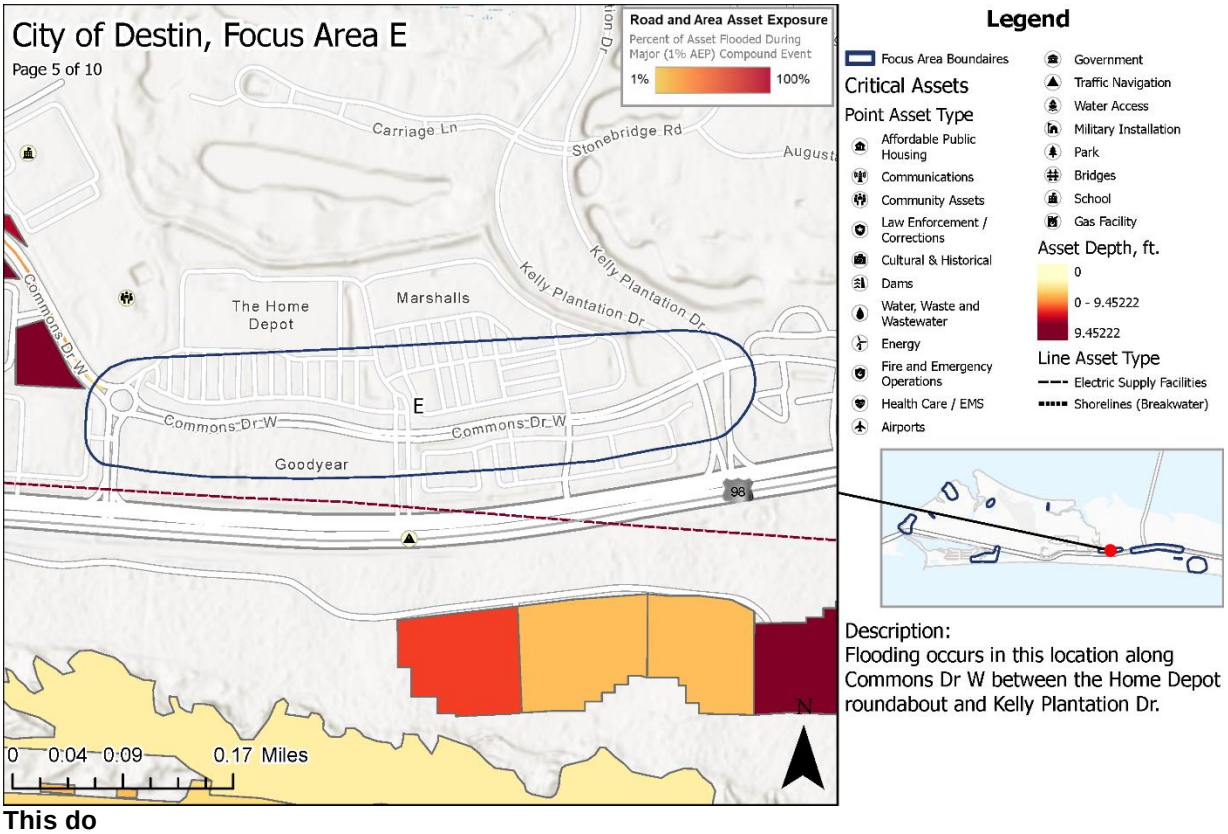


Description:
This area has chronic flooding issues. The Destin Harbor pump and Gulf Shore Dr were identified as highly exposed during analysis.

Focus Area E

Focus area E is located just north of US-98 along Commons Drive West, spanning the area between the Home Depot roundabout and Kelly Plantation Drive. This area has chronic flooding issues.

Exposure data for this section of Commons Drive West was not included in the vulnerability assessment, as this area is outside of the city limits. However, adjacent sections of Commons Drive West were identified as moderately exposed during the analysis.

