CITY OF CRESTVIEW

CITY COUNCIL

CITY COUNCIL AGENDA
April 25, 2022
6:00 PM
Council Chambers

The Public is invited to view our meetings on the City of Crestview live stream at https://www.cityofcrestview.org or the City of Crestview Facebook Page. You may submit questions on any agenda item in advance by 3:00 p.m. the day of the meeting to cityclerk@cityofcrestview.org.

1. **Call to Order**
2. **Invocation, Pledge of Allegiance**
3. **Open Policy Making and Legislative Session**
4. **Approve Agenda**
5. **Presentations and Reports**
   - 5.1. Proclamation declaring May 1 - May 7, 2022 as Municipal Clerks Week
6. **Consent Agenda**
   - 6.1. Blue Value Solutions Contract
   - 6.2. Emergency Debris Removal Contract Renewal
   - 6.3. Approval of the minutes from April 11, 2022
   - 6.4. Fire Department Safety Equipment
7. **Public Hearings / Ordinances on Second Reading**
   - 7.1. Ordinance 1860 - Lindley Road Rezoning
   - 7.2. Ordinance 1861 - Antioch Road Annexation
8. **Ordinances on First Reading**
   - 8.1. Ordinance 1864 - Repeal 2016 Local Mitigation Strategy
   - 8.2. Ordinance 1865 - Repeal and Replace Chapter 10 – Animals
9. **Resolutions** – None brought forward.
10. **Action Items**

10.1. Appointment of Mayor Pro-Tempore

11. City Clerk Report

12. City Manager Report

12.1. City Manager Updates

13. Comments from the Mayor and Council

14. Comments from the Audience

15. Adjournment

The Presentations section is for items that were submitted by a citizen or group of Citizens no later than the Wednesday 2 weeks prior to the meeting to the Clerk's office for approval. These items will be scheduled under the section titles Presentations and Reports. Supporting documents must be submitted at this time to be on the regular agenda. All Action Items are for staff and elected officials only and must be submitted for approval no later than the Wednesday 10 days prior to the meeting. Those not listed on the regular agenda who wish to address the council should fill out a yellow card. The card must be submitted to the City Clerk. Speaking time should be three minutes or less, large groups may designate a spokesperson. All remarks should be addressed to the Council as a whole and not to individual members. All meeting procedures are outlined in the Meeting Rules and Procedures brochure available outside the Chambers. Florida Statute 286.0105. Notices of meetings and hearings must advise that a record is required to appeal. Each board, commission, or agency of this state or of any political subdivision thereof shall include in the notice of any meeting or hearing, if notice of the meeting or hearing is required, of such board, commission, or agency, conspicuously on such notice, the advice that, if a person decides to appeal any decision made by the board, agency, or commission with respect to any matter considered at such meeting or hearing, he or she will need a record of the proceedings, and that, for such purpose, he or she may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based. The requirements of this section do not apply to the notice provided in s. 200.065(3). In accordance with Section 286.26, F.S., persons with disabilities needing special accommodations, please contact Maryanne Schrader, City Clerk at cityclerk@cityofcrestview.org or 850-628-1560 option2 within 48 hours of the scheduled meeting. Any invocation that is offered before the official start of the City Council meeting shall be the voluntary offering of a private person, to and for the benefit of the City Council. The views or beliefs expressed by the invocation speaker have not been previously reviewed or approved by the City Council or the city staff, and the City is not allowed by law to endorse the religious beliefs or views of this, or any other speaker. Persons in attendance at the City Council meeting are invited to stand during the opening invocation and Pledge of Allegiance. However, such invitation shall not be construed as a demand, order, or any other type of command. No person in attendance at the meeting shall be required to participate in any opening invocation that is offered. A person may exit the City Council Chambers and return upon completion of the opening invocation if a person does not wish to participate in or witness the opening invocation.

CITY OF CRESTVIEW Item # 5.1.

Staff Report

CITY COUNCIL MEETING DATE: April 25, 2022
TYPE OF AGENDA ITEM: Presentation

TO:	Mayor and City Council
CC:	City Manager, City Clerk, Staff and Attorney
FROM:	J.B. Whitten, Mayor
DATE:	4/18/2022
SUBJECT:	Proclamation declaring May 1 - May 7, 2022 as Municipal Clerks Week

BACKGROUND:

The Florida Association of City Clerks (FACC), the professional association for Florida's municipal clerks, is celebrating its 50th anniversary.

DISCUSSION:

The office of the Municipal Clerk, is a time-honored and vital part of local government.

GOALS & OBJECTIVES

This item is consistent with the goals in A New View Strategic Plan 2020 as follows;
Foundational- these are the areas of focus that make up the necessary foundation of a successful local government.
Financial Sustainability- Achieve long term financial sustainability

Organizational Capacity, Effectiveness & Efficiency- To efficiently & effectively provide the highest quality of public services

Infrastructure- Satisfy current and future infrastructure needs

Communication- To engage, inform and educate public and staff

Quality of Life- these areas focus on the overall experience when provided by the city.
Community Character- Promote desirable growth with a hometown atmosphere

Safety- Ensure the continuous safety of citizens and visitors

Mobility- Provide safe, efficient and accessible means for mobility

Opportunity- Promote an environment that encourages economic and educational opportunity

Play- Expand recreational and entertainment activities within the City

Community Culture- Develop a specific identity for Crestview

FINANCIAL IMPACT

n/a

RECOMMENDED ACTION

Proclamation to be presented to Maryanne Schrader, City Clerk.

Attachments

1. Proclamation declaring May 1 - May 7, 2022 as Municipal Clerks Week

A Proclamation

WHEREAS, the Office of the Municipal Clerk, a time honored and vital part of local government exists throughout the world, and

WHEREAS, the Office of the Municipal Clerk is the oldest among public servants, and

WHEREAS, the Office of the Municipal Clerk provides the professional link between the citizens, the local governing bodies and agencies of government at other levels, and

WHEREAS, municipal clerks have pledged to be ever mindful of their neutrality and impartiality, rendering equal service to all, and

WHEREAS, the municipal clerk serves as the information center on functions of local government and community, and

WHEREAS, municipal clerks continually strive to improve the administration of the affairs of the Office of the Municipal Clerk through participation in education programs, seminars, workshops and the annual meetings of their state, provincial, county and international professional organizations, and

WHEREAS, it is most appropriate that we recognize the accomplishments of the Office of the Municipal Clerk.

NOW, THEREFORE, I, JB Whitten, Mayor of the City of Crestview, do recognize the week of May 1 through May 7, 2022, as Municipal Clerks Week and recognize that the Florida Association of City Clerks (FACC), the professional association for Florida's municipal clerks, is celebrating its 50th anniversary. I further extend appreciation to our municipal clerk, Maryanne Schrader, and to all municipal clerks for the vital services they perform and their exemplary dedication to the communities they represent.

Duly passed and adopted on this this 25th day of April 2022.

_____

Mayor JB Whitten
City of Crestview

CITY OF CRESTVIEW

Item # 6.1.

Staff Report

CITY COUNCIL MEETING DATE: April 25, 2022
TYPE OF AGENDA ITEM: Action Item

TO:	Mayor and City Council
CC:	City Manager, City Clerk, Staff and Attorney
FROM:	Jessica Leavins, Administrative Services Director
DATE:	4/21/2022
SUBJECT:	Blue Value Solutions Contract

BACKGROUND:

Our employee benefits program is what sets us apart from other employers. In recent years, we have seen unprecedented staffing shortages throughout the nation. The City of Crestview has been largely able to avoid this crisis due to our status as a preferred employer. To stay competitive in the current labor environment, it is critical that we continue to be competitive in this area. The city's employee benefit program consists of 100% paid employee health and life insurance.

During the fiscal year 2021-2022, the City of Crestview agreed to participate in a trial program through Florida Blue for wellness education, screenings, and incentives. We were successful in meeting the goals set for our organization, including participating in a biometric health screening, personal health assessments and education sessions held by FL Blue. Thanks to this success, we have been offered participation in the complete 3 year program.

For the fiscal year 2021-2022 budget, the city saw an eight percent increase in Health Insurance premiums. Most of our competitors received over 10% increases or downgraded their health plans all together.

DISCUSSION:

The City has been presented with the opportunity to enhance the employee benefit program available to our employees at no cost increase to the city. Florida Blue has selected the City to take part in a new program in which they will provide incentives for wellness activities and earn points towards lower rates. Participation in this program guarantees the city a rate cap of five percent for the 2022-2023 fiscal year, a savings compared to the estimated 9 percent based on our usage. This program will include a biometric screening, in-person health education sessions, and provide incentives to employees that will encourage wellness and participation in screening and education sessions.

GOALS & OBJECTIVES

This item is consistent with the goals in A New View Strategic Plan 2020 as follows;

Foundational- these are the areas of focus that make up the necessary foundation of a successful local government.

Financial Sustainability- Achieve long term financial sustainability

Organizational Capacity, Effectiveness & Efficiency- To efficiently & effectively provide the highest quality of public services

Communication- To engage, inform and educate public and staff

FINANCIAL IMPACT

There is no financial impact to the city for accepting the Blue Value Solutions Contract. The contract provides for free services and reimbursement for incentives purchased. The contract for health insurance premiums will be brought back to the council as part of the budget process.

RECOMMENDED ACTION

Staff respectfully requests the Council approve the Mayor to execute the attached contract.

Attachments

1. BVS Agreement_City of Crestview 59530 eff 20220401

BlueValue Solutions AGREEMENT

This is an Agreement (hereinafter "Agreement") between Blue Cross Blue Shield of Florida, Inc. d/b/a Florida Blue and Health Options, Inc., (hereinafter jointly referred to as "Florida Blue"), located at 4800 Deerwood Campus Parkway, Jacksonville, Florida 32246 and City of Crestview (hereinafter "the Group") located at PO BOX 1209, Crestview, FL 32536-1209.

WHEREAS, the Group and Florida Blue have contracted to provide one or more group health insurance and/or HMO products (hereinafter jointly referred to as GHP "the Group Health Plan") to the Group's employees and their covered dependents (hereinafter "Group Member(s)"); and

WHEREAS, Florida Blue and the Group have agreed to work together to improve the health and wellness of the Group Members enrolled in the Group Health Plan; and

WHEREAS, the Group and Florida Blue reasonably believe that improvement of the Metrics noted in this Agreement will result in measurable claims cost reductions and/or improved health outcomes. Therefore, Group and Florida Blue have agreed to certain renewal rating actions based upon achieving the wellness and health improvement activities Metrics identified in this Agreement.

WHEREAS, each of the parties to this Agreement seeks to set forth in writing the terms and conditions of their Agreement.

NOW THEREFORE, for good and valuable consideration, the parties agree to these terms and conditions:

I. TERM

The initial term of this Agreement shall begin on 4/1/2022, (hereinafter "the effective date) and shall end on 9/30/2024, (hereinafter "the Termination Date"), unless otherwise terminated in accordance with the provisions of this Agreement.

II. BENEFIT PLAN

Florida Blue will pay benefits to all eligible Group Members in accordance with the provisions of the GHP.

III. PREMIUM PAYMENTS

The Premium Rates for the GHP are payable in advance to Florida Blue at the address set forth above and subject to the standard terms and conditions of the Group Master Policy. Renewal Premiums will be adjusted as set forth in Section IV, below, based upon participation in and achievement of the goals set forth in the BlueValue Solutions program (the "Program").

IV. BlueValue Solutions Program

a. Florida Blue and Group Agree to the following Program terms.

1. **Baseline**. Florida Blue and Group have established a baseline regarding certain health promotion and wellness activities as noted in the Chart below (the "Baseline"). Each metric's program goals (expressed as percentages) to achieve Program Points are Specifically identified on Exhibit A. These Goals may be adjusted annually upon review and mutual agreement between the parties by executing a new Exhibit A.

2. **Metrics Descriptions**. The Metrics have the following meanings and the Baseline percentage and Goals percentages are determined in accordance with the descriptions indicated on Exhibit A.

3. **Points Earned**. Total points for all Metrics identified in Exhibit A that Group may earn over the Measurement Period are identified in Exhibit A and agreed to value of points with respect to the renewal premium rate increase for the applicable anniversary date noted in Exhibit A.

4. **Measurement Period**. The measurement period for determining the points earned for the Program will begin on the date of execution of this Agreement and run until the date that is 90 days before the Group's renewal date specified in Exhibit A (the "Measurement Period End Date"). Upon mutual Agreement, the Goals may be adjusted once during the Measurement Period by Executing a new Exhibit A. After the measurement period has expired, Florida Blue will determine, in its sole reasonable discretion, based upon data then in its possession the percentage increase from the Baseline and the number of Program Points achieved based upon the Goal level achieved by Metric (e.g. Minimum, Target, Maximum).

5. **General Terms and Conditions**. The Group must comply with all of the following terms in order to be eligible for award of Program Points:

    a. The Agreement must be fully executed (signed) by both parties within 14 days of presenting the Agreement to the group for review and signature.

    b. No material modifications of the membership of the group, group health plan benefits or any other premium risk factor as solely determined by Florida Blue;

    c. Group's meeting with a Florida Blue Value Consultant ("Value Consultant") within 45 days of signing this Agreement to develop a Health Improvement Plan ("HIP");

    d. Group's meeting, at least quarterly, with Value Consultant to review HIP, evaluate performance to plan, and revise HIP if necessary, to achieve Goals;

    e. Group's remaining, at all times, covered by the Group Health Plan; and,

    f. Group remaining up to date on payment of then current premiums.

V. TERM AND TERMINATION

This Agreement shall automatically terminate at the earliest of the following dates (the "Termination Date"):

a. Termination of the underlying Group Health Plan by either the Group or Florida Blue pursuant to its terms;

b. The Termination Date specified in section I, above;

c. After any Program Points earned have been applied to the Applicable Anniversary Date premiums;

d. After the GHP appoints a new Agent of Record and Florida Blue determines, in it's sole discretion to terminate and sends notice of termination of this Agreement; or,

e. at any time upon mutual agreement between the parties.

VI. RENEWAL

This Agreement shall not automatically renew/extend after the termination date. Any future participation in the Program must be done by mutual agreement and execution of a new written contract.

VII. INCONSISTENCIES

If the provisions of this Agreement are, in any way, inconsistent with the provisions of the Benefit Contract(s), then the provisions of the Benefit Contract(s) shall prevail, and the other provisions shall be deemed modified but only to the extent necessary to implement the intent of the parties expressed herein.

VIII. SURVIVAL

The rights and obligations of the parties, as set forth herein, shall survive the termination of this Agreement to the extent necessary to effectuate the intent of the parties as expressed herein.

IX. WAIVER OF BREACH

The failure by either party, at any time, to enforce or to require the strict adherence to any provision of this Agreement shall not be deemed to be a waiver of such provision or any other provision of this Agreement.

X. GOVERNING LAW

This Agreement and the rights of the parties hereunder, shall be construed according to the laws of the State of Florida.

XI. SEVERABILITY

In the event any provision of this Agreement is deemed to be invalid or unenforceable, all other provisions shall remain in full force and effect.

XII. AMENDMENT

This Agreement may be amended at any time upon mutual, written agreement of both parties, except that Florida Blue may make changes necessary to comply with State and Federal laws upon 60 days' notice to the Group.

XIII. ENTIRE AGREEMENT

This Agreement, including its Exhibits, the application(s) for coverage, and the Benefit Contract(s) constitute the entire Agreement between the Group and Florida Blue. Any prior agreements, promises, or representations, either oral or written, relating to the subject matter of this Agreement, and not expressly set forth in this Agreement, are of no force or effect.

XIV. NOTICES

Any notice, required or permitted under this Agreement, shall be deemed given if hand delivered or if mailed by United States mail, an overnight mail service (e.g., Federal Express), postage prepaid, or by email to the applicable address as set forth above or to such other address as a party may designate, in writing, to the other party. Such notice shall be deemed effective as of the date so deposited or delivered.

BLUE CROSS & BLUE SHIELD OF FLORIDA, INC.
d/b/a FLORIDA BLUE & HEALTH OPTIONS, INC.

By: 

Name: **Joseph C Gregor**

Title: **Vice President**

Date: 4/20/2022

CITY OF CRESTVIEW

By: _____

Name:
Printed _____

Title: _____

Date: _____

Exhibit A

To BlueValue Solutions Agreement

Baseline, Goals, Metrics and Maximum Points

For City of Crestview (the "Group")

Effective Date of this Exhibit – 4/1/2022

I. Baseline Metrics and Goals -

Metric		Goal		
	Baseline	**Minimum**	**Target**	**Maximum**
PHA and Biometric Screening	43%	50%	60%	75%
Adult Wellness Exam	34%	50%	60%	75%
Care Pathway Completion	97%	50%	60%	75%
	Program Points Earned by Goal per Metric	1	2	3

II. Metrics and Metric Descriptions –

Metric	Metric Description
PHA and Biometric Screening	Percentage of eligible enrolled employees participating in both the Personal Health Assessment and the Biometric Screening for blood pressure, blood glucose and total cholesterol, HDL and ratio.
Adult Wellness Exam	Percentage of eligible members 18+ receiving an exam conducted in a physician's office which consists of age/gender appropriate exam for the purpose of understanding health status and areas of risk. This is not a "sick" visit.
Care Pathway Completion	Percentage of employees and dependents that complete their Care Pathway Plan Goals

Exhibit A

To BlueValue Solutions Agreement

Continued

III. Points and Maximum applicable rate increase cap

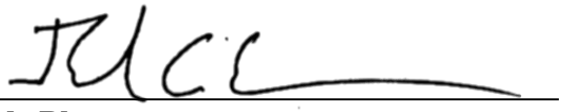
Points	Maximum applicable rate increase cap
0	No maximum
1	No maximum
2	5%
3	4.5%
4	4%
5	3.5%
6	3%
7	2%
8	1%
9	Rate hold

IV. **Measurement Period.** The Measurement Period is 4/1/2022 through 3/31/2023 with runout through 6/30/2023.

V. **Applicable Anniversary Date.** The Applicable Anniversary Date for the earned rate increase cap is the contract term beginning on 10/1/2023.

VI. **Year 1 Rate Cap**. In recognition of the Group's agreement to participate in this Program, Florida Blue will not increase rates on the group by more than 5% at their next anniversary date on 10/1/2022.

Agreed to by:



Florida Blue

Title: **Vice President**

City of Crestview

Title: _____

CITY OF CRESTVIEW

Item # 6.2.

Staff Report

CITY COUNCIL MEETING DATE: April 25, 2022
TYPE OF AGENDA ITEM: Action Item

TO:	Mayor and City Council
CC:	City Manager, City Clerk, Staff and Attorney
FROM:	Michael Criddle, Public Services Director, Kyle Lusk
DATE:	4/21/2022
SUBJECT:	Emergency Debris Removal Contract Renewal

BACKGROUND:

CrowderGulf has been providing the City's debris removal services during hurricanes since fiscal year 2018 under the same terms as the overall Okaloosa County contract. The county renewed the contract on June 18, 2021 for an additional one (1) year period through September 30, 2022, as provided in the original contract.

DISCUSSION:

CrowderGulf has provided Emergency Debris Removal services since fiscal year 2018. This is an extension of their contract from September 2021 to September 2022.
This contract has no cost associated with it. CrowderGulf will only provide removal services in the case of major storm events.

GOALS & OBJECTIVES

This item is consistent with the goals in A New View Strategic Plan 2020 as follows;
Foundational- these are the areas of focus that make up the necessary foundation of a successful local government.
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Quality of Life- these areas focus on the overall experience when provided by the city.
Safety- Ensure the continuous safety of citizens and visitors

Mobility- Provide safe, efficient and accessible means for mobility

Opportunity- Promote an environment that encourages economic and educational opportunity

FINANCIAL IMPACT

This contract has no cost associated with it. CrowderGulf will only provide removal services in the case of major storm events. In addition, during hurricane events a percentage of debris removal costs are reimbursed by FEMA.

RECOMMENDED ACTION

Staff respectfully requests approval of the contract extension to insure efficient removal of debris during major storm events.

Attachments

1. Renewal thru 09.30.22 Unex by City
2. Contract renewal thru 09.30.22
3. CrowderGulf Contact Sheet 2021 FL
4. Renewal thru 09.30.21

CrowderGulf

Disaster Recovery and Debris Management

5629 Commerce Boulevard E.
Mobile, Alabama 36619

Office: (800) 992-6207
Fax: (251) 459-7433

July 8, 2021

Mr. Carlos Jones, Assistant Director
Department of Public Services
City of Crestview
715 North Ferdon Boulevard
Crestview, FL 32536

via email: carlosjones@cityofcrestview.org

Re: Contract Renewal for Emergency Debris Removal

Dear Mr. Jones:

CrowderGulf has been providing the City of Crestview Emergency Debris Removal per the agreement executed on October 09, 2018 under the same terms and conditions as the Okaloosa County contract. The term of Okaloosa County's Contract is for a three (3) year period. The County has the option to renew for two (2) additional one (1) year periods upon agreement in writing and execution by both parties and upon advance notice of ninety (90) days. On June 18, 2021, Okaloosa County renewed this contract for an additional one (1) year period through September 30, 2022.

If the City of Crestview is in agreement to renew this contract, please sign the renewal acceptance below and return to CrowderGulf. Upon execution of this acknowledgement, the contract will continue under the same terms and conditions until its new expiration date of September 30, 2022.

We appreciate the opportunity to renew this contract and stand ready to respond immediately in the event the City of Crestview requests our services. If you have any questions or if we can be of any further assistance please do not hesitate to contact me at the CrowderGulf Disaster Administration Office 800-992-6207 or by e-mail jramsay@crowdergulf.com.

Best regards,

Ashley Ramsay-Naile

Ashley Ramsay-Naile
President

RENEWAL ACCEPTANCE – City of Crestview, FL

_____
Signature

_____
Name/Title

_____
Date

CONTRACT, LEASE, AGREEMENT CONTROL FORM

Date: 06/18/2021

Contract/Lease Control #: C17-2617-PW

Procurement#: RFP PW 41-17

Contract/Lease Type: CONTRACT

Award To/Lessee: CROWDERGULF JOINT VENTURE, INC.

Owner/Lessor: OKALOOSA COUNTY

Effective Date: 09/19/2021

Expiration Date: 09/30/2022

Description of: EMERGENCY DEBRIS REMOVAL

Department: PW

Department Monitor: AUTREY

Monitor's Telephone #: 850-689-5772

Monitor's FAX # or E-mail: JAUTREYMYOKALOOSA.COM

Closed:

Cc: BCC RECORDS

CONTRACT/LEASE RENEWAL FORM

CONTRACT#: C17-2617-PW
CROWDERGULF JOINT VENTURE, INC.
EMERGENCY DEBRI REMOVAL
EXPIRES: 09/30/2022

May 3, 2021
CrowderGulf
Attn: Ashley Ramsay
5629 Commerce Blvd. East
Mobile, AL 36619
RE: Emergency Debris Removal

Dear Sir:

The Okaloosa County Board of County Commissioners agrees to renew the subject contract/lease, # C17-2617-PW for an additional term. The contract renewal period will be 9/19/2021 to 9/30/2022. The annual budgeted amount for this contract is $ EXHIBIT A. All other terms and conditions of the original agreement shall remain in full force and effect through the duration of this renewal.

If you are in agreement, please sign below and return this form along with a current Certificate of Insurance listing Okaloosa County as co-insured (if applicable).

COUNTY REPRESENTATIVES

Dept. Director Signature: Jason T. Autrey, P.E., C.P.M. Digitally signed by Jason T. Autrey, P.E., C.P.M. Date: 2021.05.21 13:50:45 -05'00'

Date:

Approved By: John Hofstad Digitally signed by John Hofstad Date: 2021.06.08 10:07:13 -05'00'
(as prescribed below on item 1)

Date:

Approved By:
(as prescribed below on item 1)
Carolyn N. Ketchel, Chairman

Date: 15 June 202

AUTHORIZED COMPANY REPRESENTATIVE

Contractor: CrowderGulf

Approved By: Ashley Ramsay-Naile
Ashley Ramsay-Naile

Title: President

Date: 05-03-21

SEAL

County Department Instructions:

1) **Obtain signatures from Department Director, authorized Company Representative and then Purchasing Manager <$25K and less, OMB Director $25K to $50K, County Administrator <$100K and less or Board >$100K, as necessary. If Board approval is required, the Chairman and County Administrator's signatures are required. Make sure the company provides a current Certificate of Insurance. (If applicable).**

2) **Keep a copy of this form for your records.**

3) **Send original to Contracts and Lease Coordinator at Purchasing Department.**
If you have any questions please contact the Purchasing Manager at 850-689-5960, Fax: 850-689-5970

Exhibit "A"

ITEM NO.	ITEM DESCRIPTION	ASSUMED QUANTITY	UNIT PRICE (Written)	UNIT PRICE (Numeric)	PRICE EXTENSION (Numeric)
1.0	REMOVAL AND HAULING OF ELIGIBLE VEGETATIVE DEBRIS TO A DISPOSAL SITE OR DMS, including limbs and trees placed on ROW under other pay items.	250,000 CY	Seven Dollars and Zero Cents	$ 7.00	$ 1,750,000.00
2.0	SITE MANAGEMENT AND GRINDING OF ELIGIBLE VEGETATIVE DEBRIS AT A DMS PROVIDED BY THE CONTRACTOR, including grinding of eligible disaster related debris delivered to the DMS by the Contractor, Owner, or others.	250,000 CY	Two Dollars and fifty Cents	$ 2.50	$ 625,000.00
3.0	LOADING AND HAULING OF ELIGIBLE VEGETATIVE DEBRIS REDUCED BY GRINDING FROM DMS TO AN APPROVED DISPOSAL SITE, including eligible debris which has been reduced by the Contractor, Owner, or others. Note 1	60,000 CY	Three Dollars and Zero Cents	$ 3.00	$ 180,000.00
4.0	DISPOSAL OF ELIGIBLE VEGETATIVE DEBRIS REDUCED BY GRINDING AT AN APPROVED DISPOSAL SITE, including eligible debris which has been reduced by the Contractor, Owner, or others, with Contractor paying all tipping fees.	60,000 CY	Four Dollars and Twenty Cents	$ 4.20	$ 252,000.00

Note 1: This price includes haul distances up to 25 miles for distances over 25 miles add $0.09 / CY / Mile.

ITEM NO.	ITEM DESCRIPTION	ASSUMED QUANTITY	UNIT PRICE (Written)	UNIT PRICE (Numeric)	PRICE EXTENSION (Numeric)
5.0	**SITE MANAGEMENT AND BURNING OF ELIGIBLE VEGETATIVE DEBRIS AT A DMS PROVIDED BY THE CONTRACTOR,** including burning of eligible disaster related debris delivered to the DMS by the Contractor, Owner, or others.	250,000 CY	One Dollar and Twenty Five Cents	$ 1.25	$ 312,500.00
6.0	**LOADING AND HAULING OF ELIGIBLE VEGETATIVE DEBRIS REDUCED BY BURNING FROM DMS TO AN APPROVED DISPOSAL SITE,** including eligible debris which has been reduced by the Contractor, Owner, or others. Note 1	25,000 CY	Five Dollars and Zero Cents	$ 5.00	$ 125,000.00
7.0	**DISPOSAL OF ELIGIBLE VEGETATIVE DEBRIS REDUCED BY BURNING AT AN APPROVED DISPOSAL SITE,** including eligible debris which has been reduced by the Contractor, Owner, or others, with Contractor paying all tipping fees.	25,000 CY	Four Dollars and Twenty Cents	$ 4.20	$ 105,000.00
8.1	**REMOVAL AND HAULING OF ELIGIBLE C&D/ MIXED DEBRIS TO AN APPROVED DMS OR TRANSFER STATION.**	200,000 CY	Seven Dollars and Fifty Cents	$ 7.50	$ 1,500,000.00

Note 1: This price includes haul distances up to 25 miles for distances over 25 miles add $0.09 / CY / Mile.

ITEM NO.	ITEM DESCRIPTION	ASSUMED QUANTITY	UNIT PRICE (Written)	UNIT PRICE (Numeric)	PRICE EXTENSION (Numeric)
8.2	REMOVAL AND HAULING OF ELIGIBLE C&D/ MIXED DEBRIS TO AN APPROVED DISPOSAL SITE.	200,000 CY	Seven Dollars and Fifty Cents	$ 7.50	$ 1,500,000.00
9.0	SITE MANAGEMENT OF C&D/ MIXED DEBRIS, IF APPROVED IN WRITING BY OWNER.	200,000 CY	One Dollar and Twenty Cents	$ 1.20	$ 240,000.00
10.0	LOADING AND HAULING OF C&D/ MIXED DEBRIS TO AN APPROVED DISPOSAL SITE, AS IDENTIFIED BY THE OWNER OR MONITOR.	200,000 CY	Three Dollars and Fifty Cents	$ 3.50	$ 700,000.00
11.0	DISPOSAL OF C&D/ MIXED DEBRIS AT AN APPROVED DISPOSAL SITE including eligible debris which has been removed by the Contractor, Owner, or others, with Contractor paying all tipping fees.	200,000 CY	Four Dollars and Twenty Cents	$ 4.20	$ 840,000.00
12.0	REMOVAL OF HAZARDOUS LIMBS OVER 2" IN DIAMETER AT THE POINT OF BREAK and placement to be loaded and hauled under other pay items.	5,000 Trees	Seventy Dollars and Zero Cents	$ 70.00	$ 350,000.00

ITEM NO.	ITEM DESCRIPTION	ASSUMED QUANTITY	UNIT PRICE (Written)	UNIT PRICE (Numeric)	PRICE EXTENSION (Numeric)
13.1	**REMOVAL OF HAZARDOUS TREES OVER 6 AND UP TO 12 INCHES** and placement to be loaded and hauled under other pay items.	250 Trees	Twenty Five Dollars and Zero Cents	$ 25.00	$ 6,250.00
13.2	**REMOVAL OF HAZARDOUS TREES OVER 12 AND UP TO 24 INCHES** and placement to be loaded and hauled under other pay items.	100 Trees	Ninety Dollars and Zero Cents	$ 90.00	$ 9,000.00
13.3	**REMOVAL OF HAZARDOUS TREES OVER 24 AND UP TO 36 INCHES** and placement to be loaded and hauled under other pay items.	50 Trees	One Hundred Forty Dollars and Zero Cents	$ 140.00	$ 7,000.00
13.4	**REMOVAL OF HAZARDOUS TREES OVER 36 INCHES** and placement to be loaded and hauled under other pay items.	10 Trees	One Hundred Ninety Dollars and Zero Cents	$ 190.00	$ 1,900.00

ITEM NO.	ITEM DESCRIPTION	ASSUMED QUANTITY	UNIT PRICE (Written)	UNIT PRICE (Numeric)	PRICE EXTENSION (Numeric)
14.1	EXTRACTION, TRANSPORT, AND DISPOSAL OF HAZARDOUS STUMPS OVER 24 AND UP TO 36 INCHES including backfill of the hole.	250 Stumps	One Hundred Eighty Dollars and Zero Cents	$ 180.00	$ 45,000.00
14.2	EXTRACTION, TRANSPORT, AND DISPOSAL OF HAZARDOUS STUMPS OVER 36 AND UP TO 48 INCHES including backfill of the hole.	100 Stumps	Two Hundred Forty Dollars and Zero Cents	$ 240.00	$ 24,000.00
14.3	EXTRACTION, TRANSPORT, AND DISPOSAL OF HAZARDOUS STUMPS OVER 48 INCHES including backfill of the hole.	10 Stumps	Three Hundred Fifty Dollars and Zero Cents	$ 350.00	$ 3,500.00
15.0	REMOVAL, HAULING, AND DISPOSAL OF REGULATED ASBESTOS CONTAINING MATERIAL.	2,000 Tons	Sixty Eight Dollars and Zero Cents	$ 68.00	$ 136,000.00
16.0	REMOVAL, HAULING, AND RECYCLING/DISPOSAL OF WHITE GOODS.	1,000 Each	Fifty Dollars and Zero Cents	$ 50.00	$ 50,000.00
17.0	REMOVAL, HAULING, AND RECYCLING OR DISPOSAL OF ELECTRONICS WASTE.	10,000 Lbs.	Four Dollars and Zero Cents	$ 4.00	$ 40,000.00

ITEM NO.	ITEM DESCRIPTION	ASSUMED QUANTITY	UNIT PRICE (Written)	UNIT PRICE (Numeric)	PRICE EXTENSION (Numeric)
18.0	REMOVAL, HAULING, AND RECYCLING OR DISPOSAL OF CONCRETE AND MASONRY MATERIALS.	2,000 Tons	Twenty Dollars and Zero Cents	$ 20.00	$ 40,000.00
19.0	REMOVAL, HAULING, COLLECTION, RECYCLING AND/ OR DISPOSAL OF HOUSEHOLD HAZARDOUS WASTES (HHW).	10,000 Lbs.	Eight Dollars and Zero Cents	$ 8.00	$ 80,000.00
20.0	REMOVAL, HAULING, AND RECYCLING OR DISPOSAL OF LAWNMOWERS AND EQUIPMENT WITH SMALL ENGINES.	500 Each	Forty Dollars and Zero Cents	$ 40.00	$ 20,000.00
21.0	REMOVAL, HAULING, AND RECYCLING OR DISPOSAL OF ABANDONED TIRES.	1,000 Each	Nine Dollars and Zero Cents	$ 9.00	$ 9,000.00
22.0	REMOVAL, HAULING, AND RECYCLING OR DISPOSAL OF DEBRIS FROM DRAINAGEWAYS, STREAMS AND BAYOUS.	10,000 Linear Feet	Nine Dollars and Zero Cents	$ 9.00	$ 90,000.00

ITEM NO.	ITEM DESCRIPTION	ASSUMED QUANTITY	UNIT PRICE (Written)	UNIT PRICE (Numeric)	PRICE EXTENSION (Numeric)
23.0	REMOVAL, HAULING, AND RECYCLING OR DISPOSAL OF MARINE DEBRIS FROM WATERWAYS, BAYS, CANALS AND OCEANS.	5,000 CY	Eighty Dollars and Zero Cents	$ 80.00	$ 400,000.00
24.0	RESTORATION OF CANAL BANKS AND SLOPES.	5,000 CY	Nine Dollars and Zero Cents	$ 9.00	$ 45,000.00
25.1	REMOVAL OF ABANDONED CARS, TRUCKS AND VANS.	50 Each	Two Hundred Twenty Five Dollars and Zero Cents	$ 225.00	$ 11,250.00
25.2	REMOVAL OF ABANDONED CAMPERS, RV'S AND SHIPPING CONTAINERS.	10 Each	Four Hundred Dollars and Zero Cents	$ 400.00	$ 4,000.00
25.3	REMOVAL OF ABANDONED BUSSES AND TRACTOR TRAILERS.	5 Each	Five Hundred Dollars and Zero Cents	$ 500.00	$ 2,500.00
25.4	REMOVAL OF ABANDONED UTILITY AND BOAT TRAILERS.	10 Each	One Hundred Dollars and Zero Cents	$ 100.00	$ 1,000.00

ITEM NO.	ITEM DESCRIPTION	ASSUMED QUANTITY	UNIT PRICE (Written)	UNIT PRICE (Numeric)	PRICE EXTENSION (Numeric)
25.5	REMOVAL OF ABANDONED VESSELS – 10 TO 26 FEET.	300 Each	~~Twelve Hundred Dollars and Zero Cents~~ Eight Hundred Dollars and Zero Cents	~~$ 1,200.00~~ $800.00	~~$ 360,000.00~~ $240,000.00
25.6	REMOVAL OF ABANDONED VESSELS – 27 TO 40 FEET.	150 Each	~~Thirty Six Hundred Dollars and Zero Cents~~ Two Thousand Fifty Dollars and Zero Cents	~~$ 3,600.00~~ $2,250.00	~~$ 540,000.00~~ $337,500.00
25.7	REMOVAL OF ABANDONED VESSELS – OVER 60 FEET.	50 Each	~~Nine Thousand Dollars and Zero Cents~~ Seven Thousand Dollars and Zero Cents	~~$ 9,000.00~~ $7,000.00	~~$ 450,000.00~~ $350,000.00
26.0	REMOVAL OF DEBRIS FROM SAND BEACHES.	200 Tons	Eighty Five Dollars and Zero Cents	$ 85.00	$ 17,000.00
27.0	RAKING OF SAND BEACHES TO 12 INCH DEPTH.	10,000 Sq. Yards	Three Dollars and Zero Cents	$ 3.00	$ 30,000.00
28.0	REMOVAL, SCREENING, REPLACING, AND GRADING OF BEACH SAND TO ORIGINAL CONTOUR.	10,000 CY	Twelve Dollars and Zero Cents	$ 12.00	$ 120,000.00

ITEM NO.	ITEM DESCRIPTION	ASSUMED QUANTITY	UNIT PRICE (Written)	UNIT PRICE (Numeric)	PRICE EXTENSION (Numeric)
29.0	REMOVAL OF DISASTER DEPOSITED BEACH SAND.	5,000 CY	Twelve Dollars and Zero Cents	$ 12.00	$ 60,000.00
30.0	PROVISION OF EMERGENCY DELIVERY OF POTABLE BOTTLED WATER.	75,000 Gallons	Sixty Cents	$ 0.60	$ 45,000.00
31.0	EMERGENCY DELIVERY OF BAGGED ICE.	100,000 Lbs.	Twenty Five Cents	$ 0.25	$ 25,000.00
32.0	FIRE SUPPRESSION SUPPORT WATER WITH MINIMUM OF 1,500 GALLONS PER UNIT.	75 Unit-Days	Two Hundred Dollars and Zero Cents	$ 200.00	$ 15,000.00
33.0	TEMPORARY SATELITE COMMUNICATIONS.	15 Days	One Hundred Twenty Five Dollars and Zero Cents	$ 125.00	$ 1,875.00

ITEM NO.	ITEM DESCRIPTION	ASSUMED QUANTITY	UNIT PRICE (Written)	UNIT PRICE (Numeric)	PRICE EXTENSION (Numeric)
34.0	TEMPORARY EMERGENCY POWER GENERATION WITH MINIMUM OF 70 KW PER UNIT.	75 Unit-Days	Two Hundred Seventy Five Dollars and Zero Cents	$275.00	$ 20,625.00
35.0	FLOOD CONTROL PUMPING AND WATER RELOCATION WITH 4 INCH MINIMUM PUMPS.	75 Unit-Days	One Hundred Forty Dollars and Zero Cents	$ 140.00	$ 10,500.00
36.0	SEWER AND CULVERT CLEANING.	1,000 Linear Feet	Seven Dollars and Zero Cents	$ 7.00	$ 7,000.00
37.0	STORMWATER CATCH BASIN CLEANING.	3 Each	Seventy Dollars and Zero Cents	$ 70.00	$ 210.00
38.0	DECONTAMINATION OF BUILDINGS AND FACILITIES.	5,000 Sq. Feet	One Dollar and Eighty Cents	$ 1.80	$ 9,000.00
39.0	MOLD REMEDIATION OF BUILDINGS.	5,000 Sq. Feet	Two Dollars and Fifty Cents	$ 2.50	$ 12,500.00

ITEM NO.	ITEM DESCRIPTION	ASSUMED QUANTITY	UNIT PRICE (Written)	UNIT PRICE (Numeric)	PRICE EXTENSION (Numeric)
SIGNATURE [signature] BY John Ramsay TITLE President & CEO DATE 09/13/2017			TOTAL BID		$ 10,806,110.00

Disaster Recovery & Debris Management

Contact Information

DISASTER ADMINISTRATION OFFICE (DAO)
5629 COMMERCE BOULEVARD EAST
MOBILE, ALABAMA 36619
24 Hours / 7 Days a Week
800-992-6207 Phone
251-459-7433 Fax

In the event of activation please contact the Disaster Administration Office (DAO) first 800-992-6207
Please ask for Ashley Ramsay-Naile.

Official Notices should be sent to
DAO address, DAO fax or jramsay@crowdergulf.com

Ashley Ramsay-Naile
President
646-872-1548 Cell
jramsay@crowdergulf.com

John Campbell
Regional Director
859-963-8672 Cell
jcampbell@crowdergulf.com

Don Madio
Regional Manager
813-285-8749 Cell
dmadio@crowdergulf.com

CrowderGulf

Disaster Recovery and Debris Management

5629 Commerce Boulevard E
Mobile, Alabama 36619

Office: (800) 992-6207
Fax: (251) 459-7433

September 3, 2020

Mr. Carlos Jones, Assistant Director
Department of Public Services
City of Crestview
715 North Ferdon Boulevard
Crestview, FL 32536

via email: carlosjones@cityofcrestview.org

Re: Contract Renewal for Emergency Debris Removal

Dear Mr. Jones:

CrowderGulf has been providing the City of Crestview Emergency Debris Removal per the agreement executed on October 09, 2018 under the same terms and conditions as the Okaloosa County contract. The term of Okaloosa County's Contract is for a three (3) year period. The County has the option to renew for two (2) additional one (1) year periods upon agreement in writing and execution by both parties and upon advance notice of ninety (90) days. On July 13, 2020 Okaloosa County renewed this contract for an additional one (1) year period through September 30, 2021.

If the City of Crestview is in agreement to renew this contract, please sign the renewal acceptance below and return to CrowderGulf. Upon execution of this acknowledgement, the contract will continue under the same terms and conditions until its new expiration date of September 30, 2021.

We appreciate the opportunity to renew this contract and stand ready to respond immediately in the event the City of Crestview requests our services. If you have any questions or if we can be of any further assistance please do not hesitate to contact me at the CrowderGulf Disaster Administration Office 800-992-6207 or by e-mail jramsay@crowdergulf.com.

Best regards,

Ashley Ramsay-Naile

Ashley Ramsay-Naile
Sr. Vice President & COO

RENEWAL ACCEPTANCE – City of Crestview, FL

JB Whitten

Signature

JB Whitten / Mayor

Name/Title

9/28/20

Date

ATTEST

Elly M Roy

CITY OF CRESTVIEW

Item # 6.3.

Staff Report

CITY COUNCIL MEETING DATE: April 25, 2022
TYPE OF AGENDA ITEM: Action Item

TO:	Mayor and City Council
CC:	City Manager, City Clerk, Staff and Attorney
FROM:	Maryanne Schrader, City Clerk
DATE:	4/18/2022
SUBJECT:	Approval of the minutes from April 11, 2022

BACKGROUND:

Routine approval of past minutes.

DISCUSSION:

The City Council has reviewed the draft minutes included in the packet.

GOALS & OBJECTIVES

This item is consistent with the goals in A New View Strategic Plan 2020 as follows;
Foundational- these are the areas of focus that make up the necessary foundation of a successful local government.
Financial Sustainability- Achieve long term financial sustainability

Organizational Capacity, Effectiveness & Efficiency- To efficiently & effectively provide the highest quality of public services

Infrastructure- Satisfy current and future infrastructure needs

Communication- To engage, inform and educate public and staff

Quality of Life- these areas focus on the overall experience when provided by the city.
Community Character- Promote desirable growth with a hometown atmosphere

Safety- Ensure the continuous safety of citizens and visitors

Mobility- Provide safe, efficient and accessible means for mobility

Opportunity- Promote an environment that encourages economic and educational opportunity

Play- Expand recreational and entertainment activities within the City

Community Culture- Develop a specific identity for Crestview

FINANCIAL IMPACT

n/a

RECOMMENDED ACTION

Staff requests a motion to approve the minutes of April 11, 2002, as presented.

Attachments

1. 04112022 City Council Minutes- Draft

City Council Minutes - DRAFT
April 11, 2022
6:00 p.m.
Council Chambers

1. Call to Order

The Regular Meeting of the Crestview City Council was called to order at 6:00 p.m. by Mayor JB Whitten. Board members present: Mayor Pro-Tem Shannon Hayes, Council members Andrew Rencich, Doug Capps, Cynthia Brown, and Joe Blocker. Also present: City Manager Tim Bolduc, City Clerk Maryanne Schrader, City Attorney Jon Holloway, and various staff members.

2. Invocation, Pledge of Allegiance

2.1. Pastor Josh Neel - Hope City Community Church

The Invocation and Pledge of Allegiance was led by Pastor Josh Neel of Hope City Community Church.

3. Open Policy Making and Legislative Session

Mayor JB Whitten mentioned we have visitors from the Sister Cities delegation in attendance.

4. Approve Agenda

Council member Shannon Hayes and seconded by Council member Joe Blocker approve the Consent Agenda, as presented.

Roll Call: Joe Blocker, Cynthia Brown, Shannon Hayes, Andrew Rencich, Douglas Capps. All ayes. Motion carried.

5. Presentations and Reports

5.1. Proclamation declaring April as Child Abuse Awareness Month

Mayor JB Whitten declared April as Child Abuse Awareness Month and recognized the Guardian ad Litem program.

Ms. Carita Smith and Brian Carter came forward to receive the proclamation.

5.2. Proclamation declaring April 11th as Sister Cities Day

Mayor JB Whitten declared April 11th as Sister Cities Day.

Brian Hughes, Cultural Services, and representatives of the Sister Cities entourage came forward to accept the Proclamation.

6. Consent Agenda

Mayor Whitten passed the gavel to Mayor Pro-Tem Shannon Hayes at 6:19 p.m., as he left with the Sister Cities delegation.

Mayor Pro-Tem Shannon Hayes called for action.

Motion by Council member Douglas Capps and seconded by Council member Cynthia Brown to approve the Consent agenda, as presented.

Roll Call: Joe Blocker, Cynthia Brown, Shannon Hayes, Andrew Rencich, Douglas Capps. All ayes. Motion carried.

6.1. Fire Department Personal Protection Equipment (PPE)

6.2. Approval of March 28, 2022 City Council Regular Meeting Minutes - Draft

6.3. Consulting Services for Computerized Maintenance Management System Implementation Plan

6.4. Redstone Avenue Improvements Task Orders

6.5. Police Benefits Package Update

7. Public Hearings / Ordinances on Second Reading – None brought forward.

8. Ordinances on First Reading

8.1. Ordinance 1860 - Lindley Road Rezoning

Senior Planner Nicholas Schwendt stated this is the first reading of Ordinance 1860 and went over details of the staff report stating on March 4, 2022, an application to amend the zoning designation for property located at Lindley Road was received. The subject property is currently located within the city limits of Crestview with a Future Land Use and zoning designation of Residential and Single-Family Low-Density Dwelling District (R-1), respectively. The Planning and Development Board recommended approval of the request on April 4, 2022. He added the property is currently vacant. He went over the mailings and posting requirements.

Senior Planner Nicholas Schwendt asked the City Clerk to read the ordinance into the record.

City Clerk Maryanne Schrader read the Ordinance by Title: An Ordinance of the City of Crestview, Florida, Providing for the rezoning of 19.73 acres, more or less, of real property, located in Section 2, Township 3 North, Range 24 West, from the Single-Family Low-Density Dwelling District (R-1) Zoning District to the Single-Family Estate Dwelling District (R-1E) Zoning District; providing for Authority; providing for the updating of the Crestview Zoning Map; providing for Severability;

Providing for Scrivener's Errors; Providing for Liberal Interpretation; Providing for Repeal of Conflicting Codes and Ordinances; and Providing for an Effective Date.

Mayor Pro-Tem Shannon Hayes asked for comment from the Council and public. In hearing none, he called for action.

Motion by Council member Cynthia Brown and seconded by Council member Joe Blocker to approve Ordinance 1860 on 1st reading and move to second reading for final adoption.

Roll Call: Joe Blocker, Cynthia Brown, Shannon Hayes, Andrew Rencich, Douglas Capps Ayes: None Nays: All ayes. Motion carried.

8.2. Ordinance 1861 - Antioch Road Annexation

Senior Planner N. Schwendt stated this is the first reading of Ordinance 1861 for the Antioch Road annexation adding the next three ordinances relate to Antioch Road and 58.55 acres.

Senior Planner Nicholas Schwendt went over the details of the staff report stating on March 7, 2022, staff received an application to annex and to amend the Comprehensive Plan and zoning designations for property located on Antioch Road. The subject property is currently located within unincorporated Okaloosa County with Future Land Use designations of Agriculture and Low Density Residential, and zoning designations of Agriculture and Residential-1. The Planning and Development Board recommended approval of the request on April 4, 2022. He said the land is vacant or zoned for developmental use. He stated the mailings and notices were sent out, and said the fees were waived due to the fee moratorium.

Senior Planner N. Schwendt presented the Ordinance information to the City Council and asked the City Clerk to read the ordinance into the record.

City Clerk Maryanne Schrader read the Ordinance by Title: An ordinance annexing to the city of Crestview, Florida, ± 58.55 acres of contiguous lands located in Sections 23 & 26, township 3 north, Range 24 west, and being described as set forth herein; providing for authority; providing for land description; providing for boundary; providing for land use and zoning designation; providing for amendment to the base, land use and zoning maps; providing for a Comprehensive Plan amendment; providing for filing with the Clerk of Circuit Court of Okaloosa County, the chief administrative officer of Okaloosa County and the Florida Department of State; providing for severability; providing for scrivener's errors; providing for liberal interpretation; providing for repeal of conflicting codes and ordinances; and providing for an effective date.

Mayor Pro-Tem Shannon Hayes asked for comment from the Council and public. In hearing none, he called for action.

Motion by Council Member Andrew Rencich and seconded by Council Member Joe

Blocker to approve Ordinance 1861 on 1st reading and move to second reading for final adoption.

Roll Call: Joe Blocker, Cynthia Brown, Shannon Hayes, Andrew Rencich, Douglas Capps. All ayes. Motion carried.

8.3. Ordinance 1862 - Antioch Road Comprehensive Plan Amendment

Senior Planner N. Schwendt stated this is the first reading of Ordinance 1862, Antioch Road Comprehensive Plan Amendment. He went over the details of the staff report stating on March 7, 2022, staff received an application to annex and to amend the comprehensive plan and zoning designations for property located on Antioch Road. The subject property is currently located within unincorporated Okaloosa County with Future Land Use designations of Agriculture and Low Density Residential, and zoning designations of Agriculture and Residential-1. He stated the applicant has requested Mixed-Use Future Land Use designation for the property. The Planning and Development Board recommended approval of the request on April 4, 2022. He added the properties are vacant and zoned for residential development use. He went over the notices, mailings, and posting requirements.

Senior Planner Nicholas Schwendt asked the City Clerk to read the ordinance into the record.

City Clerk Maryanne Schrader read the Ordinance by Title: An Ordinance of the City of Crestview, Florida, Amending its Adopted Comprehensive Plan; Providing for Authority; Providing for Findings of Fact; Providing for Purpose; Providing for Changing the Future Land Use Designation from Okaloosa County Agriculture and Low Density Residential to Mixed Use (MU) on Approximately 58.55 Acres, More or Less, in Sections 23 and 26, Township 3 North, Range 24 West; Providing for Future Land Use Map Amendment; Providing for Severability; Providing for Scrivener's Errors; Providing for Liberal Interpretation; Providing for Repeal of Conflicting Codes and Ordinances; and Providing for an effective date.

Mayor Pro-Tem Shannon Hayes asked for comment from the Council and public. In hearing none, he called for action.

Motion by Council Member Joe Blocker and seconded by Council Member Andrew Rencich to approve Ordinance 1862 on 1st reading and move to second reading for final adoption.

Roll Call: Joe Blocker, Cynthia Brown, Shannon Hayes, Andrew Rencich, Douglas Capps. All ayes. Motion carried.

8.4. Ordinance 1863 - Antioch Road Rezoning

Senior Planner N. Schwendt stated this is the first reading of Ordinance 1863, Antioch Road Rezoning. He went over the applicant's request and provided details of the staff report stating on March 7, 2022, staff received an application to annex and to amend the Comprehensive Plan and zoning designations for property located on

Antioch Road. The property is currently located within unincorporated Okaloosa County with Future Land Use designations of Agriculture and Low Density Residential, and zoning designations of Agriculture and Residential-1. The applicant has requested Single and Multi-Family Density Dwelling District (R-3) zoning designation for the property. The Planning and Development Board recommended approval of the request on April 4, 2022. He said courtesy notices were mailed and posted, adding the fees were waived because of the fee moratorium.

Senior Planner N. Schwendt asked the City Clerk to read the ordinance into the record.

City Clerk Maryanne Schrader read the Ordinance by Title: An Ordinance of the City of Crestview, Florida, Providing for the Rezoning of 58.55 Acres, More or Less, of Real Property, Located in Sections 23 and 26, Township 3 North, Range 24 West, from the Okaloosa County Agriculture and Residential-1 Zoning District to the Single and Multi-Family Density Dwelling District (R-3) Zoning District; Providing for Authority; Providing for the Updating of the Crestview Zoning Map; Providing for Severability; Providing for Scrivener's Errors; Providing for Liberal Interpretation; Providing for Repeal of Conflicting Codes and Ordinances; and Providing for an effective date.

Mayor Pro-Tem Shannon Hayes asked for comment from the Council and public. In hearing none, he called for action.

Motion by Council Member Joe Blocker and seconded by Council Member Cynthia Brown to approve Ordinance 1863 on 1st reading and move to second reading for final adoption.

Roll Call: Joe Blocker, Cynthia Brown, Shannon Hayes, Andrew Rencich, Douglas Capps. All ayes. Motion carried.

9. Resolutions

9.1. Budget Amendment

City Manager Tim Bolduc went over the budget resolution stating the intent is to amend the bottom line of the budget, as well as creating a new division. He mentioned the amendment the funds for the Wilson Street Splash Pad, as well as the establishment of the Animal Control Department with a budget.

City Manager Tim Bolduc asked the City Clerk to read the Resolution into the record.

City Clerk Maryanne Schrader read the Resolution by title: A Resolution of the City of Crestview, Florida, Amending the Budget to more accurately reflect Estimated Revenues and Appropriations. The amendments are the result of various factors,

including: Increases in estimated revenues and/or Appropriations to more accurately reflect projections for departments of record, and providing for an effective date.

Mayor Pro-Tem Shannon Hayes asked for comment from the Council and public. In hearing none, he called for action.

Motion by Council Member Andrew Rencich and seconded by Council Member Joe Blocker to adopt Resolution 2022 - 12.

Roll Call: Joe Blocker, Cynthia Brown, Shannon Hayes, Andrew Rencich, Douglas Capps. All ayes. Motion carried.

10. Action Items

10.1. Shoal River Landing Phase 2A

Senior Planner Nicholas Schwendt went over the application stating the final plat was reviewed. He said this is for Phase 2A of the single-family subdivision 193.35-acre parcel. This plat will require a signature from the Mayor. Additionally, the agent has notified us that this new phase will be annexed to the existing declaration and HOA for Phase 1.

Mayor Pro-Tem Shannon Hayes asked for comment from the Council and public. In hearing none, he called for action.

Motion by Council Member Andrew Rencich and seconded by Council Member Joe Blocker to approve the Mayor to sign the plat.

Roll Call: Joe Blocker, Cynthia Brown, Shannon Hayes, Andrew Rencich, Douglas Capps. All ayes. Motion carried.

10.2. Emergency Repair of Texas Parkway and Phillip Drive Drainage Structures

City Manager Tim Bolduc said this is for approval of an emergency repair for Texas Parkway and for Philips Drive. He mentioned PS Director Michael Criddle is going over the needs of the department, adding both repairs total $119,000.

Mayor Pro-Tem Shannon Hayes asked for comment from the Council and public. In hearing none, he called for action.

Motion by Council Member Cynthia Brown and seconded by council Member Douglas Capps to approve the emergency repairs on Texas Parkway and Philips Drive.

Roll Call: Joe Blocker, Cynthia Brown, Shannon Hayes, Andrew Rencich, Douglas Capps. All ayes. Motion carried.