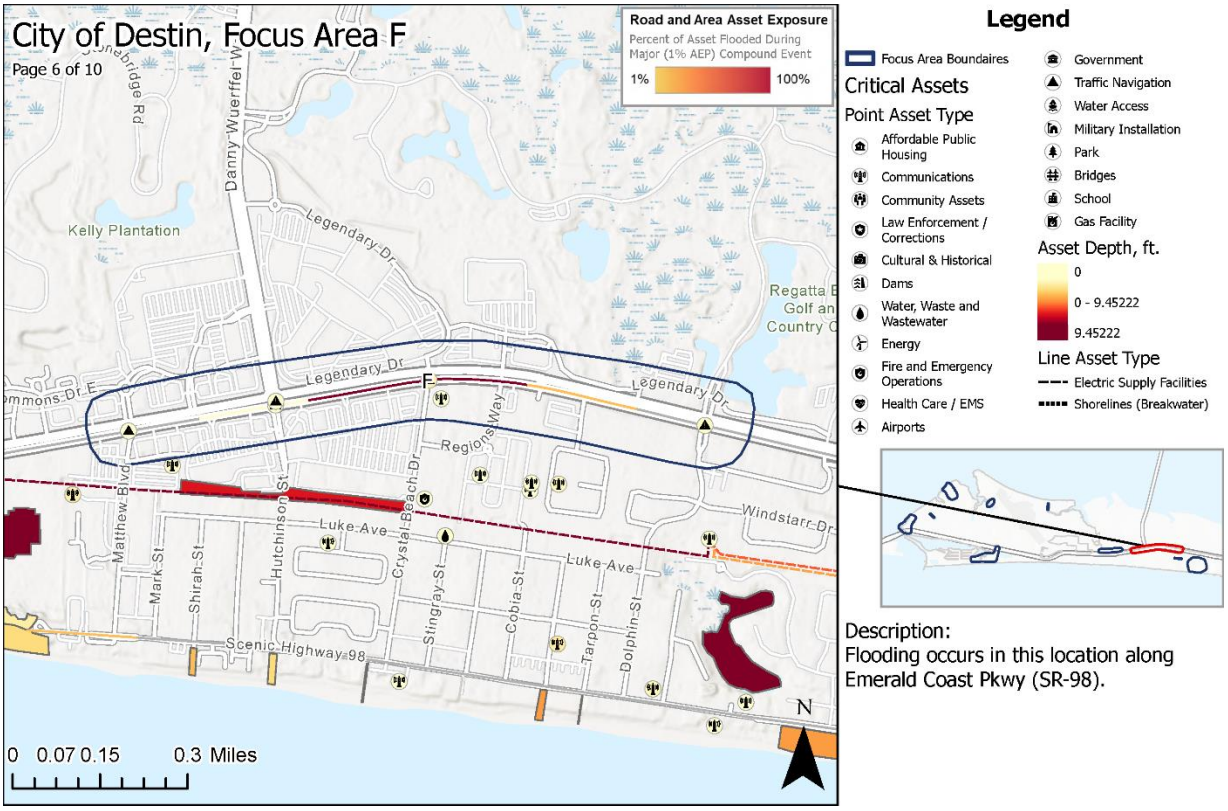


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Focus Area F

Focus area F contains a .75-mile section of SR-98 between Matthew Boulevard and Regatta Bay Boulevard. This location was included as a focus area due to flooding that occurs on the roadway.