11. City Clerk Report

11.1. Public Records Portal Update

City Clerk Maryanne Schrader updated the City Council stating several staff members viewed webinars for three public records portal solutions and will return with a recommendation.

12. City Manager Report

12.1. Financial Update - City Manager

City Manager Tim Bolduc said Carver Hill Historical Society wishes to use the gym for their May Day event adding he would like to waive the expense.

Fletcher Williams, Jr. came forward and provided Council with details of the basketball tournament. He said May Day is a time when Carver Hill is celebrated, as it was the first segregated school. He requested to have the fees waived for the tournament. He added they plan a parade, which will end at Allen Park. The Council agreed to waiving the fee.

Next, City Manager Tim Bolduc went over the financial report. stating the bottom line is we are in a good financial condition. In response to Council member Andrew Rencich on the 1/2 cents sales tax, City Manager Tim Bolduc replied that the city is ahead of schedule.

City Manager Tim Bolduc asked to cancel July meetings and hold a budget workshop at the library to discuss a five-year plan. We will discuss departmental needs and provide the department heads an opportunity to showcase what they are doing. In response to Council member A. Rencich, he said a Special meeting would be called, if needed. He added we are bringing in more money than what we had projected. The money will be used for the police department and roads.

Mayor Pro-Tem Shannon Hayes asked for comment from the Council and public. In hearing none, he called for action.

Motion by Council Member Andrew Rencich and seconded by Council Member Joe Blocker to cancel the July meetings and hold a budget meeting on a Wednesday in July at the library.

Roll Call: Joe Blocker, Cynthia Brown, Shannon Hayes, Andrew Rencich, Douglas Capps. All ayes. Motion carried.

In response to several Council questions, City Manager Tim Bolduc replied that the financial report is included in the packet giving detail information on the costs incurred in the setup of the Blackwater Golf Course. He added the driving range has outperformed the original projections. He said the golf course, driving range and restaurant are the three key areas. He said we have received $40,000 in gross revenue with just the nine holes open, adding the restaurant is not yet open. The back nine will be open to members next week and open to the public next month. The restaurant

should open no later than June 1st, as we are having supply chain issues.

City Manager Tim Bolduc also mentioned the police benefits program stating it is a challenge to recruit members for law enforcement, so we are always looking for ways to enhance our programs. As we do not have a Union, we want to take care of our officers by offering LawShield when there is a Use of Force. We will also provide our employees the opportunity to participate. Council member A. Rencich added this takes the burden from the officers.

13. Comments from the Mayor and Council

Mayor Pro-tem Hayes asked Council if they had additional comments.

In response to Council member C. Brown, City Manager Tim Bolduc replied we are going to hire another full-time technician for Animal Control. The Laurel Hill facility is open. The Crestview facility is not open yet, as we have staff finishing at golf course. He added that we have successfully returned pets to their owners, but people can view the Animal Control Facebook page to find out when the animals are ready for adoption.

Mayor Pro-Tem Shannon Hayes asked for comment from the Council.

Council member D. Capps updated Council that the TDC will start compliance on Air BNB's. He mentioned Mobile Adventure Units have been started and suggested we should get one. Council member A. Rencich suggested the TDC look at the zoo as a possibility for a mobile adventure unit.

Council member C. Brown announced that on Saturday, April 16, Twin Hills Park has the annual Easter egg hunt scheduled and encouraged everyone to participate. She mentioned on April 28th at 6:30 p.m., at Warriors Hall, an Open House is scheduled for "Let's Talk About It" regarding addiction in our community which is sponsored by the High School SWAT program.

Council member J. Blocker commended the city for their work.

14. Comments from the Audience

Mayor Pro-Tem S. Hayes asked the public if they had any comments. No one came forward.

15. Adjournment

Mayor Pro-Tem S. Hayes adjourned the meeting at 7:07 p.m.

Minutes approve this __ day of __, 2022.

_____

JB Whitten, Mayor

Minutes submitted by,

_____
Maryanne Schrader, City Clerk
Proper notice having been duly given

CITY OF CRESTVIEW Item # 6.4.

Staff Report

CITY COUNCIL MEETING DATE: April 25, 2022
TYPE OF AGENDA ITEM: Action Item

TO:	Mayor and City Council
CC:	City Manager, City Clerk, Staff and Attorney
FROM:	Anthony Holland, Fire Chief
DATE:	4/21/2022
SUBJECT:	Fire Department Safety Equipment

BACKGROUND:

In 2016, the City of Crestview worked with Fisher Scientific to develop a replacement schedule for its Self-Contained Breathing Apparatus (SCBA) and air cylinders. SCBA consists of the harness, regulators, face piece and air gauge, while the cylinders provide air supply to the SCBA. Currently, Crestview Fire Department maintains twenty-five (25) SCBA. These units are maintained on each fire truck and must be interchangeable.

DISCUSSION:

With new National Fire Protection Association (NFPA) regulations and designs, we have five (5) SCBA's that will soon be out of service. It is imperative that these five be replaced before expiration. The unit cost is $6,798.75 for a total purchase amount of $33,993.75.

Staff further requests approval from the City Council to purchase these units from Fisher Scientific to ensure compatibility with the existing system and receive a lifetime warranty on the units.

GOALS & OBJECTIVES

This item is consistent with the goals in A New View Strategic Plan 2020 as follows;
Foundational- these are the areas of focus that make up the necessary foundation of a successful local government.
Financial Sustainability- Achieve long term financial sustainability

Organizational Capacity, Effectiveness & Efficiency- To efficiently & effectively provide the highest quality of public services

Infrastructure- Satisfy current and future infrastructure needs

Communication- To engage, inform and educate public and staff

Quality of Life- these areas focus on the overall experience when provided by the city.
Community Character- Promote desirable growth with a hometown atmosphere

Safety- Ensure the continuous safety of citizens and visitors

Mobility- Provide safe, efficient and accessible means for mobility

Opportunity- Promote an environment that encourages economic and educational opportunity

Play- Expand recreational and entertainment activities within the City

Community Culture- Develop a specific identity for Crestview

FINANCIAL IMPACT

The total purchase price of $33,993.75 is an unbudgeted item; however, funding is available in Public Safety Impact Fees.

RECOMMENDED ACTION

Staff respectfully requests that City Council approve the purchase of five (5) SCBA's from Fisher Scientific in the amount of $33,993.75 to be funded from public safety impact fees.

Attachments

1. Fisher Scientific Quote

Sales Quotation

*Quote Nbr	Creation Date	Due Date	Page
2103-0393-51	04/13/2022		1 of 1

Payment Terms	Delivery Terms
NET 30 DAYS	DEST
Valid To	Prepared By
08/11/2022	SHIPLEY, CHRISTINE
Customer Reference	Sales Representative
XXXXXX	

To place an order	Ph: 800-766-7000	Fx: 800-926-1166

Submitted To:	Customer Account: **813627-002**
DAVID SIDLEY CHRISTINE.SHIPLEY@THERMOFISHER.COM 000-000-0000	CRESTVIEW FIRE DEPARTMENT 321 W WOODRUFF AVE CRESTVIEW FL 32536-3467

Fisher Scientific
Part of Thermo Fisher Scientific

FISHER SCIENTIFIC COMPANY LLC
4500 TURNBERRY DRIVE
HANOVER PARK IL 60133-5491

Review and Place Order

Click here or go through your purchasing system to fishersci.com quotes

***Please reference this Quote Number on all correspondence.**

Don't have a profile? Register on fishersci.com

For complete Terms and Conditions, please click here.

Nbr	Qty	UN	Catalog Number	Description	Unit Price	Extended Price
1	5	EA	19 222 982	X3PRO18/4.5/UNIVEBSS/PAKTRAC	6,798.75	33,993.75
				Vendor Catalog # X8914021305304		
			No Image Available.	Hazardous Material		
				This item is being sold as 1 per each		

MERCHANDISE TOTAL 33,993.75

NOTES:
Returns are subject to manufacturer terms and conditions.

We now offer highly competitive financing with low monthly payments. Please contact your local sales representative for more information.

Tell us about your recent customer service experience by completing a short survey. This should take no longer than three minutes. Enter the link into your browser and enter the passcode: USA-PGH-CS2
http://survey.medallia.com/fishersci

CITY OF CRESTVIEW

Item # 7.1.

Staff Report

CITY COUNCIL MEETING DATE: April 25, 2022
TYPE OF AGENDA ITEM: Ordinance

TO:	Mayor and City Council
CC:	City Manager, City Clerk, Staff and Attorney
FROM:	Barry Henderson, Development Services Director, Nicholas Schwendt, Gis
DATE:	4/19/2022
SUBJECT:	Ordinance 1860 - Lindley Road Rezoning

BACKGROUND:

On March 4, 2022, staff received an application to amend the zoning designation for property located at Lindley Road.

The subject property is currently located within the city limits of Crestview with a future land use and zoning designation of Residential and Single-Family Low-Density Dwelling District (R-1), respectively.

The application requests the Single-Family Estate Dwelling District (R-1E) zoning designation for the property.

The Planning and Development Board recommended approval on April 4, 2022, and the first reading was approved by the City Council on April 11, 2022.

As a requirement of the recent annexation of 172.45 acres, the property owner agreed to change the zoning of property already inside the city limits to be consistent with the property being annexed.

DISCUSSION:

The property description is as follows:

Property Owner:	Eagle View Investments LLC 9729 Hammocks Blvd E107 Miami, FL 33196
Parcel ID:	02-3N-24-0000-0003-001A 02-3N-24-0000-0003-001B 02-3N-24-0000-0003-0060
Site Size:	19.73 acres
Current FLU:	Residential (R)
Current Zoning:	Single-Family Low-Density Dwelling District (R-1)
Current Land Use:	Vacant

The following table provides the surrounding land use designations, zoning districts, and existing uses.

Direction	FLU	Zoning	Existing Use
North	Residential (R)	Single-Family Estate Dwelling District (R-1E)	Vacant and Residential

East	Residential (R)	Single-Family Low-Density Dwelling District (R-1)	Residential
South	Residential (R)	Single-Family Estate Dwelling District (R-1E)	Vacant
West	Residential (R)	Single-Family Estate Dwelling District (R-1E)	Vacant and Resident

The subject property is currently vacant, and a development application has not been submitted. Based on the requested land-use and zoning designations, the property will be developed for residential use.

Staff reviewed the request for rezoning and finds the following:

- The proposed zoning is consistent with the proposed future land use designation.
- The uses within the requested zoning district are compatible with uses in the adjacent zoning districts.
- The requested use is not substantially more or less intense than allowable development on adjacent parcels.

Courtesy notices were mailed to property owners within 300 feet of the subject property on March 14, 2022. The property was posted on March 21, 2022. An advertisement ran in the Crestview News Bulletin on March 24, 2022.

GOALS & OBJECTIVES

This item is consistent with the goals in A New View Strategic Plan 2020 as follows.

Foundational – these are the four areas of focus that make up the necessary foundation of a successful local government.

Financial Sustainability – Achieve long term financial sustainability.

Organizational Capacity, Effectiveness & Efficiency – To efficiently & effectively provide the highest quality of public services.

Quality of Life – these six areas focus on the overall experience when provided by the city.

Community Character – Promote desirable growth with a hometown atmosphere.

Opportunity – Promote an environment that encourages economic and educational opportunity.

Community Culture – Develop a specific identity for Crestview.

FINANCIAL IMPACT

The fees for the rezoning request have been waived for this application as the zoning change request was initiated by the City.

The cost of advertising is approximately $200.00.

RECOMMENDED ACTION

Staff respectfully requests adoption of Ordinance 1860 on second reading.

Attachments

1. Exhibit Packet

ORDINANCE: 1860

AN ORDINANCE OF THE CITY OF CRESTVIEW, FLORIDA, PROVIDING FOR THE REZONING OF 19.73 ACRES, MORE OR LESS, OF REAL PROPERTY, LOCATED IN SECTION 2, TOWNSHIP 3 NORTH, RANGE 24 WEST, FROM THE SINGLE-FAMILY LOW-DENSITY DWELLING DISTRICT (R-1) ZONING DISTRICT TO THE SINGLE-FAMILY ESTATE DWELLING DISTRICT (R-1E) ZONING DISTRICT; PROVIDING FOR AUTHORITY; PROVIDING FOR THE UPDATING OF THE CRESTVIEW ZONING MAP; PROVIDING FOR SEVERABILITY; PROVIDING FOR SCRIVENER'S ERRORS; PROVIDING FOR LIBERAL INTERPRETATION; PROVIDING FOR REPEAL OF CONFLICTING CODES AND ORDINANCES; AND PROVIDING FOR AN EFFECTIVE DATE.

BE IT ORDAINED BY THE CITY COUNCIL OF CRESTVIEW, FLORIDA AS FOLLOWS:

SECTION 1 – AUTHORITY. The authority for enactment of this ordinance is Section 166.041, Florida Statutes and Chapter 102, City Code.

SECTION 2 – PROPERTY REZONED. The following described 19.73 acres, more or less, of real property lying within the corporate limits of Crestview, Florida, with 19.73 acres, more or less, being formerly zoned Single-Family Low-Density Dwelling District (R-1), is hereby rezoned to Single-Family Estate Dwelling District (R-1E) to wit:

PIN # 02-3N-24-0000-0003-001A, 02-3N-24-0000-0003-001B, 02-3N-24-0000-0003-0060

Parcel 02-3N-24-0000-0003-0060

A strip of land 66 feet wide in the SE 1/4 of Section 2, Township 3 North, Range 24 West, Okaloosa County, Florida, being 33 feet on either side of a centerline described as follows:

Commence at the NE corner of said SE 1/4; thence run South 300.00 feet; thence run South 89 degrees 37' 09" West 493.82 feet; thence run South 00 degrees 05' 39" West 1028.78 feet to the POINT OF BEGINNING; thence continue South 00 degrees 05'39" West 766.18 feet to the Point of Terminus.

TOGETHER WITH AN EASEMENT FOR INGRESS AND EGRESS OVER AND ACROSS THE FOLLOWING:

A strip of land 66 feet wide in the SE 1/4 of Section 2, Township 3 North, Range 24 West, Okaloosa County, Florida, being 33 feet on either side of a centerline described as follows: Commence at the NE corner of said SE 1/4; thence run South 300.00 feet to the Point of Beginning; thence run South 89 degrees 37' 09" West 493.82 feet; thence run South 00 degrees 05' 39" West 1794.96.

ALSO a strip of land 66 feet wide in the SW 1/4 of Section 1, Township 3 North, Range 24 West, Okaloosa County, Florida, being 33 feet either side of a centerline described as follows: Commence at the NW, corner of said SW 1/4; thence run South 300.00 feet to the Point of Beginning; thence run North 89 degrees 37' 09" East 470 feet, more or less to an existing road.

Parcel 02-3N-24-0000-0003-001A

Begin at the Southeast corner of Section 2, Township 3 North, Range 24 West, Okaloosa County, Florida; thence proceed North 00 degrees 31 minutes 11 seconds East, a distance of 569.71 feet to

the Point of Beginning; thence proceed North 89 degrees 55 minutes 39 seconds West, a distance of 791.08 feet; thence proceed North 00 degrees 31 minutes 29 seconds East, a distance of 545.18 feet; thence proceed South 89 degrees 55 minutes 39 seconds East, a distance of 790.98 feet; thence proceed South 00 degrees 30 minutes 50 seconds West, a distance of 545.18 feet to the Point of Beginning of the parcel herein described.

Parcel 02-3N-24-0000-0003-001B

Parcel B-1

Commencing at the Southeast corner of Section 2, Township 3 North, Range 24 West, Okaloosa County, Fl., thence North O degrees 30 minutes 50 seconds East along the East line of said Section 2 for 1114.28 feet to the Point of Beginning; thence North 89 degrees 55 minutes 39 seconds West for 460.30 feet to the East margin of a right of way 66 feet wide; thence North 0 degrees 33 minutes 15 seconds East along said East margin for 271.58 feet; thence South 89 degrees 55 minutes 14 seconds East 260.40 feet; thence South 0 degrees 2 minutes 4 seconds West for 66.11 feet; thence South 89 degrees 27 minutes 3 seconds East 199.15 feet to the East line of Section 2; thence South 0 degrees 30 minutes 50 seconds West 203.78 feet to the Point of Beginning.

Parcel B-2

Commencing at the Southeast corner of Section 2, Township 3 North, Range 24 West, Okaloosa County, Fl., thence North 0 degrees 30 minutes 50 seconds East along the East line of said Section 2, for 1114.28 feet; thence North 89 degrees 55 minutes 39 seconds West for 460.30 feet to a point on the East margin of a right of way 66 feet in width; thence continue North 89 degrees 55 minutes 39 seconds West, 66.00 feet to a point on the West margin of said right of way being the Point of Beginning; thence continue North 89 degrees 55 minutes 39 seconds West for 264.67 feet; thence North 0 degrees 31 minutes 29 seconds East for 223.30 feet; thence South 89 degrees 55 minutes 14 seconds East for 264.82 feet; thence South 0 degrees 33 minutes 15 seconds West for 223.26 feet to the Point of Beginning.

SECTION 3 – MAP UPDATE. The Crestview Zoning Map, current edition, is hereby amended to reflect the above changes concurrent with passage of this ordinance, which is attached hereto.

SECTION 4 – SEVERABILITY. If any word, phrase, sentence, paragraph or provision of this ordinance or the application thereof to any person or circumstance is held invalid or unconstitutional, such finding shall not affect the other provisions or applications of this ordinance which can be given effect without the invalid or unconstitutional provision or application, and to this end the provisions of this ordinance are declared severable.

SECTION 5 – SCRIVENER'S ERRORS. The correction of typographical errors which do not affect the intent of this Ordinance may be authorized by the City Manager or the City Manager's designee, without public hearing, by filing a corrected or re-codified copy with the City Clerk.

SECTION 6 – ORDINANCE TO BE LIBERALLY CONSTRUED. This Ordinance shall be liberally construed in order to effectively carry out the purposes hereof which are deemed not to adversely affect public health, safety, or welfare.

SECTION 7 – REPEAL OF CONFLICTING CODES, ORDINANCES, AND RESOLUTIONS. All Charter provisions, codes, ordinances and resolutions or parts of charter provisions, codes, ordinances and resolutions or portions thereof of the City of Crestview, in conflict with the provisions of this Ordinance are hereby repealed to the extent of such conflict.

SECTION 8 – EFFECTIVE DATE. This ordinance shall take effect immediately upon its adoption.

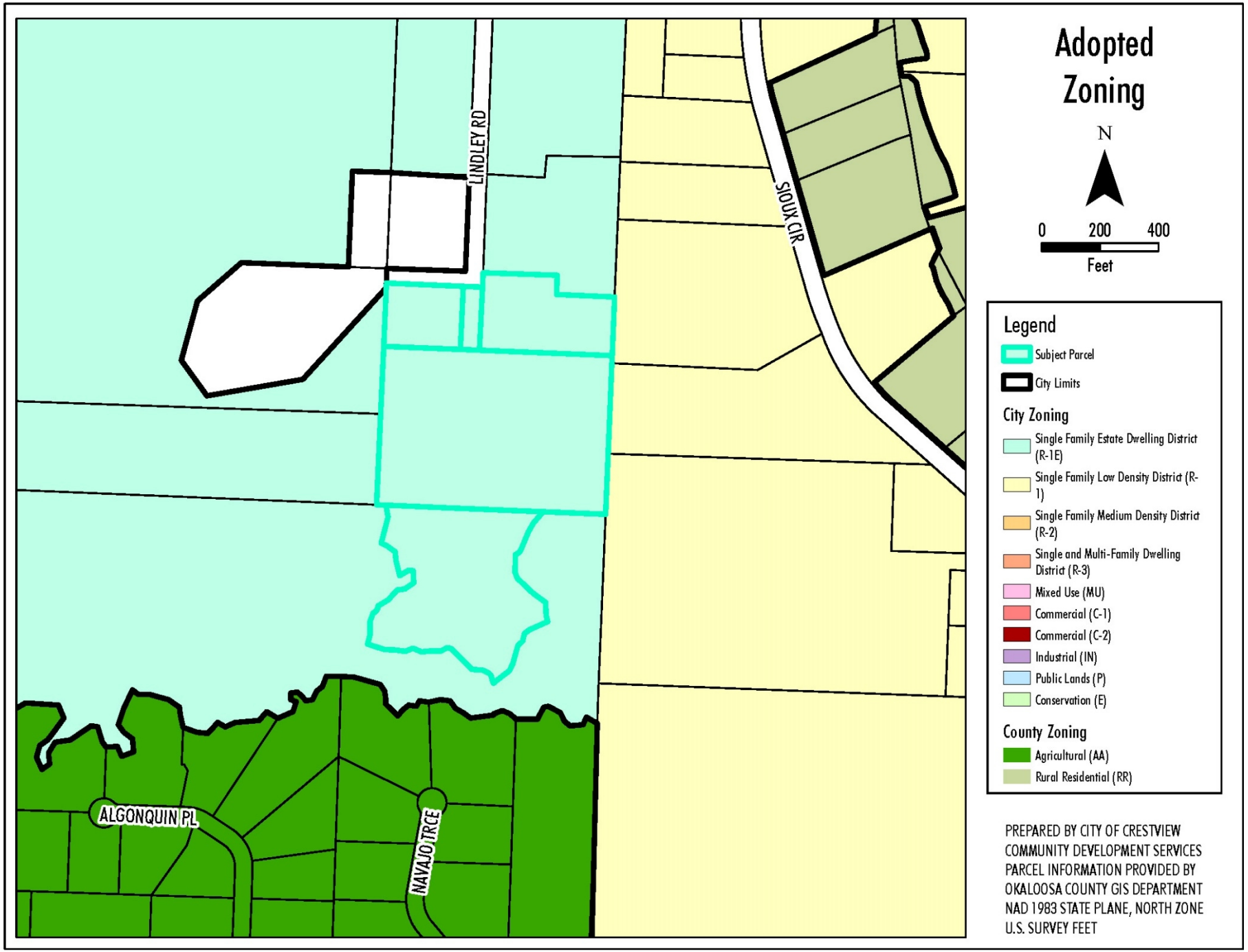
Passed and adopted on second reading by the City Council of Crestview, Florida on the 25th day of April, 2022.

ATTEST:

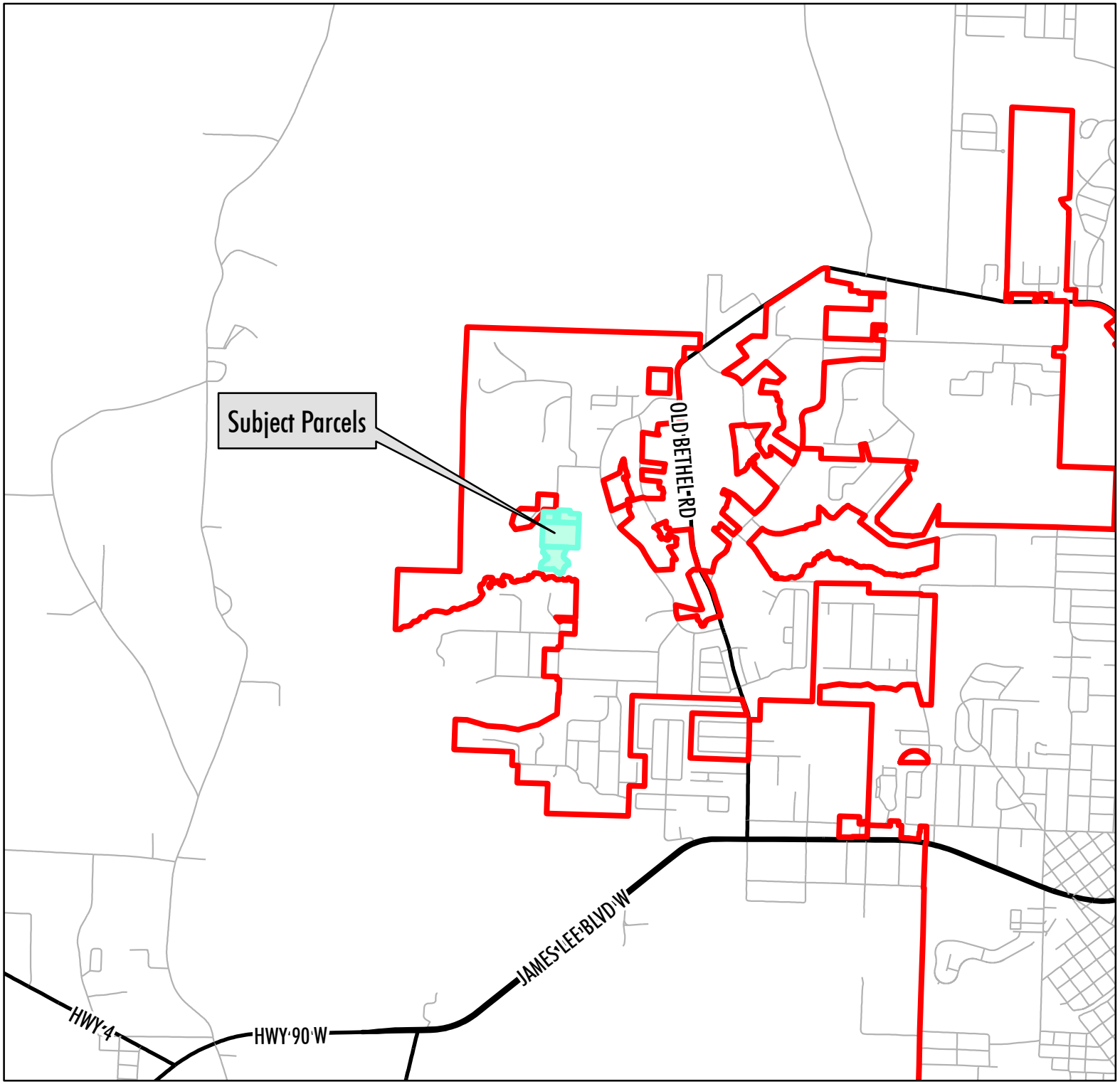
_____
Maryanne Schrader
City Clerk

Approved by me this 25th day of April, 2022.

_____
J. B. Whitten
Mayor


LINDLEY RD
SIOUX CIR
ALGONQUIN PL
NAVAJO TRCE
Adopted Zoning
N
0 200 400
Feet
Legend
Subject Parcel
City Limits
City Zoning
Single Family Estate Dwelling District (R-1E)
Single Family Low Density District (R-1)
Single Family Medium Density District (R-2)
Single and Multi-Family Dwelling District (R-3)
Mixed Use (MU)
Commercial (C-1)
Commercial (C-2)
Industrial (IN)
Public Lands (P)
Conservation (E)
County Zoning
Agricultural (AA)
Rural Residential (RR)
PREPARED BY CITY OF CRESTVIEW
COMMUNITY DEVELOPMENT SERVICES
PARCEL INFORMATION PROVIDED BY
OKALOOSA COUNTY GIS DEPARTMENT
NAD 1983 STATE PLANE, NORTH ZONE
U.S. SURVEY FEET

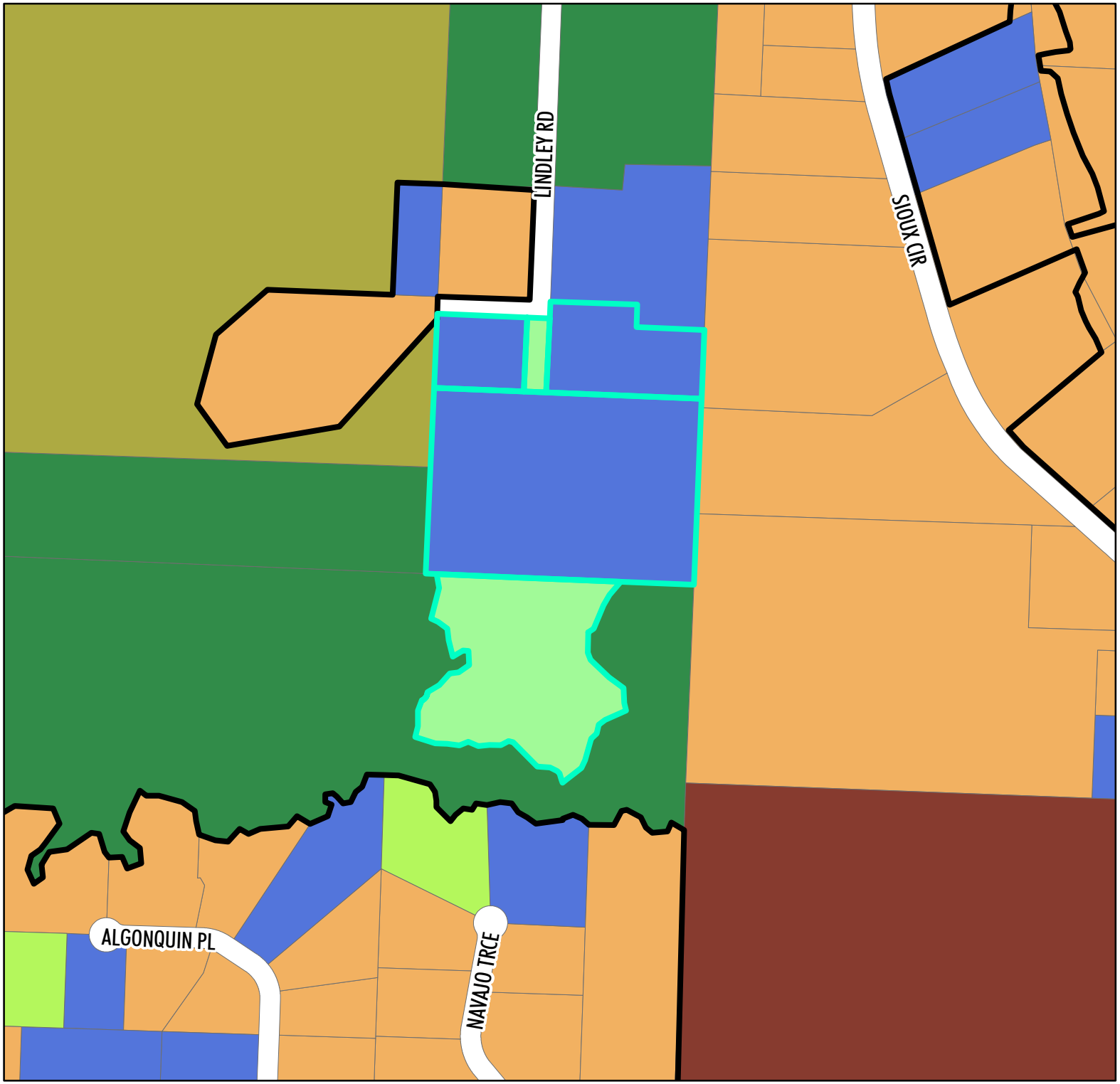
Vicinity Map



N

Not to Scale

PREPARED BY CITY OF CRESTVIEW
COMMUNITY DEVELOPMENT SERVICES
PARCEL INFORMATION PROVIDED BY
OKALOOSA COUNTY GIS DEPARTMENT
NAD 1983 STATE PLANE, NORTH ZONE
U.S. SURVEY FEET



Existing Use

N

0 200 400

Feet

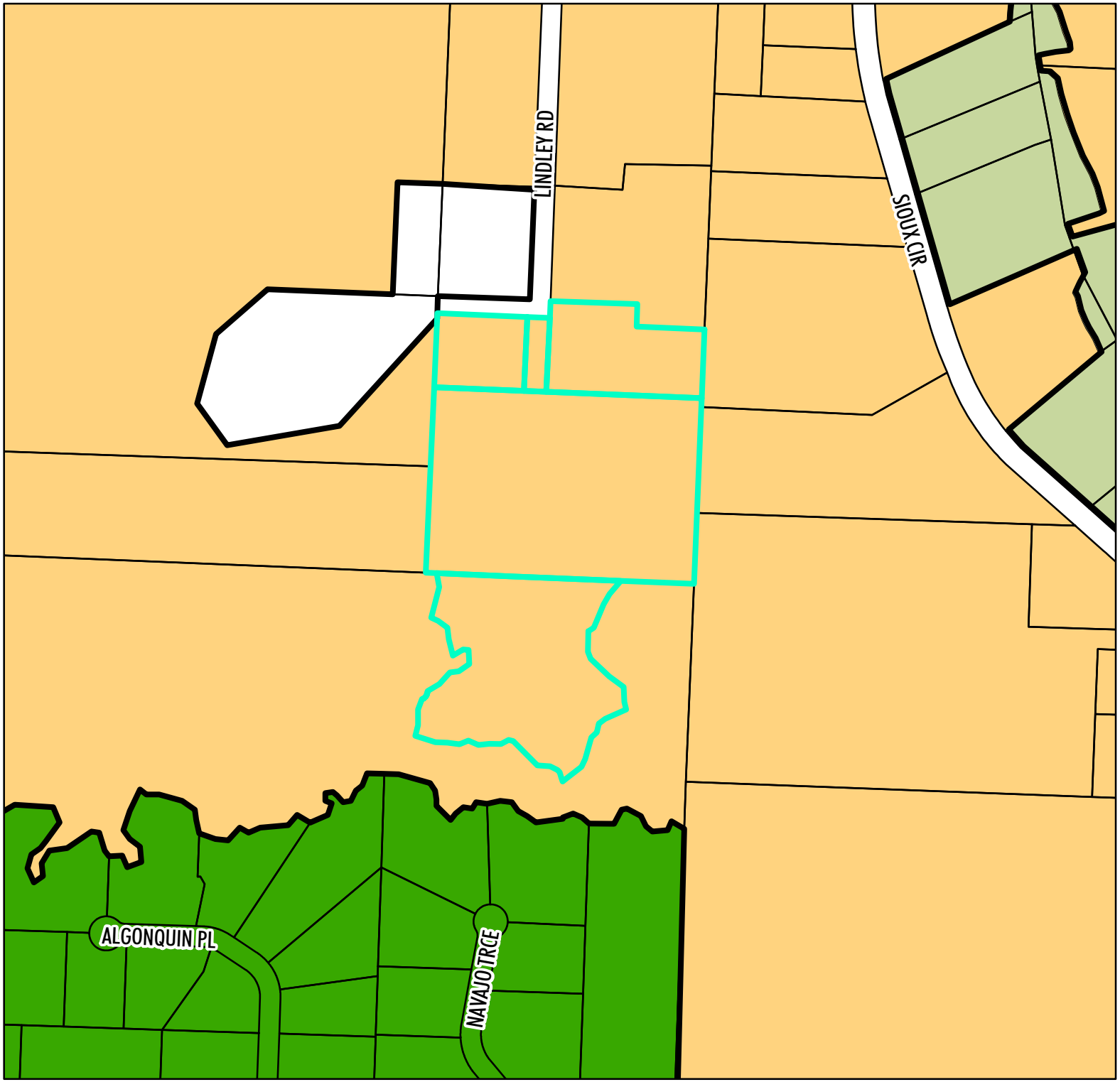
Legend

- Subject Parcel
- City Limits

Existing Use

- County
- Improved A
- No AG Acre
- Single Family
- Timber
- Timberland
- Vacant

PREPARED BY CITY OF CRESTVIEW
COMMUNITY DEVELOPMENT SERVICES
PARCEL INFORMATION PROVIDED BY
OKALOOSA COUNTY GIS DEPARTMENT
NAD 1983 STATE PLANE, NORTH ZONE
U.S. SURVEY FEET



Current Future Land Use

N

0 200 400

Feet

Legend

- Subject Parcel
- City Limits

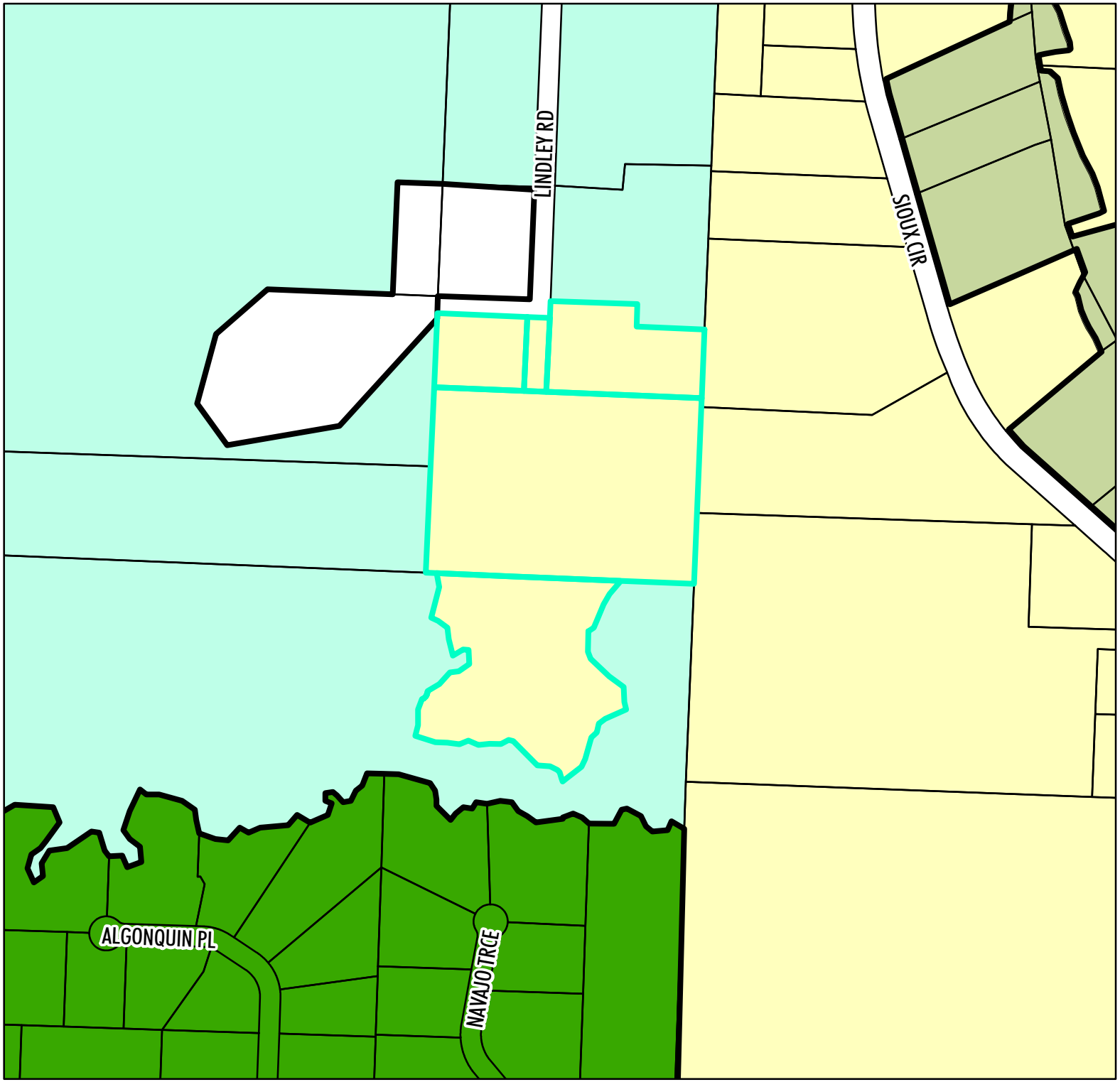
City Future Land Use

- Commercial (C)
- Industrial (IN)
- Mixed Use (MU)
- Conservation (CON)
- Public Lands (PL)
- Residential (R)

County Future Land Use

- Agriculture (AG)
- Rural Residential (RR)

PREPARED BY CITY OF CRESTVIEW
COMMUNITY DEVELOPMENT SERVICES
PARCEL INFORMATION PROVIDED BY
OKALOOSA COUNTY GIS DEPARTMENT
NAD 1983 STATE PLANE, NORTH ZONE
U.S. SURVEY FEET



Current Zoning

N

0 200 400

Feet

Legend

- Subject Parcel
- City Limits

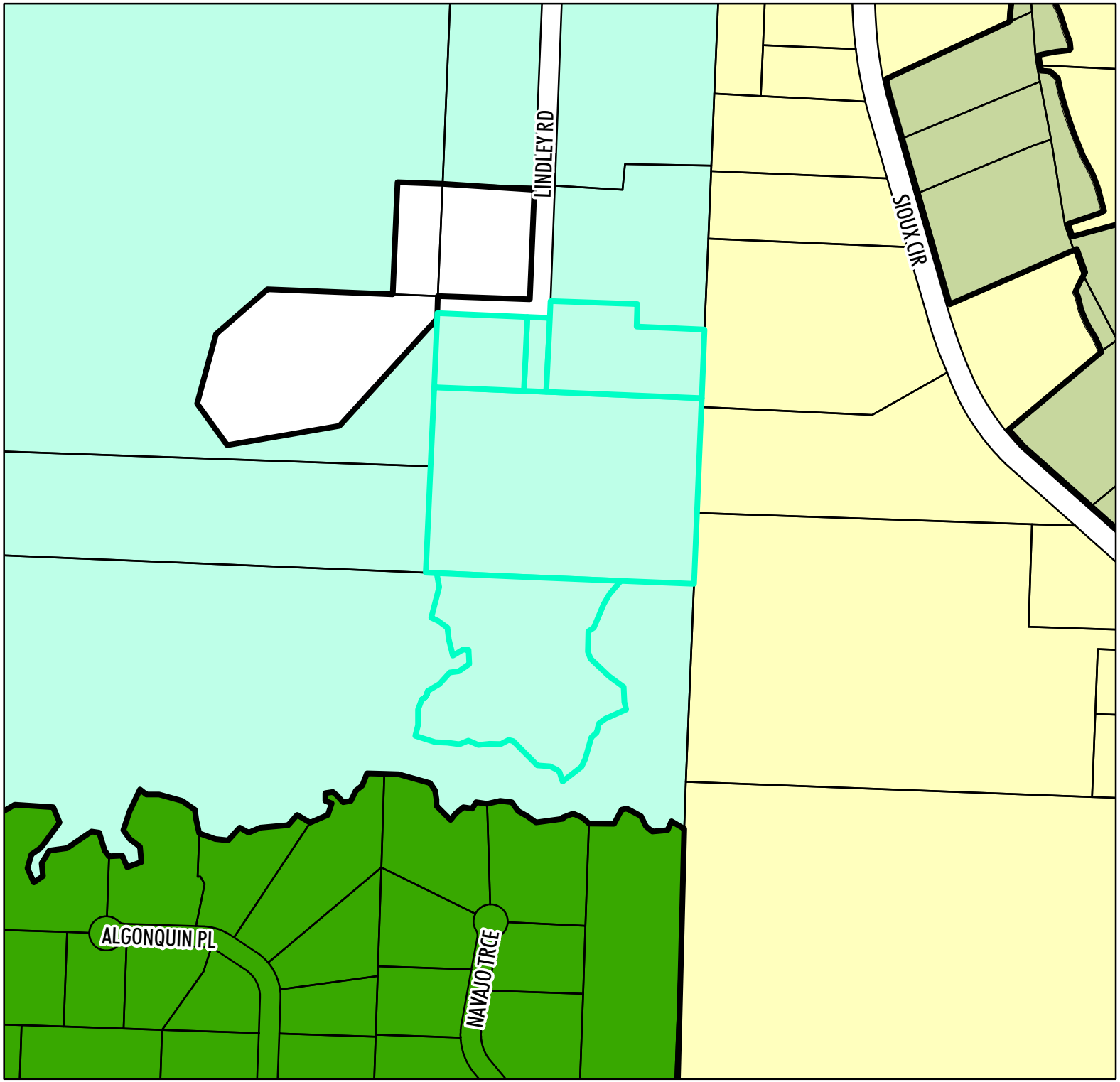
City Zoning

- Single-Family Estate District (R-1E)
- Single Family Low Density District (R-1)
- Single Family Medium Density District (R-2)
- Single and Multi-Family Dwelling District (R-3)
- Mixed Use (MU)
- Commercial (C-1)
- Commercial (C-2)
- Industrial (IN)
- Public Lands (P)
- Conservation (E)

County Zoning

- Agricultural (AA)
- Rural Residential (RR)

PREPARED BY CITY OF CRESTVIEW
COMMUNITY DEVELOPMENT SERVICES
PARCEL INFORMATION PROVIDED BY
OKALOOSA COUNTY GIS DEPARTMENT
NAD 1983 STATE PLANE, NORTH ZONE
U.S. SURVEY FEET



Proposed Zoning

N

0 200 400

Feet

Legend

- Subject Parcel
- City Limits

City Zoning

- Single Family Estate Dwelling District (R-1E)
- Single Family Low Density District (R-1)
- Single Family Medium Density District (R-2)
- Single and Multi-Family Dwelling District (R-3)
- Mixed Use (MU)
- Commercial (C-1)
- Commercial (C-2)
- Industrial (IN)
- Public Lands (P)
- Conservation (E)

County Zoning

- Agricultural (AA)
- Rural Residential (RR)

PREPARED BY CITY OF CRESTVIEW
COMMUNITY DEVELOPMENT SERVICES
PARCEL INFORMATION PROVIDED BY
OKALOOSA COUNTY GIS DEPARTMENT
NAD 1983 STATE PLANE, NORTH ZONE
U.S. SURVEY FEET

CITY OF CRESTVIEW

Item # 7.2.

Staff Report

CITY COUNCIL MEETING DATE: April 25, 2022
TYPE OF AGENDA ITEM: Ordinance

TO:	Mayor and City Council
CC:	City Manager, City Clerk, Staff and Attorney
FROM:	Barry Henderson, Development Services Director, Nicholas Schwendt, Gis
DATE:	4/19/2022
SUBJECT:	Ordinance 1861 - Antioch Road Annexation

BACKGROUND:

On March 7, 2022, staff received an application to annex and to amend the comprehensive plan and zoning designations for property located on Antioch Road.

The subject property is currently located within unincorporated Okaloosa County with future land use designations of Agriculture and Low Density Residential, and zoning designations of Agriculture and Residential-1.

The Planning and Development Board recommended approval on April 4, 2022, and the first reading was on April 11, 2022.

DISCUSSION:

The property description is as follows:

Property Owner:	RSW Foundation LLC 308 W James Lee Blvd Crestview, FL 32536
Parcel ID:	23-3N-24-0000-0012-0000 23-3N-24-0000-0015-0000 23-3N-24-0000-0014-0010 26-3N-24-0000-0002-0000
Site Size:	58.55 acres
Current FLU:	Okaloosa County Agriculture and Low Density Residential
Current Zoning:	Okaloosa County Agriculture and Residential-1
Current Land Use:	Vacant and Residential

The following table provides the surrounding land use designations, zoning districts, and existing uses.

Direction	FLU	Zoning	Existing Use
North	Okaloosa County Agriculture	Okaloosa County Agriculture	Vacant
East	Okaloosa County Agriculture & Public Lands (PL)	Okaloosa County Agriculture & Public Lands (PL)	Vacant & Golf Course
South	Okaloosa County Low Density Residential & Public Lands (PL)	Okaloosa County Residential-1 & Public Lands (PL)	Residential & Golf Course

West	Okaloosa County Agriculture and Low Density Residential	Okaloosa County Agriculture and Residential-1	Vacant & Residential

The subject properties are currently vacant or developed for residential use and a development application has not been submitted. Based on the requested land-use and zoning designations, the property could be developed for residential use.

Staff has reviewed the application based on the criteria detailed in Florida statute 171.043 for annexations and finds the following:

- The property is contiguous to the city limits;
- The property is comprised of four (4) lots in unincorporated Okaloosa County, and is therefore considered compact;
- The annexation of the property would not create an enclave
- The subject property is not included in the boundary of another municipality; and,
- The subject property meets the definition of urban purposes.

Courtesy notices were mailed to property owners within 300 feet of the subject property on March 14, 2022. A letter was sent via certified mail to the Okaloosa Board of County Commissioners on March 22, 2022. The property was posted on March 21, 2022. An advertisement ran in the Crestview News Bulletin on March 24, 2022.

GOALS & OBJECTIVES

This item is consistent with the goals in A New View Strategic Plan 2020 as follows.

Foundational – these are the four areas of focus that make up the necessary foundation of a successful local government.

Financial Sustainability – Achieve long term financial sustainability.

Organizational Capacity, Effectiveness & Efficiency – To efficiently & effectively provide the highest quality of public services.

Quality of Life – these six areas focus on the overall experience when provided by the city.

Community Character – Promote desirable growth with a hometown atmosphere.

Opportunity – Promote an environment that encourages economic and educational opportunity.

Community Culture – Develop a specific identity for Crestview.

FINANCIAL IMPACT

The fees for annexation have been waived for this application as it was received during the moratorium on annexation fees.

The cost of advertising is approximately $550.00.

The successful annexation of this property will have positive future impacts, including ad valorem revenue based on future taxable assessed value, development and building permit fees, and utility usage fees.

RECOMMENDED ACTION

Staff respectfully requests adoption of Ordinance 1861 on second reading.

Attachments

1. Exhibit Packet

ORDINANCE: 1861

AN ORDINANCE ANNEXING TO THE CITY OF CRESTVIEW, FLORIDA, ± 58.55 ACRES OF CONTIGUOUS LANDS LOCATED IN SECTIONS 23 & 26, TOWNSHIP 3 NORTH, RANGE 24 WEST, AND BEING DESCRIBED AS SET FORTH HEREIN; PROVIDING FOR AUTHORITY; PROVIDING FOR LAND DESCRIPTION; PROVIDING FOR BOUNDARY; PROVIDING FOR LAND USE AND ZONING DESIGNATION; PROVIDING FOR AMENDMENT TO THE BASE, LAND USE AND ZONING MAPS; PROVIDING FOR A COMPREHENSIVE PLAN AMENDMENT; PROVIDING FOR FILING WITH THE CLERK OF CIRCUIT COURT OF OKALOOSA COUNTY, THE CHIEF ADMINISTRATIVE OFFICER OF OKALOOSA COUNTY AND THE FLORIDA DEPARTMENT OF STATE; PROVIDING FOR SEVERABILITY; PROVIDING FOR SCRIVENER'S ERRORS; PROVIDING FOR LIBERAL INTERPRETATION; PROVIDING FOR REPEAL OF CONFLICTING CODES AND ORDINANCES; AND PROVIDING FOR AN EFFECTIVE DATE.

BE IT ORDAINED BY THE CITY COUNCIL OF CRESTVIEW, FLORIDA AS FOLLOWS:

SECTION 1 – AUTHORITY. The authority for enactment of this ordinance is Chapter 171, Florida Statutes, and Section 2 of the City Charter.

SECTION 2 – LAND DESCRIPTION. The following described unincorporated area contiguous to the City of Crestview, Florida, is hereby annexed to the City:

PIN # 23-3N-24-0000-0012-0000, 23-3N-24-0000-0015-0000, 23-3N-24-0000-0014-0010, 26-3N-24-0000-0002-0000 (Deed recorded in Book 3595, page 1908, dated December 21, 2021)

PARCEL 1:

An undivided one-half interest, being all my interest, in and to the following described property, to wit:

That portion of the Southwest 1/4 of the Southwest 1/4, lying East of Highway #4 (Antioch Road), LESS AND EXCEPT THE South 60 feet thereof in Section 23, Township 3 North, Range 24 West, Okaloosa County, Florida.

PARCEL IDENTIFICATION NUMBER: 23-3N-24-0000-0014-0010

PARCEL 2:

Parcel 1:

The NW ¼ of NE ¼, Section 26, Township 3 North, Range 24 West, Okaloosa County, Florida.

Parcel 2:

Begin at the NE corner of the NW ¼ if Section 26, Township 3 North, Range 24 West, Okaloosa County, Florida for P.O.B.; thence run West 1110 feet; thence run South 525.0 feet; thence run East 420.0 feet; thence run 105.0 feet; thence run East 690 feet; thence run North 630.0 feet to the Point of Beginning, containing 15.5 acres, more or less.

Parcel 3:

Commencing at an existing iron pin marking the N.E. corner of N.W. 1/4, of N.W. 1/4, of Section 26, Township 3 North, Range 24 West, Okaloosa County, Florida, also being the point of beginning; thence S 85°34'21" W a distance of 183.01 feet to a set iron pin, on East right of way line of Antioch Road; thence S 75°55'28" E a distance of 192.20 feet to a set iron pin; thence N 85°34'21" E a distance of 420.83 feet to a set iron pin; thence N 3°43'39" W a distance of 1.00 feet to a set iron pin; thence S 85°34'21" W a distance of 210.00 feet to a set iron pin; thence N 3°43'39" W a distance of 59.00 feet to a set iron pin; thence S 85°34'21" W a distance of 210.83 feet to a set iron pin; thence N 3°43'39" W a distance of 1.00 feet to the Point of Beginning.

Parcel 4:

Commencing at the SE corner of SW ¼ of SW ¼ Section 23, Township 3 North, Range 24 West, Okaloosa County, Florida, also being the Point of Beginning; thence South 85 degrees 34 minutes 21 seconds West 183.41 feet; thence North 03 degrees 4 minutes 39 seconds West 60 feet; thence North 85 degrees 34 minutes 21 seconds East 182.0 feet; thence South 03 degrees 57 minutes 28 seconds East 60 feet to Point of Beginning, containing 0.25 acres more or less.

Parcel 5:

Commencing at a lightwood post marking the Southeast comer of the Northeast Quarter of Section 26, Township 3 North, Range 24 West, Okaloosa County, Florida; thence North 00 degrees 03'13" East along the East line of said Section 26, a distance of 1838.04 feet to a 4-inch diameter concrete monument, which is 175 yards North of the Northeast corner of the Southeast Quarter of the Northeast Quarter of said Section; thence North 89 degrees 53'56" West a distance of 1317.04 feet to a 4-inch diameter concrete monument; thence South 00 degrees 08'51" East along the West line of the Northeast Quarter of the Northeast Quarter of said Section, a distance of 525 feet to a 4-inch diameter concrete monument marking the Northeast comer of the Southwest Quarter of the Northeast Quarter; thence North 89 degrees 53'55" West a distance of 1315.19 feet to a 4-inch diameter concrete monument marking the Southeast corner of the Northeast Quarter of the Northwest Quarter; thence North 00 degrees 20'55" West a distance of 618.56 feet to the Point of Beginning; thence continue North 00 degrees 20'55" West a distance of 65.0 feet; thence North 89 degrees 53'31" West a distance of 569.0 feet; thence South 0 degrees 39' 28" East a distance of 65.0 feet; thence South 89 degrees 53'31" East a distance of 569.0 feet to the Point of Beginning.

Parcel 6:

An undivided one-half interest:

Beginning at the NW corner of NE ¼ of NW 1/4, Section 26, Township 3 North, Range 24 West, Okaloosa County, Florida, thence South run 399 feet to point of beginning of the land herein conveyed, thence continue South 772 feet to the East ROW of Florida State Road #4, thence along the East ROW run in a Northerly direction 852 feet, thence run Easterly 185.5 feet to point of beginning herein conveyed.

Parcel 7:

A non-exclusive access easement over and across:

Begin at Northwest corner of NE ¼ of NW ¼, Sec 26, TWP. 3 N, Range 24 West, in Okaloosa County, Florida, thence run South 484 feet for Point of Beginning of the easement hereby granted and conveyed, thence run East 210 feet, thence run South 30 feet, thence run West 210 feet, thence run North 30 feet back to the point of beginning, situate in NE ¼ of NW ¼, Section 26, Twp. 3 North, Range 24 West in Okaloosa County, Florida, consisting of a strip of land 210 feet East and West and 30 feet North and South.

Less and Except the Following 7 Parcels:

Less Out Parcel A:

Begin at a point where the West boundary of the Northeast Quarter of the Northwest Quarter, Section 26, Township 3 North, Range 24 West, intersects with the South boundary of road to L.R. Green's; thence run South 300 feet; thence run West to the East boundary of the Florida State Road #4; thence along, on and with the East boundary of said road #4 run North to where the East boundary of road #4 intersects with the South boundary of road to L.R. Green's; thence 173 feet to point of beginning, in the Northwest Quarter of the Northwest Quarter of Section 26, Township 3 North, Range 24 West of Okaloosa County, Florida.

Less Out Parcel B:

Commencing at an iron pipe marking the NE corner of the NW ¼ of the NW ¼ of Section 26, Township 3 N, Range 24 W, Okaloosa County, Florida; run S 89°46'55" E along the N line of said Section 26 a distance of 210.0'; thence runs S 00°05'05"W a distance of 60.0' to an iron rod and the Point of Beginning; thence continue S 00°05'05" W a distance of 452.21' to a concrete monument; thence run S 89°46'55" E a distance of 210.0' to an iron rod; thence run N 00°05'05" E a distance of 452.21' to an iron rod; thence run N 89°46'55" W a distance of 210.0' to the P.O.B.

Less Out Parcel C:

Commence at the Northeast corner of the Northwest Quarter of the Northwest Quarter of Section 26, Township 3 North, Range 24 West, Okaloosa County, Florida; thence South 85°34'21" West 233.42 feet to a point on the center line of State Road 4. Said point being designated as Station 95 + 68.10, thence South 3°04'39" East along said center line a distance of 207.46 feet to the beginning of a curve to the left having a radius of 1910.08 feet, thence along said curve a distance of 293.49 feet through a central angle of 8°48'17" to a point on the curve, thence North 84°32'42" East 861.10 feet, thence South 5°27'18" East 25.00 feet to the Point of Beginning, thence continue South 5°27'18" East 105.00 feet, thence North 84°32'42" East 157.18 feet, thence North 5°27'18" West 105 feet, thence South 84°32'42" West 157.18 feet to the Point of Beginning. Contains 0.38 acres, more or less.

Less Out Parcel D:

The North 12.3 feet of the following described parcel:

Commencing at the Northwest corner of the Northeast ¼ of the Northwest ¼ of Section 26, Township 3 North, Range 24 West, Okaloosa County, Florida; thence South 03°54'17" East along the West line thereof a distance of 512.97 feet to the Point of Beginning; thence North 85°34'21" East parallel with the North line of said Section 26 a distance of 420.0 feet; thence South 03°54'17" East parallel with the said West line a distance of 300.00 feet; thence South 85°34'21" West a distance of 150.00 feet; thence South 03°54'17" East a distance of 280.00 feet; thence South 85°34'21" West a distance of 272.24 feet to the East right of way line State Road S-4 (100.00' R/W); thence North 21°35'39" West along East right of way line a distance of 306.20 feet a point of curvature; thence along the arc of a curve a distance of 296.01 feet. Said curve having a radius of 1860.08 feet, a delta angle of 09°07'05", a Chord 295.44 feet, and a chord bearing North 17°43'11" West, thence leaving said East right of way line North 85°34'21" East a distance of 165.84 feet to the Point of Beginning.

Less Out Parcel E:

Beginning at a lightwood post marking the Southeast corner of the Northeast Quarter of Section 26, Township 3 North, Range 24 West, Okaloosa County, Florida; thence North 00 degrees 03'13" East along the East line of said Section 26 a distance of 1838.04 feet to a 4-inch diameter concrete

monument, which is 175 yards North of the Northeast corner of the Southeast Quarter of the Northeast Quarter of said Section; thence North 89 degrees 53'56" West a distance of 1317.04 feet to a 4-inch diameter concrete monument; thence South 00 degrees 08'51" East along the West line of the Northeast Quarter of the Northeast Quarter of the said Section, a distance of 525 feet to a 4-inch diameter concrete monument marking the Northeast corner of the Southwest Quarter of the Northeast Quarter and the Point of Beginning; thence North 89 degrees 53'55" West a distance of 200 feet; thence run in a Northeasterly direction a distance of 301.04 feet to a point that is North 0 degrees 08'51" West and 225 feet from the Point of Beginning; thence South 0 degrees 08'51" East a distance of 225 feet to the Point of Beginning.

Less Out of Parcel F:

Commencing at an existing iron pin marking the N.E. corner of N.W. ¼, of N.W. ¼ of Section 26, Township 3 North, Range 24 West, Okaloosa County, Florida; thence N 85°34'21" E a distance of 420.83 feet to a set iron pin; thence S 3°43'39" E a distance of 61.00 feet to a set iron pin and the point of beginning; thence continue S 3°43'39" E a distance of 241.43 feet to an existing concrete monument; thence S 4°53'59" E a distance of 171.54 feet to a set iron pin; thence N 84°15'22" E a distance of 84.53 feet to a set iron pin; thence N 3°43'39" W a distance of 411.03 feet to a set iron pin; thence S 85°34'21" W a distance of 88.00 feet to the point of beginning.

Less out Parcel G:

Commencing at the Northwest corner of Northeast ¼ of the Northwest ¼ of Section 26, Township 3 North, Range 24 West, Okaloosa County, Florida; thence South 03 degrees 54 minutes 17 seconds East along the West line thereof a distance of 512.97 feet to the Point of Beginning; thence North 85 degrees 34 minutes 21 seconds East parallel with the North line of said Section 26 a distance of 420.0 feet; thence South 03 degrees 54 minutes 17 seconds East parallel with the said West line a distance of 300.00 feet; thence South 85 degrees 34 minutes 21 seconds West a distance of 150.00 feet; thence South 03 degrees 54 minutes 17 seconds East a distance of 280.00 feet; thence South 85 degrees 34 minutes 21 seconds West a distance of 272.24 feet to the East right of way line of State Road S-4 (100.00 R/W); thence North 21 degrees 35 minutes 39 seconds West along said East right of way a distance of 306.20 feet to a point of curvature; thence along the arc of a curve a distance of 296.01 feet. Said curve having a radius of 1860.08 feet, a delta angle of 09 degrees 07 minutes 05 seconds, a chord of 295.44 feet, and a chord bearing North 17 degrees 43 minutes 11 seconds West; thence leaving said East right of way line North 85 degrees 34 minutes 21 seconds East a distance of 165.84 feet to the Point of Beginning.

TOGETHER with the Easements recorded in O.R. Book 2557, page 656 and O.R. Book 2557, page 660, of the public records of Okaloosa County, Florida.

PARCEL IDENTIFICATION NUMBER: 26-3N-24-0000-0002-0000

SECTION 3 – BOUNDARY. The existing boundary line of the City of Crestview, Florida, is modified to include the herein referenced tract of land and the base, zoning and land use maps shall be updated to reflect these changes pursuant to law.

SECTION 4 – LAND USE AND ZONING. Pursuant to general law, the property hereby annexed was subject to Okaloosa County land development, land use plan, and zoning or subdivision regulations, which shall remain in full force and effect until rezoning and land use changes are finalized by the City in compliance with the Comprehensive Plan.

SECTION 5 – COMPREHENSIVE PLAN UPDATE. Pursuant to Chapter 163.011, et seq. petitioner for annexation shall apply through the City for a Comprehensive Plan change which will designate the future land use category for the parcel, with a zoning designation to be assigned and run concurrent with the approval and adoption of the Comprehensive Plan amendment by the proper authorities.

SECTION 6 – MAP UPDATE. The Base, Zoning and Future Land Use Maps shall be updated at the earliest possible date.

SECTION 7 – FILING. Upon passage, the City Clerk is directed to file a copy of this ordinance with the Clerk of Circuit Court of Okaloosa County and with the Florida Department of the State.

SECTION 8 – SEVERABILITY. If any word, phrase, sentence, paragraph or provision of this ordinance or the application thereof to any person or circumstance is held invalid or unconstitutional, such finding shall not affect the other provisions or applications of this ordinance which can be given effect without the invalid or unconstitutional provision or application, and to this end the provisions of this ordinance are declared severable.

SECTION 9 – SCRIVENER'S ERRORS. The correction of typographical errors which do not affect the intent of this Ordinance may be authorized by the City Manager or the City Manager's designee, without public hearing, by filing a corrected or re-codified copy with the City Clerk.

SECTION 10 – ORDINANCE TO BE LIBERALLY CONSTRUED. This Ordinance shall be liberally construed in order to effectively carry out the purposes hereof which are deemed not to adversely affect public health, safety, or welfare.

SECTION 11 – REPEAL OF CONFLICTING CODES, ORDINANCES, AND RESOLUTIONS. All Charter provisions, codes, ordinances and resolutions or parts of charter provisions, codes, ordinances and resolutions or portions thereof of the City of Crestview, in conflict with the provisions of this Ordinance are hereby repealed to the extent of such conflict.

SECTION 12 – EFFECTIVE DATE. This ordinance shall take effect immediately upon its adoption.

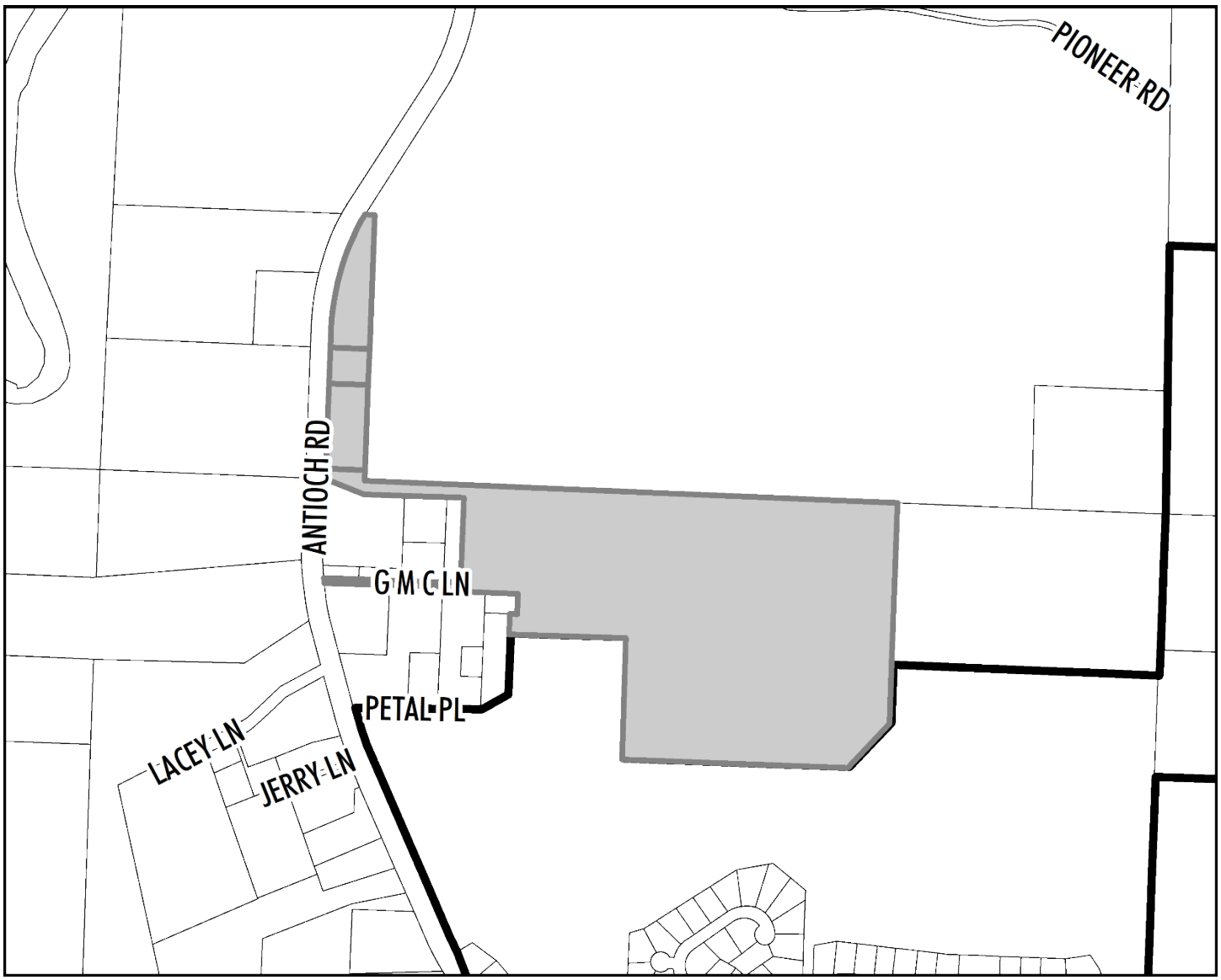
Passed and adopted on second reading by the City Council of Crestview, Florida on the 25th day of April, 2022.

ATTEST:

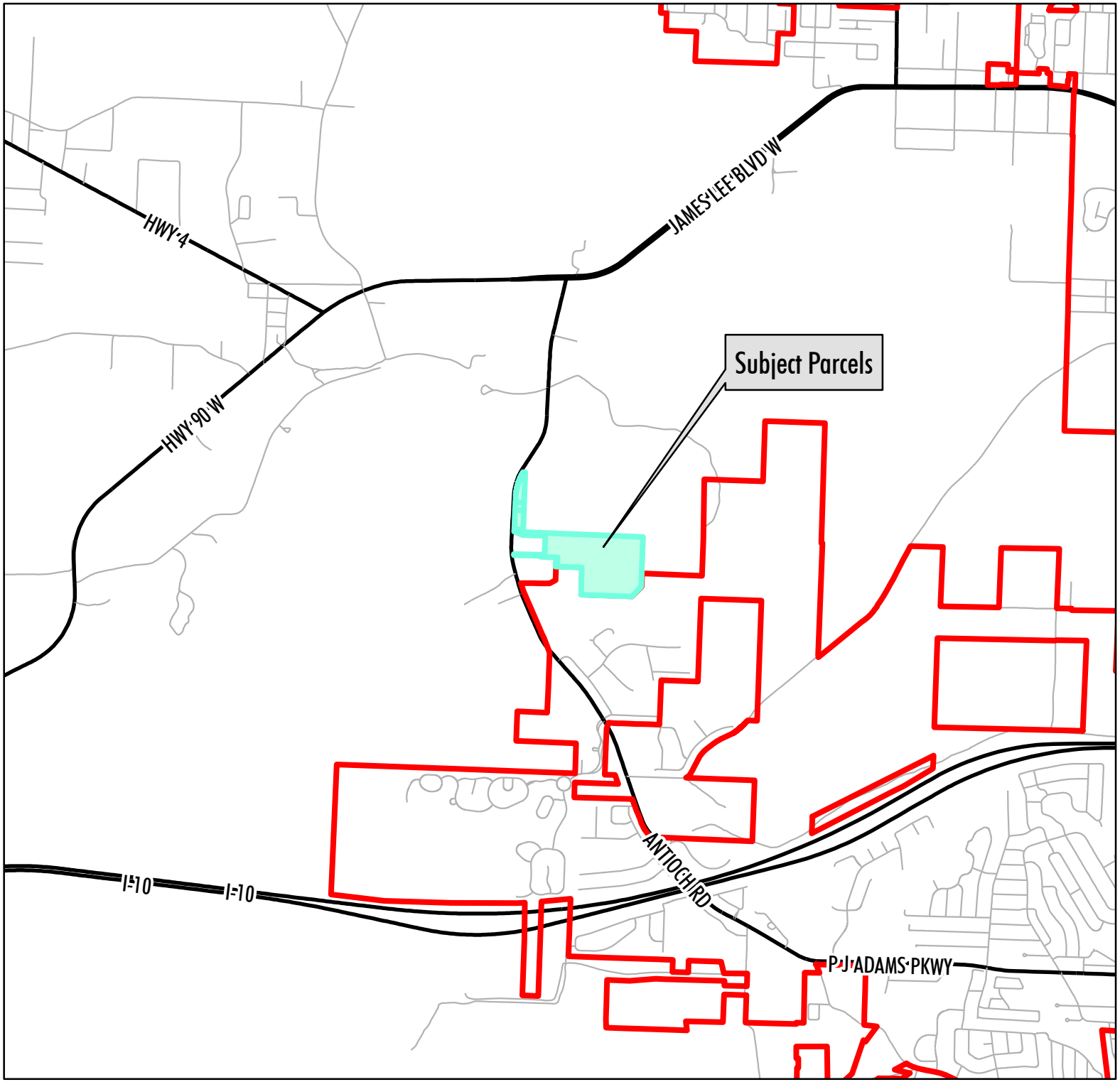
_____
Maryanne Schrader
City Clerk

Approved by me this 25th day of April, 2022.

_____
J. B. Whitten
Mayor


PIONEER RD
ANTIOCH RD
G M C LN
PETAL PL
LACEY LN
JERRY LN

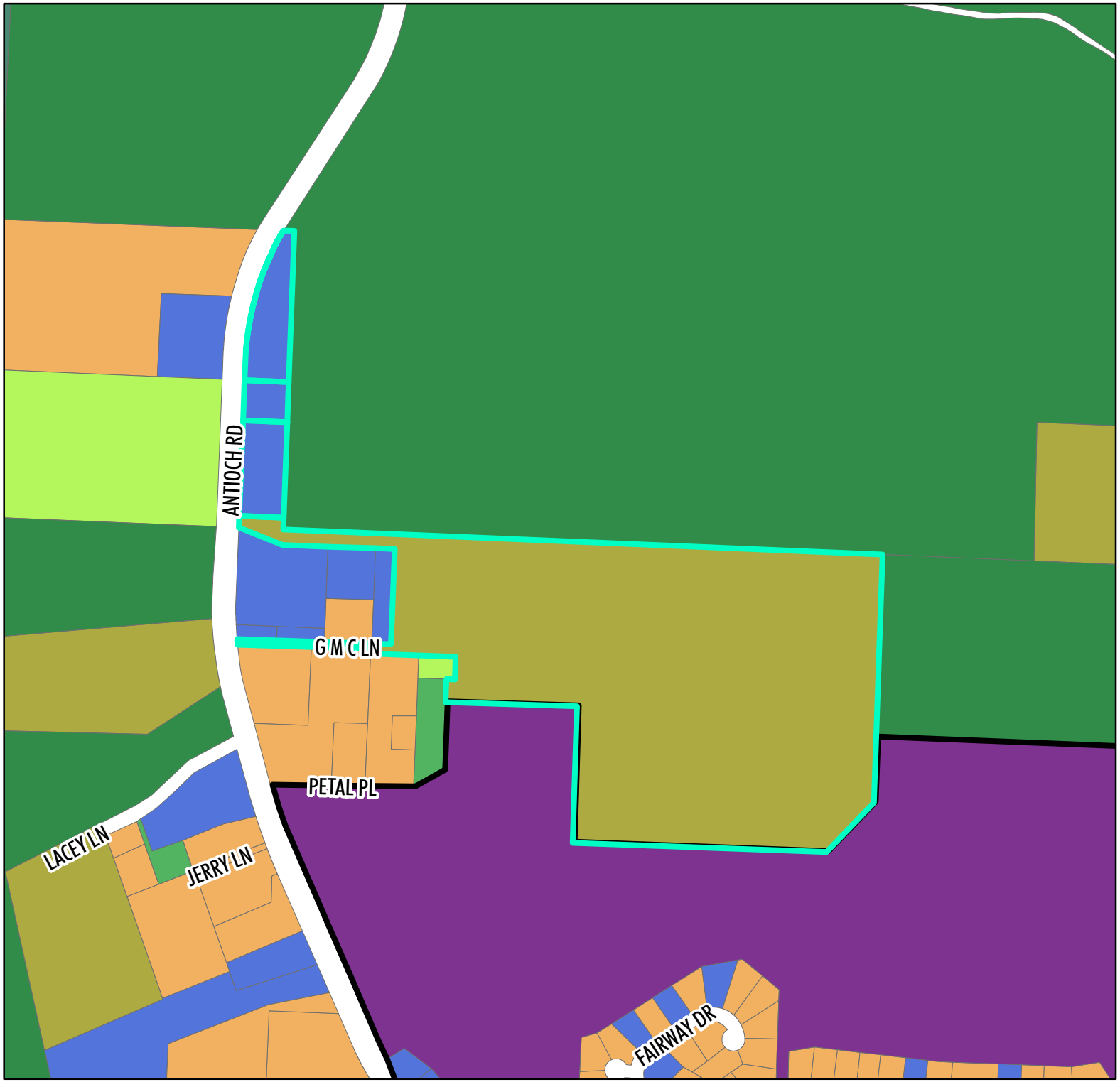
Vicinity Map



N

Not to Scale

PREPARED BY CITY OF CRESTVIEW
COMMUNITY DEVELOPMENT SERVICES
PARCEL INFORMATION PROVIDED BY
OKALOOSA COUNTY GIS DEPARTMENT
NAD 1983 STATE PLANE, NORTH ZONE
U.S. SURVEY FEET



Existing Use

N

0 300 600

Feet

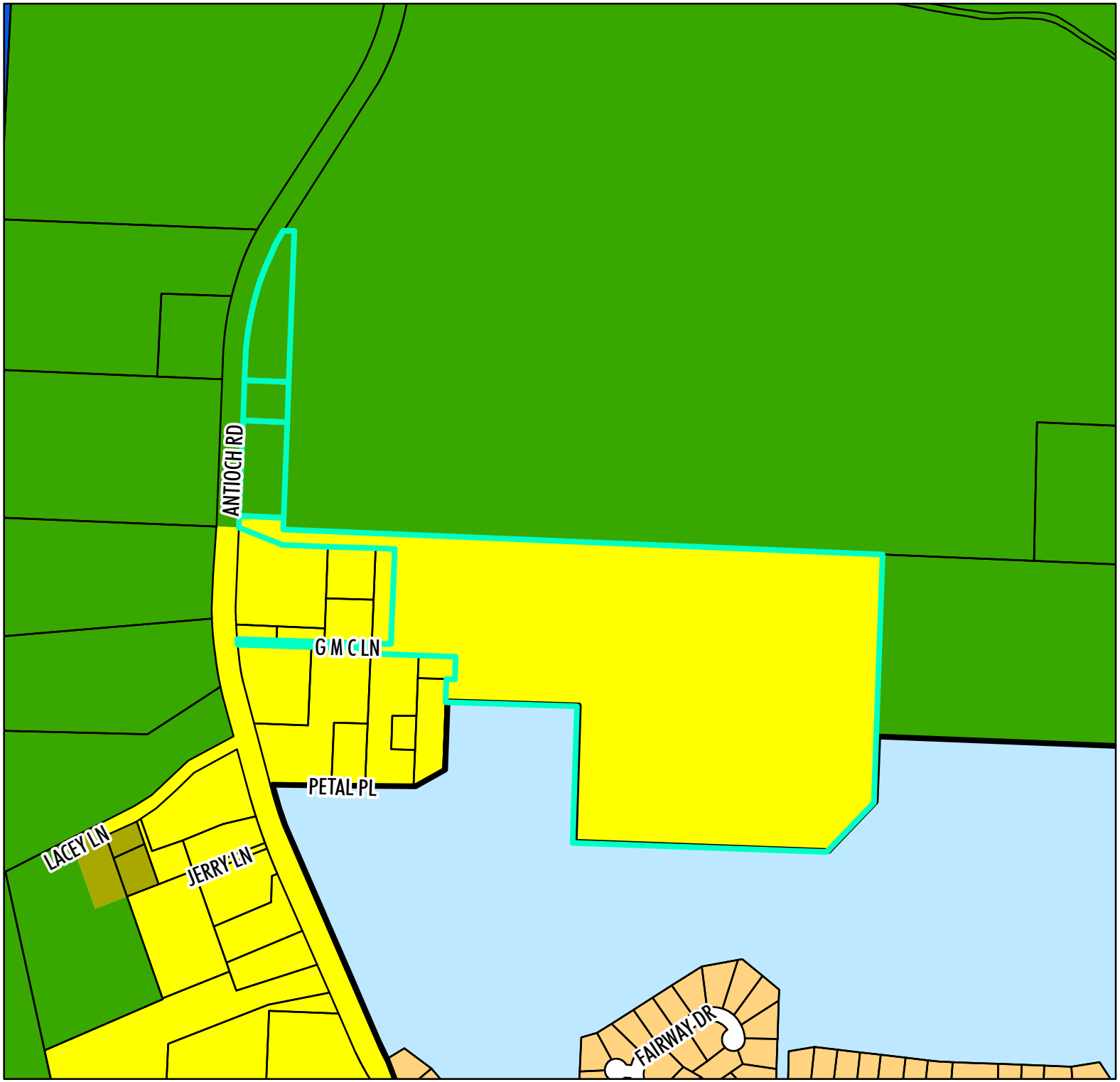
Legend

- Subject Parcel
- City Limits

Existing Use

- County
- Golf Course
- Improved A
- Mobile Home
- Single Family
- Timberland
- Vacant
- Water Managment

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COMMUNITY DEVELOPMENT SERVICES
PARCEL INFORMATION PROVIDED BY
OKALOOSA COUNTY GIS DEPARTMENT
NAD 1983 STATE PLANE, NORTH ZONE
U.S. SURVEY FEET



Current Future Land Use

N

0 300 600

Feet

Legend

- Subject Parcel
- City Limits

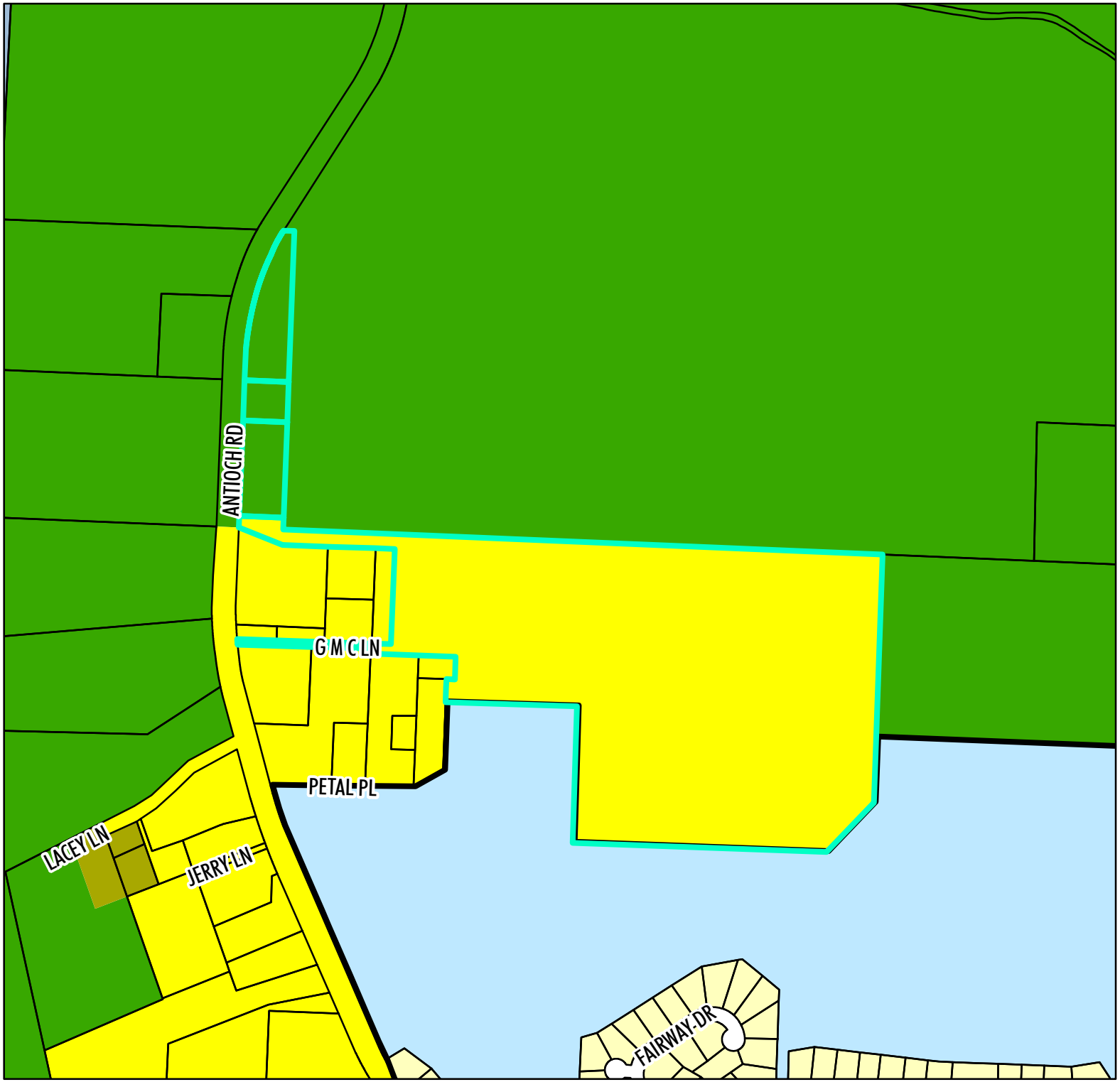
City Future Land Use

- Commercial (C)
- Industrial (IN)
- Mixed Use (MU)
- Conservation (CON)
- Public Lands (PL)
- Residential (R)

County Future Land Use

- Agriculture (AG)
- Conservation (CON)
- Low Density Residential (LDR)
- Mixed Use (MU)

PREPARED BY CITY OF CRESTVIEW
COMMUNITY DEVELOPMENT SERVICES
PARCEL INFORMATION PROVIDED BY
OKALOOSA COUNTY GIS DEPARTMENT
NAD 1983 STATE PLANE, NORTH ZONE
U.S. SURVEY FEET



Current Zoning

N

0 300 600

Feet

Legend

Subject Parcel

City Limits

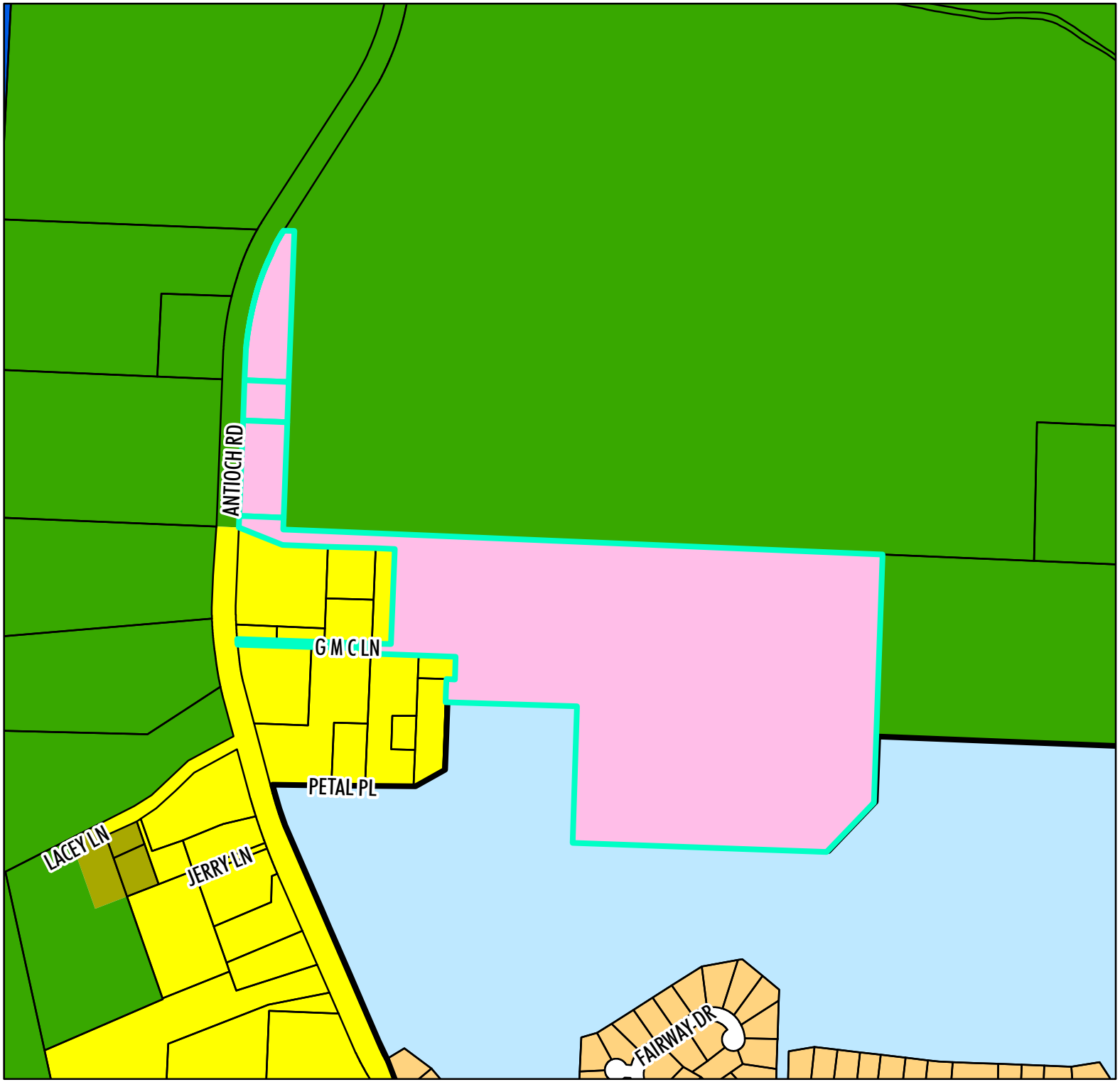
City Zoning

- Single Family Estate Dwelling District (R-1E)
- Single Family Low Density District (R-1)
- Single Family Medium Density District (R-2)
- Single and Multi-Family Dwelling District (R-3)
- Mixed Use (MU)
- Commercial (C-1)
- Commercial (C-2)
- Industrial (IN)
- Public Lands (P)
- Conservation (E)

County Zoning

- Agricultural (AA)
- Residential - 1 (R-1)
- Mixed Use (MU)
- Institutional (INST)

PREPARED BY CITY OF CRESTVIEW
COMMUNITY DEVELOPMENT SERVICES
PARCEL INFORMATION PROVIDED BY
OKALOOSA COUNTY GIS DEPARTMENT
NAD 1983 STATE PLANE, NORTH ZONE
U.S. SURVEY FEET



Proposed Future Land Use

N

0 300 600

Feet

Legend

- Subject Parcel
- City Limits

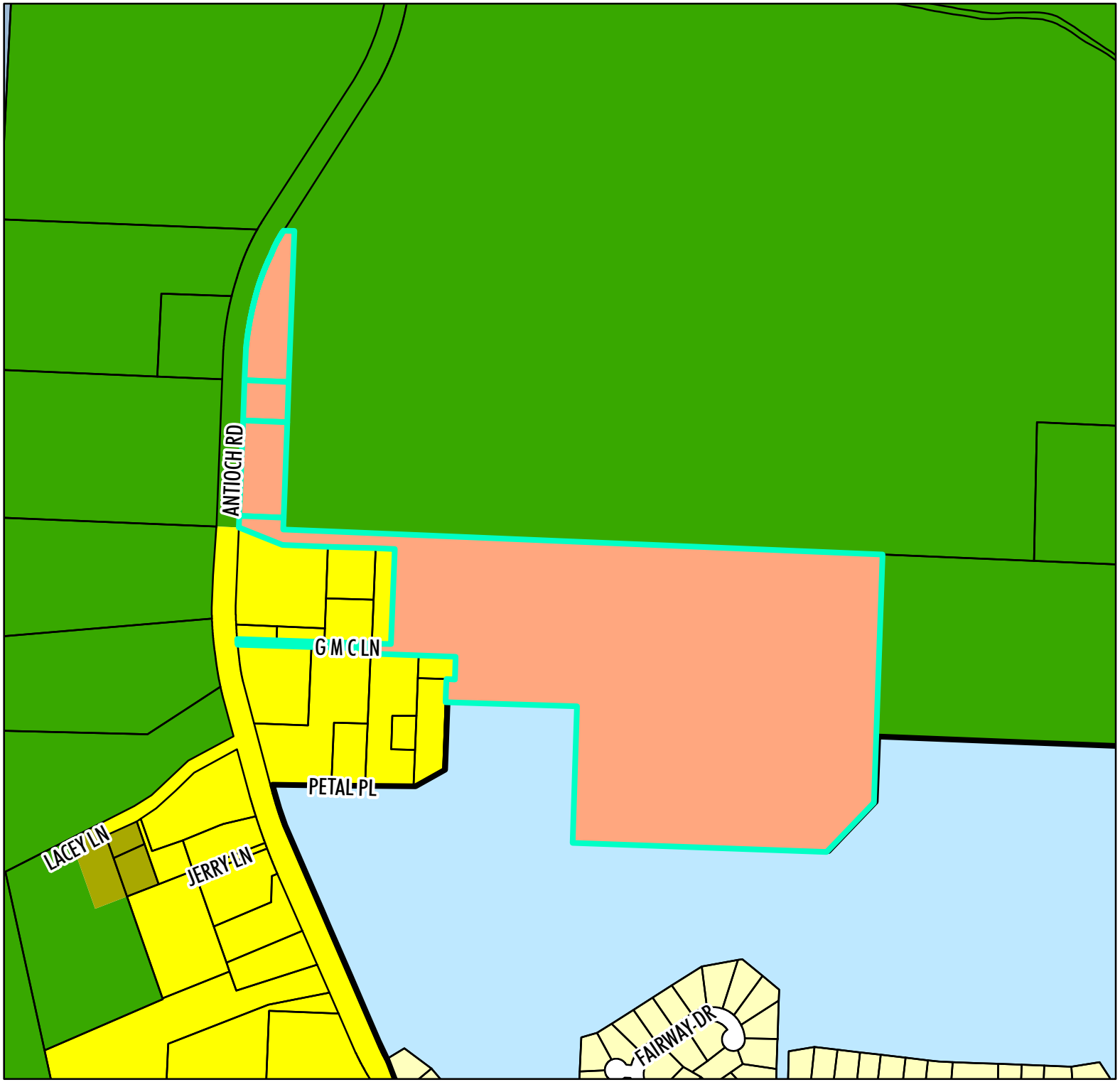
City Future Land Use

- Commercial (C)
- Industrial (IN)
- Mixed Use (MU)
- Conservation (CON)
- Public Lands (PL)
- Residential (R)

County Future Land Use

- Agriculture (AG)
- Conservation (CON)
- Low Density Residential (LDR)
- Mixed Use (MU)

PREPARED BY CITY OF CRESTVIEW
COMMUNITY DEVELOPMENT SERVICES
PARCEL INFORMATION PROVIDED BY
OKALOOSA COUNTY GIS DEPARTMENT
NAD 1983 STATE PLANE, NORTH ZONE
U.S. SURVEY FEET



Proposed Zoning

N

0 300 600

Feet

Legend

- Subject Parcel
- City Limits

City Zoning

- Single Family Estate Dwelling District (R-1E)
- Single Family Low Density District (R-1)
- Single Family Medium Density District (R-2)
- Single and Multi-Family Dwelling District (R-3)
- Mixed Use (MU)
- Commercial (C-1)
- Commercial (C-2)
- Industrial (IN)
- Public Lands (P)
- Conservation (E)

County Zoning

- Agricultural (AA)
- Residential - 1 (R-1)
- Mixed Use (MU)
- Institutional (INST)

PREPARED BY CITY OF CRESTVIEW
COMMUNITY DEVELOPMENT SERVICES
PARCEL INFORMATION PROVIDED BY
OKALOOSA COUNTY GIS DEPARTMENT
NAD 1983 STATE PLANE, NORTH ZONE
U.S. SURVEY FEET

CITY OF CRESTVIEW

Item # 8.1.

Staff Report

CITY COUNCIL MEETING DATE: April 25, 2022
TYPE OF AGENDA ITEM: Ordinance

TO:	Mayor and City Council
CC:	City Manager, City Clerk, Staff and Attorney
FROM:	Barry Henderson, Development Services Director, Nicholas Schwendt, Gis
DATE:	4/21/2022
SUBJECT:	Ordinance 1864 - Repeal 2016 Local Mitigation Strategy

BACKGROUND:

The Robert T. Stafford Disaster Relief Act, as modified by the Disaster Mitigation act of 2000, requires local governments to develop a Local Mitigation Strategy (LMS). This LMS identifies the types of natural disasters that a community is likely to experience and clearly defines hazard mitigation activities to reduce the community's vulnerability to such natural disasters. Okaloosa County adopted it's first LMS in 1999, which has subsequently been updated every 5 years since 2006, with the latest update in 2016. The City is included within the Okaloosa County LMS and is thereby required to formally adopt the LMS before it can be submitted to the Federal Emergency Management Agency (FEMA) by the State of Florida.

DISCUSSION:

In the past, the City has repealed and adopted the LMS, as amended, by ordinance. This year staff identified that the adoption of the LMS by ordinance is not necessary, and that it may be adopted by resolution, resulting in less time taken to adopt the new document and no advertising cost, versus following the process for ordinances.

As a result, this year, staff tailored this process to repeal the 2016 Local Mitigation Strategy by this Ordinance 1864, due to it having been originally adopted by ordinance. A resolution to adopt the 2021 Local Mitigation Strategy will be read following the adoption of this ordinance on second reading at the May 9th City Council meeting.

The entire 2021 LMS, as well as the section specifically pertaining to the City of Crestview has been provided as an attachment for your reference. Additionally, a draft of the proposed resolution to adopt the 2021 LMS at the next Council meeting is attached, as well.

GOALS & OBJECTIVES

This item is consistent with the goals in A New View Strategic Plan 2020 as follows;
Foundational- these are the areas of focus that make up the necessary foundation of a successful local government.
Organizational Capacity, Effectiveness & Efficiency- To efficiently & effectively provide the highest quality of public services

Infrastructure- Satisfy current and future infrastructure needs

Quality of Life- these areas focus on the overall experience when provided by the city.
Safety- Ensure the continuous safety of citizens and visitors

FINANCIAL IMPACT

Adoption of this ordinance will not have a direct impact on the city budget, but will ensure the ongoing availability of both pre- and post-disaster funds for the city and its residents.

RECOMMENDED ACTION

Staff respectfully requests a motion to approve Ordinance 1864 on First Reading and move to Second Reading for final adoption.

Attachments

1. 2021 LMS - Section 5.01 City of Crestview
2. 2021 LMS Final
3. Draft Resolution 2022-XX

ORDINANCE: 1864

AN ORDINANCE OF THE CITY OF CRESTVIEW, FLORIDA, REPEALING THE 2016 OKALOOSA COUNTY LOCAL MITIGATION STRATEGY; PROVIDING FOR AUTHORITY; PROVIDING FOR FILING OF THIS ORDINANCE WITH THE CLERK OF THE CIRCUIT COURT OF OKALOOSA COUNTY; PROVIDING FOR SEVERABILITY; PROVIDING FOR SCRIVENER'S ERRORS; PROVIDING FOR LIBERAL INTERPRETATION; PROVIDING FOR REPEAL OF CONFLICTING CODES AND ORDINANCES; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, to ensure local communities prepare for natural disasters and as a prerequisite to receive certain disaster funds, the Robert T. Stafford Disaster Relief Act (42 USC 5121-5207), as modified by the Disaster Mitigation Act of 2000 (44 CFR 201), requires local governments develop a Local Mitigation Strategy (LMS); and

WHEREAS, Okaloosa County adopted its first LMS in 1999, which it readopted with revisions in 2006, substantially revised in 2011, and further updated in 2016; and

WHEREAS, City Council adopted the 2016 Okaloosa County LMS on October 10, 2016; and

WHEREAS, Okaloosa County has updated its LMS in 2021 and submitted such plan to the Florida Division of Emergency Management (FDEM), which approved the 2021 Okaloosa County LMS on October 18, 2021; and

WHEREAS, the City of Crestview is required to formally adopt the Okaloosa County LMS prior to submittal to Federal Emergency Management Agency (FEMA) by the State of Florida; and

WHEREAS, upon review of the 2021 LMS for Okaloosa County, the City Council of the City of Crestview does formally repeal the 2016 Okaloosa County Local Mitigation Strategy to allow for the adoption of the 2021 Okaloosa County Local Mitigation strategy by resolution of the City Council to ensure the City of Crestview and its residents are able to receiver certain types of pre-disaster and post-disaster funds caused by natural disasters.

BE IT ORDAINED BY THE CITY COUNCIL OF CRESTVIEW, FLORIDA AS FOLLOWS:

SECTION 1 – AUTHORITY. The authority for enactment of this ordinance is Chapter 166.021, Florida Statutes, and Section 2 of the City Charter.

SECTION 2 – REPEAL OF 2016 LMS – The Okaloosa County 2016 Local Mitigation Strategy is hereby repealed in its entirety.

SECTION 3 – FILING. Upon passage, the City Clerk is directed to file a copy of this ordinance with the Clerk of Circuit Court of Okaloosa County and with the Florida Department of the State.

SECTION 4 – SEVERABILITY. If any word, phrase, sentence, paragraph or provision of this ordinance or the application thereof to any person or circumstance is held invalid or unconstitutional, such finding shall not affect the other provisions or applications of this ordinance which can be given effect without the invalid or unconstitutional provision or application, and to this end the provisions of this ordinance are declared severable.

SECTION 5 – SCRIVENER'S ERRORS. The correction of typographical errors which do not affect the intent of this Ordinance may be authorized by the City Manager or the City Manager's designee, without public hearing, by filing a corrected or re-codified copy with the City Clerk.

SECTION 6 – ORDINANCE TO BE LIBERALLY CONSTRUED. This Ordinance shall be liberally construed in order to effectively carry out the purposes hereof which are deemed not to adversely affect public health, safety, or welfare.

SECTION 7 – REPEAL OF CONFLICTING CODES, ORDINANCES, AND RESOLUTIONS. All Charter provisions, codes, ordinances and resolutions or parts of charter provisions, codes, ordinances and resolutions or portions thereof of the City of Crestview, in conflict with the provisions of this Ordinance are hereby repealed to the extent of such conflict.

SECTION 8 – EFFECTIVE DATE. This ordinance shall take effect immediately upon its adoption.

Passed and adopted on second reading by the City Council of Crestview, Florida on the ___ day of _____, 2022.

ATTEST:

_____
Maryanne Schrader
City Clerk

Approved by me this _____ day of _____, 2022.

_____
J. B. Whitten
Mayor

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 26,178 people according a 2020 Official Population Estimate as prepared by the University of Florida, Bureau of Economic & Business Research. 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 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 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, 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.

Utilizing the Historical Hurricane Tracks data set provided by NOAA (https://coast.noaa.gov/hurricanes) and referenced by Professor Phil Klotzbach, PhD, research scientist with the Department of Atmospheric Science at Colorado State University, the number of storms affecting Okaloosa County can be assessed. As stated above, hurricane force winds can extent 150 miles from the center. Therefor, a point placed near Destin and counting out 150 miles in both directions yields a count of 22 named storms since 2010 to 2020. This include the unique storm Amanda / Cristobal that started in the Pacific Ocean and came ashore within 150 miles of Destin.

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

Table 5.01.01.02.2: Tropical Storms within 50 miles from 1851 - 2019

					Climatological				Probability in 2021		
	Number of Events (1851-2019) (within 50 Miles)				Probability >=1 Event of Specific Intensity				Probability >=1 Event of Specific Intensity		
County	Named Storms	Hurricanes	Major Hurricanes		Named Storm	Hurricane	Major Hurricane		Named Storm	Hurricane	Major Hurricane
Escambia	79	32	11		37%	17%	6%		44%	21%	8%
Santa Rosa	70	30	9		34%	16%	5%		40%	20%	6%
Okaloosa	73	30	9		35%	16%	5%		42%	20%	6%
Walton	74	32	10		35%	17%	6%		42%	21%	7%
Bay	76	35	9		36%	19%	5%		43%	23%	6%

Source: Department of Atmospheric Science, Colorado State University and NOAA, 2021

Section 5.01.01.03 Flooding

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

City of Crestview

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. In September of 2020, more than 20 inches of rain was dumped in some areas by Hurricane Sally. This caused significant flooding and caused FDOT to close the Highway 90 bridge over the Shoal River. Throughout that event, many of the other area bridges were closed, including Interstate 10.

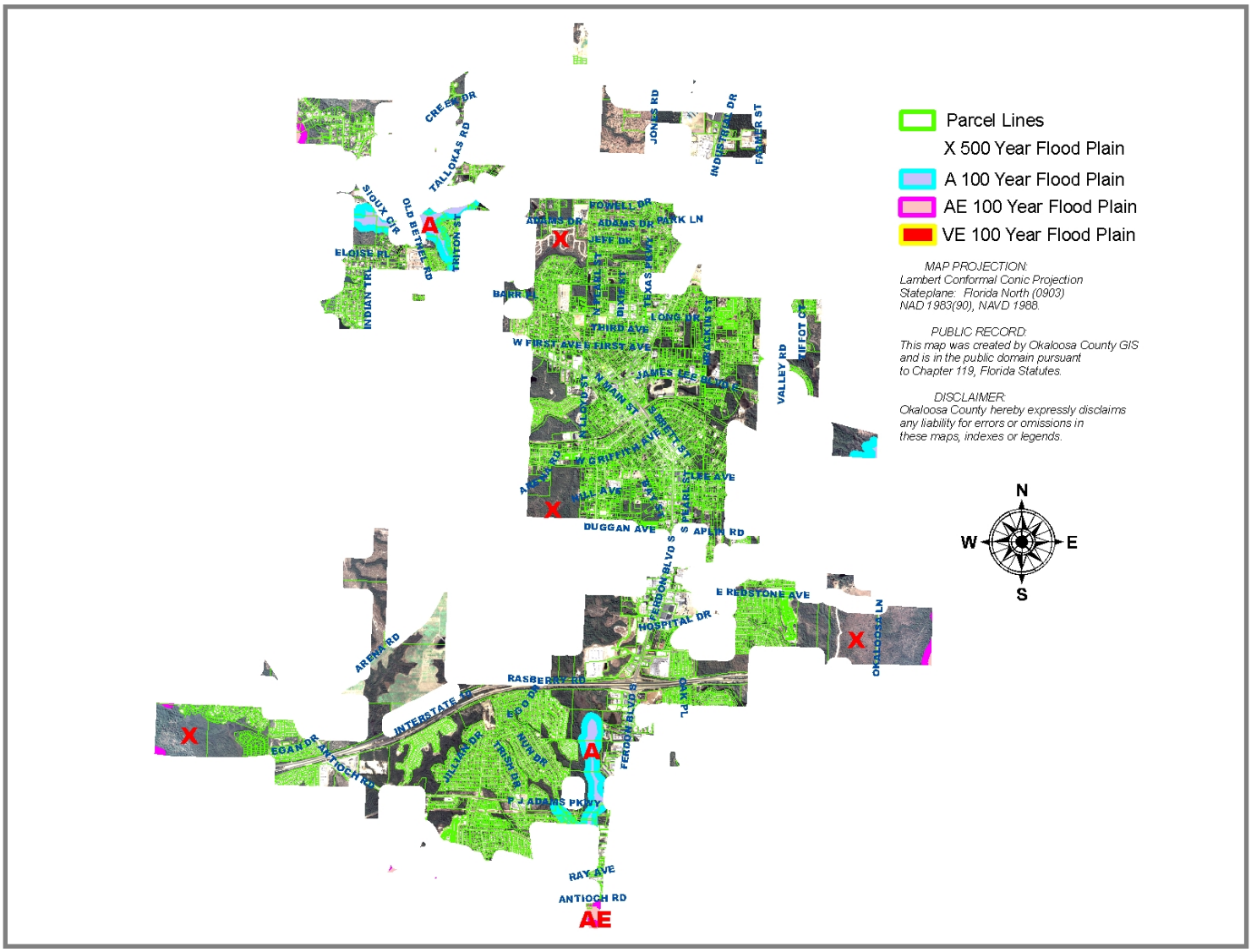
EXTENT:
The City of Crestview is susceptible to localized flooding in the areas surrounding the small streams, lakes, and rivers found within the municipality, and would likely be attributed to heavy rains associated with a hurricane, tropical storm, or severe storm. Due to the City of Crestview's location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

City of Crestview

Figure 5.01.01.03.1: The City of Crestview's Flood Zones



Source: FEMA Map Service Center, Dec 6 2002

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.

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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 back to 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, 2010

Snow is considered a very rare event and generally melts off quickly. No historical, scientific data was found regarding snowfall in the City of Crestview. But, in February 2010 there were local reports of snow flurries in the northern portion of the County and around the City of

Crestview. No official snowfall amount was recorded, as the snow flurries did not accumulate on the ground.

EXTENT:
The worst case scenario in terms of winter storms in the City of Crestview 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 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 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 branches falling. 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 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 back to the Risk Assessment of the overall County 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, 1971-2009

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

Source: Southeast Regional Climate Center, 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.

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 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 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.

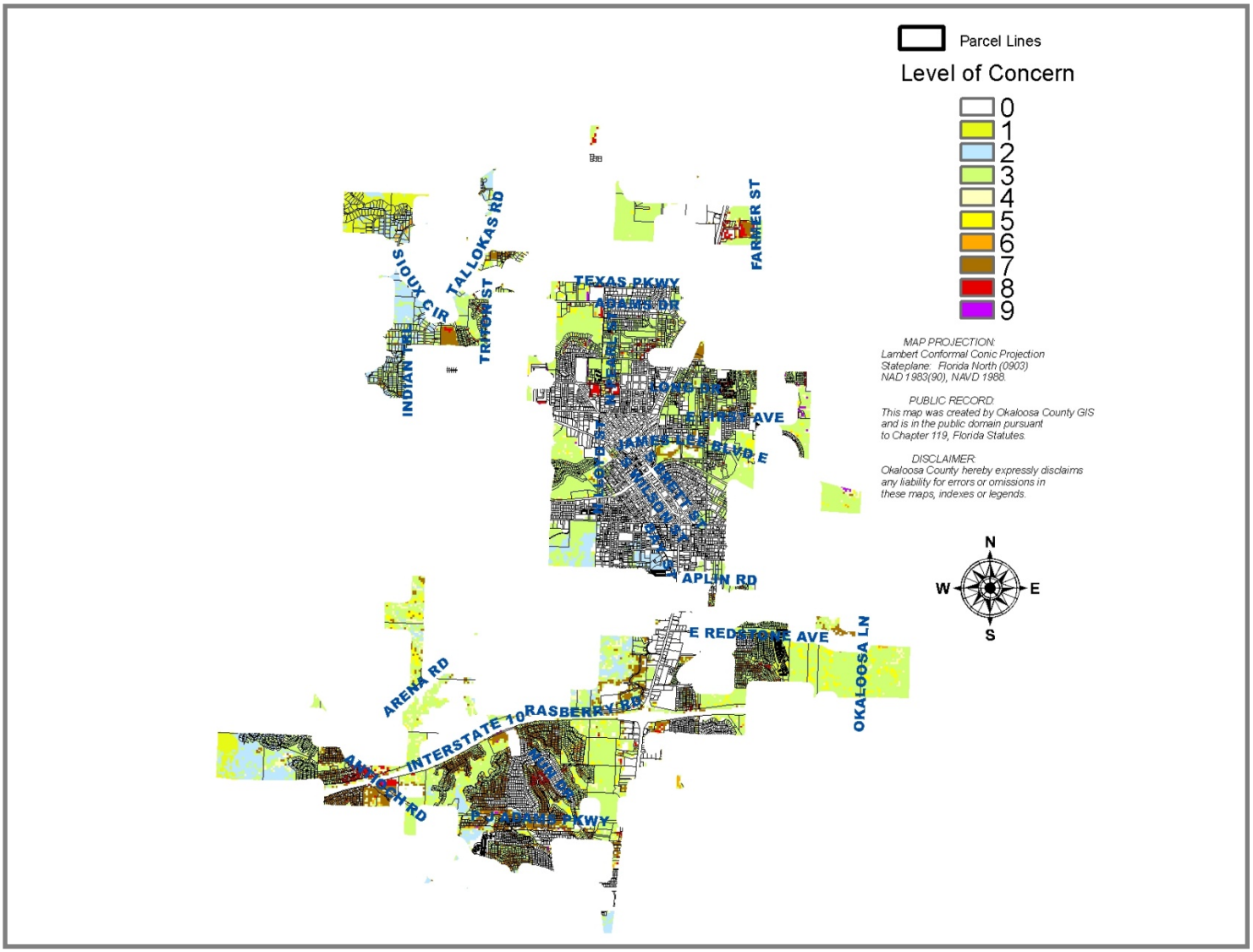
HISTORICAL OCCURRENCE:
The City of Crestview is vulnerable to wildfire. The majority of the acreage located within the municipality is urban or residential, but vast acres of open forest lands surround the City of Crestview, and these lands consists of natural vegetation historically related to the Longleaf 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, 2010

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.