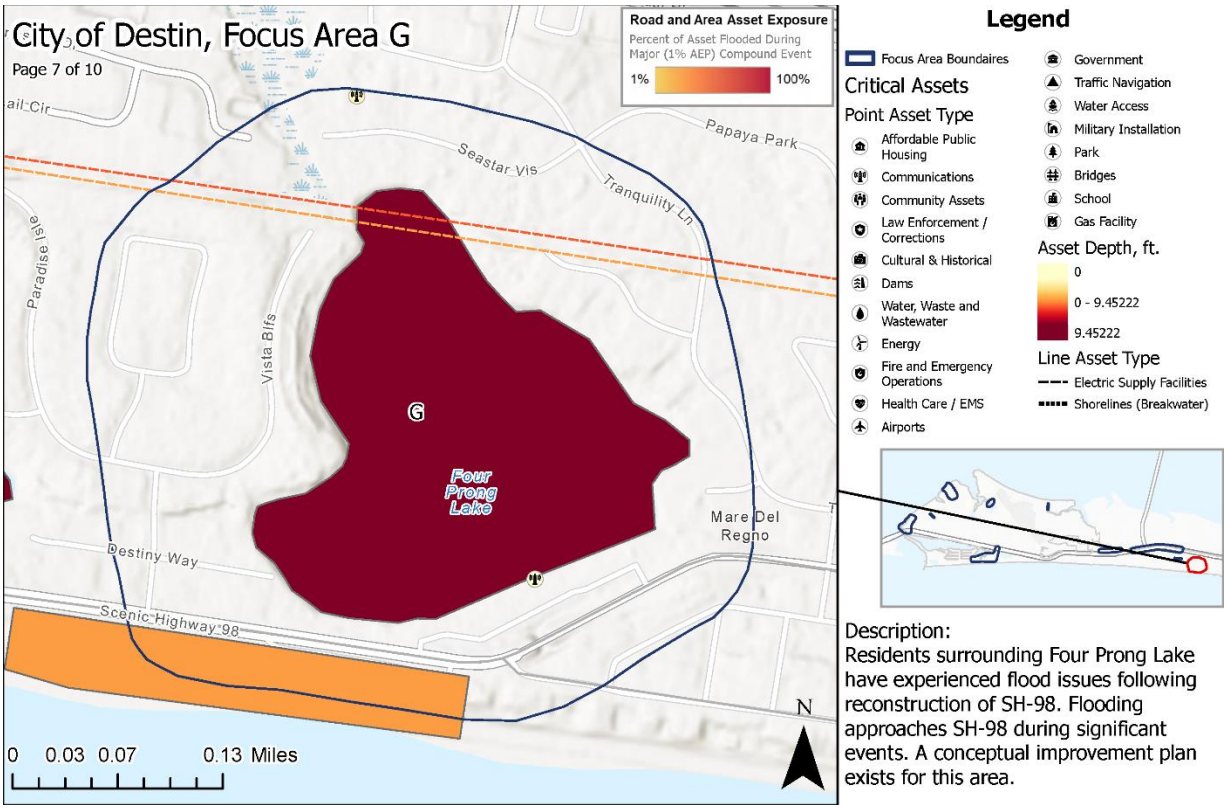
Exposed assets in this focus area include three major traffic signals along SR-98 at the intersections of White Point, Regatta Bay Boulevard, and Legendary Drive. This section of SR-98 was identified as highly exposed during the vulnerability assessment.



Focus Area G

Focus area G is located in southeast Destin and encompasses Four Prong Lake, the surrounding residences and a section of SH-98. This location was selected as a focus area due to chronic flooding issues affecting the residents near Four Prong Lake and flooding which threatens SH-98. An improvement plan has been drafted for this plan which included in the Capital Improvement Plan and the Stormwater Master Plan.

Assets exposed in this area include one communications facility, a portion of the Destin harbor, and two sets of electrical transmission lines.

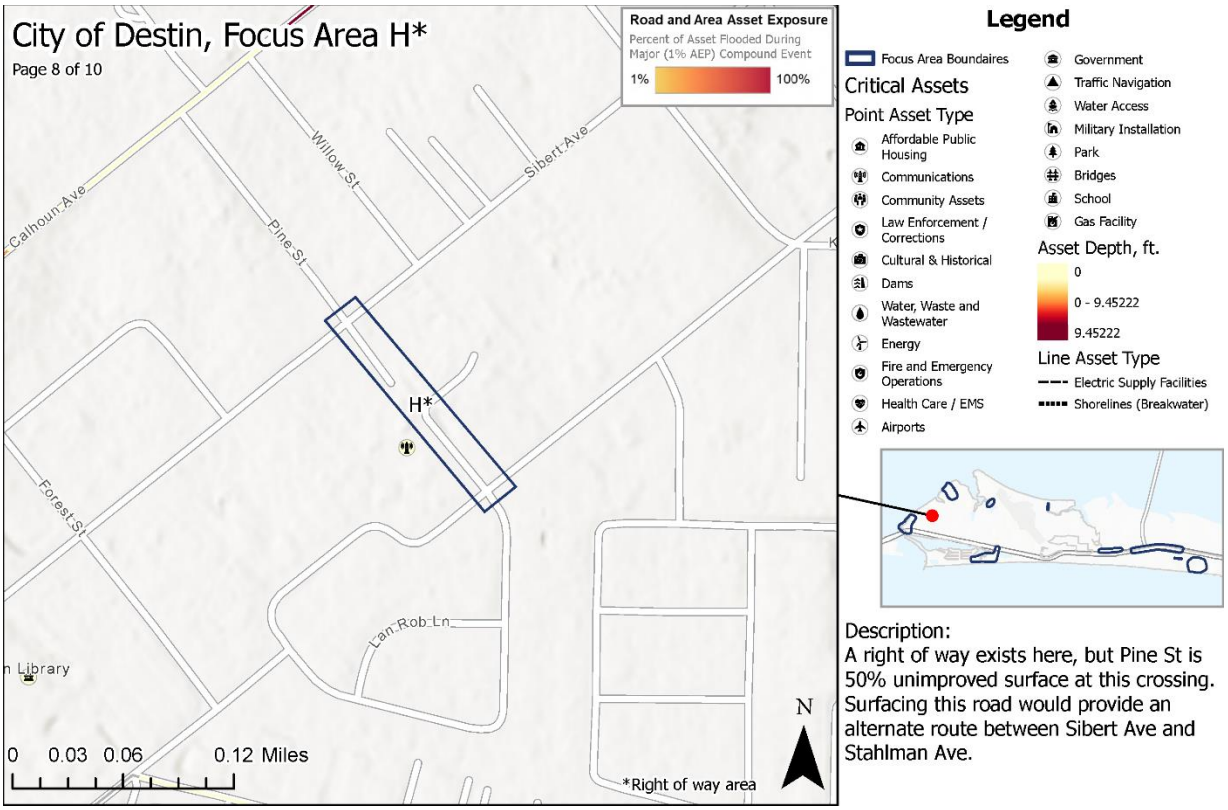


Description:
Residents surrounding Four Prong Lake have experienced flood issues following reconstruction of SH-98. Flooding approaches SH-98 during significant events. A conceptual improvement plan exists for this area.

Focus Area H*

Focus area H* is a right-of-way area on Pine Street between Sibert Avenue and Stahlman Avenue. 50% of Pine Street has an existing improved surface on the side connecting to Stahlman Avenue, but the side connecting to Sibert Avenue is unfinished. Completing this roadway would provide an additional completed crossing point between Sibert Avenue and Stahlman Avenue, both of which are major thoroughfares providing access to SR-98.

There are no exposed assets in this area. However, installing this roadway would provide an additional route for traffic to move between major roads in the event of an evacuation.