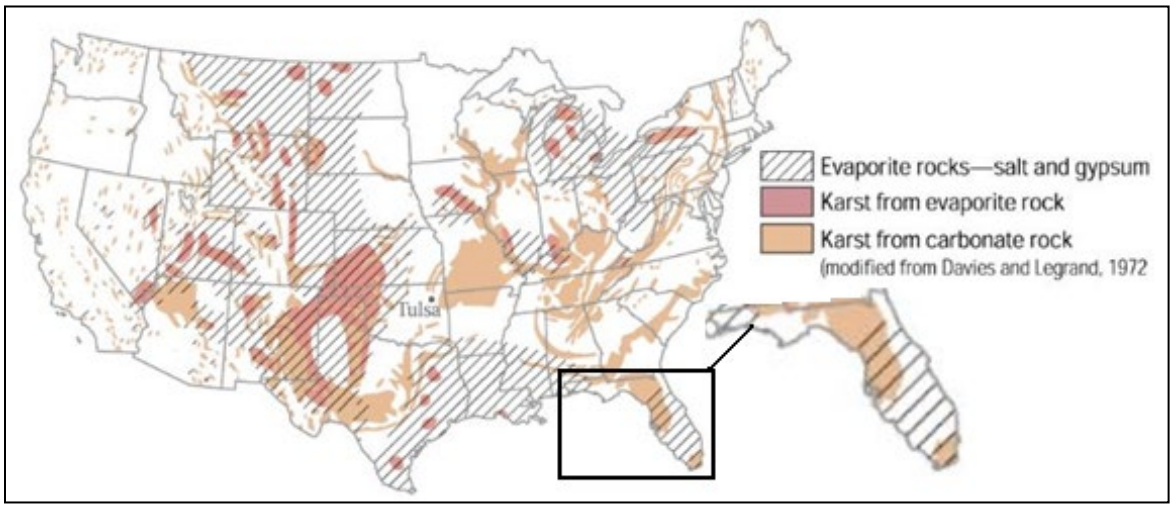
Section 5.01.01.09.04 Avalanche

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 5.01.01.10 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. The City is home to 26,178 people according a 2020 Official Population Estimate as prepared by the University of Florida, Bureau of Economic & Business Research, 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. In 2004, 68 applicants have sought building permits for residential subdivisions in the Crestview area alone. By 2019 that number has grown to 115 and for 2020 there were 145. It is reasonable to expect that the City of Crestview and the surrounding area will continue to grow as the population of Eglin Air Force Base expands.

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, 2010

Population	2010 Census Percent Population	2014 Estimate
Elderly	14.5%	3256
Language Isolation	.3%	45
Disabled	48.6%	9845
Single Parent	19.5%	1102
Poverty	13.5%	2561
Minority	18.6%	4031

Source: 2010 Census; U.S. Census Population Division

Section 5.01.02.05 Repetitive Loss Properties

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" (FEMA, 2010). 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. As of 2015 the City of Crestview does not have any current 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

Our definition of flooding only considers flooding that is a result of rainfall, which includes tropical rains during a 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 rain might cause some homes to flood particularly in low lying areas or those with poor drainage systems. In the City of Crestview, there are 9 structures located in the AE flood zone and 4 structures in the A flood zone. The cumulative 'just value' of the structures in the AE and A flood zones is $1,711,146. 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	9	$1,485,823	4	$225,323

Source: Okaloosa County Department of Growth Management, 2010

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
	658	4,104	117
Just Value	$54,554,868	$538,409,243	$53,296,853

Source: Okaloosa County Department of Growth Management, 2010

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

Total:	Commercial	Government/ Institutional
	451	56
Just Value	$215,295,972	$100,349,865

Source: Okaloosa County Department of Growth Management, 2010

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	7	225	3	7
Just Value	$651,700	$35,856,259	$430,749	$13,830,698
Level 5	18	194	1	3
Just Value	$1,587,348	$30,895,302	$286,783	$6,941,452
Level 6	0	83	2	0
Just Value	$0	$14,237,174	$328,659	$0
Level 7	1	625	1	8
Just Value	$98,316	$90,317,399	$286,783	$10,084,252
Level 8	0	99	1	5
Just Value	$0	$14,278,776	$286,783	$6,186,265
Level 9	0	12	0	1
Just Value	$0	$1,595,215	$0	$4,954,204

Source: Florida Division of Forestry and Okaloosa County Property Appraiser, 2010 (Okaloosa County 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	22	11
Just Value	$22,813,980	$36,372,509
Level 5	13	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, 2010 (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, 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 FIRE DEPARTMENT	2106 P J ADAMS PKWY CRESTVIEW FL 32536	1313718.375	628287.254
CRESTVIEW MAIN FD	203 W WOODRUFF AVE CRESTVIEW FL 32536	1317938.4	645060.2
CRESTVIEW FIRE STATION 3	585 BROOKEMEADE DRIVE	1321294.721	63641.001

Section 5.01.03.02 Law Enforcement

Site Name	Address	X-COORD	Y-COORD
CRESTVIEW PD	201 STILLWELL BLVD	1320845.377	650834.051
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/PROPERTY APPRAISER	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	500 HOSPITAL DR CRESTVIEW FL 32539	1321083.377	636256.705
CRESTVIEW MANOR	603 N PEARL ST CRESTVIEW FL 32536	1317985.4	646987.213
CRESTVIEW REHAB	1849 E FIRST AVE CRESTVIEW FL 32539	1323750.25	647646.249
SILVERCREST MANOR NURSING HOME	103 RUBY LN CRESTVIEW FL 32539	1319671.75	635144.499

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 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 preformed 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 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 5.01.04.04.01 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 5.01.04.04.02 Thunderstorms and Lightning

1. Ensure communications systems are capable to communicate during and following thunderstorms and lightning. (Responsible party: Okaloosa County Public Safety, 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 5.01.04.04.03 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 5.01.04.05 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 5.01.04.06 Wildfire

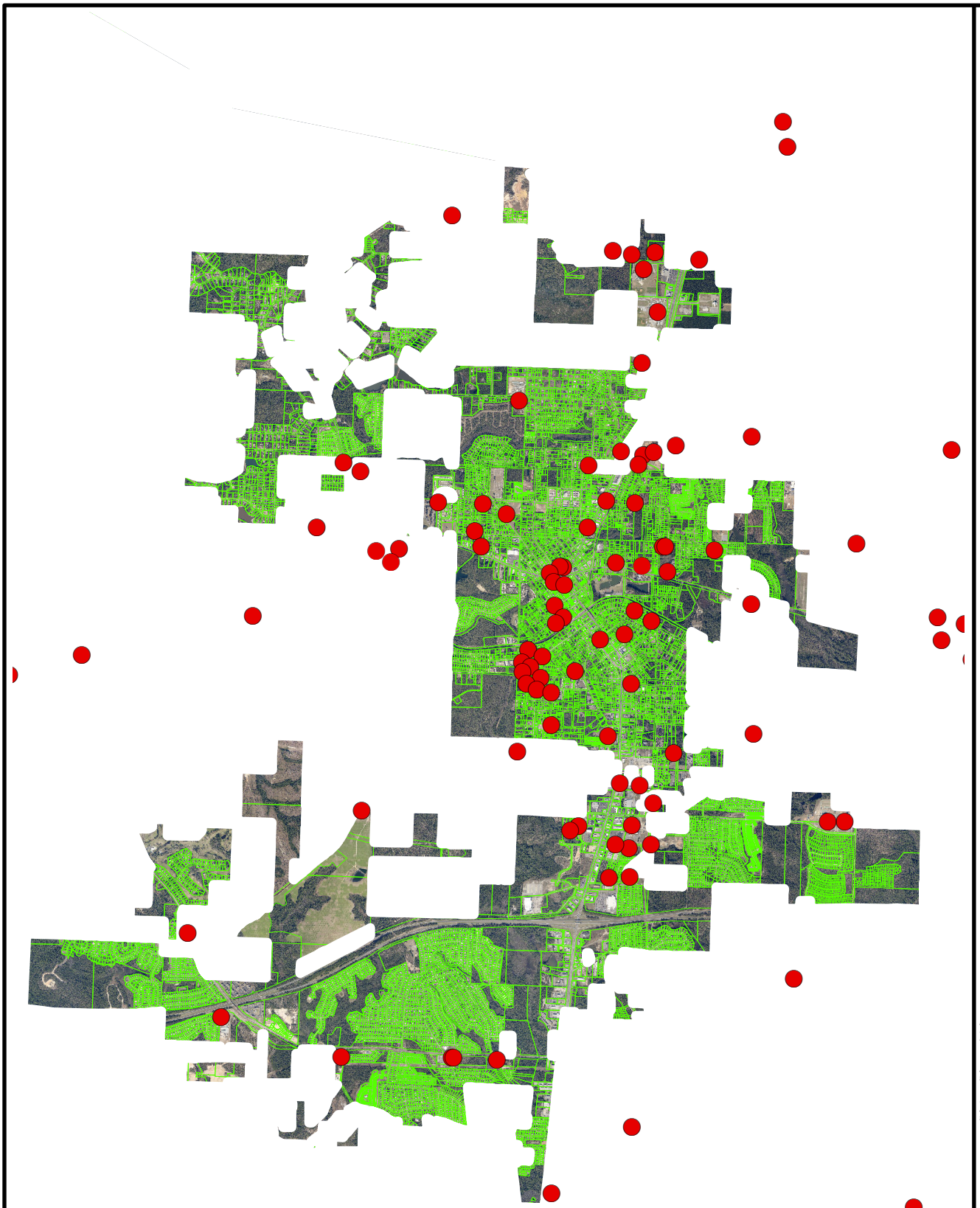
1. Ensure communications systems are capable to communicate during and following wildfire events. (Responsible party: Police and Fire) *Status: Up to Date*
2. Ensure the public is informed of pending conditions. (Responsible party: Police, Fire, Florida Division of Forestry) *Status: As Needed*
3. Support 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, 2010

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

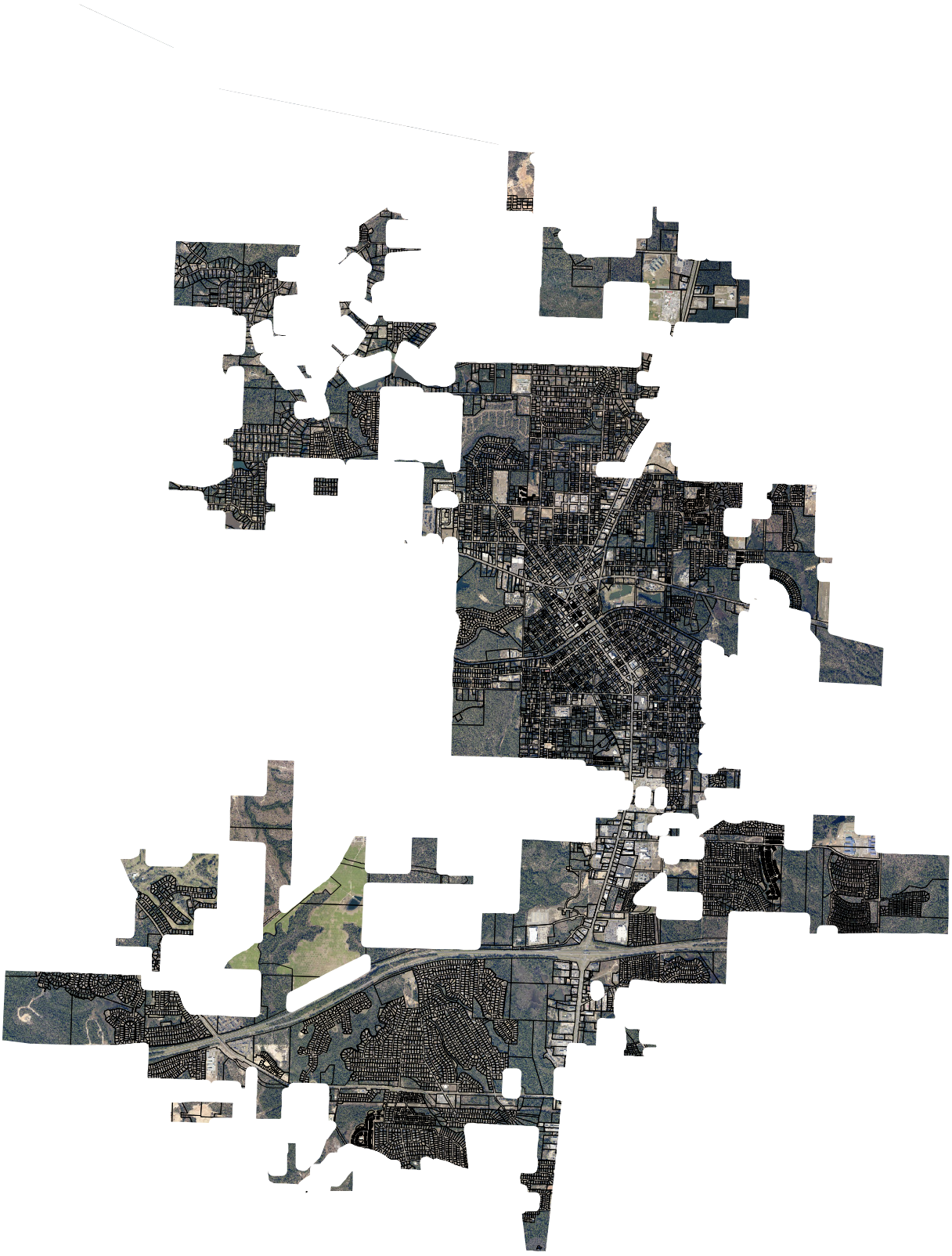
PUBLIC RECORD:
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Department of
Growth Management
01/25/2021

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, 2010

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

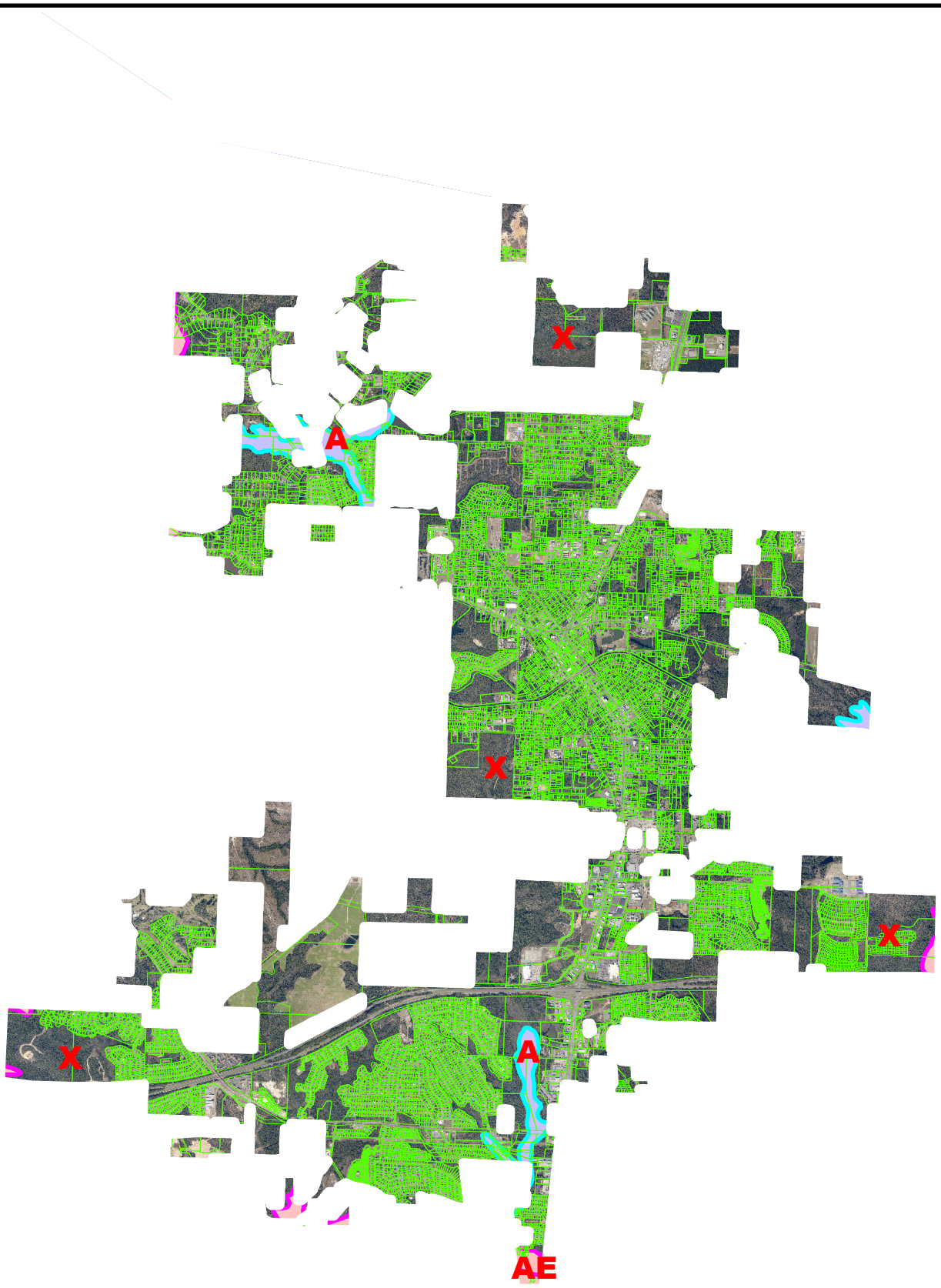
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Department of
Growth Management
01/25/2021

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, Dec 6 2002

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

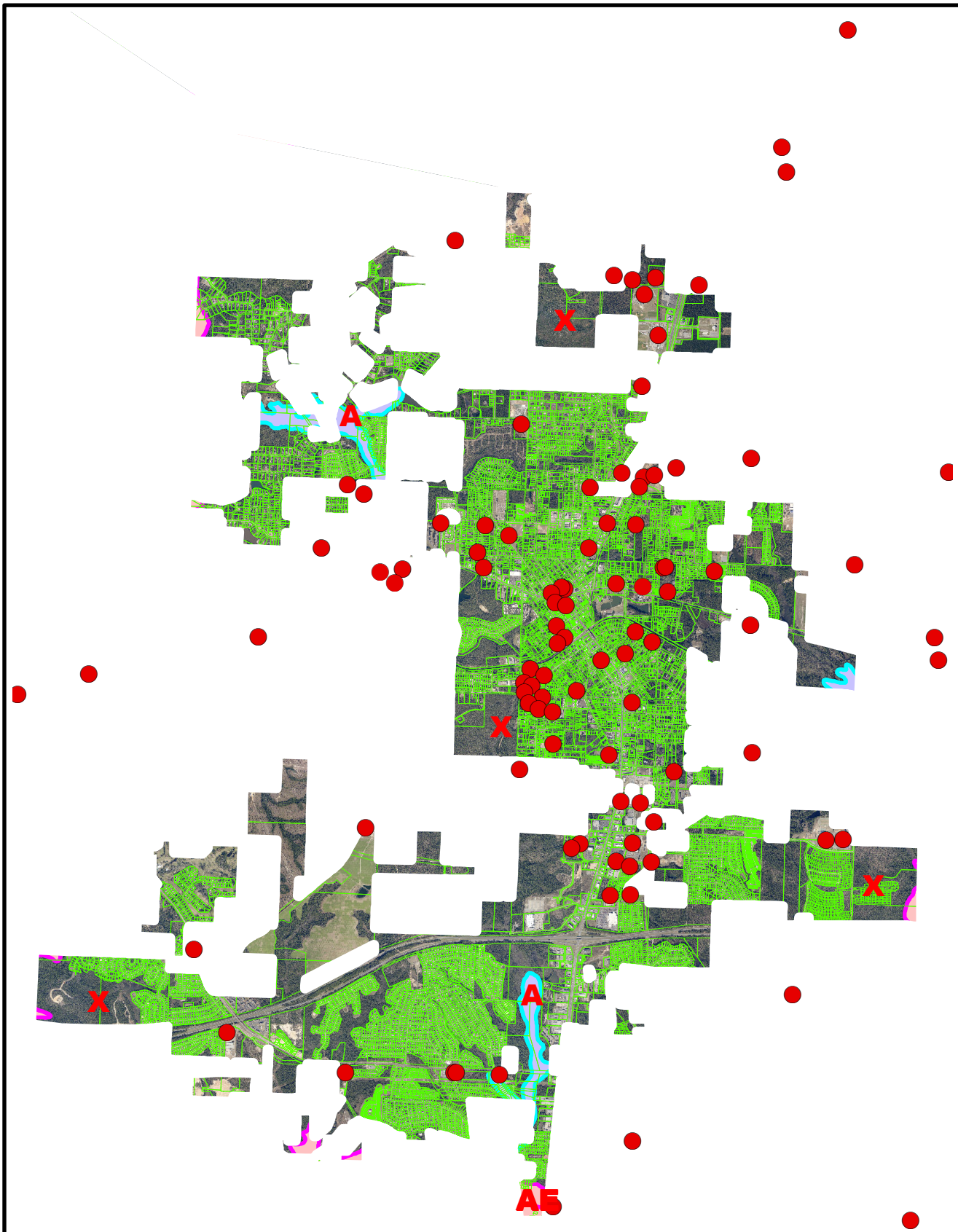
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Department of Growth Management
01/25/2021

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, Dec 6 2002

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

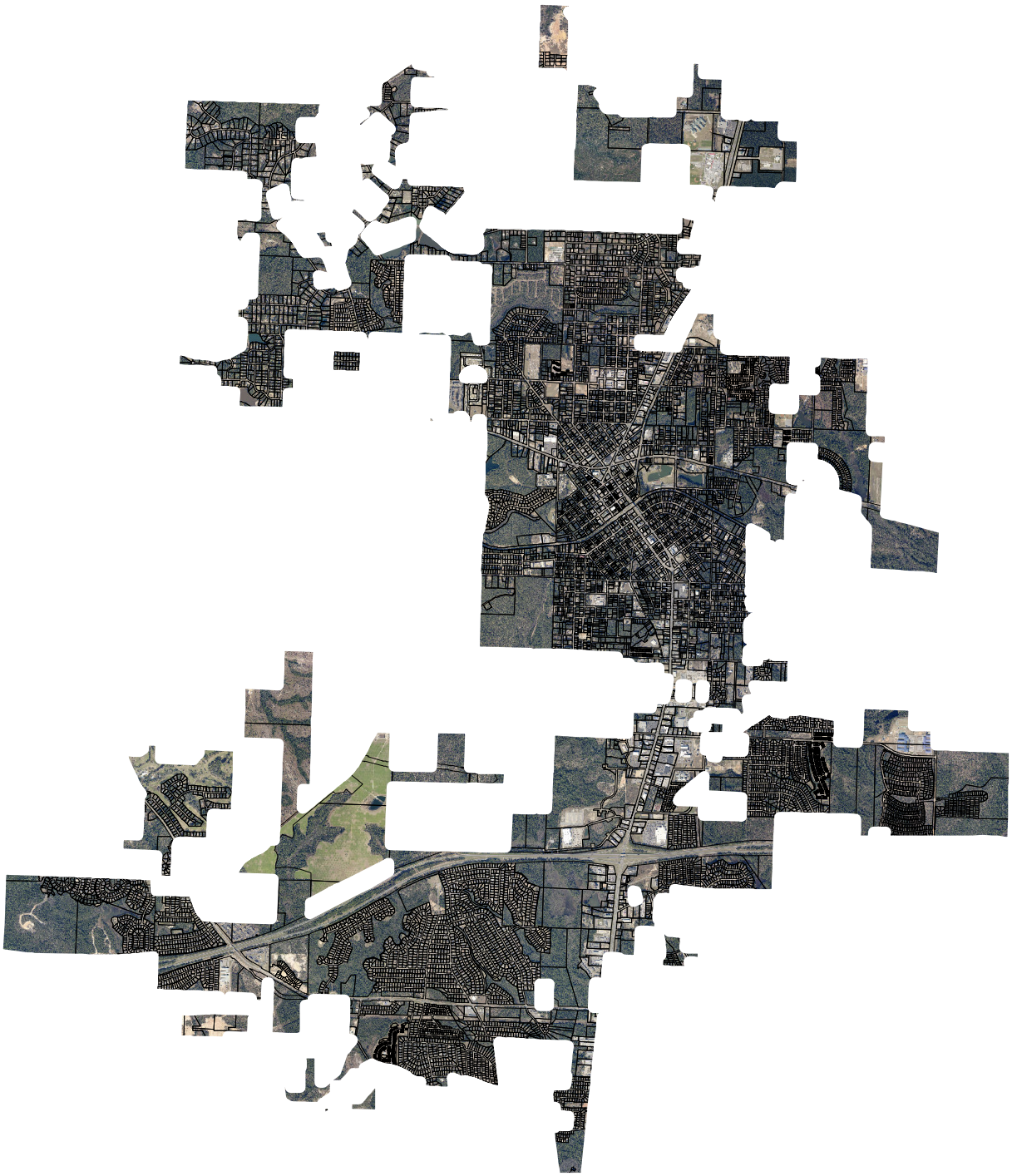
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Department of Growth Management
01/25/2021

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, 2010

MAP PROJECTION:
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Department of
Growth Management
01/25/2021



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, 2010

MAP PROJECTION:
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Department of
Growth Management
01/25/2021

Section 5.01.06 Post Disaster Redevelopment Plan

The City of Crestview has prepared and enacted a Disaster Resiliency Plan. It is the purpose of this Plan to define the actions and roles necessary to provide a coordinated response within City of Crestview, FL. This plan provides guidance to agencies within the City of Crestview with a general concept of potential emergency assignments before, during, and following emergency situations. It also provides for the systematic integration of emergency resources when activated and does not replace county or local emergency operations plans or procedures.

City of Crestview

Emergency Operations Plan

2020

Promulgation Statement

JB Whitten
Mayor
City of Crestview

CITY OF CRESTVIEW EMERGENCY OPERATIONS PLAN
PROMULGATION

The primary role of government is to provide for the welfare of its citizens. The welfare and safety of citizens is never more threatened than during disasters. The goal of emergency management is to ensure that mitigation, preparedness, response, and recovery actions exist so that public welfare and safety is preserved.

The City of Crestview Emergency Operations Plan provides a comprehensive framework for City of Crestview-wide emergency management. It addresses the roles and responsibilities of government organizations and provides a link to local, State, Federal, and private organizations and resources that may be activated to address disasters and emergencies within the City of Crestview, Florida.

The City of Crestview Emergency Operations Plan ensures consistency with current policy guidance and describes the interrelationship with other levels of government. The plan will continue to evolve, responding to lessons learned from actual disaster and emergency experiences, ongoing planning efforts, training and exercise activities, and Federal guidance.

Therefore, in recognition of the emergency management responsibilities of City of Crestview government and with the authority vested in me as the Chief Executive Officer of Crestview, Florida. I hereby promulgate the City of Crestview Emergency Operations Plan.

_____

JB Whitten
Mayor, City of Crestview

Approval and Implementation

This plan supersedes any previous Emergency Operation Plans.

The transfer of management authority for actions during an incident should be done through the execution of a written delegation of authority from an agency to the incident commander. The delegation of authority is a part of the briefing package provided to an incoming incident management team. It should contain both the delegation of authority and specific limitations to that authority.

The City of Crestview Emergency Operations Plan delegates the Mayor's authority to specific individuals in the event that he or she is unavailable. The chain of succession in a major emergency or disaster is as follows:

1. City Manager
2. Fire Chief
3. Police Chief
4. Public Works Director

_____
Date

_____
JB Whitten
Mayor, City of Crestview

Signature Page

Tim Buldoc, City Manager
City of Crestview

JB Whitten, Mayor
City of Crestview

Anthony Holland, Fire Chief
City of Crestview

Stephen McCosker, Police Chief
City of Crestview

Brona D. Steel, Public Services Director
City of Crestview

Gina Toussaint, Finance Director
City of Crestview

Brian Hughes, Public Information Officer
City of Crestview

Cesar Damiani, Information Technology
City of Crestview

Barry Henderson, Development Services
City of Crestview

Betsy Roy, City Clerk
City of Crestview

Record of Changes

Change #	Date	Part Affected	Date Posted	Who Posted

Record of Distribution

Plan #	Office/Department	Representative	Signature
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

I. Purpose, Scope, Situation, and Assumptions

A. Purpose

It is the purpose of this Plan to define the actions and roles necessary to provide a coordinated response within City of Crestview, FL. This plan provides guidance to agencies within the City of Crestview with a general concept of potential emergency assignments before, during, and following emergency situations. It also provides for the systematic integration of emergency resources when activated and does not replace county or local emergency operations plans or procedures.

B. Scope

This plan applies to all participating departments and agencies of the jurisdictions contained within the geographical boundary of City of Crestview.

C. Situation Overview

1. Characteristics

a. Location and Geography

• The City of Crestview consists of an area of an area that encompasses 16.31 square miles and is 235 feet above sea level. Crestview is located in Okaloosa County, Florida. It is situated 20 miles North of Fort Walton Beach, Fl and 20 miles South of the Alabama/Florida state line. The Shoal River borders the city to the South and East with the Yellow River bordering the West.

b. Climate

• Crestview's climate is humid subtropical. Average summer highs are 92°F with peaks in the low 100's. Average winter lows are in the 30's with the capability to occasionally reach in to the single digit range.

c. Education

• Crestview is home to seven (7) elementary schools, two (2) middle schools one (1) high school and two (2) college campuses.

d. Demographics

• The City of Crestview has a population of 23856 as of 2019. The average growth rate ranges from 1%-2% over the last five (5) years. Crestview is the 1,897th largest city in the United States. The population density is 1,463 per sq. mi which is 387% higher than the Florida average and 1479% higher than the national average.

e. Economic Base

• The City of Crestview is largely a bedroom community that supports two (2) major military insulations. The community is predominantly comprised of residential homes, retail shopping and schools. Ad valorem taxes are the largest revenue producer, accounting for 39% of the operating budget. The remainder of the cities revenues are made up from the local option gas tax, utility service tax, communication service tax, half cent sales tax and other finds/fees for services.

f. Transportation Infrastructure

• Two major highways travel through the City of Crestview. U.S Route 90 heads East-West through the city. State Road 85 heads North-South, intersecting both U.S Route 90 and Interstate 10, which also runs East-West through Crestview.

• Bob Sikes Airport is located 3 miles North East of the city center.

• CSX railroad runs East-West through the center of Crestview.

2. Hazard Profile

a. Potential Hazards

The City of Crestview is subjected to the effects of many disasters, varying widely in type and magnitude from local communities to statewide in scope.

- Natural Disasters could be a result of a number of phenomena such as, hurricanes, tropical storms, floods, severe thunderstorms, high water, drought, severe winter weather, fires (including urban, grass, and forest fires), epidemics, severe heat, high winds or earthquakes.

- Manmade Disasters could be the result of a myriad of other disaster contingencies, such as train

derailments, aircraft accidents, transportation accidents involving chemicals and other hazardous materials, chemical, oil and other hazardous material spills, leaks or pollution problems, dumping of hazardous wastes, building or bridge collapses, utility service interruptions, energy shortages, civil disturbances or riots, terrorism, warfare, applicable criminal acts, or a combination of any of these.

D. Planning Assumptions

1. Effective prediction and warning systems have been established that make it possible to anticipate certain disaster situations, such severe weather events, that may occur throughout the jurisdiction or the general area beyond the jurisdiction's boundaries. Man made events and some natural events may not be predicted but sufficient pre-planning is in place to effectively react to and recover from such events.

2. It is assumed that any of the disaster contingencies could individually, or in combination, cause a grave emergency situation within the City of Crestview. It is also assumed that these contingencies will vary in scope and intensity, from an area in which the devastation is isolated and limited to one that is wide-ranging and extremely devastated. For this reason, planning efforts are made as general as possible so that great latitude is available in their application, considering they could occur in several locations simultaneously.

3. Initial actions to mitigate the effects of emergency situations or potential disaster conditions will be conducted as soon as possible by the local government.

4. Assistance to the affected jurisdictions(s) by response organizations from another jurisdiction(s) is expected to supplement the efforts of the affected jurisdiction(s) in an efficient, effective, and coordinated response when jurisdiction officials determine their own resources to be insufficient.

5. Federal and State disaster assistance, when provided, will supplement, not substitute for, relief provided by local jurisdictions.

6. It is the responsibility of officials under this plan to save lives, protect property, relieve human suffering, sustain survivors, repair essential facilities, restore services, and protect the environment.

7. When a jurisdiction receives a request to assist another jurisdiction, reasonable actions will be taken to provide the assistance as requested.

Concept of Operations

A. General

1. Communication is maintained between affected jurisdictions and area emergency management branch offices. Where the Okaloosa County EOC is activated, two (2) Fire Department, (2) Police Department (1) Public Services representative are placed within the Okaloosa County EOC to facilitate ongoing information exchange between the Okaloosa County EOC and City of Crestview EOC.

2. Where states of emergency are declared, the City of Crestview may request state assistance. All requests for State assistance should go through the local emergency management area coordinator within the Okaloosa County EOC and the appropriate emergency management branch manager to the State Emergency Operations Center (EOC).

3. When the State EOC is activated, Florida's State Emergency Operations Center (SEOC) becomes the office of primary responsibility for the State Emergency Response Team (SERT). The director of emergency management will normally serve as SERT leader.

4. The Okaloosa County EOC will serve as the clearinghouse for response and recovery operations and for deployment of resources within the counties, including cities within the counties.

5. Planning for recovery will be implemented at the same time local governments are taking the emergency response actions necessary to protect the public. Preparations will be made for rapid deployment of resources necessary to facilitate recovery.

B. Hazard Control and Assessment

1. Perceive the threat

2. Assess the hazard

3. Select control strategy

4. Control hazard

5. Monitor hazard

C. Protective Action Selection

1. Analyze the hazard
2. Determine protective action
3. Determine public warning
4. Determine protective action implementation plan

D. Public Warning

1. Determine message content
2. Select appropriate public warning system(s)
3. Disseminate public warning

E. Protective Action Implementation

1. Monitor progress of protective action implementation
2. Control access and isolate danger area
3. Evacuation support
4. Decontamination support
5. Medical treatment
6. Special population support
7. Search and rescue

F. Short-term Needs

1. Shelter operations
2. Unite families
3. Continued medical treatment
4. Increase security
5. Stabilize the affected area

G. Long-term Needs

1. Re-entry

2. Recovery

II. Organization and Assignment of Responsibilities

A. General

Most departments/agencies of government have emergency functions in addition to their normal, day-to-day duties. These emergency functions usually parallel or complements normal functions. Each city department is responsible for **developing and maintaining its own emergency management procedures** that are maintained in their respective department emergency operations plan. (DEOP). Each DEOP is maintained as an appendix to the master City EOP and is inclusive to this overall EOP.

B. Organization & Assignment

1. Chief elected officials

    a. Mayor

        a. Responsible for enacting the City EOP to ensure preparedness, response, mitigation and recovery actions exist so that public welfare and safety is preserved.

        b. Facilitates disaster declarations

        c. Facilitates evacuation orders

        d. Facilitates re-entry decisions

    b. City Manager

        a. Reports to the City of Crestview EOC when activated.

        b. Assists with disaster declarations, evacuation orders and re-entry decisions.

    c. Council Members

        a. Provide direction and support to the EOP.

2. Crestview Police Department

    a. Police Chief reports to the City of Crestview EOC when activated.

    b. Maintain law and order

    c. Control traffic

d. Protect vital installations

e. Control and limit access to the scene of the disaster

f. Assist with all evacuation efforts

g. Assist with search and rescue

3. Crestview Fire Department

a. Fire Chief reports to and chairs the City of Crestview EOC

b. Provides fire protection and the combating of fires

c. Search and rescue

d. Decontamination

e. Assist with damage assessment

4. City of Crestview Department of Public Services

a. Public Services Director reports to the City of Crestview EOC

b. Maintaining streets, avenues, highways and other routes of travel.

c. Assisting with heavy rescue

d. Assist with decontamination

e. Engineering services as required

f. Transportation

g. Debris removal

h. Inspection of shelter sites for safe occupancy

i. Facility damage assessment, public and private, for safe occupancy

j. Enforcement of building codes

k. Maintenance of vehicles and other essential equipment of the various departments and agencies

l. Development of a plan of priorities to be used during the period of increased readiness that addresses the repair of vehicles and equipment

m. Maintenance of a reserve supply of fuel

o. Provisions for the immediate repair of emergency service vehicles and equipment, both in the field and in the shop, as the situation permits

5. City of Crestview Finance Department
    a. Finance Director reports to the City of Crestview EOC
    b. Maintaining economic stabilization efforts as required
    c. Maintaining a list of suppliers, vendors, and items of critical emergency need.
    d. Maintains accountability of all expenditures, debt and man hours dedicated to the declared event.
    e. Provides proper FEMA documentation to Okaloosa County EOC for potential reimbursements.

6. Development Services
    a. Reports to the City of Crestview EOC.
    b. Assist with facility damage assessment, public and private, for safe occupancy.

7. Public Information Officer (PIO)
    a. Reports to the City of Crestview EOC when activated.
    b. Disseminates information to the public.

8. City Clerk
    a. Reports to the City of Crestview EOC when activated.
    b. Documents all activities within the EOC.
    c. Provides for records management within the EOC.

9. Information Technology (IT)
    a. Reports to the City of Crestview EOC when activated.
    b. Maintains critical hardware such as telephones, computers, networks and internet capability during a declared event.

10. Okaloosa County Emergency Medical Services (EMS)
    a. Responsible for emergency medical treatment and transport during a declared event
    b. Provides staff for medical care in designated shelters.
    c. Assists with special needs evacuation.

11. Okaloosa County Health Department
    a. Conduct community needs assessments

b. Ensures safety, disease prevention to include vector born disease prevention

c. Provides medical support to shelters

d. Emergency interment coordination

e. Insect and pest control as required

f. Inoculations for the prevention of disease

12. North Okaloosa Medical Center (NOMC)

a. Emergency medical care

b. Limited on-site decontamination

c. Hospital evacuation

d. Traditional hospital medical services

13. Okaloosa County School District

a. Provide the use of facilities for emergency public education.

b. Providing facilities for emergency housing of evacuees and relief forces

c. Providing facilities for emergency first aid stations, emergency hospitals, or emergency morgues

d. Providing personnel for shelter managers and staff

e. Providing recreation plans for shelter occupants' use during shelter-stay period

C. Support Functions

1. Support from the National Guard may be requested through the Okaloosa County EOC from the State office of emergency management. Military assistance will complement and not be a substitute for local participation in emergency operations. Military forces will remain at all times under military command but will support and assist response efforts.

2. Support from other State government departments and agencies may be made available in accordance with the State plan.

3. Private sector organizations within the jurisdiction may assist with a wide variety of tasks based on their capabilities.

4. Volunteer agencies, such as the American Red Cross, local church/synagogue congregations, and assistive organizations, such as the Salvation Army, are available to give assistance with sheltering, feeding, and other issues, as necessary.

5. Assistance from surrounding jurisdictions may be available through the execution of a memorandum of understanding (MOU) or MOA.

III. +

IV. *Direction, Control, and Coordination

A. Authority to Initiate Actions

1. The Mayor of the City of Crestview is responsible for activating the EOP. Where the city is already responding to an unannounced event, the decision to activate the EOP will be done with the coordination of the "on scene" commander of the event.

2. Where the Mayor is not available, the ability to activate the EOP shall fall within the designated chain of succession to the Mayor.

3. Once notified, the Fire Chief is responsible for implementing the EOP. Where the Fire Chief is not available, the Police Chief shall commence implementation.

B. Command Responsibility for Specific Actions

1. With the activation of the EOP, the Emergency Operations Center (EOC) shall be activated. All activities that support the resolution of, and recovery from the declared event shall be coordinated and directed from the EOC.

2. The City of Crestview EOC will be made up of eight (9) essential support function representatives (ESF's) with the Fire Chief designated as the EOC Director of Emergency Management.

a. The eight (8) EOC, ESF's are:

a. Fire Chief (Director)

b. Police Chief

c. Public Services Director

d. City Manager

e. Development Services Representative

f. Finance Director

g. IT representative

h. Public Information Officer (PIO)

i. City Clerk

3. Incident Command System

The incident command structures used within the City of Crestview's jurisdiction shall be compliant with the National Incident Management System (NIMS). Designated incident commanders are responsible for directing on-scene emergency operations and maintaining command and control of the scene. The EOC shall provide support to the designated incident commanders. If a disaster affects multiple widely separated facilities or jurisdictions, separate incident command operations and an area command may be set up.

4. Assistance

If the City of Crestview's own resources are insufficient or inappropriate to respond to the event, a request will be made for assistance from other jurisdictions, the State, or Federal government. Such requests shall only be made through the EOC.

V. Information Collection and Dissemination

A. Disaster information managed by the City of Crestview EOC is coordinated through the ESF's located in the EOC. These representatives collect information from and disseminate information to counterparts in the field. These ESF's also disseminate information within the EOC that can be used to develop courses of action and manage emergency operations.

B. The City of Crestview PIO shall coordinate and/or disseminate all information to the public.

VI. Communications

A. Communication protocols and coordination procedures are described in detail in the City of Crestview Communications Plan (Needs to be developed). Please refer to this plan for additional information.

VII. Administration, Finance, and Logistics

A. General Policies

1. The authority to make purchases during an emergency event, where the EOP/EOC has been activated, shall rest with the members of the EOC. No purchases will be made without the EOC's approval.

2. Reference should be made to administrative requirements that are applicable to emergency operations (e.g., emergency purchasing procedures), which appear in other documents. (reference the city purchase plan)

3. Records and Reports for Resources and Expenditures.

    a. Responsibility for submitting local government reports to the State office of homeland security and emergency preparedness rests with the City of Crestview Finance Director.

    b. The Finance director shall maintain records of expenditures and obligations in emergency operations. They should also support the collection and maintenance of narrative and long-type records of response to all declared disasters.

4. Agreements and Understandings

    This section references any mutual aid agreements or emergency response and recovery contracts that exist. It also indicates who is authorized to activate those agreements or contracts. Need to identify:

    a. Existing mutual aid agreements

        a. The city of Crestview has current mutual aid agreements with the surrounding fire departments to include North Okaloosa Fire District (NOFD), Almerante Fire District, Baker Fire District, Holt Fire District and Eglin AFB. These agreements would provide or receive specific aid as requested. Where the EOP is activated, all requests would be made through the Okaloosa County EOC.

        b. The Crestview Police Department has mutual aid agreements with the Okaloosa County Sheriffs Office and other surrounding municipalities. These aid agreements are outlined in the Crestview Police Department EOP.

    b. There are currently no existing contracts for services with the City of Crestview for any emergency response or recovery.

B. Additional Policies

1. When the resources of local government are exhausted or when a needed capability does not exist within a local government, the local units of government call for assistance from the State.

2. The incident commander will submit periodic situation reports to the appropriate authorities during a major disaster using standard ICS formats.

VIII. Plan Development and Maintenance

A. Requirements

a. The Mayor of Crestview has the overall responsibility for ensuring that efficient emergency planning is being conducted.

b. The City Manager will ensure that an updated EOP is distributed appropriately.

c. Each department shall be responsible for updating their internal department plans, SOPs, and resource data to ensure prompt and effective response to and recovery from emergencies and disasters.

2. Review and Update

a. The Basic Plan and its appendices should be reviewed and updated annually.

b. Updates should be made to the EOP when any documents are no longer current. Changes in planning documents may be needed:

1) When hazard consequences or risk areas change.

2) When the concept of operations for emergencies changes.

3) When departments, agencies, or groups that perform emergency functions are reorganized and can no longer perform the emergency tasks laid out in planning documents.

4) When warning and communications systems change.

5) When additional emergency resources are obtained through acquisition or agreement, the disposition of existing resources changes,

or anticipated emergency resources are no longer available.

6) When a training exercise or an actual emergency reveals significant deficiencies in existing planning documents.

7) When State or Federal planning standards for the documents are revised.

IX. Authorities and References

A. Legal Authority

1. Federal

a. The Robert T. Stafford Disaster Relief and Emergency Assistance, Public Law 93-288 as amended

b. Public Employees Occupational Safety and Health Act (PEOSHA) regulations

B. References

1. Federal

a. Comprehensive Preparedness Guide (CPG) 101: Developing and Maintaining State, Territorial, Tribal, and Local Government Emergency Plans, March 2009.

b. Homeland Security Exercise and Evaluation Program (HSEEP), February 2007.

c. National Incident Management System (NIMS), December 2008.

d. National Response Framework, Federal Emergency Management Agency, January 2008.

2. State

a. State EOP

3. Local

a. Local EOPs

b. Inter-local agreement(s)

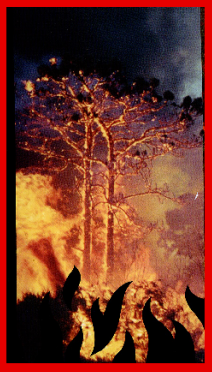
OKALOOSA COUNTY LOCAL MITIGATION STRATEGY 2021













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PREPARED BY OKALOOSA LOCAL MITIGATION STRATEGY COMMITTEE APRIL 2021

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Section 5.10.04.01 Hurricane and Tropical Storm
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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 has developed the 2016 Local Mitigation Strategy and under this directive the 2021 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 2021 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

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 2010 and 2015, and so this plan serves as the necessary five (5)-year plan update as required by FEMA. The 2021 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 approval of the 2021 LMS are found in Appendix E.

Okaloosa County is exposed to a number of natural hazards: hurricanes and tropical storms; storm surge; flooding; dam safety; land erosion; severe storms; heat wave and drought; wildfire; 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 2021 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 2021 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 2021 LMS update has culminated in the publication of this document: "The Okaloosa County 2021 Local Mitigation Strategy (LMS) Update."

Chapter 1 Executive Summary and History

The first section of the 2021 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 2021 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 2021 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 shall include:*
>
> *(i.) 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. AND*
>
> *(iv.) For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.*

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 2021 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.

Appendix

The Appendix to the 2021 LMS Update includes the project list and project submittal sheets for all jurisdictions. The project list has been compiled according to the criteria established in Chapter 3 of the 2021 LMS Update. Also included is a list of changes to the LMS for documentation. The 2021 Annual outreach letter and mail out list are referenced here, along with the current member list; minutes of the 2020 & 2021 LMS Committee meetings and other support documentation.

This document details the work of the Okaloosa County LMS Committee over the past several months to develop the planning organization, to undertake the needed 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 2021 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. This current plan serves to address all of the necessary requirements, which includes updating and making revisions to the 2005 LMS plan. 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 and this 2021 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_____: Adopting 2021 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/Emergency Management
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 of Mary Esther
City of Niceville
Town of Shalimar
City of Valparaiso
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 September 2020 when the current (2016) LMS document was reviewed by Okaloosa County Planning Coordinator Sherry Reed, who has 37 years of experience with Okaloosa County in planning and is a Certified Floodplain Manager; Okaloosa County Planning Manager, Randy Woodruff, AICP, and Okaloosa County Growth Management Director, Elliot Kampert, AICP.

Ms. Reed, Mr. Woodruff, and Mr. Kampert evaluated the 2016 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 did not indicate any need to revise the criteria used to rank the mitigation projects, and so this 2021 Plan continues to utilize the criteria approved by the LMS Committee for the 2016 Plan update.

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 Plan, this 2021 Plan is an update, not a complete re-write of the document.

It should be noted that the substantive review of the 2016 LMS leading to this 2021 edition occurred in 2020 during the initial surge of COVID-19 cases. Beginning with Florida Governor Ron Desantis' Executive Order 20-52 and continuing to the time of this writing, the implementation of social distancing and other COVID-related precautions has severely curtailed public meetings and gatherings. The Okaloosa County Board of County Commissioners has followed the Governor's lead, adopting Resolution 20-37 establishing a local state of emergency that has been extended weekly and remains in effect as of this writing.

Due to the social distancing requirements, meeting limitations, and other challenges (staff quarantines, temporary office closures, and other issues) presented by the COVID-19 pandemic

which began at roughly the same time as the update process, much of the Committee work was accomplished by way of email, telephone, and other means that did not necessitate face to face meetings or the sharing of physical documents in order to limit contact and help prevent the spread of the virus. For this reason, the LMS Committee only met as a body when absolutely necessary.

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. 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. 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 2021 LMS Plan was presented to the LMS Committee and made available for public comments at a public meeting held on February 11, 2021.

Section 1.02.03 Public and Private-Sector Participation

During the development of the 2021 LMS Plan Update, the public was allowed to participate in the discussions of the LMS Committee meetings though, as previously discussed, the meetings were limited as a result of the COVID-19 pandemic. In addition to the regular meetings which are open to the public, additional public meetings were held in December 2020; February 23, 2021 and March 3, 2021, to provide an opportunity for the general public to comment and ask questions about the 2021 LMS plan prior to transmittal to the State. These meetings were advertised in the local newspaper of record, the *Northwest Florida Daily News*. In addition, the municipal representatives received email reminders of the meetings. During meetings, the public was encouraged to ask questions, give comments, and become a LMS Committee member. The County representatives email addresses and contact information was 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 2021 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. The 2021 LMS plan was critically examined to see how the contents compared to the Crosswalk requirements and necessary elements were revised. The 2021 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 2021 Plan retains the 2011 and 2016 Plans' ranking criteria for projects that are consistent with other plans or planning documents, and provides for the prioritization of projects in the event of a tie.

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 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

With the exception of the City of Laurel Hill, all jurisdictions as well as the County are members of the National Flood Insurance Program (NFIP) and participate in the Community Rating System (CRS); therefore, special attention was given during the drafting of the 2021 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 2021 LMS plan:

Who: All participating jurisdictions.

What: Incorporate the CRS requirements into the 2021 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 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 (February 2016 to January 2021) compared to the previous update period (February 2011 to January 2016):

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

Feb 2011 thru Jan 2016 =	1,488
Feb 2016 thru Jan 25, 2021 =	1,768

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

Feb 2011 thru Jan 2016:	217,230
Feb 2016 thru Jan 27, 2021:	322,807

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, and in some parts of eastern Okaloosa County in the Destin area. As in the north, there has been an increase in development activity for the time period of this update (February 2016 to January 2021) compared to the previous update period (February 2011 to January 2016):

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

Feb 2011 thru Jan 2016	863
Feb 2016 thru Jan 2021	1488

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

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 the 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 ~~increasing populations~~ 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 2021 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 2021 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 2021 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 fact, Okaloosa County has, concurrent with this update of the LMS, also 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. During the development and adoption of the new floodplain regulations (which closely follow the model code promulgated by the Florida Division of Emergency Management), Okaloosa County included local amendments to the Florida Building Code as provided in section 553.73(4), Florida Statutes that create a more stringent development standard within Coastal A zones that does not allow the use the fill material to achieve necessary elevations. Instead, the amendments require piling or hydrostatically vented stemwall construction, thereby limiting displacement of flood storage area and limiting structural damage. 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 storm water management requirements for even single family homes and additions.

The updated 2021 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 time line 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 2021 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 DEO which captures any changes within the 2021 LMS plan.

Every five (5) years, all components of the LMS plan will be completely updated and comprehensively evaluated; therefore, this 2021 LMS plan will be substantially revised and a new LMS plan will be submitted to DEO in 2026. The LMS Committee Chair will be responsible for carrying out all the necessary tasks to ensure that the 2021 plan is completed and consistent with state and federal requirements. The LMS will begin its review of the 2021 LMS for substantial update in 2025 no later than June 2024.

In June 2024, the LMS committee will conduct a public kick-off meeting that will begin the re-evaluation process. Throughout 2025, 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 Division of Forestry, and the Northwest Florida Water Management District 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 2025.

Local Mitigation Strategy (LMS) Committee Organization

Section 2.01 By-Laws

2.01.01 Purposes of the Local Mitigation Strategy Committee

The purpose of the Okaloosa County Local Mitigation Strategy (LMS) Committee is to reduce 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 a comprehensive multi-jurisdictional plan (aka the Local Mitigation Strategy) for hazard mitigation as provided in Section 322 of the Robert T. Stafford Disaster Relief Act that is intended to accomplish this purpose and to promote a sustainable and disaster-resistant community.

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 December 2020
Okaloosa County/Growth Management Dept.
Okaloosa County/Public Works Dept.
Okaloosa County/Emergency Management
City of Cinco Bayou
City of Crestview
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 of Mary Esther
City of Niceville
Town of Shalimar
City of Valparaiso
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 (attached hereto as Exhibit 1 and made a part of). 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. A 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, which is empowered by the County Board of County Commissioners to accept and disburse funds, enter into contracts, hire staff, and take such other actions as necessary in support of, or for the benefit of, the LMS Committee.

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. 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 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 presented. 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

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 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 jurisdictions 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. For the 2021 LMS plan, the project ranking criteria have been revised to emphasize projects that are practical and feasible, so once funding becomes available they will be implemented first (*Note* Project Ranking Criteria is further explained in Section 3.02).

The LMS Committee has utilized and incorporated into this 2021 LMS relevant components of existing County plans and documents which address the identified hazard, including: 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. They are unchanged from the 2016 LMS goals which the LMS Committee determined continue to adequately serve the purpose of this 2021 edition.

Goal 1 – Continually provide mechanisms for local government jurisdictions and the public to accomplish mitigation activities in Okaloosa County.	
Accomplish by:	
	-Maintain 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 between the LMS Committee and 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 a website on the County's web server that discusses 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, 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, emergency management, chambers of commerce, etc.) to connect mitigation to these efforts.
	-Being perceptive of and proactively engage new opportunities to promote mitigation interests.
	-Developing a website that conveys updated information about mitigation activities on a continual basis.
	-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 hazards identified to at risk locations in the County and its municipalities by implementing the following mitigation actions.	
Accomplish by:	
- Implementing Stormwater improvements by adopting the Capital Improvements Program (CIP)	
- Utilize grant funds when available to elevate, purchase property and demolish structures and return the property to a natural state	
- Hardening of County facilities	

Section 3.03 Explanation of 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 criterion, 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 on this LMS' goals, but also the goals, objectives, and policies of local governments' comprehensive plans, comprehensive emergency management 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:

1. Reduce flood losses;
2. Facilitate accurate insurance rating; and
3. 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:

1. Public Information,
2. Mapping and Regulations,
3. Flood Damage Reduction, and
4. 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:

1. 0 pts= Does not meet the criteria
2. 2 pts= Meet the Public Information element for CRS credit
3. 3 pts= Meet the Maps and Regulations element for CRS credit

4. 4 pts= Meet the Flood Damage Reduction element for CRS credit
5. 5 pts= Meet 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:

1. 0 pts= Not Applicable
2. 1 pts= An improvement that provides minimal benefits ($\leq$ 20%)
3. 3 pts= Improvements that provide a moderate increase in benefits ($\geq$ 20% but $\leq$ 30%)
4. 5 pts= Improvements that provide a high amount of community benefits ($\geq$ 40%)

3.03.03 Consistency

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 the Comprehensive Plan's and Capital Improvements Plan's. 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:

1. 0= Not consistent or referenced in the goals and objectives of the LMS and other governmental documents
2. 5= Is consistent or referenced with the goals and objectives of the LMS and other governmental documents

Supporting documentation is required regarding the project's consistency.