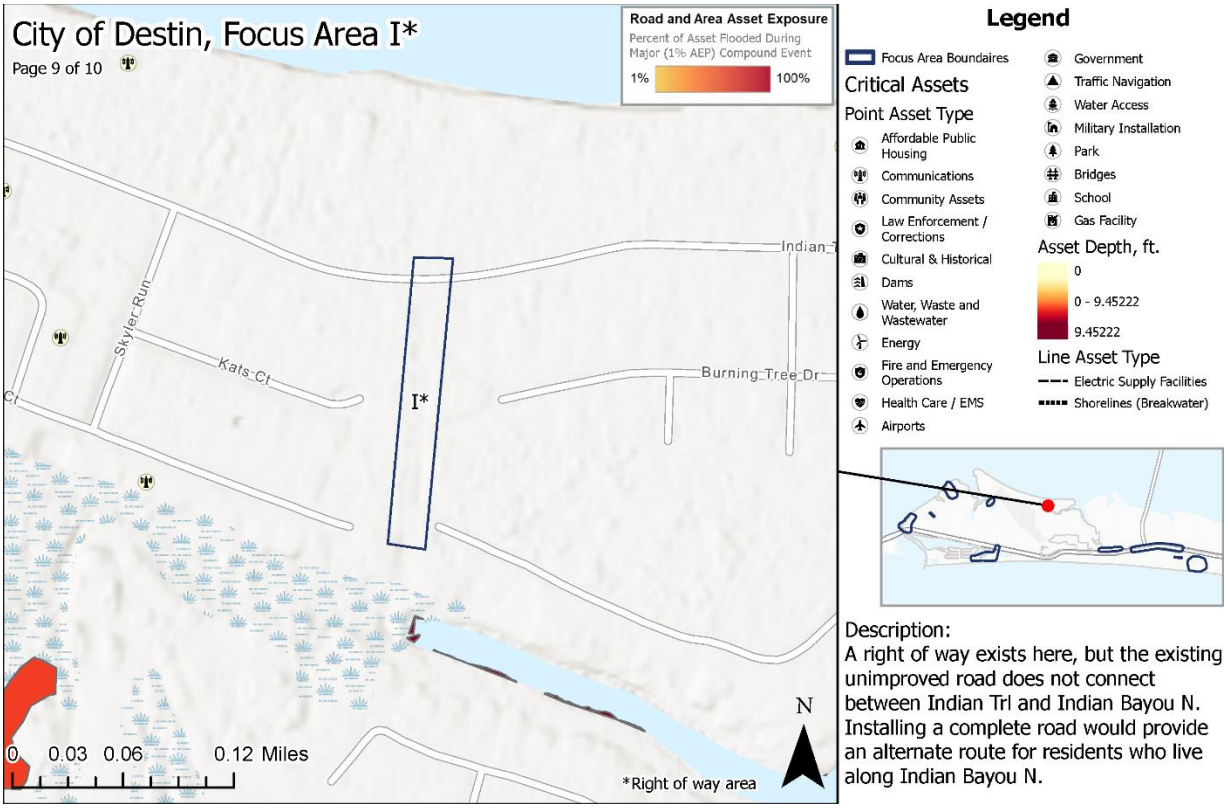


his

Focus Area I*

Focus area I* is a right-of-way area connecting Indian Trail and Indian Bayou North. There is an unimproved service road in this area which does not fully connect in the center. Completing this roadway would provide an additional route for residents along the Indian Tail / Indian Bayou North loop.

There are no exposed assets included in this area. However, installation of this roadway would complete the Indian Trail / Indian Bayou North loop and provide additional evacuation options for residents living east of this location.