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:

1. -3= The project will have negative environmental impacts
2. 1= The project will have little (or neutral) environmental impacts
3. 3= 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:

1. 0= Does not have a perceived effect on the prevention of loss of life for the population which the project is directed towards

2. 1= 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. 3= There is a perceived positive effect on the prevention of loss of life for the intended population in a moderately hazardous area (Category 3 or higher storm surge, Flood zone A or AE)

4. 5= There is a perceived positive effect on the prevention of loss of life for the intended population in a highly hazardous area (Category 2 or lower 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:

1. 0= Does not qualify for a grant or grant program; does not have funding assistance; does not have locally allocated funds for the project
2. 2= Does qualify for a grant or grant program; does not have funding assistance; does not have locally allocated funds for the project
3. 3= 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):
1. 0= Does not acquire Repetitive Loss Structure(s)
2. 2=Does acquire Repetitive Loss Structure(s), but not Severe Repetitive Loss
3. 4= 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:

1. 0= Does not prevent property damage
2. 4= 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	Medium	Low
	(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. Consistent with LMS goals and objectives	0 pts	5 pts	
2. Consistent with other governmental documents' goals and objectives (i.e. Comprehensive Plan)	0 pts	5 pts	
3. Existing governmental document(s) referenced in project (i.e. Capital Improvements Plan)	0 pts	5 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

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:
Historically, 11 hurricanes and 13 tropical storms have made landfall within 50 nautical miles of Okaloosa County between 1950 and 2015. 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 1950-2020

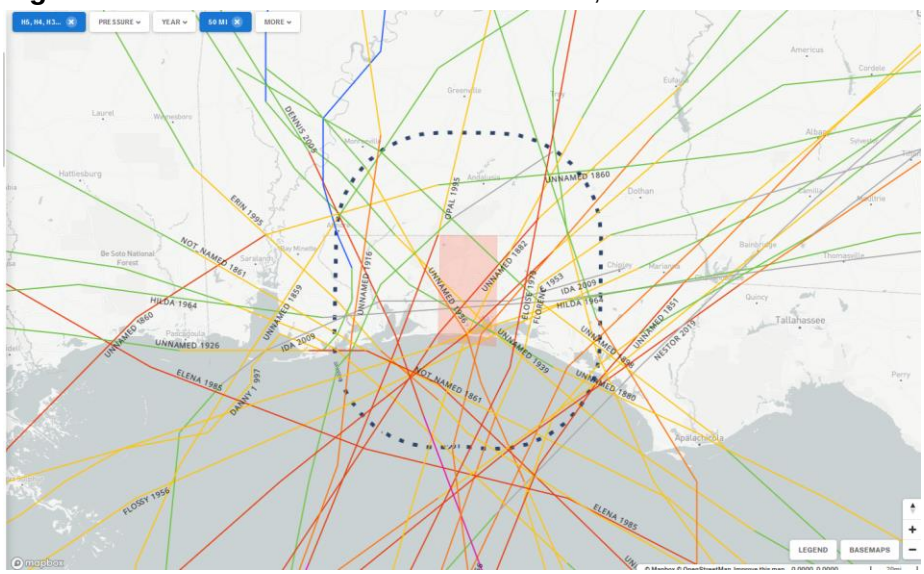
Year	Storm Name	Wind Speed (KTS)	Pressure (MB)	Category
1953	ALICE	40	0	TS
1953	FLORENCE	90	0	H2
1953	FLORENCE	70-80	0-985	H1
1956	FLOSSY	65-80	0-980	H1
1956	FLOSSY	45	0	TS
1957	DEBBIE	35	0	TS
1959	IRENE	45-50	0-1001	TS
1965	NOT NAMED	45	0	TS
1975	ELOISE	105-110	955-958	H3

1985	ELENA	110	953	H3
1985	JUAN	40-55	982-984	TS
1994	ALBERTO	45-55	993-1000	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
2000	HELENE	35-50	1001-1006	TS
2001	BARRY	60	991-992	TS
2004	IVAN	130	964	H4
2005	ARLENE	50-55	990-991	TS
2005	DENNIS	120	930	H4
2005	DENNIS	110	942	H3
2008	FAY	40	998-999	TS
2009	CLAUDETTE	40-50	1005-1008	TS
2018	ALBERTO	45	994	TD
2018	MICHAEL	155 (Highest Wind 60mph Okaloosa County)	919	H4
2020	SALLY	39 (Cat 2 for center of storm only TD for Okaloosa County, Heavy rain)	965	TD

Note: This hurricane data was condensed due to multiple entries of the same storm. Some of the storms are listed twice to reflect the change in the storm's classification.
Source: NOAA Coastal Services Center, 2020

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 1950-2020.

Figure 4.01.02.1: Historical Hurricane Tracks, 1851- 2020 within 50 miles of Okaloosa



Source: NOAA Coastal Services Center, 2020

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 in the neighboring state of 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 and storm surge caused severe structural damage and beach erosion in Okaloosa County. Hurricane Michael a major hurricane in 2018 glanced Okaloosa County causing minimal damage.

Historically, Okaloosa County has experienced a peak 5% chance of hurricane or tropical storm landfall as indicated in the table 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 hurricane season starts June 1st and spans to November 30th.

In the past the county has suffered significant damage. 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. Another issue that arose from the damages were issues with unlicensed contractors.

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. 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 the worst-case scenario of a Category 5 hurricane, there will be significant to catastrophic damage to homes and buildings, trees, service utilities, and signage. In particular to power pole damage, there would be extensive widespread system destruction anticipated, which can include transmission/substation damage. 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 to 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, 2015

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. The storm surge data is currently being updated and will be finalized by Florida Department of Emergency Management (FDEM) in late February 2021, and the data will be updated once finalized by the State.

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 Planning 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.

Damage from the other 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 4ft.

Table 4.01.03.2: Tropical Storm and Hurricane Surge Levels, 1975-2018

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

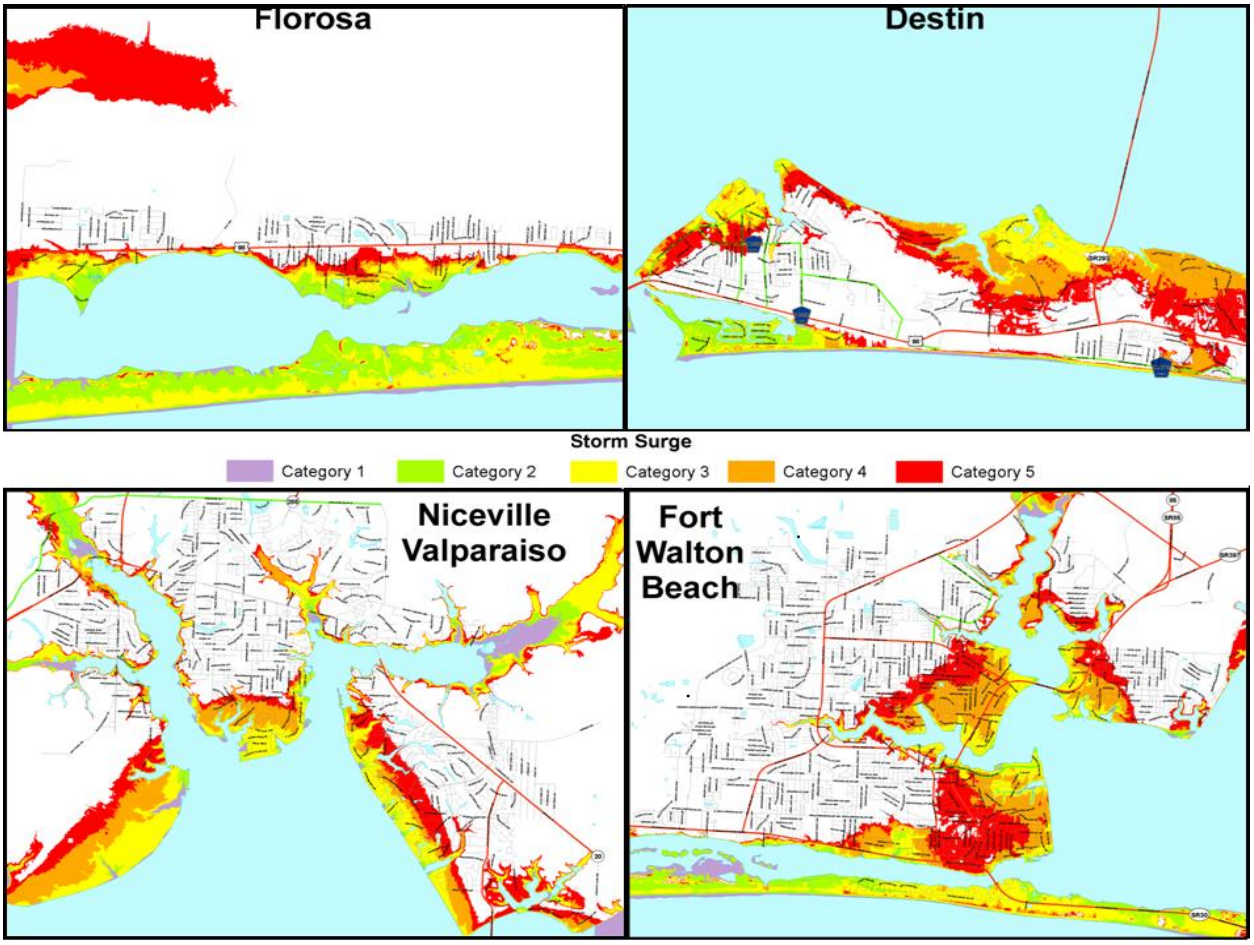
1998	Earl (H1)	4.0 feet
2000	Helene (TS)	1.0 feet
2001	Barry (TS)	0 feet
2004	Ivan (H4)	9.0-13.0 feet
2005	Arlene (TS)	0 feet
2005	Dennis (H4/H3)	0 feet
2008	Fay (TS)	0 feet
2009	Claudette (TS)	1.70-2.32 feet
2018	Michael (H4) No direct impact to Okaloosa County	4 ft

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

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 up to 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 Planning Council

Some of the coastal areas, particularly on Okaloosa Island, may experience storm surge levels up to 21 feet above mean sea level during a Category 5 hurricane (see Figure 4.01.03.1). The largest area of the county susceptible to storm surge are those areas lying adjacent to the Choctawhatchee Bay Area Basin and the Gulf of Mexico. These areas include virtually the entire southern portion of the county, totaling roughly 123,963 people. This population estimate was extrapolated from 2000 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 Planning Council, 2010

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:
This section only considers flooding that is the result of rainfall, which includes heavy rains associated with a hurricane, tropical storm, or severe storm over a period of several days. However, a flash-flood differs in that it is the result of intense rainfall over a short period of time (National Weather Service, 2010). 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. With the exception of the City of Laurel Hill, all of Okaloosa County's municipalities as well as the County participate in the National Flood Insurance Program (NFIP). In addition, the County, along with the City of Destin, City of Fort Walton Beach, City of Mary Esther, City of Niceville, and the Town of Shalimar participate in the NFIP Community Rating System.

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 - 2020

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

Source: NOAA's National Climatic Data Center,

Table 4.01.04.3: Flood warning calls from Okaloosa County's Alert Okaloosa System, 2007-2020

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 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, the chart 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, 2004-2015

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.

Source: Florida Department of Environmental Protection, Wastewater Program, 2015

EXTENT:
Flooding can severely impact 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 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 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 incorporated population in these areas was estimated at 63,559 people in 2019. This is the best available data; the 2020 U.S. Census data has not been released as of this document.

Table 4.01.04.5: Population by Municipality, 2019 Estimate

County/Municipality	2010 Census	Estimate Base	2019 Estimate
Okaloosa County	180,822	180,488	210,738
Cinco Bayou	383	380	430
Crestview	20,978	21,065	25,274
Destin	12,305	12,150	14,247
Ft. Walton Beach	19,507	19,635	22,521
Laurel Hill	537	526	626
Mary Esther	3,851	3,786	4,180
Niceville	12,749	12,978	15,972
Shalimar	717	717	808
Valparaiso	5,036	5,013	5,401

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	210,738
e	151,338
Eglin A.F.B's Census Tract	4,608
Census Tracts North of Eglin A.F.B.	54,792

Source: 2019 Census, Total Population

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.

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.

The 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 repair of roads and their associated infrastructure (culverts, etc.) would easily run into the 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 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 1970-2009 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.

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.

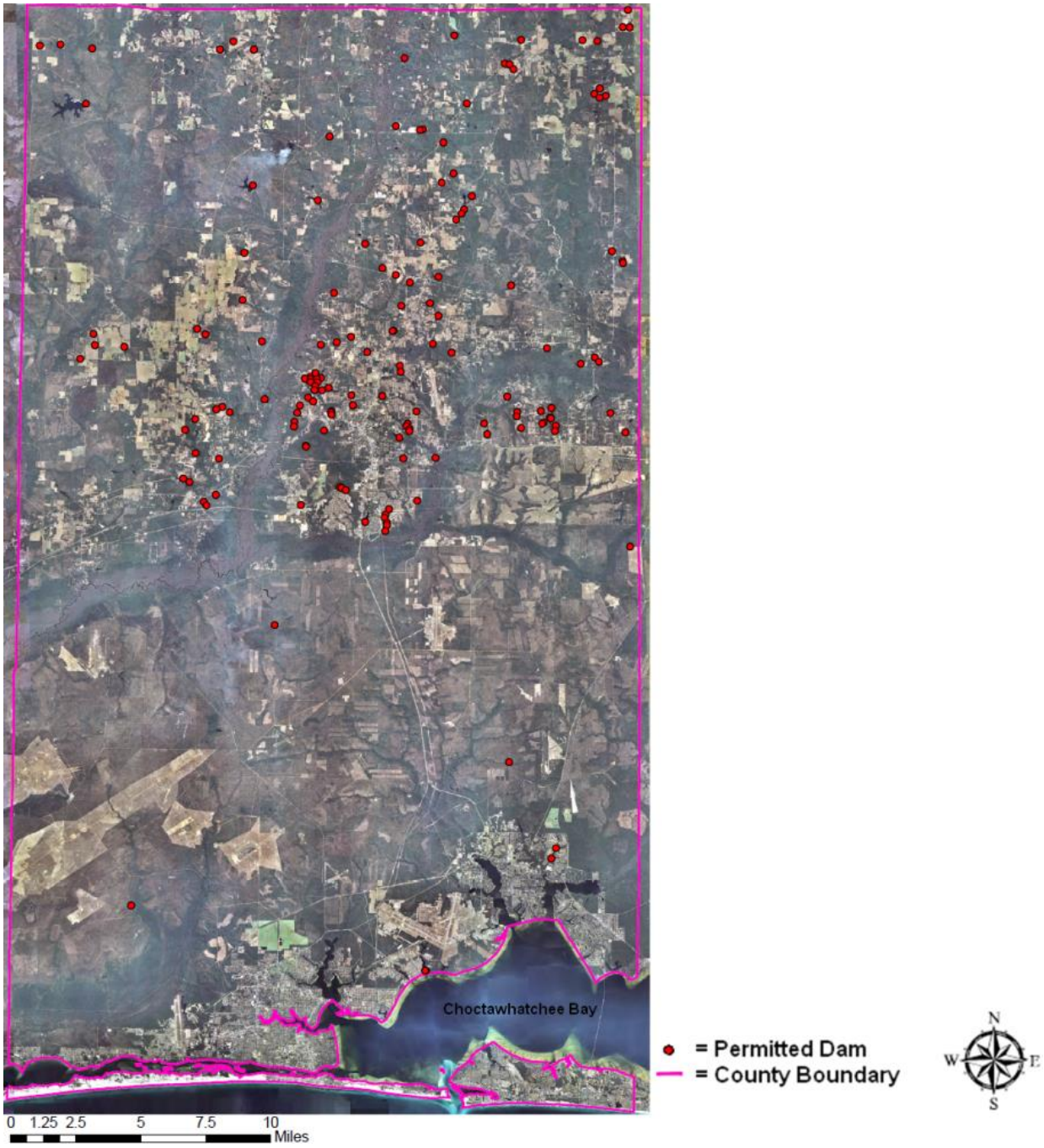
The Northwest Florida Water Management District is responsible for the permitting, inspection, and revocation of permits for dams in Okaloosa County that meet certain criteria, per the guidance of Chapters 373.314 of the Florida Statutes, and Chapters 40A-4 and 40A-44 of the Florida Administrative Code (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: North West Florida Water Management District, 2015

Figure 4.01.05.1: Permitted Dams in Okaloosa County



Source: Northwest Florida Water Management District, 2015

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.

No dam in Okaloosa County, permitted by the Northwest Florida Water Management District, has been classified as a "high hazard" dam. A classification of "high hazard" would result in a dam failure study and be on file with the North West Florida Water Management District. No dam failure event has occurred during 2016-2021.

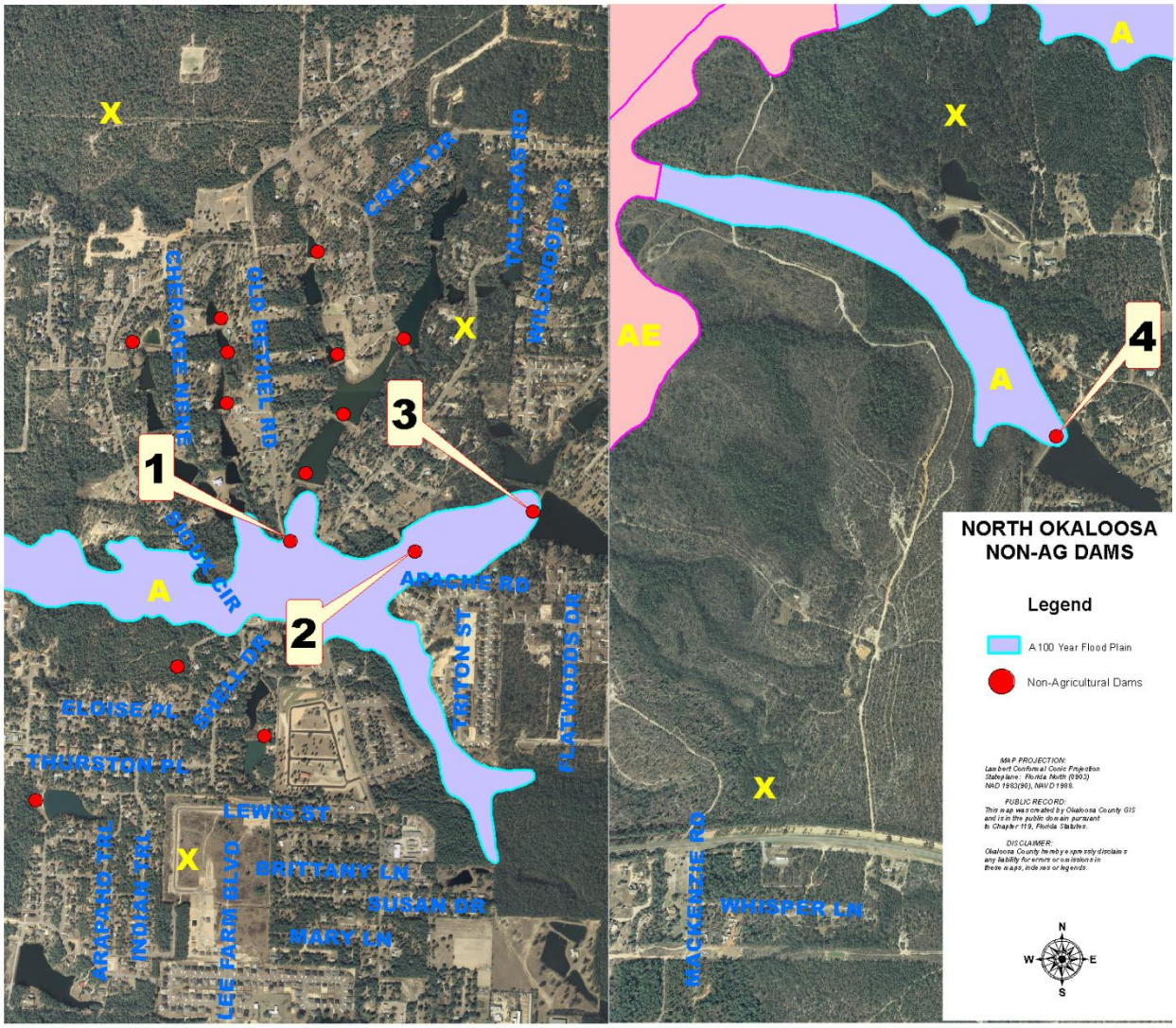
EXTENT:
The possible damages associated with dam failure are flooding of roads and properties and agricultural losses. Regarding dam failure, a worst-case scenario is difficult to determine due to the variability in dam specifications (i.e. dam size, storage capacity, and topography) and the surrounding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

Again, referring 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. Thus, resulting in little to no damage.

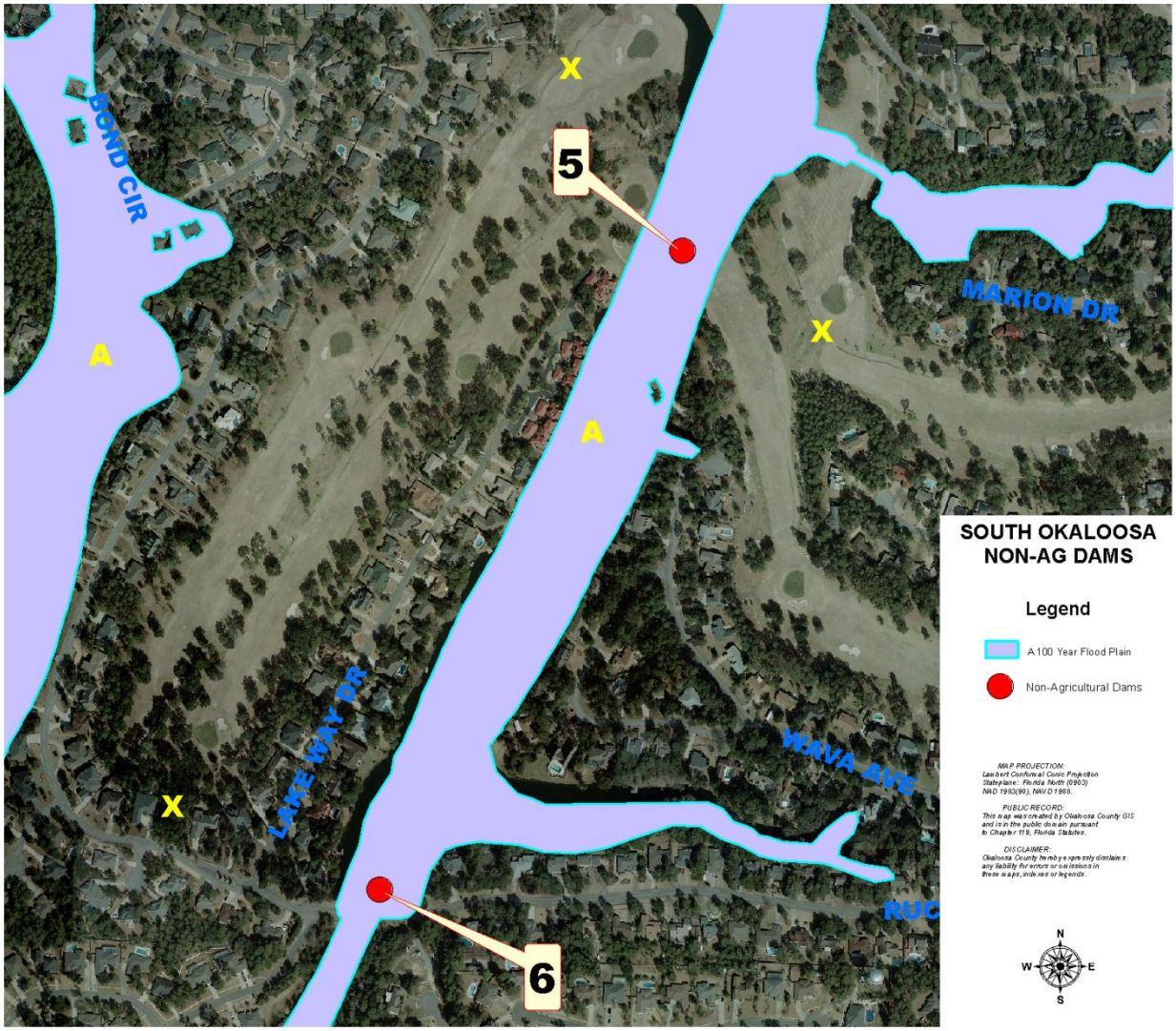
Figure 4.01.05.2: Non-Agricultural Dams North Okaloosa County



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 thru 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 flood plain 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 event has occurred during 2011-2015.

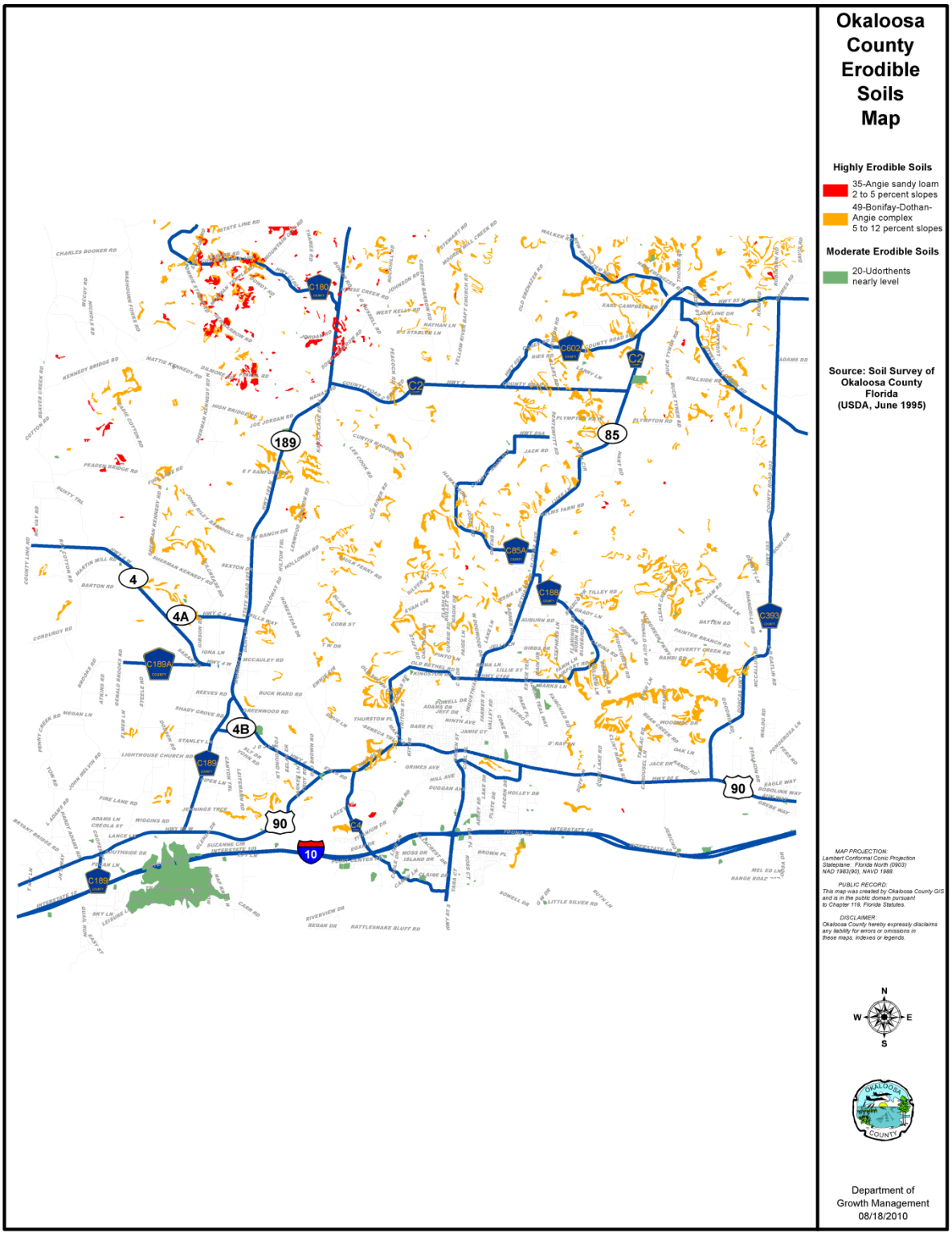
Table 4.01.06.1: Erodible Lands in the Okaloosa County.

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 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 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 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:
Water Spout
According the U.S. Storms Database, from 1996-2020 there have only been 9 reported waterspouts in Okaloosa County with no known injuries, fatalities, or property damages (NCDC, 2020 www.ncdc.noaa.gov/sotrmevents/).

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. Tables 4.01.07.01.2 and 4.01.07.01.3, below, summarize the documented tornadoes in Okaloosa County from 1950 through 2020, and 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, 1950-2020

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	-	-	-

Source: Tornado History Project

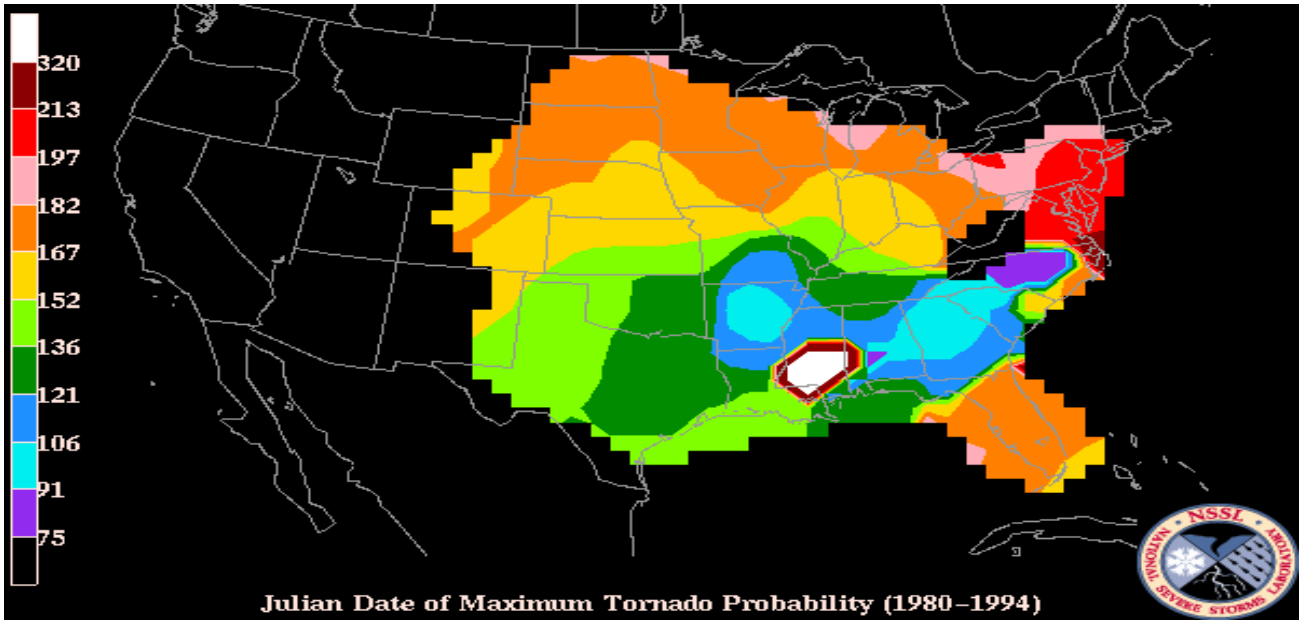
Table 4.01.07.01.3: Okaloosa County's Documented Tornadoes, 2000-2020

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

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:
Water Spout
Because of the unpredictable nature of water spouts, the minimal historical occurrences, and no historical damages reported in Okaloosa County, the worst possible scenario would be that of complete destruction of homes and businesses that were in the water spouts 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 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 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 1958-2009 there have been a total of 94 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 nine (9) reported waterspouts from 1996-2020, 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 Weather Service 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

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

HISTORICAL OCCURRENCE:
Okaloosa County has 70 to 90 thunderstorm days each year (See Figure 4.01.07.02.1). Consistent with averages from around the State of Florida, this is some of the highest frequency in the nation.

Despite Florida's dubious distinction of leading the nation in lightning deaths per year, lightning is not the main threat from thunderstorms in Okaloosa County. Wind is the main threat from thunderstorms in Okaloosa County and occasionally 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 hazard of severe thunderstorms is the Derecho. A derecho results from squall-line thunderstorms that create repeated downbursts. These types of storms are more frequent in the Midwest than in Florida.

The main damage associated with severe thunderstorms is damage to structures and power lines caused by strong winds and, less frequently, hail. Trees falling on powerlines is a major source of local power outages. Such outages are typically brief, lasting only 1-2 hours (Chelco, personal communication).

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 damages which 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.

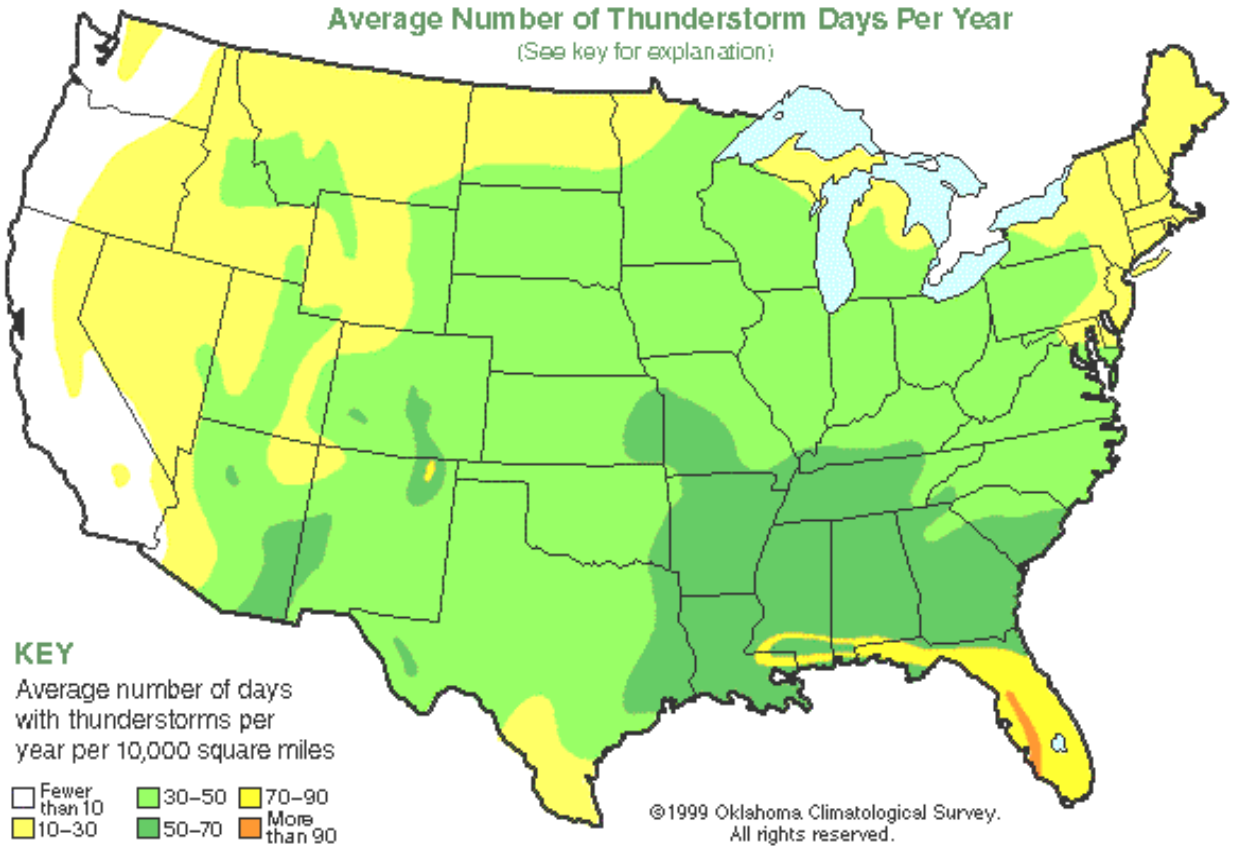
04/29/2014 - A strong storm system brought record flooding along with severe thunderstorms that produced damaging winds and tornadoes to the region. Winds estimated at 80 mph downed large trees and ripped a roof off a house at Duke Airfield.

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.

Figure 4.01.07.02.1: Average number of days with thunderstorms per 10,000 square miles. Okaloosa County receives 70 to 90 thunderstorm days per year.



Source: Oklahoma Climatologically

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).

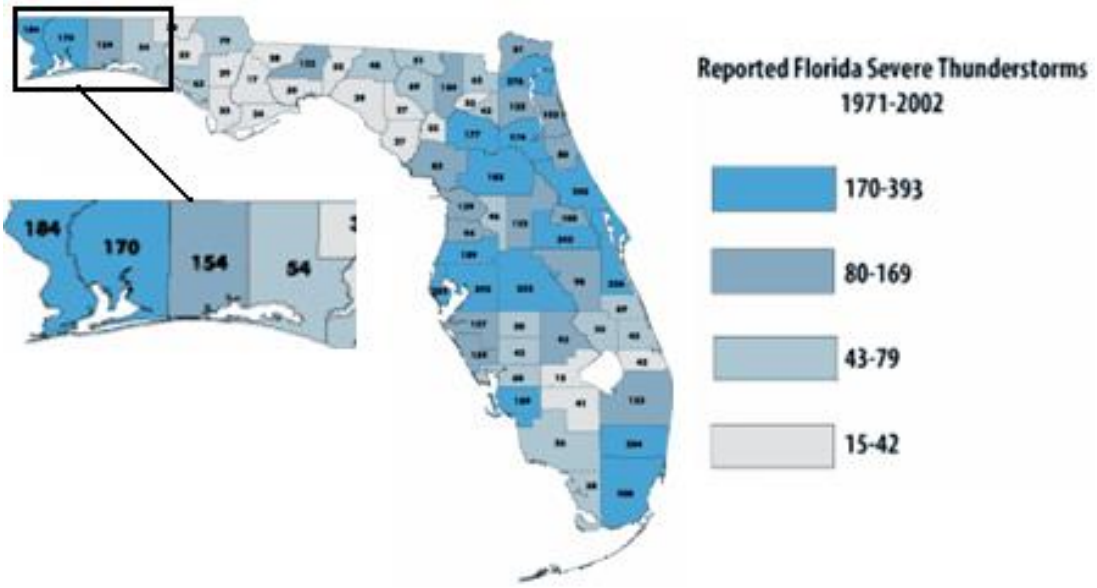
Table 4.01.07.02.1: Total Reported Severe Storms in Okaloosa County by Month, 1964-2015

	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: Sheldus (calculations from data)

Between 1965 and 2020 (See Figure 4.01.07.02.2), 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. Additionally passage of cold fronts in the autumn, winter and spring can trigger lines of thunderstorms. (NWS NCDC)

Figure 4.01.07.02.2: Reported Florida Severe Thunderstorms, 1965-2020



Source: National Weather Service.

Okaloosa County is estimated to have between 4 to 16 lightning flashes per square kilometer per year throughout the county, based upon data from 1996 to 2020 (See Figure 4.01.07.02.3). The 5-Year Flash Density Map shows the average amount of lightning recorded in 2009-2018.

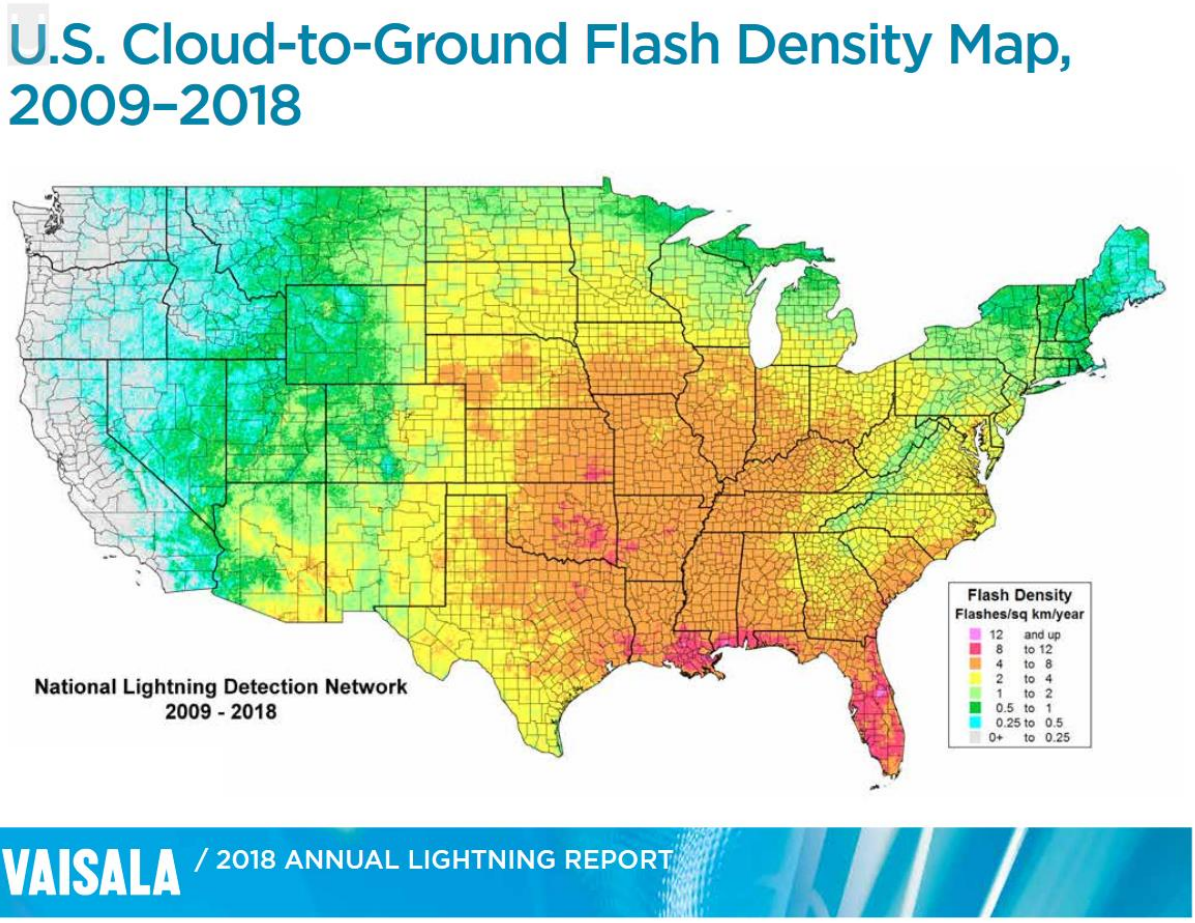


Figure 4.01.07.02.3: 5-Year Flash Density Map of the U.S.

Source: Vaisala-GAI

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 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

DEFINITION:
Winter weather in Okaloosa County can include snow, ice, sleet (freezing rain), hard freeze, and frost. The most common winter event is frost, followed by hard freeze. 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.

HISTORICAL OCCURRENCE:
It was difficult to locate temperature data for the county as a whole, therefore two cities were chosen 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 amount of freezing days may be attributed to its elevated location, which creates a greater exposure to the cold.

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, 2010

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 two shelters open for Okaloosa County residents, one in both the north and south end. (Okaloosa County Emergency Management, 2010).

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. But, in February 2010 there were local reports of snow flurries in the northern portion of the County. 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 adhere to the 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. As of this update no ice storms have occurred since 2014.

EXTENT:
The 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 in 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.

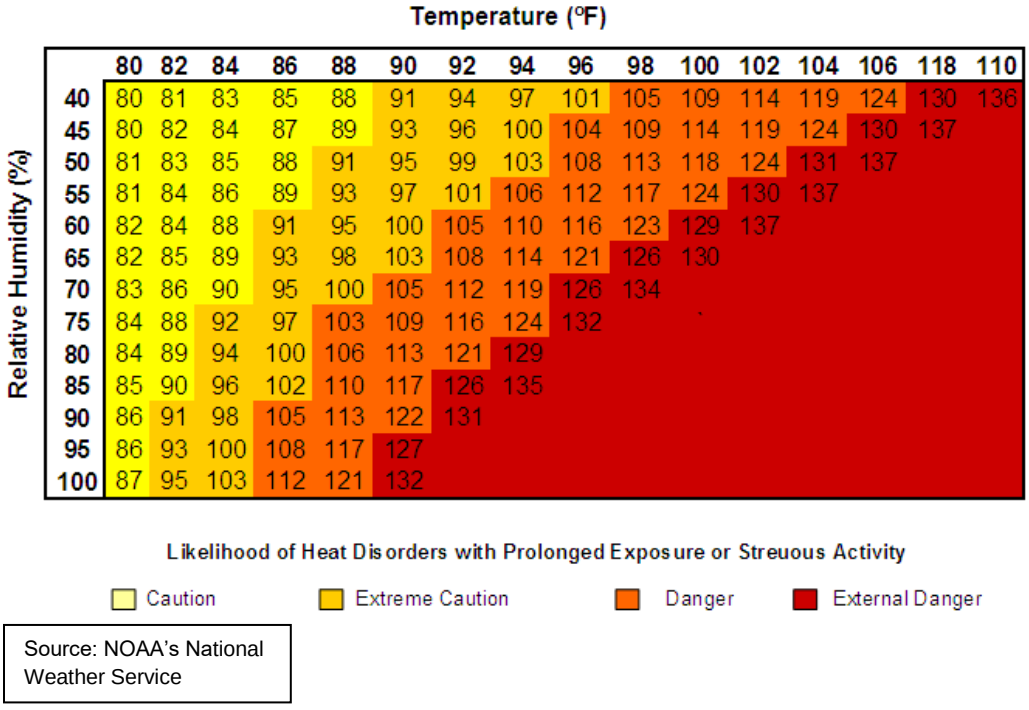
4.01.08 Heat Wave and Drought

The Heat Wave and Drought generally intertwine with one another; however, data is available for each independently for this segment of the LMS.

4.01.08.01 Heat Wave

DEFINITION:
According to the Federal Emergency Management Agency (FEMA), extreme heat or heat waves occurs when temperatures "hover 10 degrees or more above the average high temperature for the region and last for several weeks" (2009). Heat waves usually occur over five to ten continuous days along the northern Gulf Coastal region and West Florida. Heat can build up in the summer months and cause temperatures to climb into the upper 90° F range or above. Also, relative humidity affects how the temperature is felt or experienced, which can be seen in the figure below. All of Okaloosa County is susceptible to both heat waves and drought.

Figure 4.01.08.01.1: Heat Index



Source: NOAA's National Weather Service

HISTORICAL OCCURRENCE:
Temperature data for the county was recorded in Niceville and Crestview. From 2005-2009, the City of Niceville had three heat waves with high temperatures ranging from 86°F-100°F with an average humidity range of 58%-99%. During that same time period, the City of Crestview had three heat waves with high temperatures ranging from 91°F-102°F with an average humidity range of 58%-84%. When considering the heat index chart with these numbers, the likelihood of heat disorders with prolonged exposure is at a dangerous level for many during heat wave days. (Weather Underground, Inc., 2010). The table below shows the average monthly temperature in the summer months from 1971-2009. The two selected cities are the City of Niceville, located near the Choctawhatchee Bay and the City of Crestview, and located further inland north of Eglin Air Force Base. No heat wave event has occurred during 2011-2020.

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. 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 is 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.
Table 4.01.08.01.1: Monthly Mean Temperature Maximums in degrees Fahrenheit, 1971-2009

	May	Jun	Jul	Aug
Crestview FAA Airport, FL	89.8°	95.6°	97°	96.9°
Niceville, FL	88.1°	94°	95.6°	94.5°

Source: Southeast Regional Climate Center, 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.

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, 2006

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- 2015 that 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 to 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 $17,209,602 in 2009 (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 in the millions of dollars. Similarly, livestock production (including aquaculture and fowl) in Okaloosa County had a gross value of $4,527,800 in 2009. Again, depending on the ranchers' and poultryers' ability to provide water to 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 products accounted for $20,586,000 in 2009. 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 to 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- 2020

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)			

Source: U.S. Drought Monitor

EXTENT:

The 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.

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.

Table 4.01.08.02.3 Okaloosa County Agricultural Statistics

CROP	ACREAGE PLANTED	PRODUCTION PER ACRE	TOTAL PRODUCTION	UNIT $ VALUE	GROSS $ VALUE
Soybeans	500	42 bu.	21,000 bu.	9.60	201,600
Peanuts	3,650	3,400 lbs.	6,205 tons	.25	3,102,500

Cotton	4,100	945 lbs.	7,749 bales	.60	2,324,700
Cottonseed		1,250 lbs.	1,512 tons	200.00	302,400
Corn	600	94 bu.	56,400 bu.	4.25	239,700
Wheat*	300	50 bu.	15,000 bu.	5.25	78,750
Oats	100	50 bu.	5,000 bu.	3.00	15,000
Sorghum	50	55 bu.	2,750 bu.	3.75	10,312
Hay-Silage	3,216	4.0 tons	$740.00/acre		2,379,840
Improved Pasture	4,190		$160.00/acre		670,400
Native Pasture	4,500		$40.00/acre		180,000
Truck Crops/Mixed Vegetables	1,000		1,100.00/acre		1,100,000
Watermelons	50		$15.00/acre		75,000
Pecans	160	400	$64,000		54,400
Ornamental Horticulture	12 nurseries			.85	5,000,000
**CRP ** **	6,135				225,000
FSA * **					1,250,000
TOTAL	**28,551 ******				**17,209,602**

LIVESTOCK	**APPROXIMATE PRODUCTION**	**PER UNIT $ VALUE**	**GROSS $ VALUE**
Beef			
(All Cattle)	4,000 head	710.00	2,840,000
(Beef Cattle)	2,000 head	542.00	1,084,000
Hogs (Market)	150 head	94.00	14,100
Goats	2,400 head	55.00	132,000
Aquaculture (Catfish)	2,000 lbs	2.10	4,200
Quail	10,000 head	3.50	3,500
Equine	7,000 head		
Poultry Broilers	200,000 head	2.25	450,000
TOTAL			**4,527,000**
	TOTAL CROPS & LIVESTOCK		**$21,737,402**
FORESTRY FACTS			
	ACRES	**DIRECT EMPLOYEES**	**FOREST MANUFACTURING OUTPUT**
Timberland	448,300	400	$20,586,000
Public Land	271,800		
Forest Industry & Private Land	176,500		

Source: The Okaloosa County Extension

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 a total of 665,646 acres of forest land in Okaloosa. This includes the acreage of the state-owned Blackwater Forest, Eglin Air Force Base, 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 2011-2020. 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. Wildfires have occurred but have existed on State and Federal land ergo there have been no impacts to Okaloosa County or its citizens. 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, 2011-2020

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,

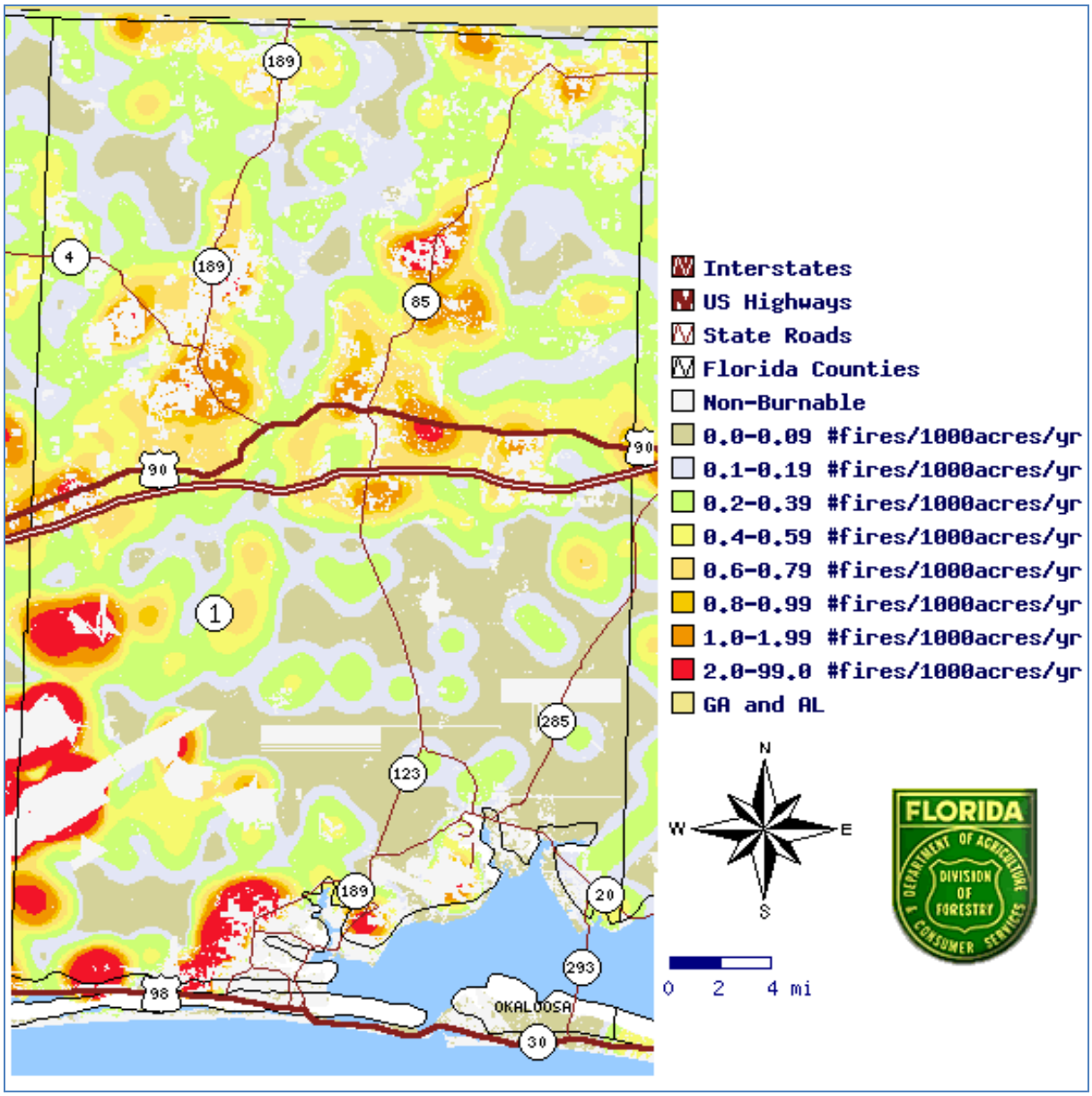
EXTENT:
Based on the Wildland Fire Risk Assessment of Okaloosa County, the worst case scenario would be if the areas with the greatest Level of Concern (LOC) experienced a massive wildfire. These areas have a greater likelihood of danger and destruction due to their inadequate infrastructure, inaccessibility 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 Map 4.01.09.1) that could 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 the 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.

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 a 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.