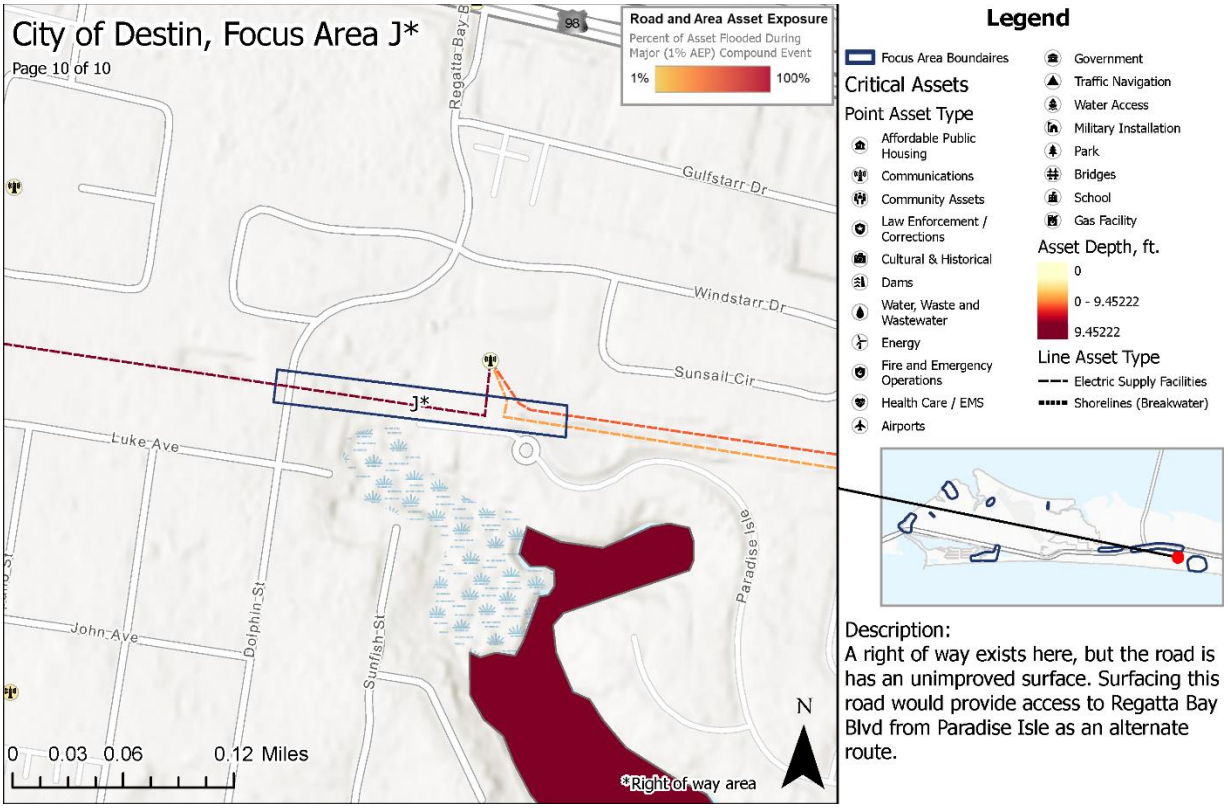


Description:
A right of way exists here, but the existing unimproved road does not connect between Indian Trl and Indian Bayou N. Installing a complete road would provide an alternate route for residents who live along Indian Bayou N.

Focus Area J*

Focus area J* is a right-of-way area connecting Regatta Bay Boulevard and Paradise Isle. There is an unimproved service road in this area off of Regatta Bay Boulevard which does not connect to Paradise Isle. Completing this roadway would provide more direct access to SR-98 for residents living east of Regatta Bay Boulevard.

There are no exposed assets included in this area. However, the installation of this roadway would provide valuable, much more direct access to SH-98 for a significant number of residents in the vicinity, allowing them to bypass the use of SH-98 to the south.



Conclusion and Recommendations

The collaboration between the planning team and the community ensures that Focus Areas are identified thoughtfully and strategically. These areas, which may include neighborhoods, infrastructure corridors, or other priority zones, will serve as the foundation for implementing tailored adaptation strategies. By directing efforts to these initial Focus Areas, communities can demonstrate early success, build capacity, and create scalable models for broader adaptation initiatives. This focused, stepwise approach allows communities to address their most pressing vulnerabilities while laying the ground work for long-term resilience.