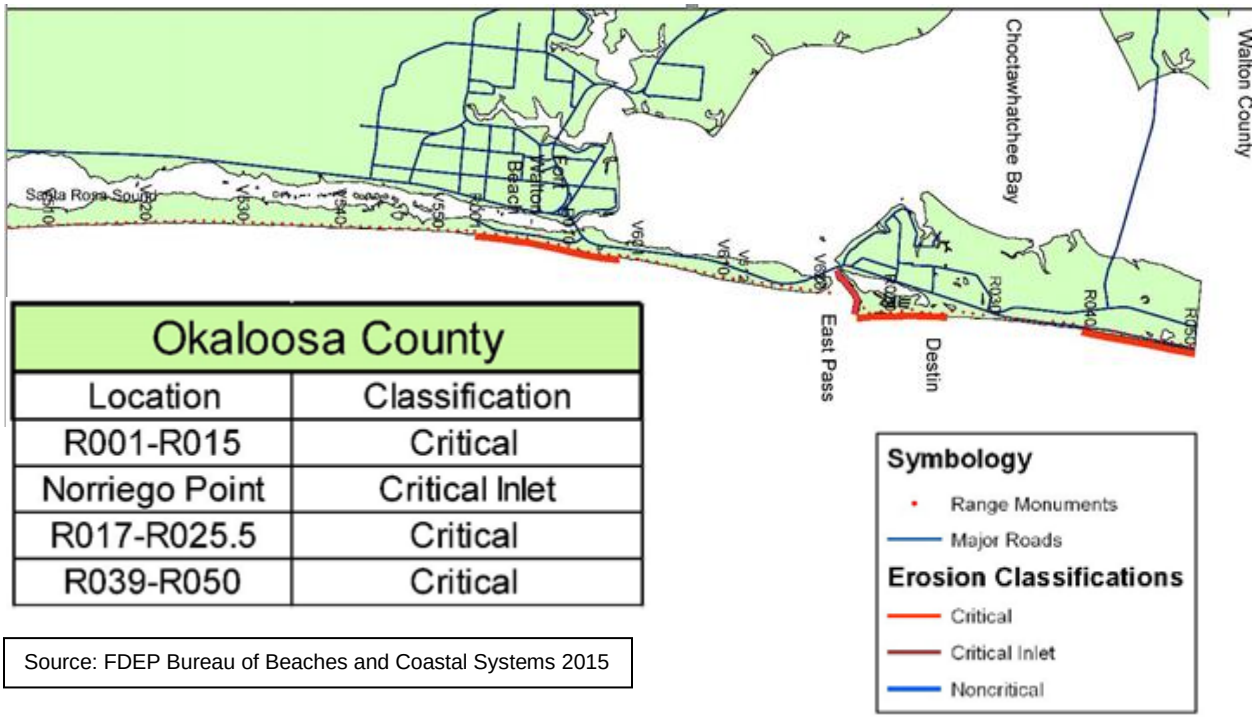
Hurricane Ivan (September 2004) caused major damage to the beach and dune systems of the county. As a result of beach erosion, approximately 59 dwelling units, 9 walls or revetments, and 20 other structures were either destroyed or deemed uninhabitable. Highway 98 between the City of Destin and City 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	
Location	Classification
R001-R015	Critical
Norriego Point	Critical Inlet
R017-R025.5	Critical
R039-R050	Critical

Source: FDEP Bureau of Beaches and Coastal Systems 2015

EXTENT:
The worst case scenario of a beach erosion occurrence 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 the recent historical data, 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. 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.

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 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. 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.

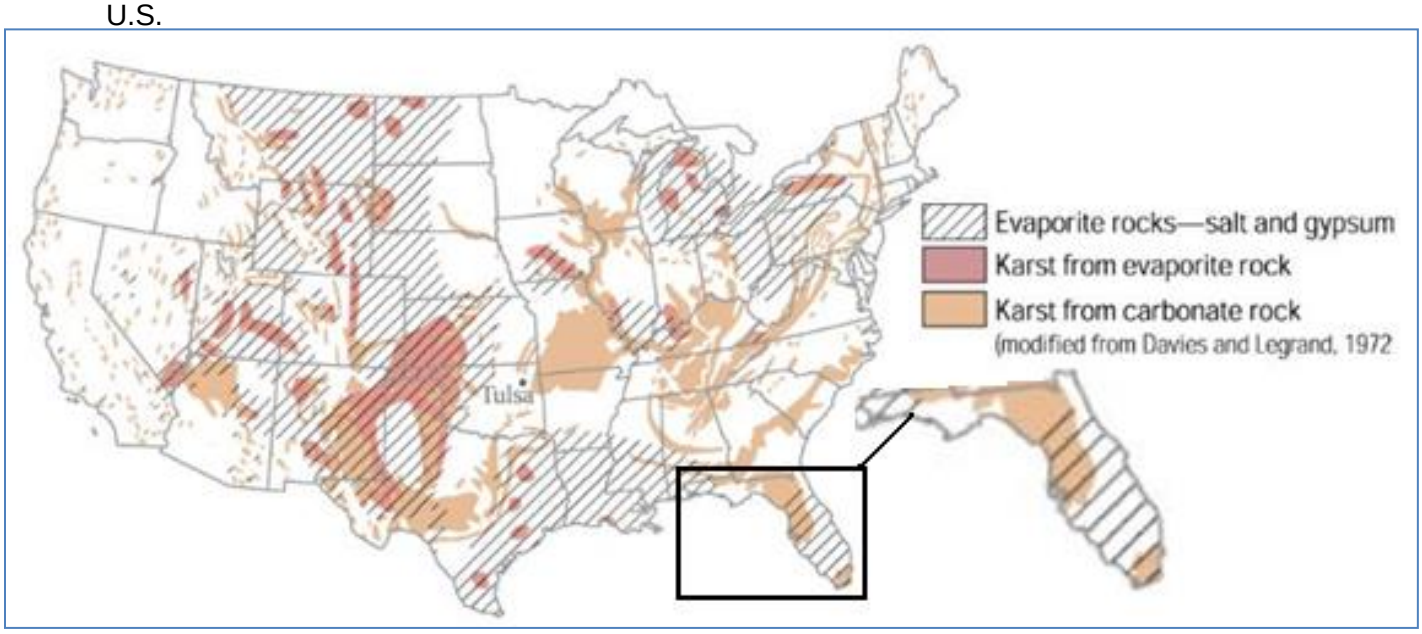
4.01.11.04 Avalanche

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 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.

4.01.12 Summary

The risk assessment section of this LMS document provides 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 for the threat of a tornado and 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, heat wave, 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 of Mexico, 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 of Mexico, 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 of Mexico, 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 25 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 of the 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 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, child care 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

TYPE	2019
Farm employment	413
Forestry, fishing, and related activities	573
Mining	e
Utilities	444
Construction	4,961
Manufacturing	4,317
Wholesale trade	1,170
Retail trade	e
Transportation and warehousing	1,576
Information	654

Finance and insurance	2,710
Real estate and rental and leasing	3,086
Professional, scientific, and technical services	6,477
Management of companies and enterprises	75
Administrative and waste services	4,985
Educational services	3,429
Health care and social assistance	e
Arts, entertainment, and recreation	1,360
Accommodation and food services	5,557
Other services, except public administration	2,426
Federal, civilian	8,008
Military	16,030*
State and local government	7,515
Total employment	**89,526**

Source: US Census—2019, * resource did not provide updates

Table 4.02.03.03: Employment, Growth Patterns and Earnings for Okaloosa County Industry Super Clusters - The figure uses 2010 estimates from Economic Modeling Specialists, Incorporated that reflect total employment in each sector (overall size of each bubble), earnings (vertical axis) and five-year growth patterns (horizontal axis). Gross domestic product is defined as the overall value of the goods and services produced in the local economy.

Employment/Industry Sector*	Salary Range	5 Year Growth Percentage
Agriculture, natural resources and mining	$21,000 - $23,000	4.4 - 5.5
Construction	$35,000 - $45,000	4.6 - 6.3
Education and health services	$32,000 - $48,000	10.1 - 13.9
Financial activities	$25,000 - $35,000	20 – 23.9
Government	$72,000 - $95,000	-3.5 – 3
Information	$58,000 - $65,000	14.1 – 15.3
Leisure and hospitality	$12,000 - $30,000	7.9 – 12
Manufacturing	$56,000 -$66,000	11.9 – 14.1
Other services	$18,000 - $28,000	11.4 – 12
Professional and business services	$39,000 - $59,000	11.8 – 16.2

Trade, transpiration and utilities	$22,000 - $39,000	1.8 – 6.2

Source: Economic Modeling Specialists Incorporated, 2010 * resource did not provide any updates

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 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. 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)

Source: Okaloosa County Department of Growth Management, 2010 * resource did not provide any updates

It is important to note that these categories are not exclusive. Individuals can be counted in several categories. This data was obtained from the 2010 U.S. Census. The percentages of the population that are included in these categories were extrapolated from the 2010 Census to estimate a more current number. The percentages were multiplied by the 2014 U.S. Census population estimates for Okaloosa County and its municipalities.

Table 4.02.04.2: Estimated Minority Population in Okaloosa County, 2014*

Jurisdiction	2010 Census Percent Population	2014 Estimate
Okaloosa County	9.1%	16841
Town of Cinco Bayou	15.4%	53
City of Crestview	18.6%	4031
City of Destin	2.2%	278
City of Fort Walton Beach	14.2%	2825
City of Laurel Hill	24.4%	149
City of Mary Esther	4.2%	165
City of Niceville	5.7%	750
Town of Shalimar	3.5%	25
City of Valparaiso	3.8%	195
Unincorporated Okaloosa County	49.2%	8370

Source: 2010 Census; U.S. Census Population Division, * resource did not provide any updates

Table 4.02.04.3: Estimated Population Living Below Poverty in Okaloosa County, 2019

Jurisdiction	2010 Census Percent Population	2019 %
Okaloosa County	13.4%	e
Town of Cinco Bayou	12.2%	13.8
City of Crestview	13.5%	16.4
City of Destin	6.3%	e
City of Fort Walton Beach	8.9%	16.4
City of Laurel Hill	31.5%	18.0
City of Mary Esther	5.2%	13.7
City of Niceville	10.2%	8.0
Town of Shalimar	2.3%	5.4
City of Valparaiso	8.6%	11.1
Unincorporated Okaloosa County	9.6%	7974*

Source: 2019 City-Data, * resource did not provide updates

Table 4.02.04.4: Estimated Single Parent Population in Okaloosa County, 2014*

Jurisdiction	2010 Census Percent Population	2014 Estimate
Okaloosa County	14.5%	8943
Town of Cinco Bayou	18.9%	22
City of Crestview	19.5%	1102
City of Destin	6.5%	256
City of Fort Walton Beach	18.6%	569
City of Laurel Hill	13.5%	10
City of Mary Esther	5.6%	65
City of Niceville	11.5%	452
Town of Shalimar	9.6%	15
City of Valparaiso	9.8%	126
Unincorporated Okaloosa County	20.15%	2617

Source: 2010 Census; U.S. Census Population Division, * resource did not provide updates

Table 4.02.04.5: Estimated Population with a Disability in Okaloosa County, 2014

Jurisdiction	2010 Census Percent Population	% 2019
Okaloosa County	31.4%	16.2
Town of Cinco Bayou	28.9%	126
City of Crestview	48.6%	9845
City of Destin	22.3%	2896
City of Fort Walton Beach	32.9%	6001
City of Laurel Hill	53.8%	309
City of Mary Esther	30.5%	1236
City of Niceville	28.9%	2987
Town of Shalimar	22.6%	148
City of Valparaiso	25.6	1598
Unincorporated Okaloosa County	35.6%	25146

Source: 2010 Census; U.S. Census Population Division, * resource did not provide updates

Table 4.02.04.6: Estimated Population Living in Language Isolation in Okaloosa County, 2014*

Language Isolated Jurisdiction	2010 Census Percent Population	2014 Estimate
Okaloosa County	1.2%	2365
Town of Cinco Bayou	.6%	2
City of Crestview	.3%	45
City of Destin	.9%	98
City of Fort Walton Beach	1.2%	198
City of Laurel Hill	.02%	1
City of Mary Esther	.8%	31
City of Niceville	1.9%	189
Town of Shalimar	.4%	4
City of Valparaiso	1.2%	74
Unincorporated Okaloosa County	0.75%	642

Source: 2010 Census; U.S. Census Population Division, * resource did not provide updates

Table 4.02.04.7: Estimated Elderly Population in Okaloosa County, 2014*

Elderly Jurisdiction	2010 Census Percent Population	2014 Estimate
Okaloosa County	15.6%	39853
Town of Cinco Bayou	9.8%	36
City of Crestview	14.5%	3256
City of Destin	22.9%	3569
City of Fort Walton Beach	18.9%	3569
City of Laurel Hill	11.2%	65
City of Mary Esther	15.9%	598
City of Niceville	13.5%	1984
Town of Shalimar	9.8%	56
City of Valparaiso	13.2%	598
Unincorporated Okaloosa County	18.6% %	13731

Source: 2010 Census; U.S. Census Population Division, * resource did not provide updates

4.02.05 Repetitive Loss Properties

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" (FEMA, 2010). 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 the properties varied from residential to non-residential. The following table depicts the cumulative repetitive loss properties within the jurisdiction of Okaloosa County.

Table 4.02.05.1: Repetitive Loss Properties in Okaloosa County

	Total Building Payment	Total Contents Payment	Total Losses Claimed	Total Paid	Residential Structures	Non-Residential Structures
Okaloosa County	$115,088,983.12	$16,324,008.69	1514	$131,412,992	614	39
Unincorporated	$53,943,596.36	$10,021,332.84	717	$63,964,929	305	8
City of Destin	$45,998,471.70	$3,705,999.29	473	$49,704,471	183	10
City of Fort Walton Beach	$5,496,352.71	$966,414.65	129	$6,462,767	53	3
City of Mary Esther	$1,604,426.40	$621,388.43	23	$2,225,815	10	1
City of Niceville	$927,945.80	$217,005.83	45	$1,144,952	17	2
Town of Shalimar	$6,599,732.45	$709,936.01	105	$7,309,668	35	15
City of Valparaiso	$518,457.70	$81,931.64	22	$600,389	11	0

Source: FEMA, 2010

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 of Mexico. 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 rains. High winds can damage structures by removing roofs, siding, and create 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	93	46	338	0	7
Just Value	$20,070,000	$8,788,675	$154,663,657	$0	$5,478,388
Zone B	185	342	1604	5	27
Just Value	$52,796,990	$97,097,945	$760,162,003	$947,436	$23,015,357
Zone C	301	758	4279	45	92
Just Value	$79,311,598	$170,964,019	$1,862,439,456	$4,871,114	$59,104,977
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	425	3744	21071	368	444
Just Value	$109,199,178	$525,384,207	$5,576,388,796	$28,073,512	$199,182,597

Note Evacuation Zones correspond with Hurricane Categories (Ex. Evacuation Zone 1 = Category 1 Hurricane)
Source: West Florida Regional Planning Council & Okaloosa County Property Appraiser, 2010 (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	16	1	0	0
Just Value	$15,779,750	$754,838	$0	$0
Zone B	79	12	0	0
Just Value	$72,170,918	$29,936,182	$0	$0
Zone C	280	38	4	1
Just Value	$301,871,506	$136,365,054	$1,525,287	$152,153
Zone D	506	60	19	1
Just Value	$434,756,148	$195,753,372	$4,392,669	$152,153
Zone E	1594	213	34	1
Just Value	$1,203,702,441	$310,679,895	$8,296,310	$152,153

Note Evacuation Zones correspond with Hurricane Categories (Ex. Evacuation Zone 1 = Category 1 Hurricane)
Source: West Florida Regional Planning Council & Okaloosa County Property Appraiser, 2010 (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 of Mexico 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	91	309	2571	7	46
Just Value	$33,450,200	$81,738,740	$1,588,563,140	$1,779,220	$34,366,652
Surge Level 2	254	562	3297	7	76
Just Value	$71,937,110	$136,505,476	$1,928,268,515	$1,779,220	$58,609,426
Surge Level 3	320	1308	9649	71	186
Just Value	$90,881,178	$248,534,732	$3,293,229,371	$6,352,549	$99,369,565
Surge Level 4	320	1308	9649	62	186
Just Value	$90,881,178	$248,534,732	$3,293,229,371	$5,465,860	$99,369,565
Surge Level 5	420	3062	16189	122	321
Just Value	$108,294,178	$452,167,581	$4,766,386,342	$9,536,403	$170,245,605

Source: West Florida Regional Planning Council & Okaloosa County Property Appraiser, 2010 (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	92	23	2	0
Just Value	$188,728,187	$398,522,413	$1,011,076	$0
Surge Level 2	147	29	2	0
Just Value	$248,347,345	$425,079,839	$1,011,076	$0
Surge Level 3	266	37	8	1
Just Value	$331,384,035	$436,237,951	$2,936,465	$152,153
Surge Level 4	342	44	8	1
Just Value	$391,691,991	$449,642,763	$2,936,465	$152,153
Surge Level 5	1402	122	18	1
Just Value	$1,131,688,878	$559,648,813	$5,725,220	$152,153

Source: West Florida Regional Planning Council & Okaloosa County Property Appraiser, 2010 (Okaloosa County Staff generated table from overlaying the surge levels and property appraiser data)

4.02.08 Flooding

For this LMS, the definition of flooding only considers flooding which is the result of rainfall, which includes rain that occurs during a hurricane or other tropical event. 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 1664 structures in the AE flood zone, 264 structures in the VE flood zone, and 210 structures in the A flood zone. The cumulative 'just value' of those structures in the flood zones is $1,704,619,650. 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	82	165	1172	11	30
Just Value	$16,378,800	$41,602,682	$529,156,492	$912,194	$16,954,425
VE Flood Zone	53	87	82	0	6
Just Value	$19,044,988	$28,201,752	$84,402,947	$0	$24,965,473
A Flood Zone	0	10	168	1	0
Just Value	$0	$1,096,004	$27,984,848	$73,660	$0

Source: Okaloosa County Department of Growth Management, 2010

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, 2010

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 the 2021 LMS are only those regulated by the Northwest Florida Water Management District. Examples of unregulated dams would be an agricultural enclosure for watering of 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 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 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 leads 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 represents 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
	590	2,996	35,746	621
Just Value	$156,081,251	$439,029,409	$8,748,627,511	$340,559,539

Source: Okaloosa County Department of Growth Management, 2010

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

Total:	Commercial	Government/ Institutional	Critical Facilities
	4,880	518	2
Just Value	$3,529,236,078	$2,126,968,763	$593,106

Source: Okaloosa County Department of Growth Management, 2010

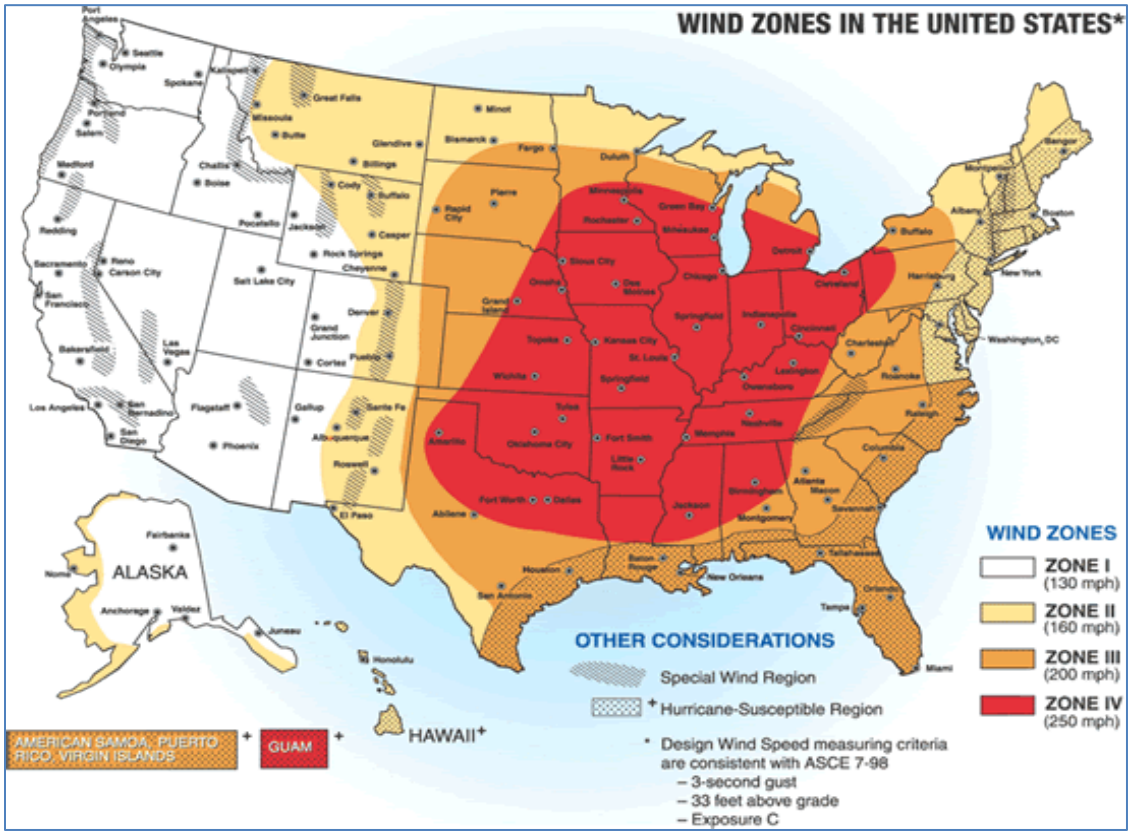
Since severe storms includes tornado and waterspout, thunderstorms and lightning, and winter storms, the values listed in the tables above apply to all of those hazard types.

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.



Source: FEMA, 2010

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 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.

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 and insulation is inadequate. Unmitigated older structures and manufactured housing are also very vulnerable.

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	0	1	18	2405	456	40
Just Value	$0	$17,534,846	$1,629,549	$444,674,998	$29,836,548	$34,786,331
Level 5	0	1	29	2062	381	31
Just Value	$0	$17,534,846	$3,255,723	$466,742,154	$25,898,863	$42,714,749
Level 6	3	1	1	689	201	7
Just Value	$707,000	$17,534,846	$92,221	$131,062,697	$13,242,560	$20,026,158
Level 7	4	1	5	2960	498	26
Just Value	$317,580	$17,534,846	$516,050	$427,534,382	$31,687,104	$18,097,961
Level 8	1	1	0	759	111	15
Just Value	$129,000	$17,534,846	$0	$113,626,038	$7,396,542	$8,296,158
Level 9	0	1	0	90	16	2
Just Value	$0	$17,534,846	$0	$15,214,478	$954,994	$5,079,389

Source: Florida Division of Forestry and Okaloosa County Property Appraiser, 2010 (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	115	50	11	1
Just Value	$138,128,271	$472,872,413	$2,651,357	$118,626
Level 5	180	64	7	1
Just Value	$403,647,446	$613,682,583	$1,702,156	$118,626
Level 6	63	34	2	0
Just Value	$115,002,224	$419,003,768	$310,583	$0
Level 7	125	45	5	0
Just Value	$144,585,817	$403,096,091	$861,817	$0
Level 8	40	26	3	0
Just Value	$55,358,514	$354,814,826	$1,191,355	$0
Level 9	10	10	0	0
Just Value	$15,523,277	$59,674,280	$0	$0

Source: Florida Division of Forestry and Okaloosa County Property Appraiser, 2010 (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 of Mexico, 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	65	168	768	12	27	17
Just Value	$26,700,988	$36,331,876	$657,419,433	$12,631,272	$125,390,403	$91,013,882

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.

4.02.15 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.

4.02.16 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 26,178 people according a 2020 Official Population Estimate as prepared by the University of Florida, Bureau of Economic & Business Research. 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 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 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, 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.

Utilizing the Historical Hurricane Tracks data set provided by NOAA (https://coast.noaa.gov/hurricanes) and referenced by Professor Phil Klotzbach, PhD, research scientist with the Department of Atmospheric Science at Colorado State University, the number of storms affecting Okaloosa County can be assessed. As stated above, hurricane force winds can extent 150 miles from the center. Therefor, a point placed near Destin and counting out 150 miles in both directions yields a count of 22 named storms since 2010 to 2020. This include the unique storm Amanda / Cristobal that started in the Pacific Ocean and came ashore within 150 miles of Destin.

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

Table 5.01.01.02.2: Tropical Storms within 50 miles from 1851 - 2019

					Climatological				Probability in 2021	
	Number of Events (1851-2019) (within 50 Miles)				Probability >=1 Event of Specific Intensity				Probability >=1 Event of Specific Intensity	
County	Named Storms	Hurricanes	Major Hurricanes		Named Storm	Hurricane	Major Hurricane		Named Storm	Hurricane	Major Hurricane
Escambia	79	32	11		37%	17%	6%		44%	21%	8%
Santa Rosa	70	30	9		34%	16%	5%		40%	20%	6%
Okaloosa	73	30	9		35%	16%	5%		42%	20%	6%
Walton	74	32	10		35%	17%	6%		42%	21%	7%
Bay	76	35	9		36%	19%	5%		43%	23%	6%

Source: Department of Atmospheric Science, Colorado State University and NOAA, 2021

Section 5.01.01.03 Flooding

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

City of Crestview

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. In September of 2020, more than 20 inches of rain was dumped in some areas by Hurricane Sally. This caused significant flooding and caused FDOT to close the Highway 90 bridge over the Shoal River. Throughout that event, many of the other area bridges were closed, including Interstate 10.

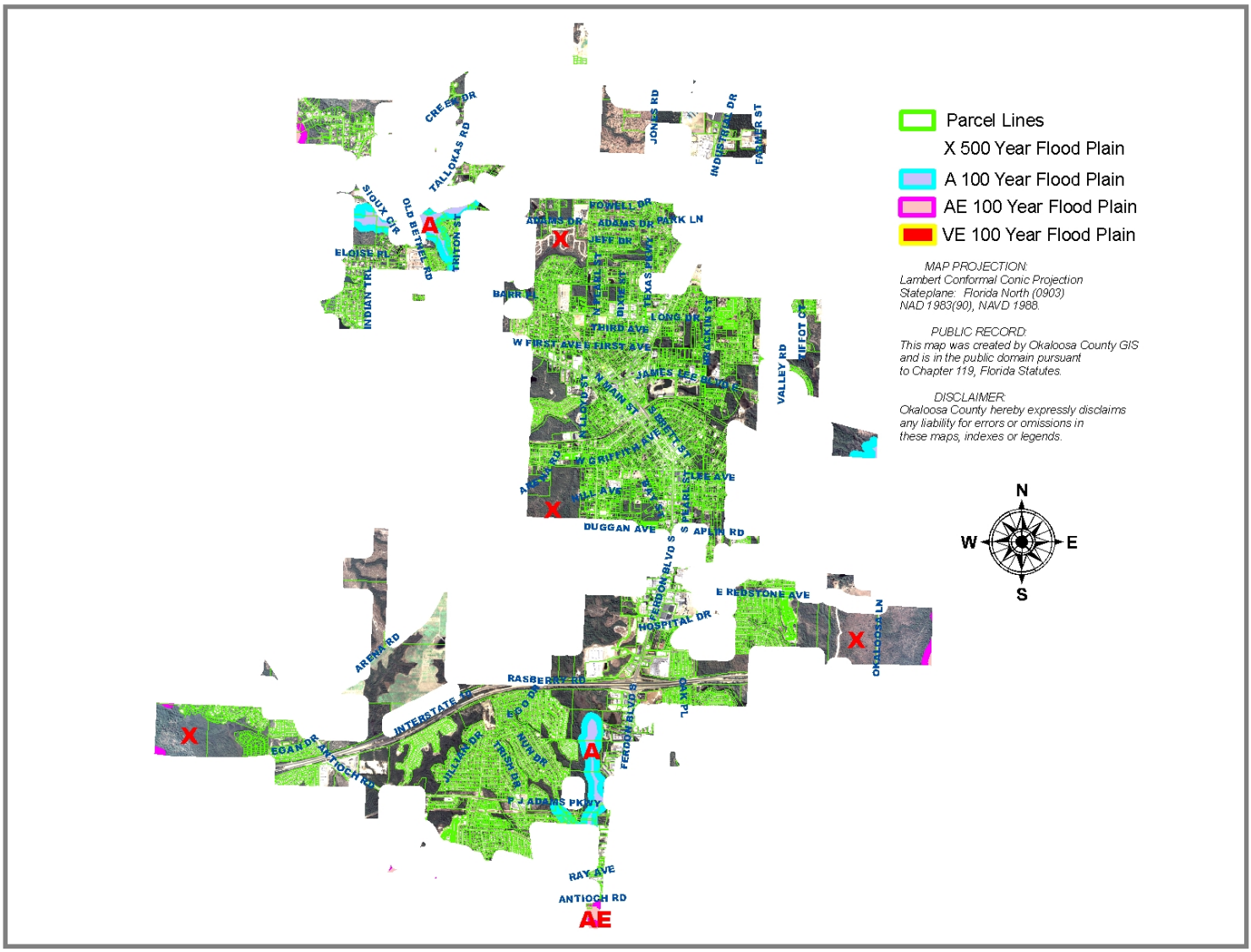
EXTENT:
The City of Crestview is susceptible to localized flooding in the areas surrounding the small streams, lakes, and rivers found within the municipality, and would likely be attributed to heavy rains associated with a hurricane, tropical storm, or severe storm. Due to the City of Crestview's location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

City of Crestview

Figure 5.01.01.03.1: The City of Crestview's Flood Zones



Source: FEMA Map Service Center, Dec 6 2002

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.

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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 back to 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, 2010

Snow is considered a very rare event and generally melts off quickly. No historical, scientific data was found regarding snowfall in the City of Crestview. But, in February 2010 there were local reports of snow flurries in the northern portion of the County and around the City of

Crestview. No official snowfall amount was recorded, as the snow flurries did not accumulate on the ground.

EXTENT:
The worst case scenario in terms of winter storms in the City of Crestview 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 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 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 branches falling. 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 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 back to the Risk Assessment of the overall County 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, 1971-2009

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

Source: Southeast Regional Climate Center, 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.

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 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 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.

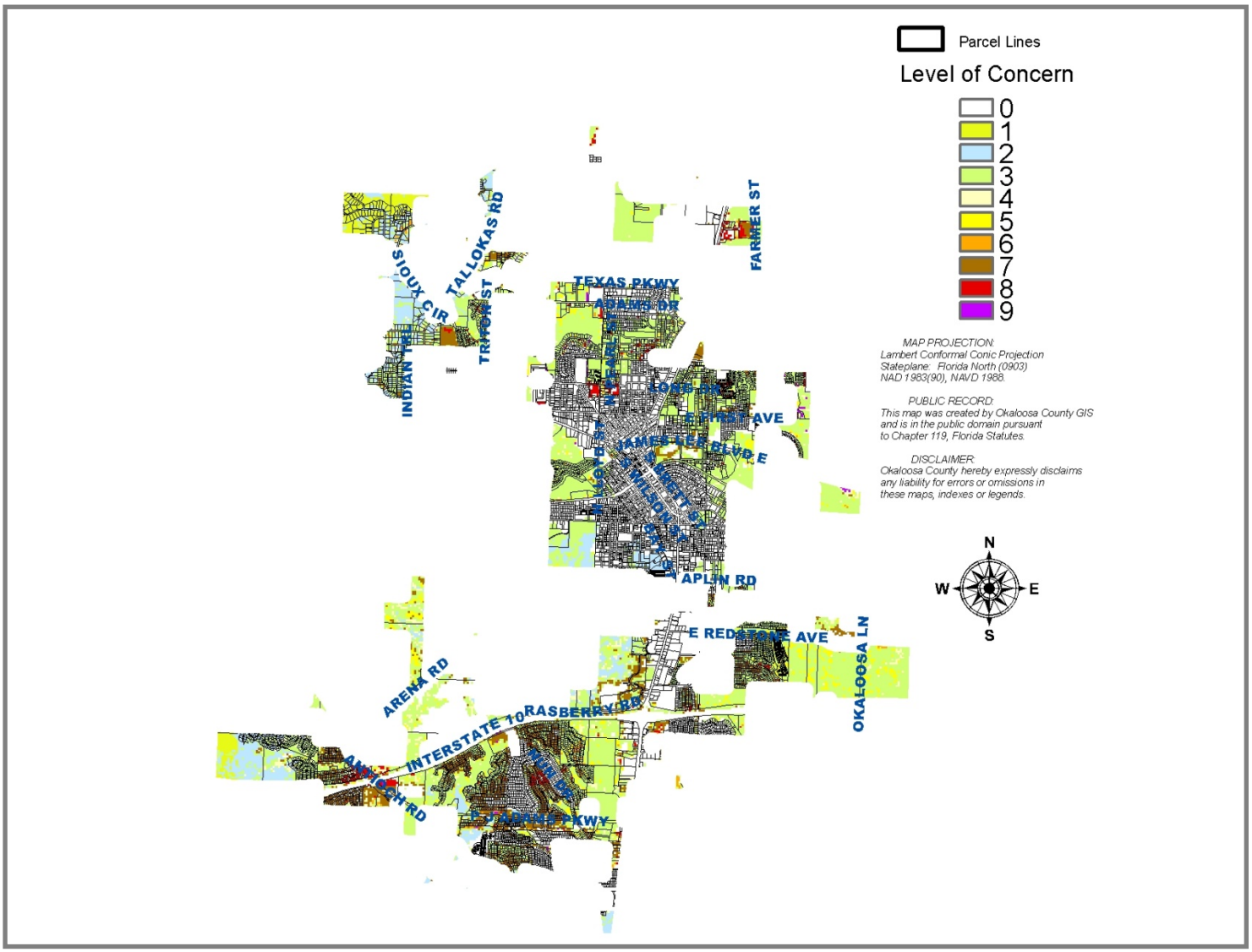
HISTORICAL OCCURRENCE:
The City of Crestview is vulnerable to wildfire. The majority of the acreage located within the municipality is urban or residential, but vast acres of open forest lands surround the City of Crestview, and these lands consists of natural vegetation historically related to the Longleaf 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, 2010

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.

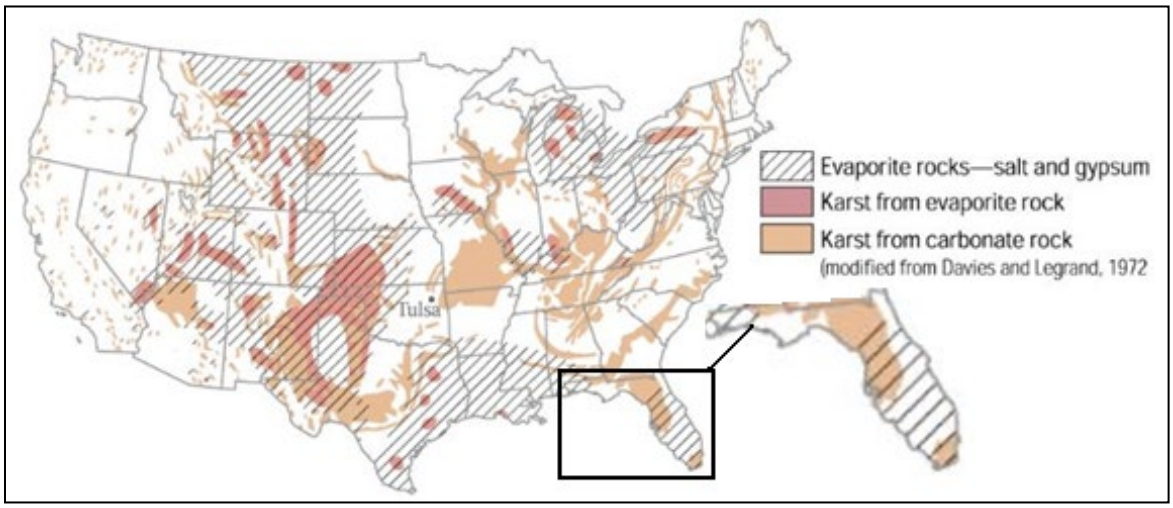
Section 5.01.01.09.04 Avalanche

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 5.01.01.10 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. The City is home to 26,178 people according a 2020 Official Population Estimate as prepared by the University of Florida, Bureau of Economic & Business Research, 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. In 2004, 68 applicants have sought building permits for residential subdivisions in the Crestview area alone. By 2019 that number has grown to 115 and for 2020 there were 145. It is reasonable to expect that the City of Crestview and the surrounding area will continue to grow as the population of Eglin Air Force Base expands.

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, 2010

Population	2010 Census Percent Population	2014 Estimate
Elderly	14.5%	3256
Language Isolation	.3%	45
Disabled	48.6%	9845
Single Parent	19.5%	1102
Poverty	13.5%	2561
Minority	18.6%	4031

Source: 2010 Census; U.S. Census Population Division

Section 5.01.02.05 Repetitive Loss Properties

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" (FEMA, 2010). 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. As of 2015 the City of Crestview does not have any current 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

Our definition of flooding only considers flooding that is a result of rainfall, which includes tropical rains during a 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 rain might cause some homes to flood particularly in low lying areas or those with poor drainage systems. In the City of Crestview, there are 9 structures located in the AE flood zone and 4 structures in the A flood zone. The cumulative 'just value' of the structures in the AE and A flood zones is $1,711,146. 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	9	$1,485,823	4	$225,323

Source: Okaloosa County Department of Growth Management, 2010

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
	658	4,104	117
Just Value	$54,554,868	$538,409,243	$53,296,853

Source: Okaloosa County Department of Growth Management, 2010

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

Total:	Commercial	Government/ Institutional
	451	56
Just Value	$215,295,972	$100,349,865

Source: Okaloosa County Department of Growth Management, 2010

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	7	225	3	7
Just Value	$651,700	$35,856,259	$430,749	$13,830,698
Level 5	18	194	1	3
Just Value	$1,587,348	$30,895,302	$286,783	$6,941,452
Level 6	0	83	2	0
Just Value	$0	$14,237,174	$328,659	$0
Level 7	1	625	1	8
Just Value	$98,316	$90,317,399	$286,783	$10,084,252
Level 8	0	99	1	5
Just Value	$0	$14,278,776	$286,783	$6,186,265
Level 9	0	12	0	1
Just Value	$0	$1,595,215	$0	$4,954,204

Source: Florida Division of Forestry and Okaloosa County Property Appraiser, 2010 (Okaloosa County 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	22	11
Just Value	$22,813,980	$36,372,509
Level 5	13	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, 2010 (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, 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 FIRE DEPARTMENT	2106 P J ADAMS PKWY CRESTVIEW FL 32536	1313718.375	628287.254
CRESTVIEW MAIN FD	203 W WOODRUFF AVE CRESTVIEW FL 32536	1317938.4	645060.2
CRESTVIEW FIRE STATION 3	585 BROOKEMEADE DRIVE	1321294.721	63641.001

Section 5.01.03.02 Law Enforcement

Site Name	Address	X-COORD	Y-COORD
CRESTVIEW PD	201 STILLWELL BLVD	1320845.377	650834.051
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/PROPERTY APPRAISER	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	500 HOSPITAL DR CRESTVIEW FL 32539	1321083.377	636256.705
CRESTVIEW MANOR	603 N PEARL ST CRESTVIEW FL 32536	1317985.4	646987.213
CRESTVIEW REHAB	1849 E FIRST AVE CRESTVIEW FL 32539	1323750.25	647646.249
SILVERCREST MANOR NURSING HOME	103 RUBY LN CRESTVIEW FL 32539	1319671.75	635144.499

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 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 preformed 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 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 5.01.04.04.01 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 5.01.04.04.02 Thunderstorms and Lightning

1. Ensure communications systems are capable to communicate during and following thunderstorms and lightning. (Responsible party: Okaloosa County Public Safety, 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 5.01.04.04.03 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 5.01.04.05 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 5.01.04.06 Wildfire

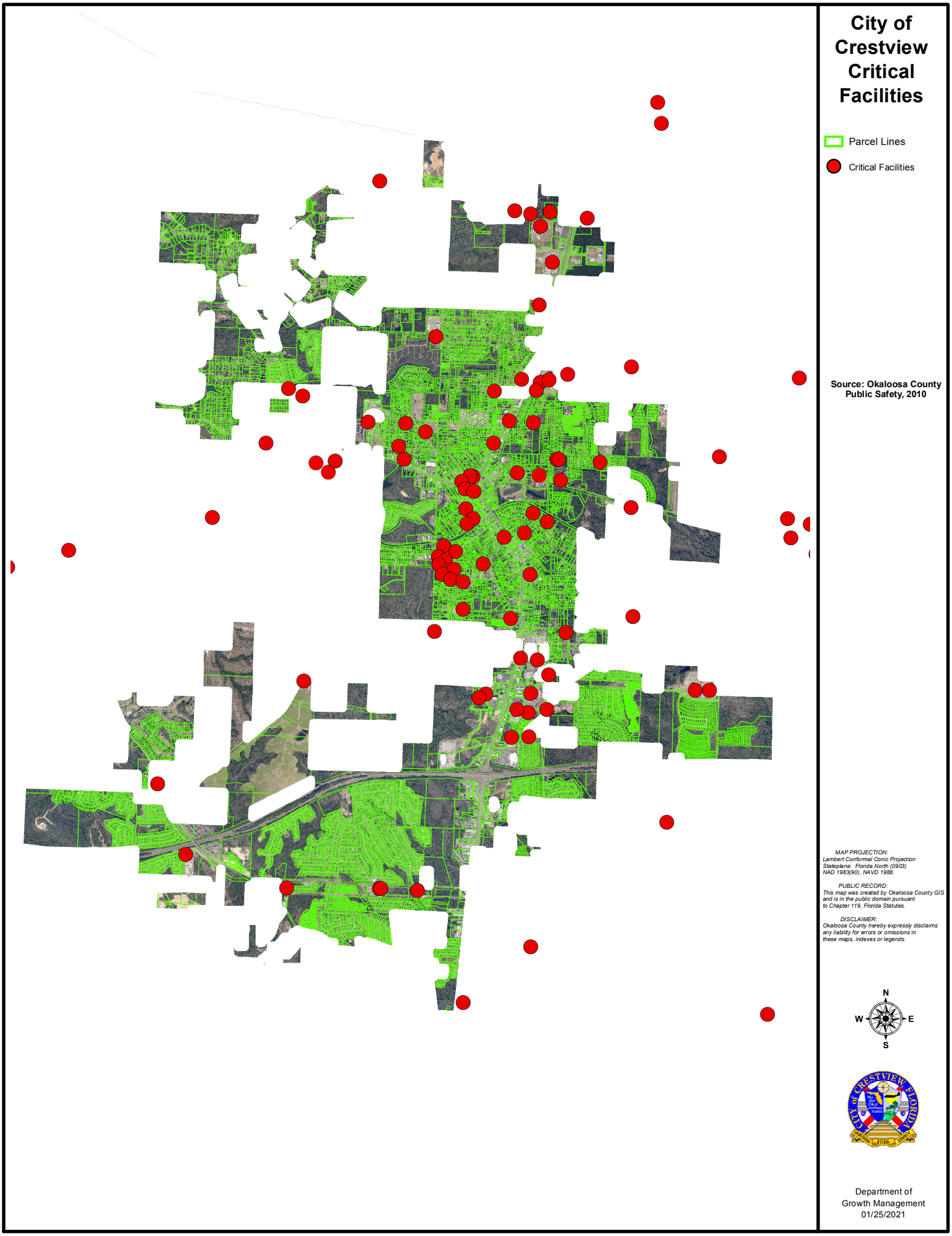
1. Ensure communications systems are capable to communicate during and following wildfire events. (Responsible party: Police and Fire) *Status: Up to Date*
2. Ensure the public is informed of pending conditions. (Responsible party: Police, Fire, Florida Division of Forestry) *Status: As Needed*
3. Support 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, 2010

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

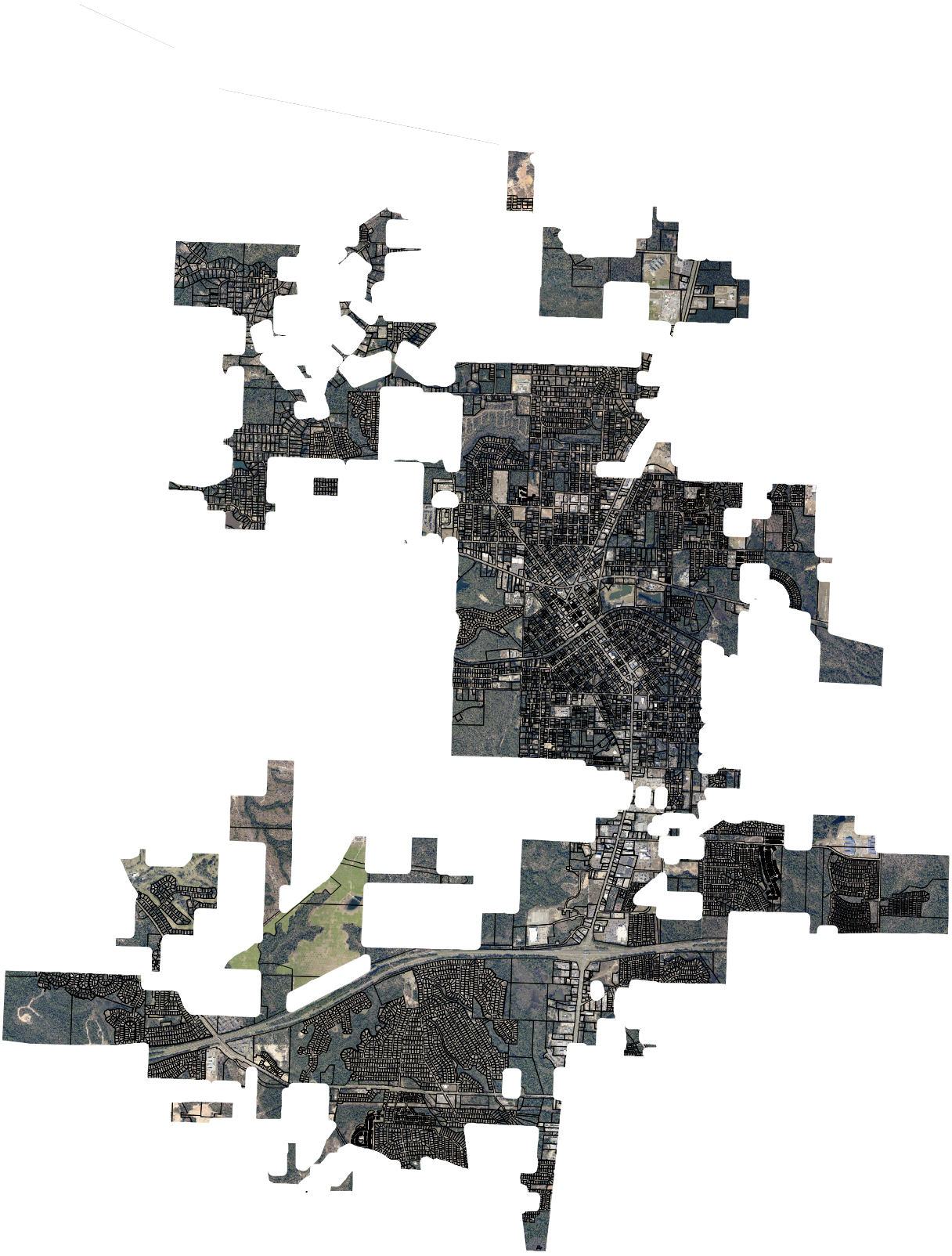
PUBLIC RECORD:
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Department of
Growth Management
01/25/2021

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, 2010

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

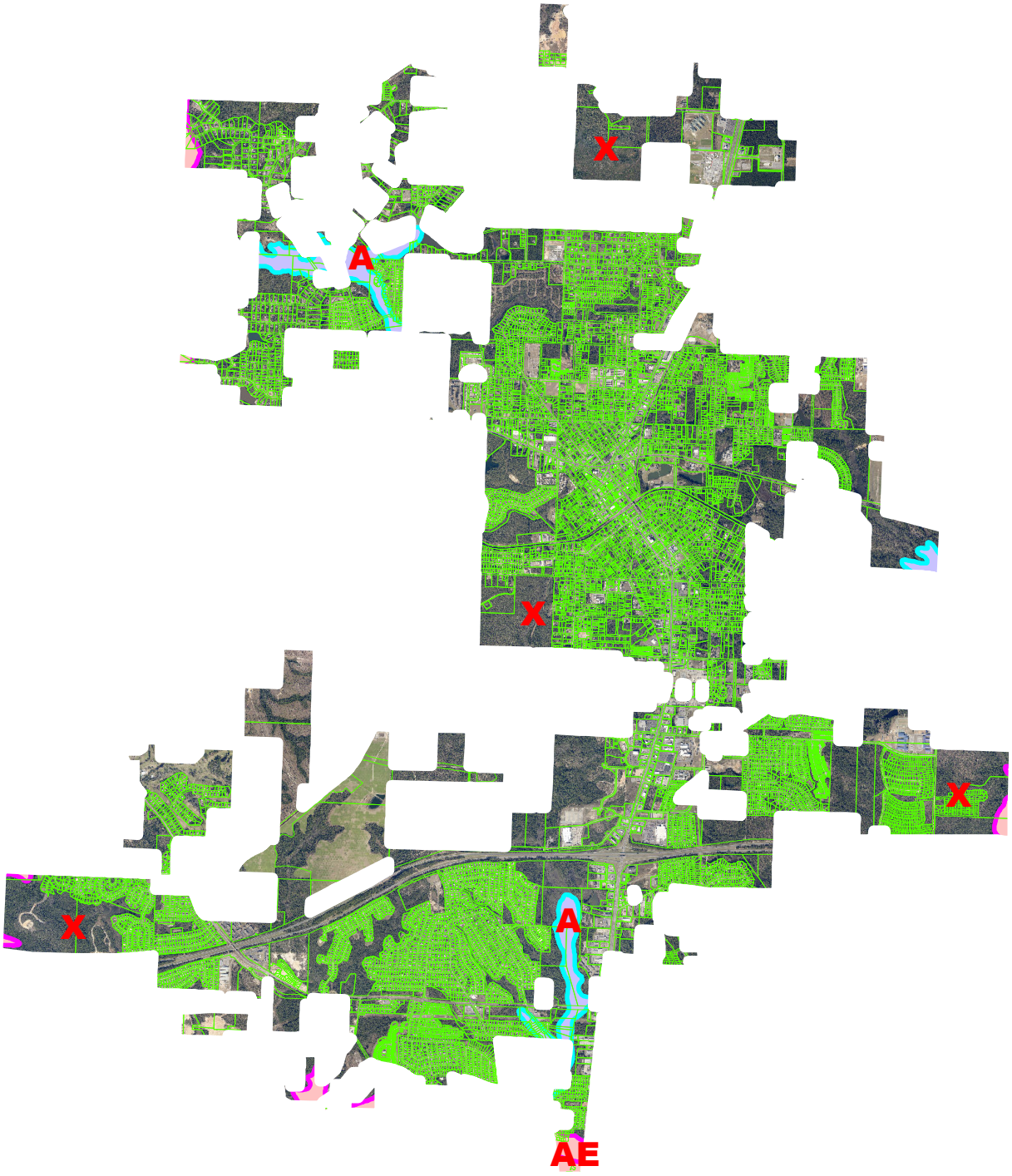
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01/25/2021

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, Dec 6 2002

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

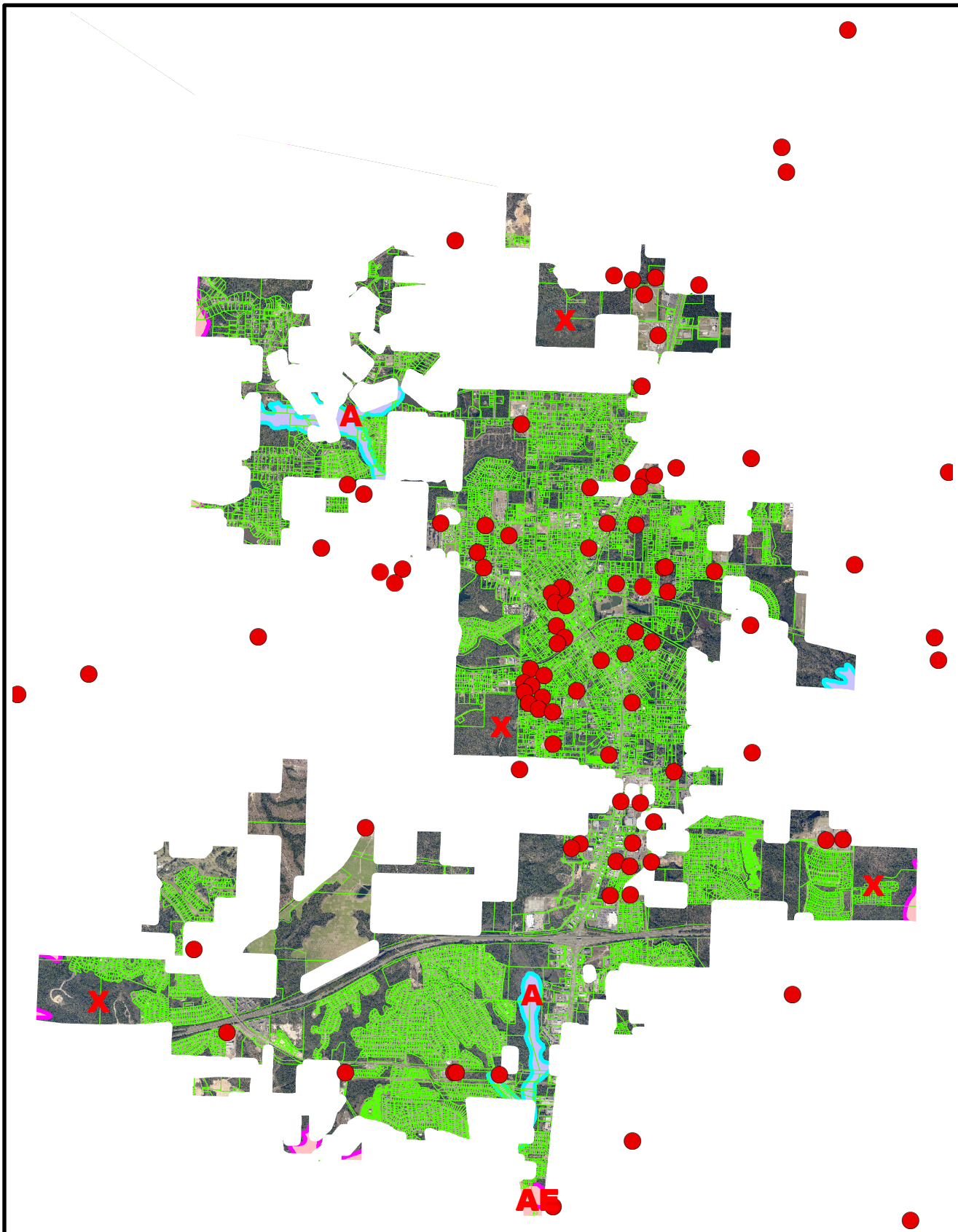
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Department of Growth Management
01/25/2021

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, Dec 6 2002

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

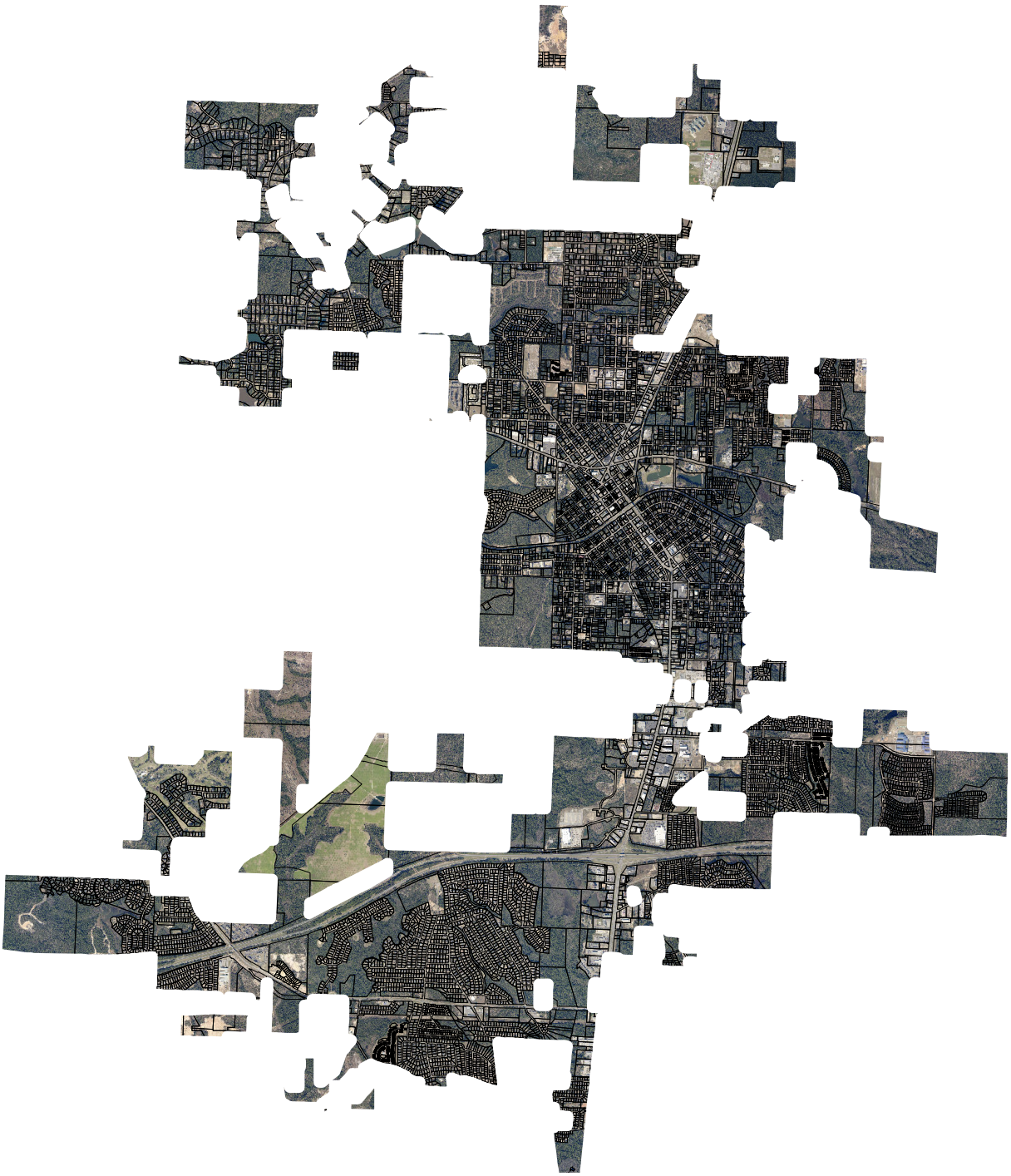
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Department of Growth Management
01/25/2021

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, 2010

MAP PROJECTION:
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Stateplane: Florida North (0903)
NAD 1983(90), NAVD 1988.