To ensure the success of Focus Areas, it is essential to strike a balance between data-driven analyses and community priorities. Transparent criteria should be established early in the process, providing a clear framework for selecting Focus Areas and ensuring the decision-making process is effectively communicated to all stakeholders. A phased approach is recommended to allow for the gradual expansion of Focus Areas as community capacity and resources increase, enabling the implementation of adaptation strategies to scale over time. Additionally, Focus Areas should be regularly revisited and adjusted based on updated hazard assessments, demographic shifts, and feedback from the community. This iterative approach ensures that Focus Areas remain relevant, equitable, and aligned with evolving conditions and priorities.

Appendix A. Focus Area Critical Asset Tables

Table 1. Critical Asset Points

Focus Area	Asset ID	Asset Name	Asset Type	Asset Group	Asset Depth (ft), 2040 1% AEP Comp. Event
A	DES089	EAST PASS BRIDGE [US98 SR30 - WEST END OF DESTIN]	Bridges	Transportation and Evacuation Route	7.04
A	DES090	EAST PASS BRIDGE [US98 SR30 - WEST END OF DESTIN]	Bridges	Transportation and Evacuation Route	8.20
A	DES092	WZLB, JVC MEDIA OF FLORIDA, LLC	Communications Facilities	Critical Infrastructure	-
A	DES0152	Destin Station #19 Destin Fire Control District	Fire Stations	Critical Community and Emergency Facilities	3.23
A	DES0153	Historical Structure	Historical and Cultural Assets	Natural, Cultural, and Historical Resource	1.42
A	DES0295	Destin Marina	Boat Ramp	Transportation and Evacuation Route	8.73
B	DES0291	FT. BENNING RECREATIONAL AREA	Military Installations	Critical Infrastructure	0.85
B	DES0292	5000GPM DISCHARGE STORMWATER PUMP, HERITAGE RUN	Stormwater Treatment Facilities and Pump Stations	Critical Infrastructure	7.04
B	DES0293	500GPM MAINTENANCE PUMP, HERITAGE RUN	Stormwater Treatment Facilities and Pump Stations	Critical Infrastructure	6.70
B	DES0346	SIBERT AVE	Communications Facilities	Critical Infrastructure	5.51
B	DES0349	BENNING DR	Communications Facilities	Critical Infrastructure	3.82
D	DES096	POWERTEL/MEMPHIS, INC.	Communications Facilities	Critical Infrastructure	5.02
D	DES0105	ALLTEL CORPORATION	Communications Facilities	Critical Infrastructure	4.84
D	DES0106	ALLTEL CORPORATION	Communications Facilities	Critical Infrastructure	-

D	DES0286	Destin Harbor Pump	Stormwater Treatment Facilities and Pump Stations	Critical Infrastructure	9.45
D	DES0307	GULF SHORE DRIVE Major Traffic Signal	Major Traffic Signals	Critical Infrastructure	0.16
D	DES0353	GULF SHORE DR	Communications Facilities	Critical Infrastructure	3.61
F	DES0298	SR 293 WHITE POINT Major Traffic Signal	Major Traffic Signals	Critical Infrastructure	0.03
F	DES0302	MATTHEW BLVD Major Traffic Signal	Major Traffic Signals	Critical Infrastructure	-
F	DES0303	REGATTA BAY BLVD Major Traffic Signal	Major Traffic Signals	Critical Infrastructure	0.15
F	DES0309	Major Traffic Signal	Major Traffic Signals	Critical Infrastructure	-
F	DES0310	LEGENDARY DRIVE Major Traffic Signal	Major Traffic Signals	Critical Infrastructure	1.05
F	DES0333	EMERALD COAST PKWY	Communications Facilities	Critical Infrastructure	-
G	DES0345	SEASTAR VISTA	Communications Facilities	Critical Infrastructure	0.57
G	DES0365	SCENIC HIGHWAY 98	Communications Facilities	Critical Infrastructure	-

Table 2. Major Roadways

Focus Area	Asset ID	Asset Name	Asset Type	Asset Group	Length (ft) Exposed, 2040 1% AEP Comp. Event
A	DES0173	US HWY 98	Major Roadway	Transportation and Evacuation Routes	75.30
A	DES0176	HARBOR BLVD	Major Roadway	Transportation and Evacuation Routes	-
A	DES0178	CALHOUN AVE	Major Roadway	Transportation and Evacuation Routes	1,923.95
B	DES0162	BENNING DR	Major Roadway	Transportation and Evacuation Routes	974.54
B	DES0164	CALHOUN AVE	Major Roadway	Transportation and Evacuation Routes	700.61
B	DES0179	SIBERT AVE	Major Roadway	Transportation and Evacuation Routes	1,046.98
B	DES0180	CALHOUN AVE	Major Roadway	Transportation and Evacuation Routes	987.76
B	DES0181	BENNING DR	Major Roadway	Transportation and Evacuation Routes	1,160.22
C	DES0170	MAIN ST	Major Roadway	Transportation and Evacuation Routes	402.88
D	DES0155	US HWY 98	Major Roadway	Transportation and Evacuation Routes	69.44
D	DES0189	GULF SHORE DR	Major Roadway	Transportation and Evacuation Routes	4,534.35
E	DES0158	COMMONS DR W	Major Roadway	Transportation and Evacuation Routes	57.06
F	DES0187	EMERALD COAST PKWY	Major Roadway	Transportation and Evacuation Routes	2,306.95
G	DES0161	SCENIC HWY 98	Major Roadway	Transportation and Evacuation Routes	-
G	DES0171	OCEAN BLVD	Major Roadway	Transportation and Evacuation Routes	-
G	DES0177	SCENIC HWY 98	Major Roadway	Transportation and Evacuation Routes	-

Table 3. Critical Asset Polygons

Focus Area	Asset ID	Asset Name	Asset Type	Asset Group	Area (SqFt) inundated, 2040 1% AEP Comp. Event
A	DES0195	CLEMENT E TAYLOR PARK	Parks	Natural, Cultural, and Historical Resource	153,678.65
C	DES0210	MAIN STREET PARK	Parks	Natural, Cultural, and Historical Resource	30,125.14
C	DES0250	JOES BAYOU	Surface Waters	Natural, Cultural, and Historical Resource	559,880.37
D	DES0240	DESTIN HARBOR	Surface Waters	Natural, Cultural, and Historical Resource	5,104.46
D	DES0241	DESTIN HARBOR	Surface Waters	Natural, Cultural, and Historical Resource	6,123.89
D	DES0267	UNNAMED	Surface Waters	Natural, Cultural, and Historical Resource	39,490.29
D	DES0268	UNNAMED	Surface Waters	Natural, Cultural, and Historical Resource	415,444.81
G	DES0194	JAMES LEE PARK	Parks	Natural, Cultural, and Historical Resource	137,594.65
G	DES0270	FOUR PRONG LAKE	Surface Waters	Natural, Cultural, and Historical Resource	1,143,341.60

Table 4. Critical Asset Lines

Focus Area	Asset ID	Asset Name	Asset Type	Asset Group	Length (ft) Exposed, 2040 1% AEP Comp. Event
A	DES0187	EAST PASS BRIDGE [US	Bridge	Transportation and Evacuation Routes	190.66
A	DES0188	EAST PASS BRIDGE [US	Bridge	Transportation and Evacuation Routes	197.79
A	DES0284	Destin East Pass Bridge Concrete Structure Breakwater	Shorelines (Breakwater)	Critical Infrastructure	275.30
G	DES0189	ELECTRIC BULK POWER TRANSMISSION AND CONTROL	Electric Production and Supply Facilities	Critical Infrastructure	4,436.57
G	DES0191	ELECTRIC BULK POWER TRANSMISSION AND CONTROL	Electric Production and Supply Facilities	Critical Infrastructure	6,114.71
J*	DES0190	ELECTRIC BULK POWER TRANSMISSION AND CONTROL	Electric Production and Supply Facilities	Critical Infrastructure	10,151.56