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01/25/2021



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, 2010

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

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Section 5.01.06 Post Disaster Redevelopment Plan

The City of Crestview has prepared and enacted a Disaster Resiliency Plan. It is the purpose of this Plan to define the actions and roles necessary to provide a coordinated response within City of Crestview, FL. This plan provides guidance to agencies within the City of Crestview with a general concept of potential emergency assignments before, during, and following emergency situations. It also provides for the systematic integration of emergency resources when activated and does not replace county or local emergency operations plans or procedures.

City of Crestview

Emergency Operations Plan

2020

Promulgation Statement

JB Whitten
Mayor
City of Crestview

CITY OF CRESTVIEW EMERGENCY OPERATIONS PLAN
PROMULGATION

The primary role of government is to provide for the welfare of its citizens. The welfare and safety of citizens is never more threatened than during disasters. The goal of emergency management is to ensure that mitigation, preparedness, response, and recovery actions exist so that public welfare and safety is preserved.

The City of Crestview Emergency Operations Plan provides a comprehensive framework for City of Crestview-wide emergency management. It addresses the roles and responsibilities of government organizations and provides a link to local, State, Federal, and private organizations and resources that may be activated to address disasters and emergencies within the City of Crestview, Florida.

The City of Crestview Emergency Operations Plan ensures consistency with current policy guidance and describes the interrelationship with other levels of government. The plan will continue to evolve, responding to lessons learned from actual disaster and emergency experiences, ongoing planning efforts, training and exercise activities, and Federal guidance.

Therefore, in recognition of the emergency management responsibilities of City of Crestview government and with the authority vested in me as the Chief Executive Officer of Crestview, Florida. I hereby promulgate the City of Crestview Emergency Operations Plan.

_____

JB Whitten
Mayor, City of Crestview

Approval and Implementation

This plan supersedes any previous Emergency Operation Plans.

The transfer of management authority for actions during an incident should be done through the execution of a written delegation of authority from an agency to the incident commander. The delegation of authority is a part of the briefing package provided to an incoming incident management team. It should contain both the delegation of authority and specific limitations to that authority.

The City of Crestview Emergency Operations Plan delegates the Mayor's authority to specific individuals in the event that he or she is unavailable. The chain of succession in a major emergency or disaster is as follows:

1. City Manager
2. Fire Chief
3. Police Chief
4. Public Works Director

_____
Date

_____
JB Whitten
Mayor, City of Crestview

Signature Page

Tim Buldoc, City Manager
City of Crestview

JB Whitten, Mayor
City of Crestview

Anthony Holland, Fire Chief
City of Crestview

Stephen McCosker, Police Chief
City of Crestview

Brona D. Steel, Public Services Director
City of Crestview

Gina Toussaint, Finance Director
City of Crestview

Brian Hughes, Public Information Officer
City of Crestview

Cesar Damiani, Information Technology
City of Crestview

Barry Henderson, Development Services
City of Crestview

Betsy Roy, City Clerk
City of Crestview

Record of Changes

Change #	Date	Part Affected	Date Posted	Who Posted

Record of Distribution

Plan #	Office/Department	Representative	Signature
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

I. Purpose, Scope, Situation, and Assumptions

A. Purpose

It is the purpose of this Plan to define the actions and roles necessary to provide a coordinated response within City of Crestview, FL. This plan provides guidance to agencies within the City of Crestview with a general concept of potential emergency assignments before, during, and following emergency situations. It also provides for the systematic integration of emergency resources when activated and does not replace county or local emergency operations plans or procedures.

B. Scope

This plan applies to all participating departments and agencies of the jurisdictions contained within the geographical boundary of City of Crestview.

C. Situation Overview

1. Characteristics

a. Location and Geography

• The City of Crestview consists of an area of an area that encompasses 16.31 square miles and is 235 feet above sea level. Crestview is located in Okaloosa County, Florida. It is situated 20 miles North of Fort Walton Beach, Fl and 20 miles South of the Alabama/Florida state line. The Shoal River borders the city to the South and East with the Yellow River bordering the West.

b. Climate

• Crestview's climate is humid subtropical. Average summer highs are 92°F with peaks in the low 100's. Average winter lows are in the 30's with the capability to occasionally reach in to the single digit range.

c. Education

• Crestview is home to seven (7) elementary schools, two (2) middle schools one (1) high school and two (2) college campuses.

d. Demographics

• The City of Crestview has a population of 23856 as of 2019. The average growth rate ranges from 1%-2% over the last five (5) years. Crestview is the 1,897th largest city in the United States. The population density is 1,463 per sq. mi which is 387% higher than the Florida average and 1479% higher than the national average.

e. Economic Base

• The City of Crestview is largely a bedroom community that supports two (2) major military insulations. The community is predominantly comprised of residential homes, retail shopping and schools. Ad valorem taxes are the largest revenue producer, accounting for 39% of the operating budget. The remainder of the cities revenues are made up from the local option gas tax, utility service tax, communication service tax, half cent sales tax and other finds/fees for services.

f. Transportation Infrastructure

• Two major highways travel through the City of Crestview. U.S Route 90 heads East-West through the city. State Road 85 heads North-South, intersecting both U.S Route 90 and Interstate 10, which also runs East-West through Crestview.

• Bob Sikes Airport is located 3 miles North East of the city center.

• CSX railroad runs East-West through the center of Crestview.

2. Hazard Profile

a. Potential Hazards

The City of Crestview is subjected to the effects of many disasters, varying widely in type and magnitude from local communities to statewide in scope.

- Natural Disasters could be a result of a number of phenomena such as, hurricanes, tropical storms, floods, severe thunderstorms, high water, drought, severe winter weather, fires (including urban, grass, and forest fires), epidemics, severe heat, high winds or earthquakes.

- Manmade Disasters could be the result of a myriad of other disaster contingencies, such as train

derailments, aircraft accidents, transportation accidents involving chemicals and other hazardous materials, chemical, oil and other hazardous material spills, leaks or pollution problems, dumping of hazardous wastes, building or bridge collapses, utility service interruptions, energy shortages, civil disturbances or riots, terrorism, warfare, applicable criminal acts, or a combination of any of these.

D. Planning Assumptions

1. Effective prediction and warning systems have been established that make it possible to anticipate certain disaster situations, such severe weather events, that may occur throughout the jurisdiction or the general area beyond the jurisdiction's boundaries. Man made events and some natural events may not be predicted but sufficient pre-planning is in place to effectively react to and recover from such events.

2. It is assumed that any of the disaster contingencies could individually, or in combination, cause a grave emergency situation within the City of Crestview. It is also assumed that these contingencies will vary in scope and intensity, from an area in which the devastation is isolated and limited to one that is wide-ranging and extremely devastated. For this reason, planning efforts are made as general as possible so that great latitude is available in their application, considering they could occur in several locations simultaneously.

3. Initial actions to mitigate the effects of emergency situations or potential disaster conditions will be conducted as soon as possible by the local government.

4. Assistance to the affected jurisdictions(s) by response organizations from another jurisdiction(s) is expected to supplement the efforts of the affected jurisdiction(s) in an efficient, effective, and coordinated response when jurisdiction officials determine their own resources to be insufficient.

5. Federal and State disaster assistance, when provided, will supplement, not substitute for, relief provided by local jurisdictions.

6. It is the responsibility of officials under this plan to save lives, protect property, relieve human suffering, sustain survivors, repair essential facilities, restore services, and protect the environment.

7. When a jurisdiction receives a request to assist another jurisdiction, reasonable actions will be taken to provide the assistance as requested.

Concept of Operations

A. General

1. Communication is maintained between affected jurisdictions and area emergency management branch offices. Where the Okaloosa County EOC is activated, two (2) Fire Department, (2) Police Department (1) Public Services representative are placed within the Okaloosa County EOC to facilitate ongoing information exchange between the Okaloosa County EOC and City of Crestview EOC.

2. Where states of emergency are declared, the City of Crestview may request state assistance. All requests for State assistance should go through the local emergency management area coordinator within the Okaloosa County EOC and the appropriate emergency management branch manager to the State Emergency Operations Center (EOC).

3. When the State EOC is activated, Florida's State Emergency Operations Center (SEOC) becomes the office of primary responsibility for the State Emergency Response Team (SERT). The director of emergency management will normally serve as SERT leader.

4. The Okaloosa County EOC will serve as the clearinghouse for response and recovery operations and for deployment of resources within the counties, including cities within the counties.

5. Planning for recovery will be implemented at the same time local governments are taking the emergency response actions necessary to protect the public. Preparations will be made for rapid deployment of resources necessary to facilitate recovery.

B. Hazard Control and Assessment

1. Perceive the threat

2. Assess the hazard

3. Select control strategy

4. Control hazard

5. Monitor hazard

C. Protective Action Selection

1. Analyze the hazard
2. Determine protective action
3. Determine public warning
4. Determine protective action implementation plan

D. Public Warning

1. Determine message content
2. Select appropriate public warning system(s)
3. Disseminate public warning

E. Protective Action Implementation

1. Monitor progress of protective action implementation
2. Control access and isolate danger area
3. Evacuation support
4. Decontamination support
5. Medical treatment
6. Special population support
7. Search and rescue

F. Short-term Needs

1. Shelter operations
2. Unite families
3. Continued medical treatment
4. Increase security
5. Stabilize the affected area

G. Long-term Needs

1. Re-entry

2. Recovery

II. Organization and Assignment of Responsibilities

A. General

Most departments/agencies of government have emergency functions in addition to their normal, day-to-day duties. These emergency functions usually parallel or complements normal functions. Each city department is responsible for **developing and maintaining its own emergency management procedures** that are maintained in their respective department emergency operations plan. (DEOP). Each DEOP is maintained as an appendix to the master City EOP and is inclusive to this overall EOP.

B. Organization & Assignment

1. Chief elected officials

   a. Mayor

      a. Responsible for enacting the City EOP to ensure preparedness, response, mitigation and recovery actions exist so that public welfare and safety is preserved.

      b. Facilitates disaster declarations

      c. Facilitates evacuation orders

      d. Facilitates re-entry decisions

   b. City Manager

      a. Reports to the City of Crestview EOC when activated.

      b. Assists with disaster declarations, evacuation orders and re-entry decisions.

   c. Council Members

      a. Provide direction and support to the EOP.

2. Crestview Police Department

   a. Police Chief reports to the City of Crestview EOC when activated.

   b. Maintain law and order

   c. Control traffic

d. Protect vital installations

e. Control and limit access to the scene of the disaster

f. Assist with all evacuation efforts

g. Assist with search and rescue

3. Crestview Fire Department

a. Fire Chief reports to and chairs the City of Crestview EOC

b. Provides fire protection and the combating of fires

c. Search and rescue

d. Decontamination

e. Assist with damage assessment

4. City of Crestview Department of Public Services

a. Public Services Director reports to the City of Crestview EOC

b. Maintaining streets, avenues, highways and other routes of travel.

c. Assisting with heavy rescue

d. Assist with decontamination

e. Engineering services as required

f. Transportation

g. Debris removal

h. Inspection of shelter sites for safe occupancy

i. Facility damage assessment, public and private, for safe occupancy

j. Enforcement of building codes

k. Maintenance of vehicles and other essential equipment of the various departments and agencies

l. Development of a plan of priorities to be used during the period of increased readiness that addresses the repair of vehicles and equipment

m. Maintenance of a reserve supply of fuel

o. Provisions for the immediate repair of emergency service vehicles and equipment, both in the field and in the shop, as the situation permits

5. City of Crestview Finance Department
    a. Finance Director reports to the City of Crestview EOC
    b. Maintaining economic stabilization efforts as required
    c. Maintaining a list of suppliers, vendors, and items of critical emergency need.
    d. Maintains accountability of all expenditures, debt and man hours dedicated to the declared event.
    e. Provides proper FEMA documentation to Okaloosa County EOC for potential reimbursements.

6. Development Services
    a. Reports to the City of Crestview EOC.
    b. Assist with facility damage assessment, public and private, for safe occupancy.

7. Public Information Officer (PIO)
    a. Reports to the City of Crestview EOC when activated.
    b. Disseminates information to the public.

8. City Clerk
    a. Reports to the City of Crestview EOC when activated.
    b. Documents all activities within the EOC.
    c. Provides for records management within the EOC.

9. Information Technology (IT)
    a. Reports to the City of Crestview EOC when activated.
    b. Maintains critical hardware such as telephones, computers, networks and internet capability during a declared event.

10. Okaloosa County Emergency Medical Services (EMS)
    a. Responsible for emergency medical treatment and transport during a declared event
    b. Provides staff for medical care in designated shelters.
    c. Assists with special needs evacuation.

11. Okaloosa County Health Department
    a. Conduct community needs assessments

b. Ensures safety, disease prevention to include vector born disease prevention

c. Provides medical support to shelters

d. Emergency interment coordination

e. Insect and pest control as required

f. Inoculations for the prevention of disease

12. North Okaloosa Medical Center (NOMC)

a. Emergency medical care

b. Limited on-site decontamination

c. Hospital evacuation

d. Traditional hospital medical services

13. Okaloosa County School District

a. Provide the use of facilities for emergency public education.

b. Providing facilities for emergency housing of evacuees and relief forces

c. Providing facilities for emergency first aid stations, emergency hospitals, or emergency morgues

d. Providing personnel for shelter managers and staff

e. Providing recreation plans for shelter occupants' use during shelter-stay period

C. Support Functions

1. Support from the National Guard may be requested through the Okaloosa County EOC from the State office of emergency management. Military assistance will complement and not be a substitute for local participation in emergency operations. Military forces will remain at all times under military command but will support and assist response efforts.

2. Support from other State government departments and agencies may be made available in accordance with the State plan.

3. Private sector organizations within the jurisdiction may assist with a wide variety of tasks based on their capabilities.

4. Volunteer agencies, such as the American Red Cross, local church/synagogue congregations, and assistive organizations, such as the Salvation Army, are available to give assistance with sheltering, feeding, and other issues, as necessary.

5. Assistance from surrounding jurisdictions may be available through the execution of a memorandum of understanding (MOU) or MOA.

III. +

IV. *Direction, Control, and Coordination

A. Authority to Initiate Actions

1. The Mayor of the City of Crestview is responsible for activating the EOP. Where the city is already responding to an unannounced event, the decision to activate the EOP will be done with the coordination of the "on scene" commander of the event.

2. Where the Mayor is not available, the ability to activate the EOP shall fall within the designated chain of succession to the Mayor.

3. Once notified, the Fire Chief is responsible for implementing the EOP. Where the Fire Chief is not available, the Police Chief shall commence implementation.

B. Command Responsibility for Specific Actions

1. With the activation of the EOP, the Emergency Operations Center (EOC) shall be activated. All activities that support the resolution of, and recovery from the declared event shall be coordinated and directed from the EOC.

2. The City of Crestview EOC will be made up of eight (9) essential support function representatives (ESF's) with the Fire Chief designated as the EOC Director of Emergency Management.

a. The eight (8) EOC, ESF's are:

a. Fire Chief (Director)

b. Police Chief

c. Public Services Director

d. City Manager

e. Development Services Representative

f. Finance Director

g. IT representative

h. Public Information Officer (PIO)

i. City Clerk

3. Incident Command System

The incident command structures used within the City of Crestview's jurisdiction shall be compliant with the National Incident Management System (NIMS). Designated incident commanders are responsible for directing on-scene emergency operations and maintaining command and control of the scene. The EOC shall provide support to the designated incident commanders. If a disaster affects multiple widely separated facilities or jurisdictions, separate incident command operations and an area command may be set up.

4. Assistance

If the City of Crestview's own resources are insufficient or inappropriate to respond to the event, a request will be made for assistance from other jurisdictions, the State, or Federal government. Such requests shall only be made through the EOC.

V. Information Collection and Dissemination

A. Disaster information managed by the City of Crestview EOC is coordinated through the ESF's located in the EOC. These representatives collect information from and disseminate information to counterparts in the field. These ESF's also disseminate information within the EOC that can be used to develop courses of action and manage emergency operations.

B. The City of Crestview PIO shall coordinate and/or disseminate all information to the public.

VI. Communications

A. Communication protocols and coordination procedures are described in detail in the City of Crestview Communications Plan (Needs to be developed). Please refer to this plan for additional information.

VII. Administration, Finance, and Logistics

A. General Policies

1. The authority to make purchases during an emergency event, where the EOP/EOC has been activated, shall rest with the members of the EOC. No purchases will be made without the EOC's approval.

2. Reference should be made to administrative requirements that are applicable to emergency operations (e.g., emergency purchasing procedures), which appear in other documents. (reference the city purchase plan)

3. Records and Reports for Resources and Expenditures.

    a. Responsibility for submitting local government reports to the State office of homeland security and emergency preparedness rests with the City of Crestview Finance Director.

    b. The Finance director shall maintain records of expenditures and obligations in emergency operations. They should also support the collection and maintenance of narrative and long-type records of response to all declared disasters.

4. Agreements and Understandings

    This section references any mutual aid agreements or emergency response and recovery contracts that exist. It also indicates who is authorized to activate those agreements or contracts. Need to identify:

    a. Existing mutual aid agreements

        a. The city of Crestview has current mutual aid agreements with the surrounding fire departments to include North Okaloosa Fire District (NOFD), Almerante Fire District, Baker Fire District, Holt Fire District and Eglin AFB. These agreements would provide or receive specific aid as requested. Where the EOP is activated, all requests would be made through the Okaloosa County EOC.

        b. The Crestview Police Department has mutual aid agreements with the Okaloosa County Sheriffs Office and other surrounding municipalities. These aid agreements are outlined in the Crestview Police Department EOP.

    b. There are currently no existing contracts for services with the City of Crestview for any emergency response or recovery.

B. Additional Policies

1. When the resources of local government are exhausted or when a needed capability does not exist within a local government, the local units of government call for assistance from the State.

2. The incident commander will submit periodic situation reports to the appropriate authorities during a major disaster using standard ICS formats.

VIII. Plan Development and Maintenance

A. Requirements

a. The Mayor of Crestview has the overall responsibility for ensuring that efficient emergency planning is being conducted.

b. The City Manager will ensure that an updated EOP is distributed appropriately.

c. Each department shall be responsible for updating their internal department plans, SOPs, and resource data to ensure prompt and effective response to and recovery from emergencies and disasters.

2. Review and Update

a. The Basic Plan and its appendices should be reviewed and updated annually.

b. Updates should be made to the EOP when any documents are no longer current. Changes in planning documents may be needed:

1) When hazard consequences or risk areas change.

2) When the concept of operations for emergencies changes.

3) When departments, agencies, or groups that perform emergency functions are reorganized and can no longer perform the emergency tasks laid out in planning documents.

4) When warning and communications systems change.

5) When additional emergency resources are obtained through acquisition or agreement, the disposition of existing resources changes,

or anticipated emergency resources are no longer available.

6) When a training exercise or an actual emergency reveals significant deficiencies in existing planning documents.

7) When State or Federal planning standards for the documents are revised.

IX. Authorities and References

A. Legal Authority

1. Federal

a. The Robert T. Stafford Disaster Relief and Emergency Assistance, Public Law 93-288 as amended

b. Public Employees Occupational Safety and Health Act (PEOSHA) regulations

B. References

1. Federal

a. Comprehensive Preparedness Guide (CPG) 101: Developing and Maintaining State, Territorial, Tribal, and Local Government Emergency Plans, March 2009.

b. Homeland Security Exercise and Evaluation Program (HSEEP), February 2007.

c. National Incident Management System (NIMS), December 2008.

d. National Response Framework, Federal Emergency Management Agency, January 2008.

2. State

a. State EOP

3. Local

a. Local EOPs

b. Inter-local agreement(s)

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. As of a 2008 Census estimate it was home to 12,563 residents. In this section, information relevant to Destin 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 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
    - Tornados and Waterspouts
    - Thunderstorms and Lightning
    - Winter Storms
- Heat Wave and Drought
    - Heat Wave
    - Drought
- Wildfires
- Beach Erosion

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 of the natural hazards that threaten the community.

Section 5.02.01.02 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 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 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.

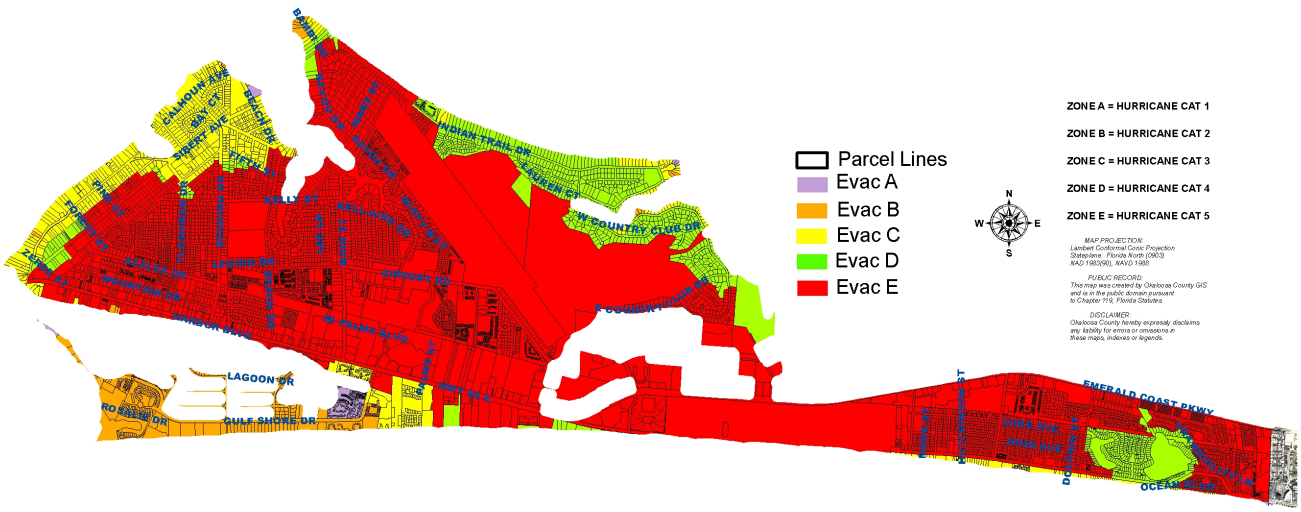
EXTENT:
High winds from hurricanes are a substantial threat to all homes, especially manufactured housing. Category 3 or higher force winds would likely cause substantial damage throughout the City of Destin. Winds in excess of 155 MPH could be experienced in a major Category 5 hurricane in some locations. 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.

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).

City of Destin

Figure 5.02.01.02.1: Evacuation Zones for the City of Destin



Source: Okaloosa County Public Safety / Okaloosa County GIS, 2010

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 time period:

Table 5.02.01.02.1: 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, 2010

Section 5.02.01.03 Storm Surge

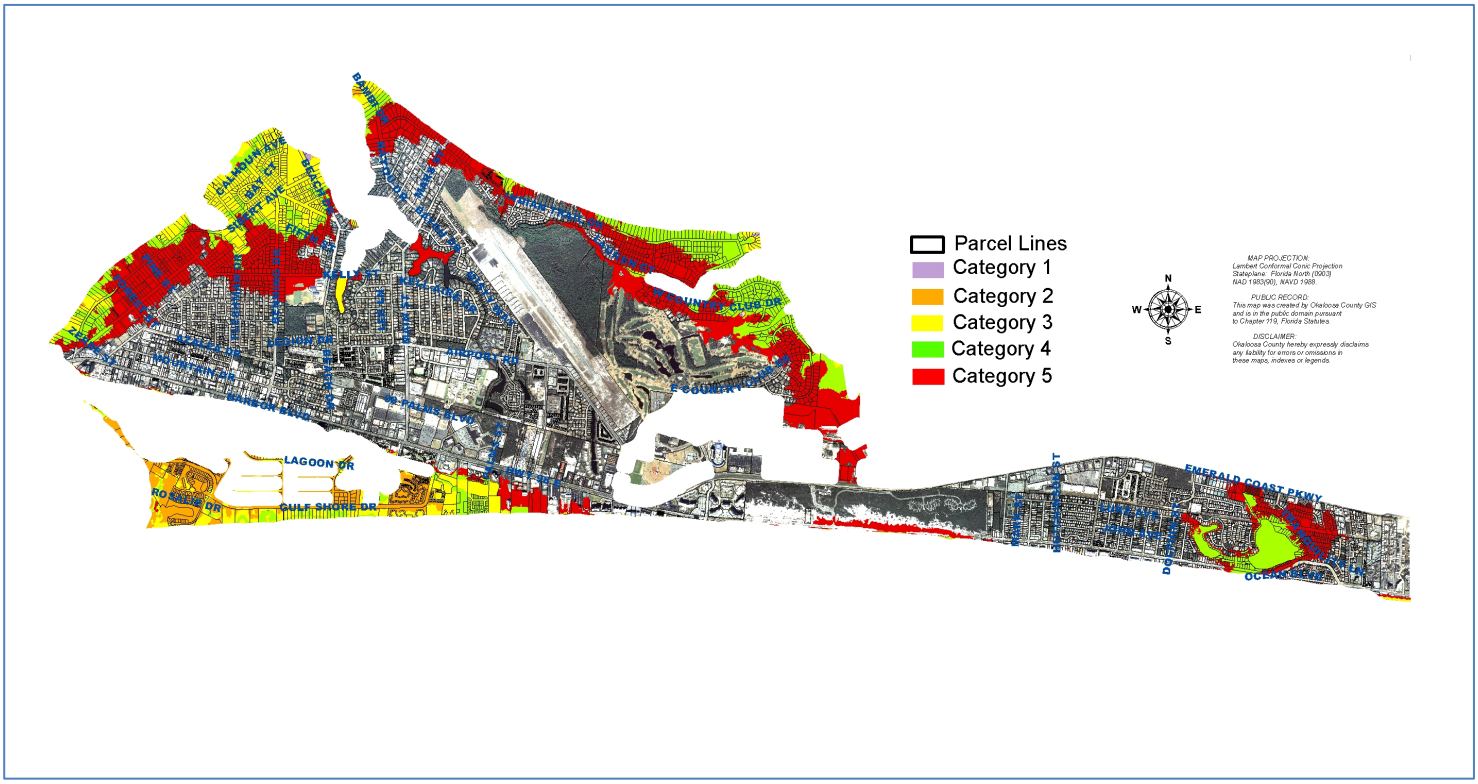
DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

City of Destin

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 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 Destin will experience storm surge levels up to 15.8 feet above mean sea level during a Category 5 hurricane (See Table 5.02.01.03.1). It is evident from the figure below that mostly the areas in close proximity to 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, 2010

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 2010 hurricane scale update.
Source: West Florida Regional Planning Council, 2010

Section 5.02.01.04 Flooding

DEFINITION:
Please refer back 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.

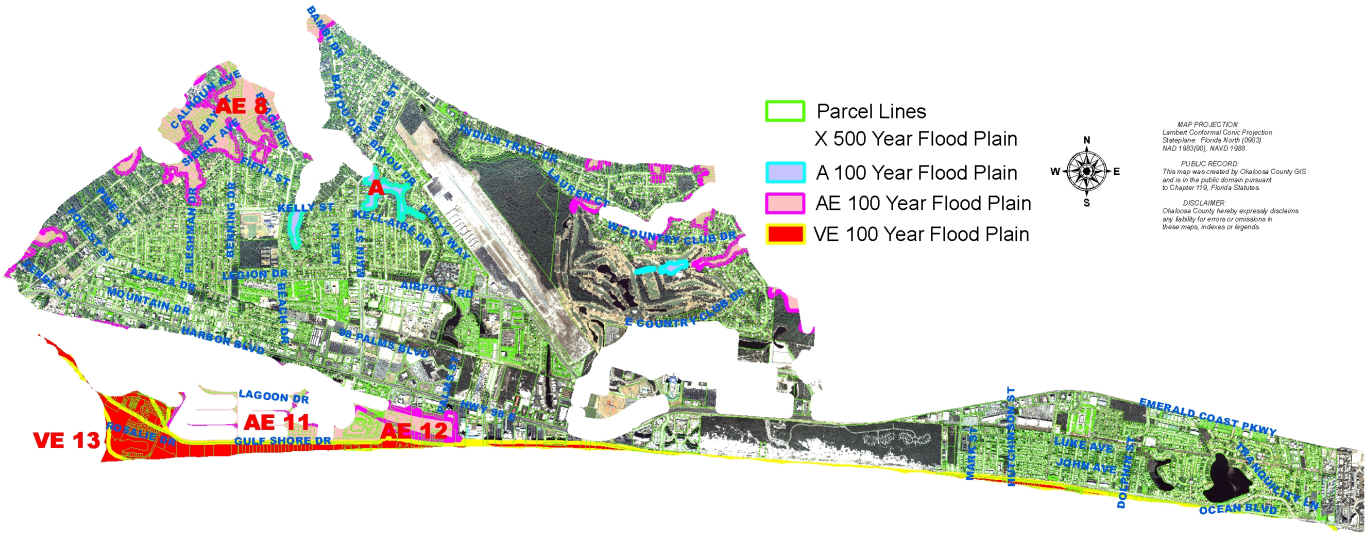
Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard because all of Okaloosa County is equally susceptible to this hazard. *Note* the data is specific to Okaloosa County as a whole entity and cannot be extrapolated into the specific areas of the county.

EXTENT:
The worst case scenario in terms of flooding in the City of 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 located in flood zone X (500 year flood plain). *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 8.93 miles of arterial and collector roads in the City of Destin. Out of this total, 8.93 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 Destin

Figure 5.02.01.04.1: The City of Destin's Flood Zones



Source: FEMA Map Service Center, Dec 6 2002

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 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 5.02.01.05 Dam Safety

DEFINITION:
Please refer back 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. Theses dams support small holding ponds or small lakes. There is one dam in particular that is of concern in the City of Destin. 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 Kelly Street outfall was recently reconstructed, and Spring Lake is staged lower than Coleman Lake. While the City of Destin is not susceptible to significant flooding due to dam failure, some consideration may need to be given to the reconstruction of the Coleman Lake dam in order to prevent such failure.

Although there have been no previous reports of dam failure in the City of Destin, the city is monitoring the Coleman Lake dam closely and has submitted to Okaloosa County Staff a project sheet which addresses the need to repair the dam.

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 would be inconvenienced by the failure but could take an alternate route on Misty Way/N Lakeside Dr to Main St south of the Coleman Lake outfall or Bayou Drive to Indian Trail Dr north of the Coleman Lake outfall in order to access their homes.

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 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 Destin 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. 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 Destin. The future probability of soil erosion cannot be given because no previous occurrences have been documented.

Section 5.02.01.07 Severe Storms

The Severe Storms segment of the LMS Hazards Assessment includes tornados 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 back to the Risk Assessment of the overall County for the definitions of these hazards.

HISTORICAL OCCURRENCE:
In 2002, there was a tornado reported in the City of Destin, which resulted in trees downed, roof damage to a condo, and damage to a home's screen room. There were no known injuries or fatalities; however, $50,000 in property damage was reported. In 2004, a tornado touched down at a construction site along the coast of the City of Destin, which resulted in minor damage to construction equipment. There were no known injuries or fatalities; however, $5,000 in property damage was reported. In 2000 and 2001, there was a waterspout spotted over Choctawhatchee Bay near the City of Destin. In both occurrences, 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 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 historic record is applicable to the City of Destin because it is located on the coast, 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 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 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 Destin. It is very unlikely that an F-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 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 Destin 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 5.02.01.07.02 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, 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 aircrafts. The most significant incident occurred in 2009, when there were 2 general aviation aircrafts destroyed and 10 other aircrafts 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~~,~~ ~~which~~ 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 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 Destin. 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 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 back 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 of a 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 2005-2007 are displayed below.

Table 5.02.01.06.03.1: Monthly Mean Temperature Minimums in degrees Fahrenheit, 2005-2007

	Nov	Dec	Jan	Feb	Mar
Destin, FL	52.7°	47.8°	48.8°	46.6°	53.8°

Source: Weather Underground, 2010

Historical temperature data specific to the City of Destin are minimal. The closest municipality with a greater range of daily temperature record is Niceville, Florida. From 2005-2009, the City of Niceville had a total of 49 days where the temperature was below 32°F. 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 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 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 Destin is estimated to be 55 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 is probably the average.

Section 5.02.01.08 Heat Wave and Drought

Heat Wave

DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of heat waves.

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). Therefore, given the City of Destin's relatively close geographic proximity to the City of Niceville, it is assumed that it experienced these three heat waves as well. Table 5.02.01.07.1, below, depicts the City of Destin's monthly mean temperature maximums from 2005-2007.

Table 5.02.01.07.1: Monthly Mean Temperature Maximums in degrees Fahrenheit, 2005-2007

	May	Jun	Jul	Aug
Destin, FL	81.6°	87.6°	89.1°	89.9°

Source: Weather Underground, 2010

On July 1, 2000 an excessive heat advisory was issued for coastal Okaloosa County, which included the City of Destin. 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 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 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 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 Destin 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 City of Destin 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 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 back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
The City of Destin 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 Destin. 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.

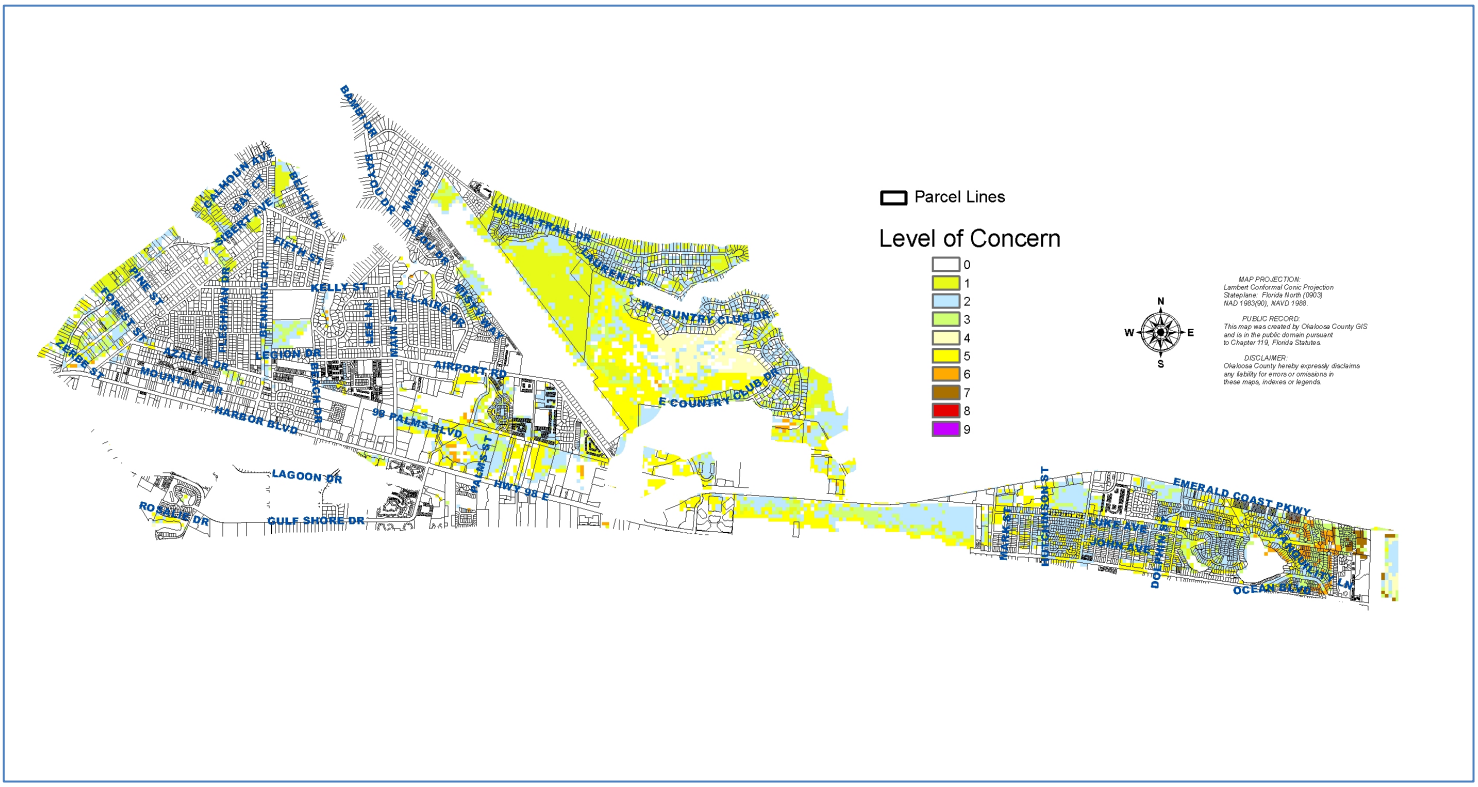
EXTENT:
Based on the Wildland Fire Risk Assessment of Okaloosa County, the worst case scenario would be if the areas with the greatest Level of Concern (LOC) experienced a massive wildfire.

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 Destin. 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. Although, the City of Destin is susceptible to wildfire, it appears that the future probability of occurrence is relatively low.

Figure 5.02.01.08.1: Wildfire Levels of Concern for the City of Destin



Source: Florida Division of Forestry, 2010

Section 5.02.01.10 Beach Erosion

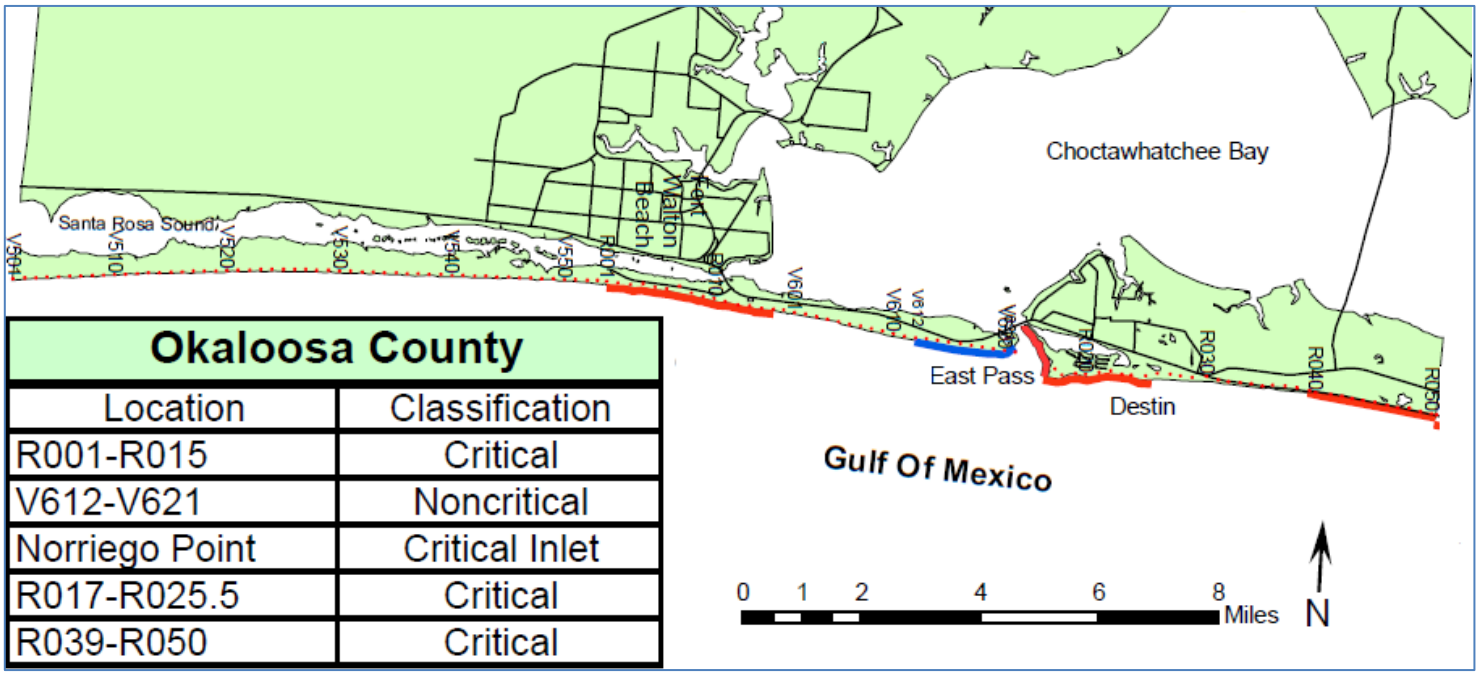
DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

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 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.

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 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. This all can be seen in the figure below.

Figure 5.02.01.09.1: Beach Erosion Classification in Okaloosa County, 2009



Okaloosa County	
Location	Classification
R001-R015	Critical
V612-V621	Noncritical
Norriego Point	Critical Inlet
R017-R025.5	Critical
R039-R050	Critical

Source: FDEP Bureau of Beaches and Coastal Systems

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 the recent historical data, 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. 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 5.02.01.11 Other Hazards

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

Section 5.02.01.11.01 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, 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 5.02.01.11.02 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 5.02.01.10.02.1: 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 Destin is minimal because this issue is addressed during the time of construction and there are no previous records of occurrence.

Section 5.02.01.11.03 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 in 100 years.

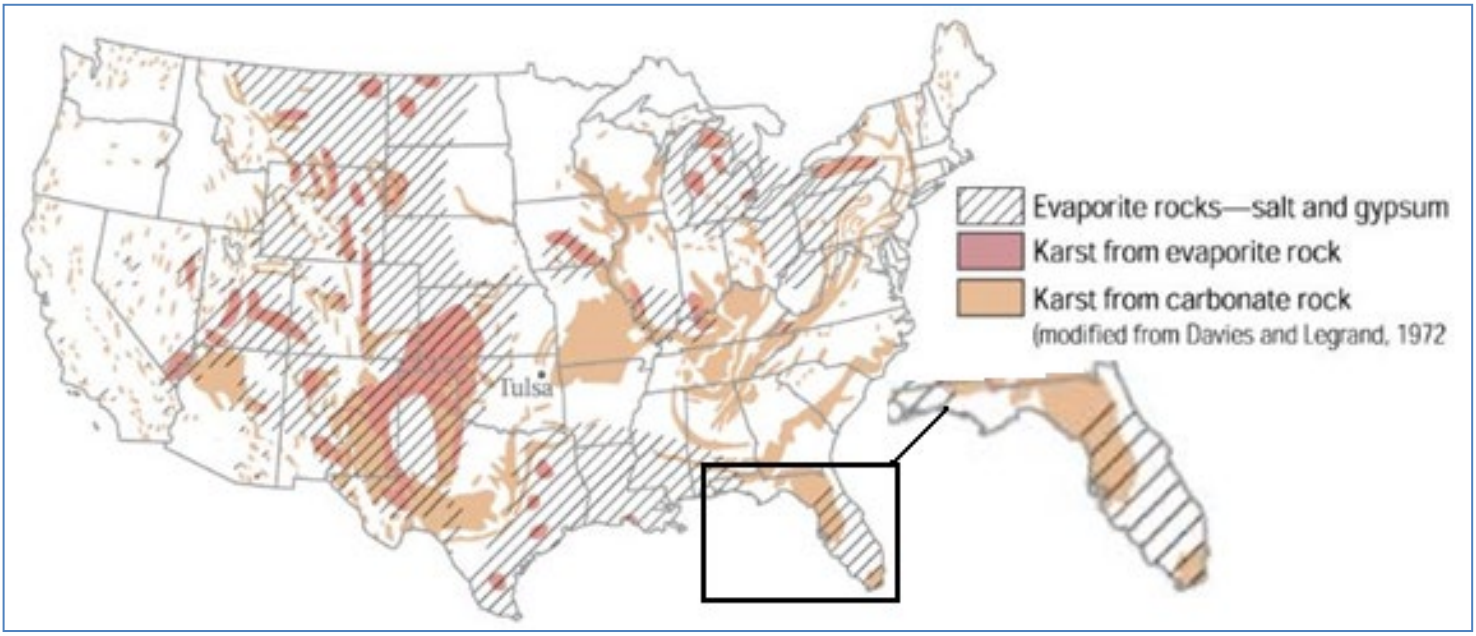
Section 5.02.01.11.04 Avalanche

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 in 100 years.

Section 5.02.01.11.05 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 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 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 in 100 years.

Figure 5.02.01.10.06.1: Rock types connected to collapse (subsurface cavities/sinkholes) in the U.S.



Source: U.S. Geological Survey

Section 5.02.01.11.06 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 in 100 years.

Section 5.02.01.11.07 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 in 100 years.

Section 5.02.01.11.08 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, including the City of Destin, 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 5.02.01.12 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. Therefore, please refer to Okaloosa County's Overall Vulnerabilities, Section 4.02.02, for more information.

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 2010 Census it was home to 12,305 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 Mexico, 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 Mexico and along both sides 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. Per Ken Gallander, AICP, Community Development Director, for the City of Destin, most of the existing and intensive, mixed-use development is located in the Azalea Drive/Airport Road/Commons Boulevard corridor, which is in the western half of the city. The current growth trend of the city can be characterized as slow as best: on average only 12-14 homes are being built per year. This is in such contrast to years prior to 2005, when the growth in the City of Destin was outstanding.

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.

Table 5.02.02.04.1: Estimated Vulnerable Populations in the City of Destin, 2010

Population	2010 Census Percent Population	2014 Estimate
Elderly	22.9%	3569
Language Isolation	.9%	98
Disabled	22.3%	2896
Single Parent	6.5%	256
Poverty	6.3%	752
Minority	2.2%	278

Source: 2010 Census; U.S. Census Population Division

Section 5.02.02.05 Repetitive Loss Properties

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" (FEMA, 2010). 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 City of Destin because they have already experienced significant flood damage. The following tables depict the repetitive loss properties and their flood zones in the City of Destin.

Table 5.02.02.05.1: Repetitive Loss Properties in the City of Destin

	Total Building Payment	Total Contents Payment	Total Losses Claimed	Total Paid	Residential Structures	Non-Residential Structures
City of Destin	$46,526,164.54	$3,695,813.20	498	$50,221,977.74	189	10

Source: FEMA, 2010

Table 5.02.02.05.2: Flood Zones of Repetitive Loss Properties in the City of Destin

Flood Zones	A, AE	V, VE	B, C, X
Total Properties	100	19	80

Source: FEMA, 2010

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 Mexico. 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, and create flying debris out of sources which are not anchored. The most vulnerable homes are those located on beach front and bay front 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

Total:	Condominium	SFR-Townhouse	Single-Family	Mobile Home	Multi-Family
Zone A	93	0	7	0	0
Just Value	$20,070,000	$0	$5,130,912	$0	$0
Zone B	146	208	296	0	2
Just Value	$44,022,000	$52,807,325	$229,993,410	$0	$1,142,315
Zone C	214	268	888	26	21
Just Value	$60,732,488	$79,741,301	$567,076,320	$2,424,273	$12,835,524
Zone D	230	290	1598	26	24
Just Value	$67,791,488	$95,055,906	$870,997,135	$2,424,273	$15,270,104
Zone E	288	1307	4663	32	51
Just Value	$82,959,488	$201,396,771	$1,729,680,864	$2,996,188	$32,743,048

Note Evacuation Zones correspond with Hurricane Categories (Ex. Evacuation Zone 1 = Category 1 Hurricane)
Source: West Florida Regional Planning Council & Okaloosa County Property Appraiser, 2010 (Okaloosa County 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

Total:	Commercial	Government/ Institutional	Trailer Park	RV Park
Zone A	3	1	0	0
Just Value	$9,384,628	$754,838	$0	$0
Zone B	6	1	0	0
Just Value	$11,203,039	$754,838	$0	$0
Zone C	24	4	1	1
Just Value	$47,285,884	$37,679,658	$203,759	$152,153
Zone D	31	7	1	1
Just Value	$55,084,689	$64,365,164	$203,759	$152,153
Zone E	488	20	2	1
Just Value	$448,253,381	$109,447,554	$358,639	$152,153

Note Evacuation Zones correspond with Hurricane Categories (Ex. Evacuation Zone 1 = Category 1 Hurricane)
Source: West Florida Regional Planning Council & Okaloosa County Property Appraiser, 2010 (Okaloosa County 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 Mexico 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

Total:	Condominium	SFR-Townhouse	Single-Family	Mobile Home	Multi-Family
Surge Level 1	61	68	460	1	9
Just Value	$28,103,000	$20,250,510	$385,675,087	$197,334	$7,162,871
Surge Level 2	164	189	609	1	9
Just Value	$53,028,000	$52,726,068	$536,030,888	$197,334	$7,162,871
Surge Level 3	209	266	1288	22	25
Just Value	$67,938,488	$77,341,512	$822,342,281	$2,134,676	$16,883,617
Surge Level 4	209	266	1288	13	25
Just Value	$67,938,488	$77,341,512	$822,342,281	$1,247,987	$16,883,617
Surge Level 5	283	1263	4472	32	51
Just Value	$82,054,488	$189,303,636	$1,606,289,525	$2,996,188	$32,743,048

Source: West Florida Regional Planning Council & Okaloosa County Property Appraiser, 2010 (Okaloosa County Staff generated table from overlaying the surge levels and property appraiser data)

Table 5.02.02.07.2: Other Vulnerable Structures to Storm Surge

Total:	Commercial	Government/ Institutional	RV Park	Trailer Park
Surge Level 1	29	4	0	0
Just Value	$64,604,209	$38,980,389	$0	$0
Surge Level 2	36	4	0	0
Just Value	$72,539,267	$38,980,389	$0	$0
Surge Level 3	44	4	1	0
Just Value	$96,129,995	$38,980,389	$152,153	$0
Surge Level 4	48	5	1	0
Just Value	$99,604,256	$39,519,445	$152,153	$0
Surge Level 5	476	19	1	2
Just Value	$438,074,119	$87,483,210	$152,153	$358,639

Source: West Florida Regional Planning Council & Okaloosa County Property Appraiser, 2010 (Okaloosa County 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 411 structures located in the AE flood zone and 187 structures in the VE flood zone. The cumulative 'just value' of all the structures located in the AE and VE flood zones is $409,675,850. 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	Just Value	VE Flood Zone	Just Value
Condominium	61	$12,811,000	38	$15,075,988
SFR-Townhouse	52	$14,198,726	78	$25,357,171
Single-Family	257	$137,127,229	47	$67,554,135
Mobile Home	8	$724,677	0	$0
Multi-Family	5	$2,388,572	1	$2,336,076
Commercial	23	$39,421,021	21	$52,568,704
Government/Institutional	3	$2,944,595	2	$36,574,850
Critical Facility	2	$593,106	0	$0

FEMA Map Service Center, Dec 6 2002

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 Kelly Street outfall was recently reconstructed, and Spring Lake is staged lower than Coleman Lake. While the City of Destin is not susceptible to significant flooding due to dam failure, some consideration may need to be given to the reconstruction of the Coleman Lake dam.

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 broad 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 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 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 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 represents 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

Total:	Condominium	SFR-Townhouse	Single-Family	Multi-Family
	398	1,404	5,650	67
Just Value	$113,666,476	$230,587,420	$2,160,543,105	$42,232,830

Table 5.02.02.09.1: Vulnerable Residential Structures to Severe Storms
Source: Okaloosa County Department of Growth Management, 2010

Table 5.02.02.09.2: Other Vulnerable Structures to Severe Storms

Total:	Commercial	Government/ Institutional	Critical Facilities
	1,010	46	2
Just Value	$982,772,315	$216,750,379	$593,106

Source: Okaloosa County Department of Growth Management, 2010

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 Mexico) 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 Mexico 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 'just 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 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 Destin, 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 5.02.02.11.03 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 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 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 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 5.02.02.13 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 5.01.02.12.1: Medium to High Wildfire Level of Concern for Residential Structures

Total:	Condominium	SFR-Townhouse	Single-Family	Multi-Family
Level 4	0	0	33	0
Just Value	$0	$0	$18,201,961	$0
Level 5	0	3	137	3
Just Value	$0	$566,376	$64,434,878	$2,720,970
Level 6	3	0	20	0
Just Value	$707,000	$0	$9,320,033	$0
Level 7	0	0	0	0
Just Value	$0	$0	$0	$0

Source: Florida Division of Forestry and Okaloosa County Property Appraiser, 2010 (Okaloosa County Staff generated table from overlaying the wildfire level of concern and property appraiser data)

Table 5.02.02.12.2: Medium to High Wildfire Level of Concern for Other Structures

Total:	Commercial	Government/ Institutional
Level 4	1	2
Just Value	$3,103,570	$22,836,441
Level 5	37	8
Just Value	$94,446,478	$72,880,325
Level 6	10	2
Just Value	$19,436,403	$3,754,884
Level 7	2	0
Just Value	$1,410,994	$0

Source: Florida Division of Forestry and Okaloosa County Property Appraiser, 2010 (Okaloosa County Staff generated table from overlaying the wildfire level of concern and property appraiser data)

Section 5.02.02.14 Beach Erosion

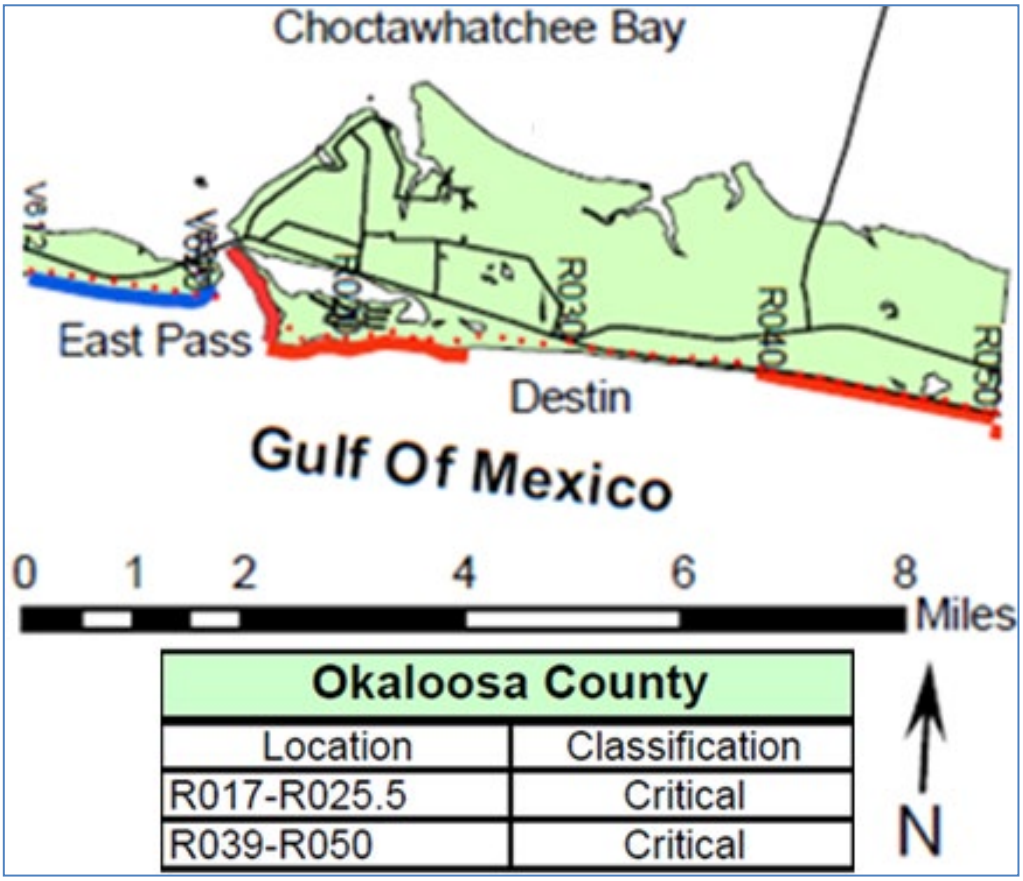
The areas of the City of Destin that are vulnerable to the effects of beach erosion are the properties that border the Choctawhatchee Bay and Gulf of Mexico. As previously mentioned, within its jurisdiction, there are 7.59 miles of coastline along the Gulf of Mexico as well as 11.22 miles of coastline 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 'just 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
Just Value	$25,052,988	$20,793,402	$272,517,829	$10,066,436	$40,344,164	$38,225,551

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.

Figure 5.02.02.13.1: Critically Eroded Beaches in the City of Destin, 2009



Source: FDEP Bureau of Beaches and Coastal Systems

Section 5.02.02.15 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 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 5.02.02.16 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 100-Year Floodplain. 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 will need to be completely evacuated. It shall be noted; the Bay View Campground is not located in the Coastal High Hazard Area. Policies that address 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 CRYSTAL BEACH FD #10	1001 AIRPORT RD DESTIN FL 32541	1347251.963	513211.472
DESTIN MAIN FD #9	848 AIRPORT RD DESTIN FL 32541	1344030.492	513269.624

Section 5.02.03.02 Government Centers

Site Name	Address	X-COORD	Y-COORD
DESTIN CITY HALL	4200 INDIAN BAYOU TRAIL DESTIN FL 32541	1351098.909	510433.244
DESTIN CITY ANNEX	4100 INDIAN BAYOU TRAIL DESTIN FL 32541	1350729.678	510934.018

Section 5.01.03.03 Hospitals

Site Name	Address	X-COORD	Y-COORD
SACRED HEART OF DESTIN	36500 EMERALD COAST PKWY DESTIN FL 32541	1370091.69	508264.269

Section 5.02.03.04 Adult Congregate Living Facilities

Site Name	Address	X-COORD	Y-COORD
DESTIN HEALTHCARE AND REHAB CENTER	195 MATTIE M KELLY BLVD DESTIN FL 32541	1347288.926	511773.598

Section 5.02.03.05 Public Works Facilities

Site Name	Address	X-COORD	Y-COORD
DESTIN WWTP	18 INDUSTRIAL PARK LN DESTIN FL 32541	1344458.256	512361.113

Section 5.02.03.06 Rapid Impact Assessment Team Reference Points

Site Name	Address	X-COORD	Y-COORD
CRYSTAL BEACH	3310 SCENIC HWY 98 DESTIN FL 32541	1364138	507543.999
DESTIN AIRPORT	1001 AIRPORT RD DESTIN FL 32541	1347557.508	513580.323
DESTIN ELEM SCHOOL	630 KELLY ST DESTIN FL 32541	1340781.28	515335.472

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	1370002.535	508393.95
HENDERSON BEACH STATE RECREATION	17000 EMERALD COAST PKWY DESTIN FL 32541	1354682.148	509413.157

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	1334877.091	513442.111
SHORES SHOPPING CENTER	841 HARBOR BLVD DESTIN FL 32541	1343777.772	511221.756

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	518068.625
CEDAR CREST MOBILE HOME PARK	230 SIBERT AVE DESTIN FL 32541	1336375.16	515099.24
DESTIN MARINA TRAILER PARK	7 CALHOUN AVE LOT 10 DESTIN FL 32541	1333747.17	513452.86
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)

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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 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 5.02.04.01 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)
12. City of Destin Comprehensive Plan: Policy 5-1.4.11: 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 Mexico. 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, FDEP)
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 coastal high hazard area (CHHA) 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. Within one year from Plan adoption, the City of Destin shall amend the LDC to include administrative procedures ensuring that any development order approved by the City is coordinated 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 delineated in the Tri-State Hurricane Evacuation Study, U.S. Army Corps of Engineers, 1997 (reference Appendix C of the Study). Promotion of roadway improvements shall be accomplished through the City's participation with the Fort Walton Beach Urban Area Metropolitan Planning Organization (MPO) and the Florida Department of Transportation. (Responsible party: Public Works, Community Development)
17. City of Destin Comprehensive Plan: Policy 6-1.7.1: Existing Infrastructure in the CHHA. Within two years of Plan adoption, the City shall establish a list of infrastructure facilities located in the CHHA that could be relocated, mitigated or replaced should state funding become available for such activities. Infrastructure is defined as roads, bridges, sanitary sewer facilities, and potable water 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, DWU, 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/or 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 nonresidential development, away from the areas

designated as a high velocity storm surge area. Residential development and/or redevelopment in the CHHA shall not exceed the residential densities shown on the Future Land Use Map 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 or Category 1 storm-surge contours. (Responsible party: Community Development)
21. City of Destin Comprehensive Plan: Policy 6-1.9.1: Emergency Management. Through the City's emergency management department, the City shall manage its local emergency plan and utilize the recommendations provided in the Northwest Florida Hurricane Evacuation Study (July 1999) as well as the Okaloosa County's Comprehensive Emergency Management Plan. (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. The City shall coordinate with the County and the Okaloosa County Emergency Management Director in assisting implementation of the County's campaign to educate the general citizenry regarding emergency preparedness plans, including specific citizen directives. (Responsible party: County, Public Works, City PIO)
23. City of Destin Comprehensive Plan: Policy 6-1.9.3: Future Coordination with the County in Emergency Preparedness. To provide for safe and efficient evacuation of the residents of Destin, in the event of a hurricane, the City shall coordinate with Okaloosa County in annually updating the County's Comprehensive Emergency Management Plan. The City shall coordinate with the County in updating hurricane evacuation center assignments as well as other policy formulation surrounding land use and emergency preparedness. This update shall enable the County and incorporated municipalities to plan for future population densities that will neither adversely impact the efficiency of the evacuation plan nor increase evacuation times. The City shall also coordinate with the County in updating hurricane evacuation shelter 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. The City's adopted Post-Disaster Redevelopment Plan shall be used as its established program addressing re-entry into the City when

destruction and damage to buildings and infrastructure have occurred due to a storm event that resulted in evacuation. (Responsible party: 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 shall plan 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 Ave. The City shall also coordinate with FDOT regarding available FDOT funds to support construction of a back-up alternative east-west evacuation route for Harbor Boulevard/Emerald Coast Parkway. (Responsible party: Public Works, TPO)
27. 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 shall plan 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 Ave. The City shall also coordinate with FDOT regarding available FDOT funds to support construction of a back-up alternative east-west evacuation route for Harbor Boulevard/Emerald Coast Parkway. (Responsible party: Public Works, TPO)
28. City of Destin Comprehensive Plan: Policy 6-1-9.8: Hurricane Evacuation Carrying Capacity Study. Within two years of Plan adoption, the City shall conduct a study to identify 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. As evacuation routes are also used by residents and visitors within Walton County and Okaloosa County, the City shall request participation from Walton County and Okaloosa County in the preparation of a carrying capacity study for Harbor Boulevard/Emerald Coast Parkway and other evacuation routes leading from coastal areas to the mainland. (Responsible party: Community Development)
29. City of Destin Comprehensive Plan: Policy 6-1.6.1: CHHA Defined. As defined in Rule 9J-5.003(17), FAC, the CHHA is defined as the areas to be evacuated during a Category 1 storm event as determined by the Northwest Florida Hurricane Evacuation Study. (Responsible party: Sheriff's Dept.)
30. City of Destin Comprehensive Plan: Policy 6-1.6.2: Hazard Mitigation Management**.** The City shall continue participate in the 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:

i. State and local regulations establish coastal construction control lines, as well as applicable state and local construction codes regulating construction activity in coastal areas.

ii. 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.

iii. 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.

iv. Land use controls shall ensure that wetlands are preserved and protected from the adverse impacts of development.

v. Dune and beach system restoration including ongoing maintenance of coastal vegetation.

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.
2. Ensure the public is informed of pending conditions.
3. Ensure that maps accurately reflect the amount of storm surge, wave and flood action that can occur during hurricanes and tropical storms.

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.
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.
6. Ensure roads are designed and engineered for the amount of storm surge that can be expected.
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.
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, FEDP)
9. City of Destin Comprehensive Plan: Policy 3-1.3.6: Manufactured Housing Location Principles. Mobile homes shall be prohibited within storm-surge areas of the City and within FEMA 100-year flood areas. Manufactured housing, which does not meet the Federal Highway Administration (FHWA) definition of mobile home, shall be constructed consistent with Florida Standard Building Code and, where applicable within the City, FEMA construction standards. (Responsible party: Community Development)

Section 5.02.04.03 Flooding

1. Ensure all future buildings are constructed to the Florida Building Code. *For NFIP Compliance*
2. Ensure all future buildings are built with a minimum finished floor height of 1’ or 2’ above (land use zone dependent) the established Base Flood Elevation on the Flood Insurance Rate Maps for those buildings located within the AE Flood Zones. *For NFIP Compliance*
3. Ensure all future buildings built within the V Flood Zones meet the minimum 1’ or 2’ freeboard requirement (land use zone dependent). *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~~ approximate A Flood Zones. *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~~ Community Development department. *For NFIP Compliance*
6. Ensure roads are designed and engineered for the amount of flooding that can be expected. *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. *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. *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. *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. *For NFIP Compliance*
11. Ensure communications systems are capable to communicate during and following flood events. *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.
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.
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. *For NFIP Compliance*
15. Ensure the public is informed of pending conditions. *For NFIP Compliance*
16. City of Destin Comprehensive Plan: Policy 9-1.5.4: Resolving Concurrency Issues. In order to implement § 9J-5.0055 FAC and Objective 9-1.5, the City shall require that all developments obtaining a development order as part of the review process, including building permits, zoning permit, subdivision approval, rezoning, special use, variance, site plan approval, or any other official City action having the effect of permitting a development of land [Cross reference § 163.3164 (7) FAC] shall, at the time the subject application is filed, submit narrative and graphic information which demonstrates that all urban services needed by the proposed development can and will be provided concurrent with the new development. (Responsible party: Community Development)
17. City of Destin Comprehensive Plan: 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 3-1.3.6: Manufactured Housing Location Principles. Mobile homes shall be prohibited within storm-surge areas of the City and within FEMA 100-year flood areas. Manufactured housing, which does not meet the Federal Highway Administration (FHWA) definition of mobile home, shall be constructed consistent with Florida Standard Building Code and, where applicable within the City, FEMA construction standards. (Responsible party: Community Development)

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)
3. City of Destin Comprehensive Plan: Policy 4-5.1.2: Inspection of 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 4-5.1.3: Maintain Facilities Per LOS Standards. The City shall continue its practice of correcting localized drainage problems so that LOS standards are maintained. (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 types of soils in these areas shall provide percolation of a 25-year/24-hour storm event within 72 hours. (Responsible party: Public Works)

Section 5.02.04.04 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)
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, FEDP)

Section 5.02.04.05 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 5.02.04.05.01 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 5.02.04.05.02 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 5.02.04.05.03 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 5.02.04.06 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.
4. City of Destin Comprehensive Plan: Policy 5-1.2.1: Potable Water Supply. Within two years of Plan adoption, the City shall request that DWU and SWU submit at least on a quarterly basis a status report to the City stating the availability of water capacity and water quality within the DWU system to serve existing development and future connections within Destin. (Responsible party: Community Development)
5. City of Destin Comprehensive Plan: Policy 5-1.2.2: Wellfield Protection Areas. The City shall ensure the protection of potable water supply wells near DWU wellfields by restricting uses within a 300-foot radius surrounding each wellfield 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 wellfield 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 SWUS 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: DWU)

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 fresh water resources to maintain adequate fresh water supplies during dry periods and to conserve water where practicable. (Responsible party: Community Development)
8. City of Destin Comprehensive Plan: Policy 5-1.2.5: Emergency Water Conservation. Destin 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. Within one year of Plan adoption, the City will amend the LDC 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. The LDC will also require rain-gauge detection devices be installed with all new irrigation systems permitted by the City. (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, DWU)

Section 5.02.04.07 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.
6. City of Destin Comprehensive Plan: Policy 3-1.5.2: Maintain Active Code Enforcement. The City shall maintain an active code enforcement program to identify housing accommodations and nonresidential 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 5.02.04.08 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.
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.
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.
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.
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.
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.
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.
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.

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.
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.
11. Shoreline development must comply with performance standards that address lot coverage, vegetated buffers, stormwater management, and erosion and sedimentation controls.
12. City of Destin Comprehensive Plan: Policy 5-1.10.1: White Sand Protection Zone. White sand is a designated natural resource within Destin 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, FEDP)
13. 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, FEDP)
14. City of Destin Comprehensive Plan: Policy 6-1.1.9: Artificial Reef Program. The City shall continue to support artificial reef programs sponsored by the State and County that create habitat for aquatic species and/or protect Gulf beaches from soil erosion. The City shall continue to cooperate with the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the FDEP by providing inspection services for artificial reef materials and continue to ensure that such materials are suitable for use as artificial habitats in the Gulf and Bay. (Responsible party: Public Works)
15. 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 contribute to fish and wildlife habitat, marine productivity and water quality, offer protection from erosion and flooding, contribute to the natural soil building process. (Responsible party: Community Development)

16. 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)
17. City of Destin Comprehensive Plan: Policy 6-1.3.4: Coastal Revegetation Programs. The City shall continue to support programs administered by the FDEP to plant coastal vegetation and sea oats along shoreline beaches. The City shall also annually evaluate available state grant funds to assist revegetation activities along the City's shoreline.
18. 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 annually evaluate available grant funds administered by the FDEP for beach restoration and renourishment. The City shall also request that the Okaloosa County Tourist Development Council (TDC) and the Okaloosa County Board of County Commissioners dedicate annual revenues to beach restoration and coastal vegetation replanting within the Destin area. (Responsible party: CM Office, Public Works)
19. City of Destin Comprehensive Plan: Policy 6-1.3.6: 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)
20. 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 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)
21. City of Destin Comprehensive Plan: Policy 6-1.3.9: 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)
22. 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, FEDP)

23. City of Destin Comprehensive Plan: Policy 6-1.5.1: Enforce Development Restrictions Seaward of the CCCL. The City shall coordinate the development review process by forwarding all applications for construction seaward of the Coastal Construction Control Line (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)
24. City of Destin Comprehensive Plan: Policy 6-1.5.2: Natural Shoreline and Beach/Dune Stabilization. Shoreline development and access shall continue to be restricted in order to preserve the shoreline. Rigid shore protection structures are not permitted except for those structures approved by FDEP or the U.S. Corps of Engineers to protect marine vessel passageways. When beach renourishment projects are needed, the dune system should be restored, as necessary, using natural, indigenous vegetation. (Responsible party: FDEP, Public Works)
25. 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)
26. 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 Mexico, excepting mechanical beach cleaning equipment, public safety and emergency vehicles, and vehicles permitted by the FDEP. (Responsible party: FDEP, Sheriff's Dept., Code Enf.)
27. City of Destin Comprehensive Plan: Policy 6-1.5.4: Beach and Dune Systems. Within one year of plan adoption, the LDC shall be amended 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: Community Development)
29. City of Destin Comprehensive Plan: Policy 5-1.5.7: Gulf Shoreline Protection Zone. A 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:

30. 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 Mexico shall not be less than 50 feet from the line of mean high water.

    a. Removal of existing vegetation, except as allowed pursuant to an approved FDEP permit;

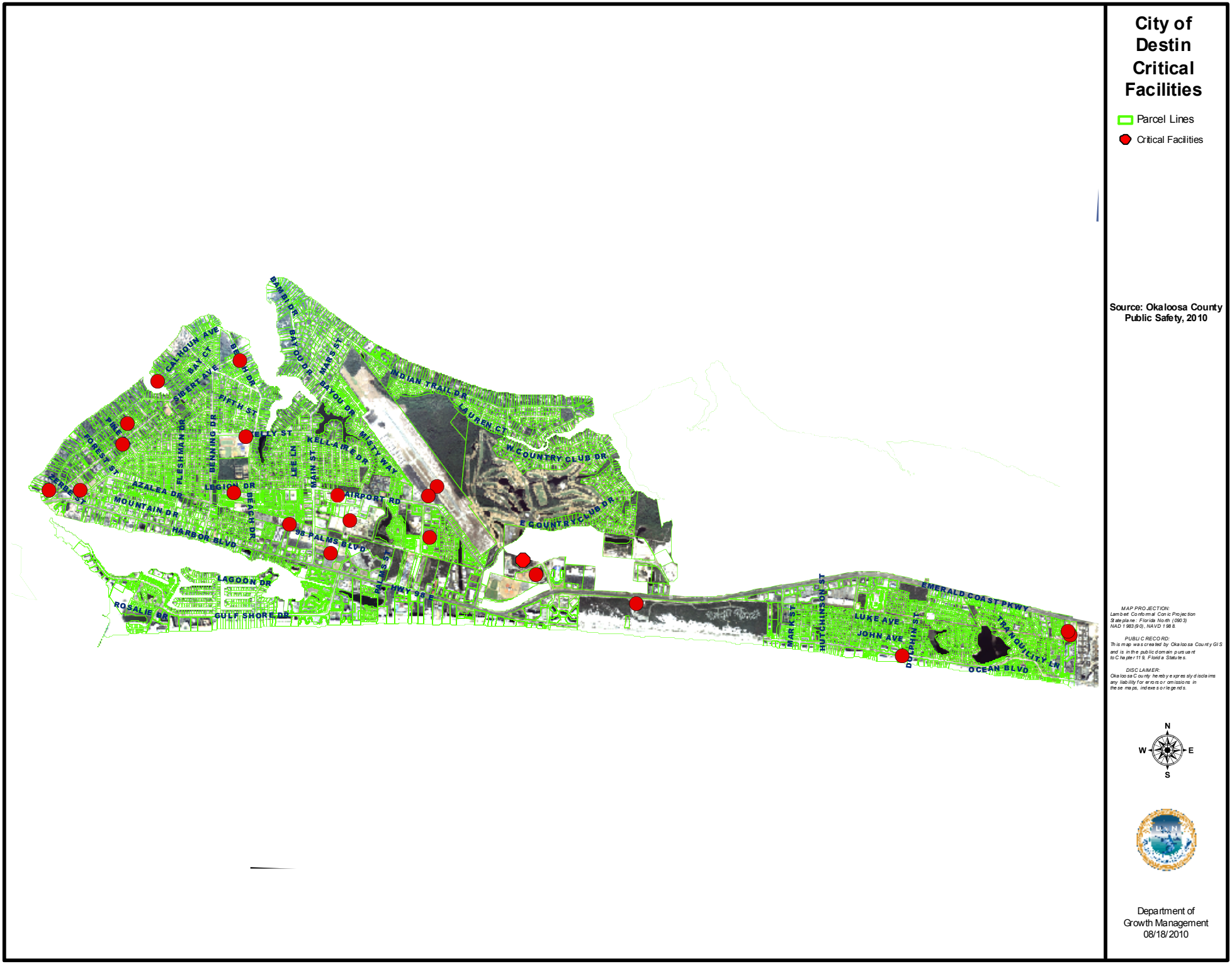
    b. Planting of new vegetation except for native, salt-resistant species suitable for beach and dune stabilization;

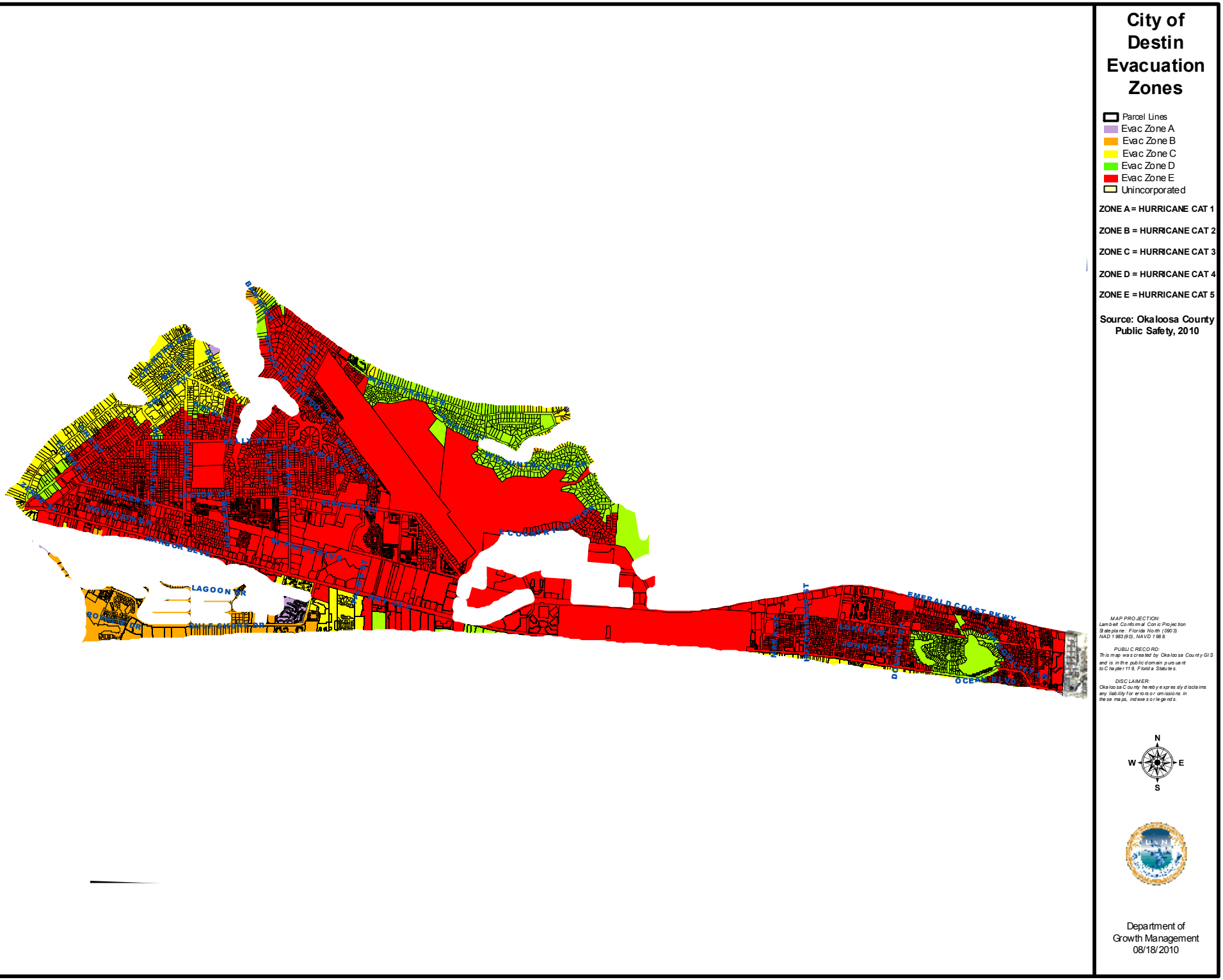
    c. Installation of temporary or permanent coastal armoring, as such is defined in Rule 62B-33.002(5), Florida Administrative Code, unless a permit for such armoring has been issued by FDEP, and any other applicable Federal and local requirements have been satisfied, or unless such armoring is authorized by the City's adoption of an emergency resolution pursuant to F.S. § 161.085(3), and any other applicable Federal, State and local requirements have been satisfied. (Responsible party: Community Development)

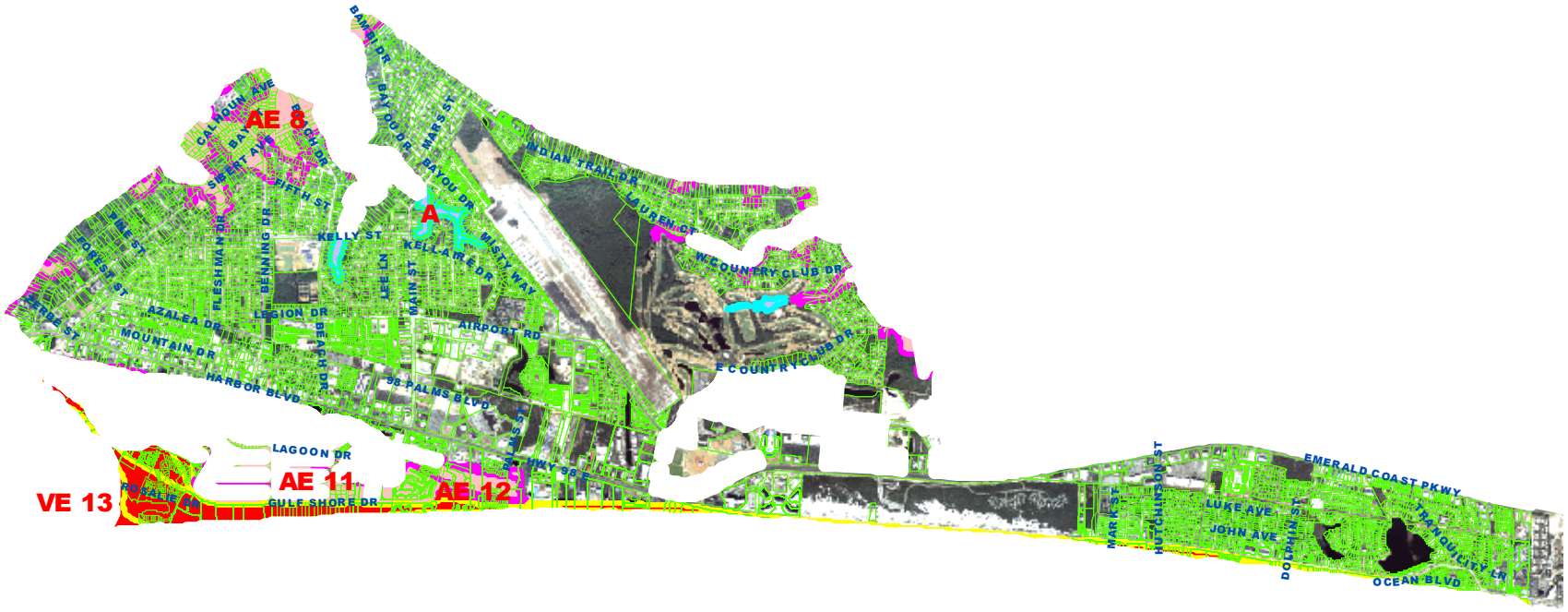
Section 5.02.05 Maps

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, 2010
MAP PROJECTION:
Lambert Conformal Conic Projection
State plane : Florida North (0903)
NAD 1983(90), NAVD 1988.
PUBLIC RECORD:
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08/18/2010
CALHOUN AVE
BAY CT
SHERRI AVE
BEACH DR
FIFTH ST
FLESHMAN DR
BENNING DR
FOREST ST
PINE
KELLY ST
LEE LN
MAIN ST
BAMBI DR
BAYOU DR
MAY ST
MISTY WAY
KELLAM DR
INDIAN TRAIL DR
LAURENCT
W COUNTRY CLUB DR
E COUNTRY CLUB DR
AZALEA DR
MOUNTAIN DR
LEGION DR
BEACH DR
AIRPORT RD
HARBOR BLVD
98 PALMS BLVD
PALMS ST
HWY 98
LAGOON DR
ROSALIE DR
GULF SHORE DR
MARK ST
HUTCHINSON ST
EMERALD COAST PKWY
LUKE AVE
JOHN AVE
DOLPHIN ST
TRANQUILITY LN
OCEAN BLVD


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, 2010
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LAGOON DR
EMERALD COAST PKWY



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, Dec 6 2002

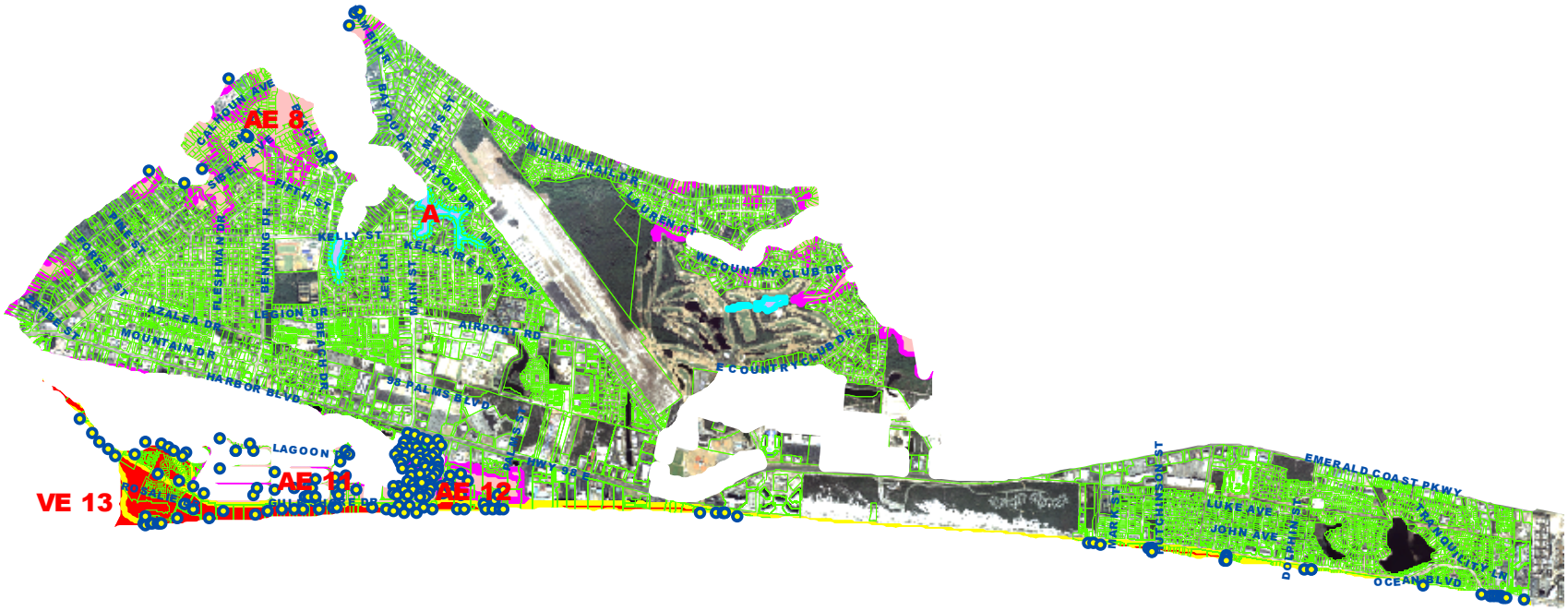
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City of Destin Repetitive Loss Properties

- 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, Dec 6 2002

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

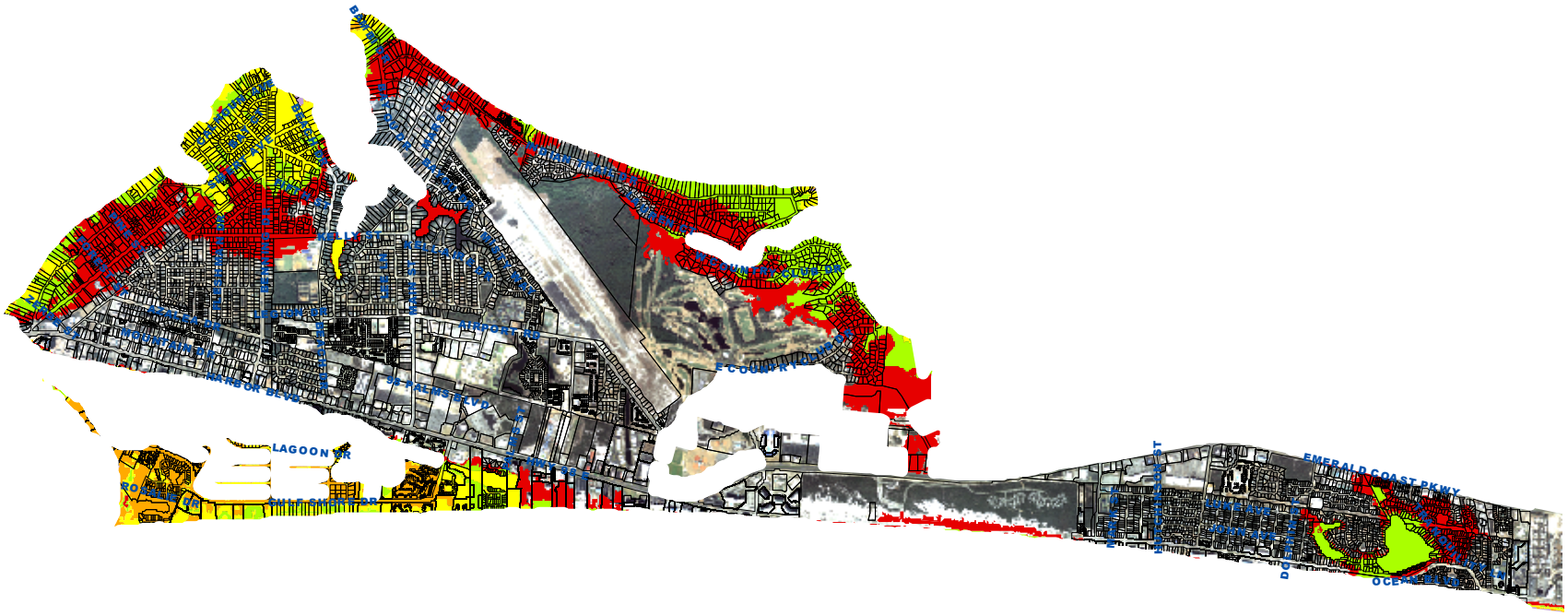
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City of Destin Surge Zones



- Parcel Lines
- Category 1
- Category 2
- Category 3
- Category 4
- Category 5

Source: West Florida Regional Planning Council, 2010

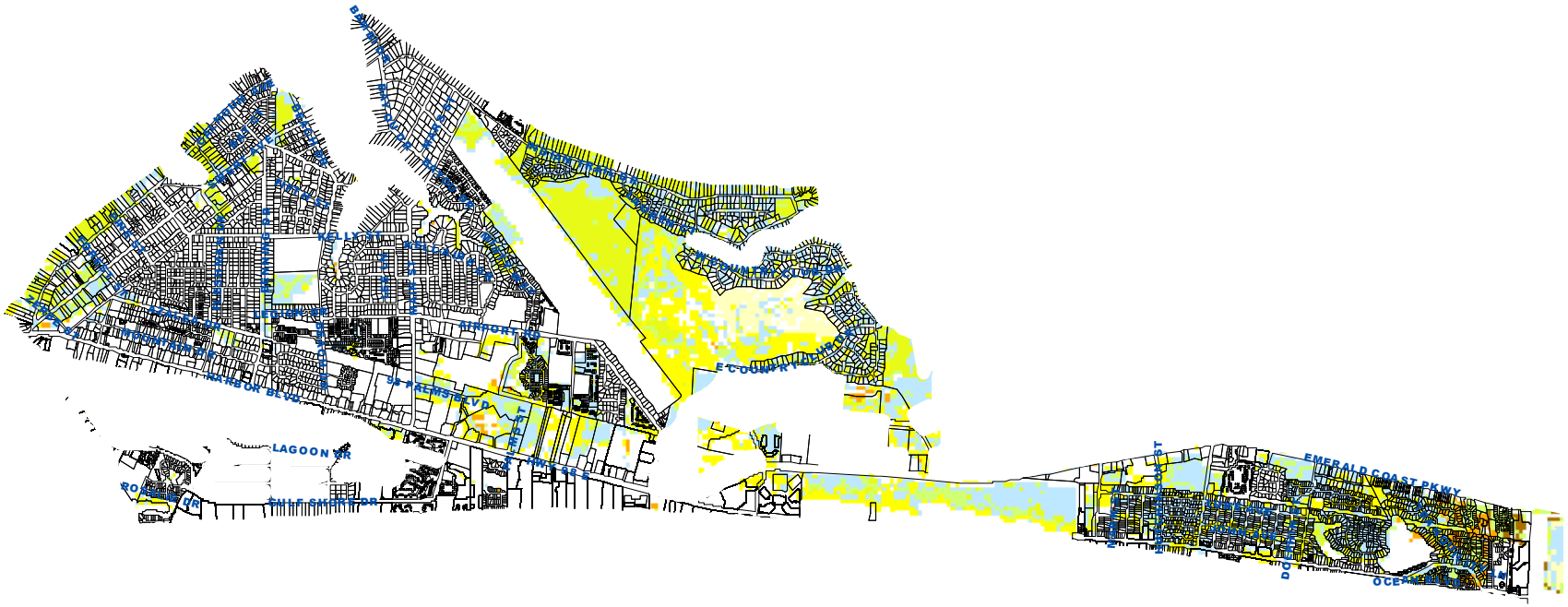
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08/18/2010



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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State plane - Florida North (0903)
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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.

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.

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.

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 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 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.

City of Destin

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.

City of Destin

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 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:

    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.

7.5.4 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).

7.6 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 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.

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.

8.6.5 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.

8.6.6 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 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.

8.6.7 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.

8.6.8 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.

8.6.9 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.

8.6.10 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.

8.6.11 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.

8.7 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:

8.7.1 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.

8.7.2 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:

8.7.2.1 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 a disaster.

8.7.2.2 Rental Assistance. Provided to homeowners or renters whose dwelling is determined uninhabitable as a direct result of the disaster.

8.7.2.3 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.

8.7.2.4 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.

8.7.3 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.)

8.8 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
- waiver of penalty for early withdrawal of funds or certain time deposits

8.9 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.

8.10 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. The City is a waterfront community situated along Santa Rosa Sound to the south, Choctawhatchee Bay to the east, and bay tributaries to the north. It is bordered by Hurlburt Field Air Force Special Operations to the west. The City of Fort Walton Beach 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 a short ½ mile from the Gulf of Mexico. The City's Utilities and Public Works facilities are located within the Central Business District approximately 1 mile from the Gulf of Mexico. The City's population density is approximately 3,120 persons/sq. mile. As of a 2018 Census estimate it was home to 21,845 residents. In this section, information relevant to City of Fort Walton Beach 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 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

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.

City of Fort Walton Beach

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.

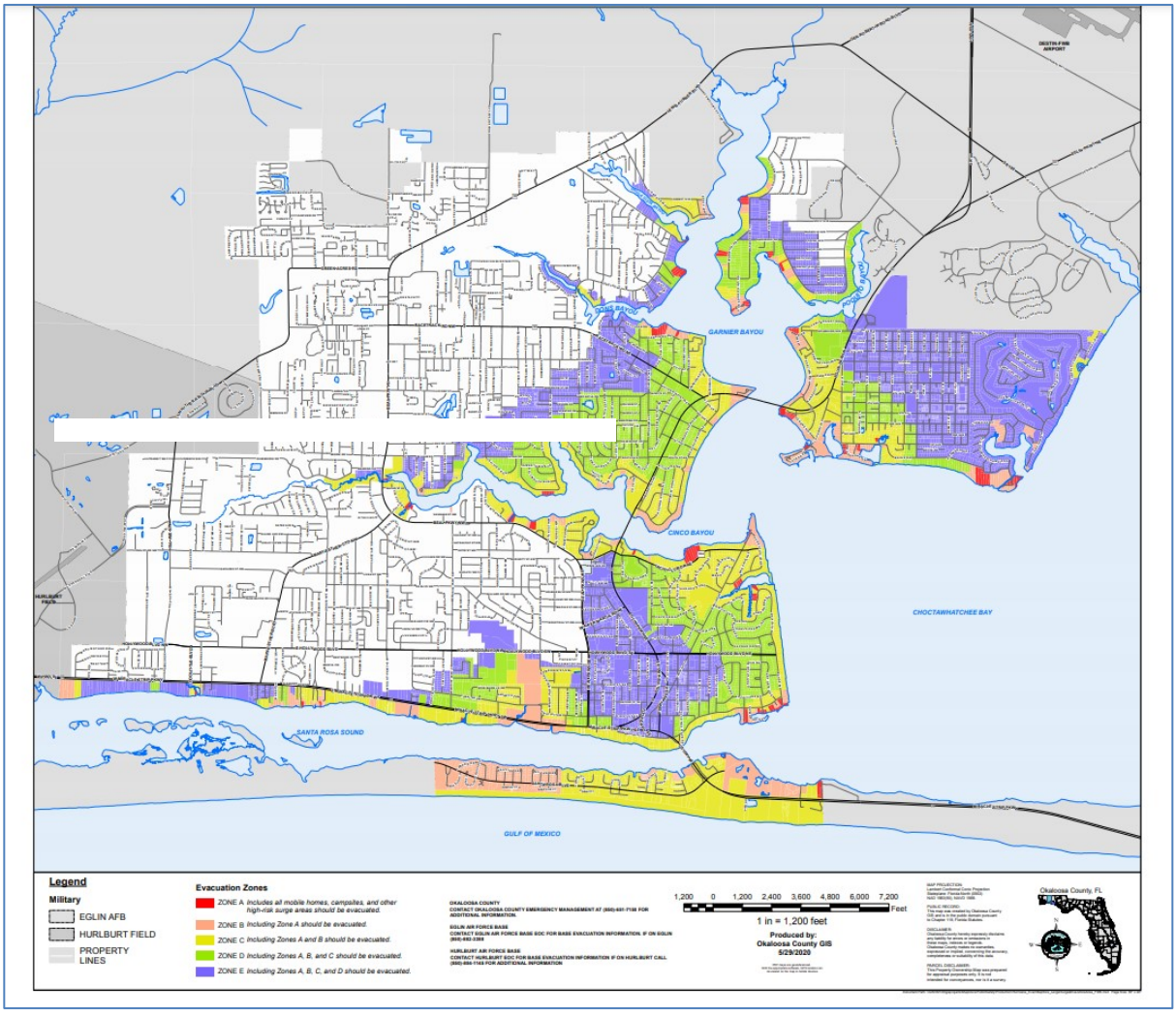
In the worst case scenario of a Category 5 hurricane, there will be catastrophic damage to homes and buildings, trees, power poles, and signage. In particular to power pole damage, there would be extensive widespread system destruction anticipated, which can include transmission/substation damage. All 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

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, 2020

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
90.90%	68.60%	40.50%	>99.9%	99.60%	82.30%

Source: The United States Landfalling Hurricane Web Project, 2010

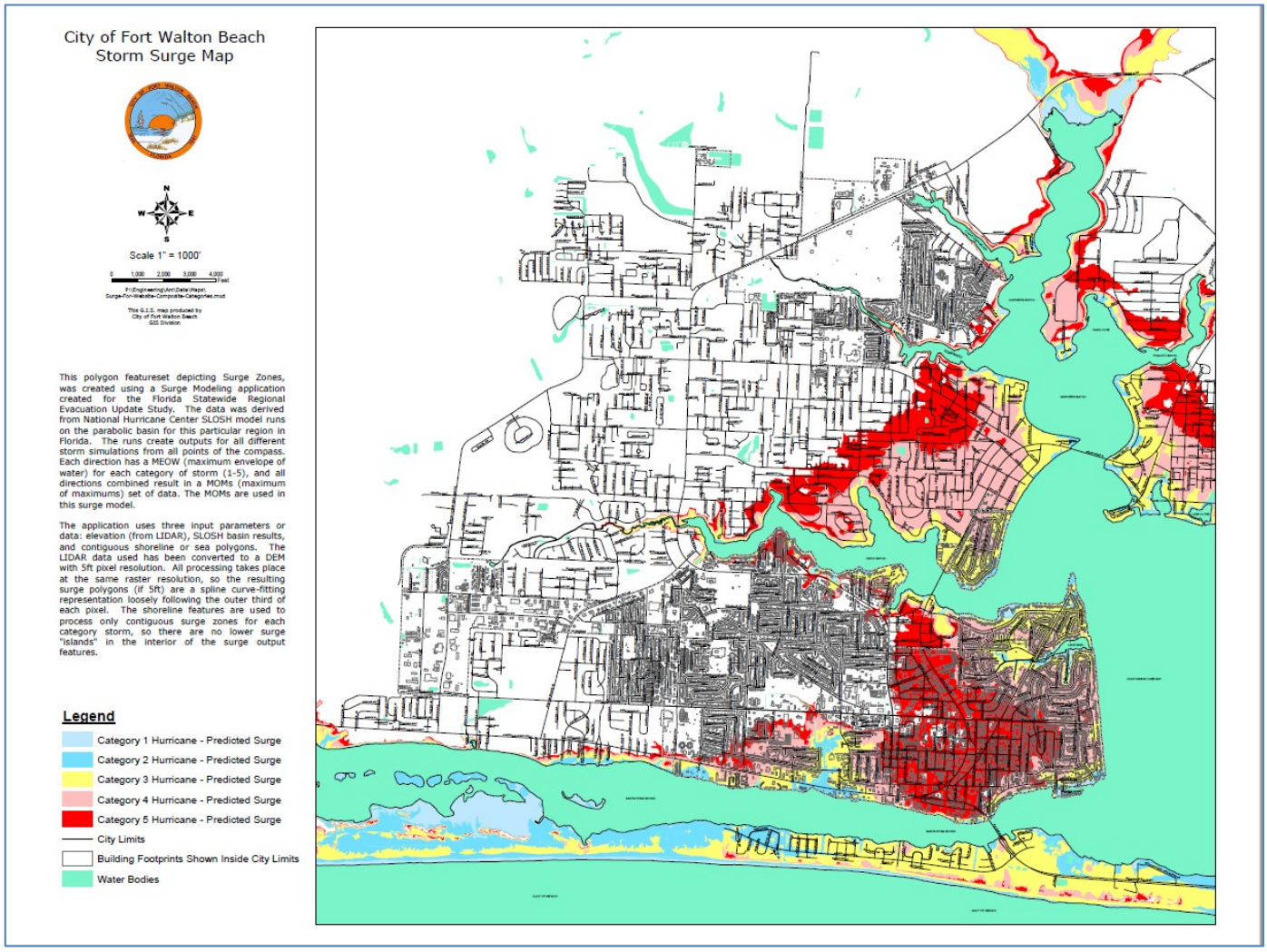
Section 5.03.01.03 Storm Surge

DEFINITION:
Please refer back to the Risk Assessment of the overall County 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.

Figure 5.03.01.03.1: The City of Fort Walton Beach's Exposure to Storm Surge



Source: City of Fort Walton Beach, 2020

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)	3.7	5.7	7.4	13.8	16.8

Note: Storm surge levels reflect 2010 hurricane scale update.
Source: West Florida Regional Planning Council, 2010

Section 5.03.01.04 Flooding

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 has the greatest average annual rainfall in the state of Florida, with 69 inches of rain 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. All jurisdictions in Okaloosa County are equally susceptible to experiencing flooding or flash-flooding.

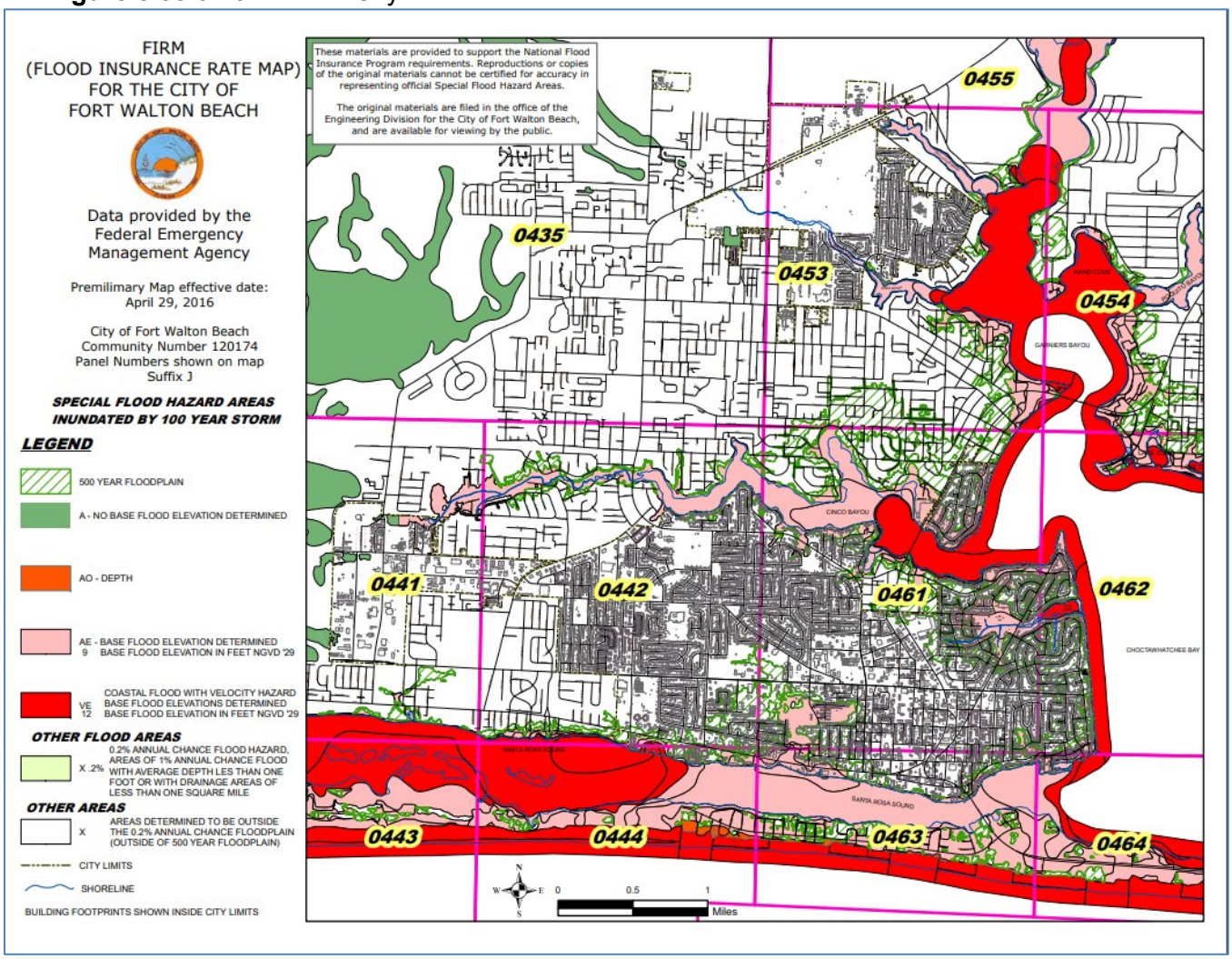
Given the minimal amount of data available at the municipal level regarding the historical occurrences of severe floods or flash-floods, overall County data of this hazard will be used. Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard because 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, April 29,2016

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 back 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 2020there 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 1958-2009 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 Fort Walton Beach 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 5.03.01.06.02 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 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 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), there has been no snow or ice storms in the City of Fort Walton Beach since 1950. Due to the subtropical climate, winter storms are considered a relatively minimal hazard in the City of Fort Walton Beach. Cold snaps such as that in the winter of 2009/2010, however, prove that snow and ice events are still possible in this city. At least one winter storm warning was issued for the City of Fort Walton Beach that winter. Although there was virtually no snowfall or ice accumulations recorded, hazardous conditions were present due to icy roads and freezing conditions. City crews had to make an emergency repair to a sewer pipe on US98 due to the prolonged freezing conditions.

From 2005-2009, the City of Niceville had a total of 49 days where the temperature was below 32°F. It is assumed that the City of Fort Walton Beach would experience a similar amount of freezing days as the City of Niceville due to their close geographic proximity. The City of Fort Walton Beach's monthly mean temperature minimums from 2006-2009 are displayed below.

Table 5.03.01.06.03.1: Monthly Mean Temperature Minimums in degrees Fahrenheit, 2006-2009

	Nov	Dec	Jan	Feb	Mar
Fort Walton Beach, FL	46.0°	40.0°	37'°	40.0°	46°

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:
Based on the data of total below freezing days, the future probability of freezing temperature days in the City of Fort Walton Beach is estimated to be 55 days in a 5-year time frame.

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 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). Therefore, given the City of Fort Walton Beach's relatively close geographic proximity to the City of Niceville, it is assumed that it experienced three heat waves as well. The City of Fort Walton Beach's monthly mean temperature maximums are displayed below.

Table 5.03.01.07.1: Monthly average temperature in degrees Fahrenheit. Fort Walton beach

	May	Jun	Jul	Aug
Fort Walton Beach, FL	83°	88.0°	90°	89°

Source: Weather.com, Monthly historical data

On July 1, 2000 an excessive heat advisory was issued for coastal Okaloosa County, which included the City of Fort Walton Beach. 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 airconditioned shelter from the excessive heat. On July 6,2019, an excessive heat advisory was issued all the Florida Panhandle. The heat index was recorded between 108°F and 112°F.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 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 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 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:
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 Fort Walton Beach 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 Fort Walton Beach is on average 5 months per year.

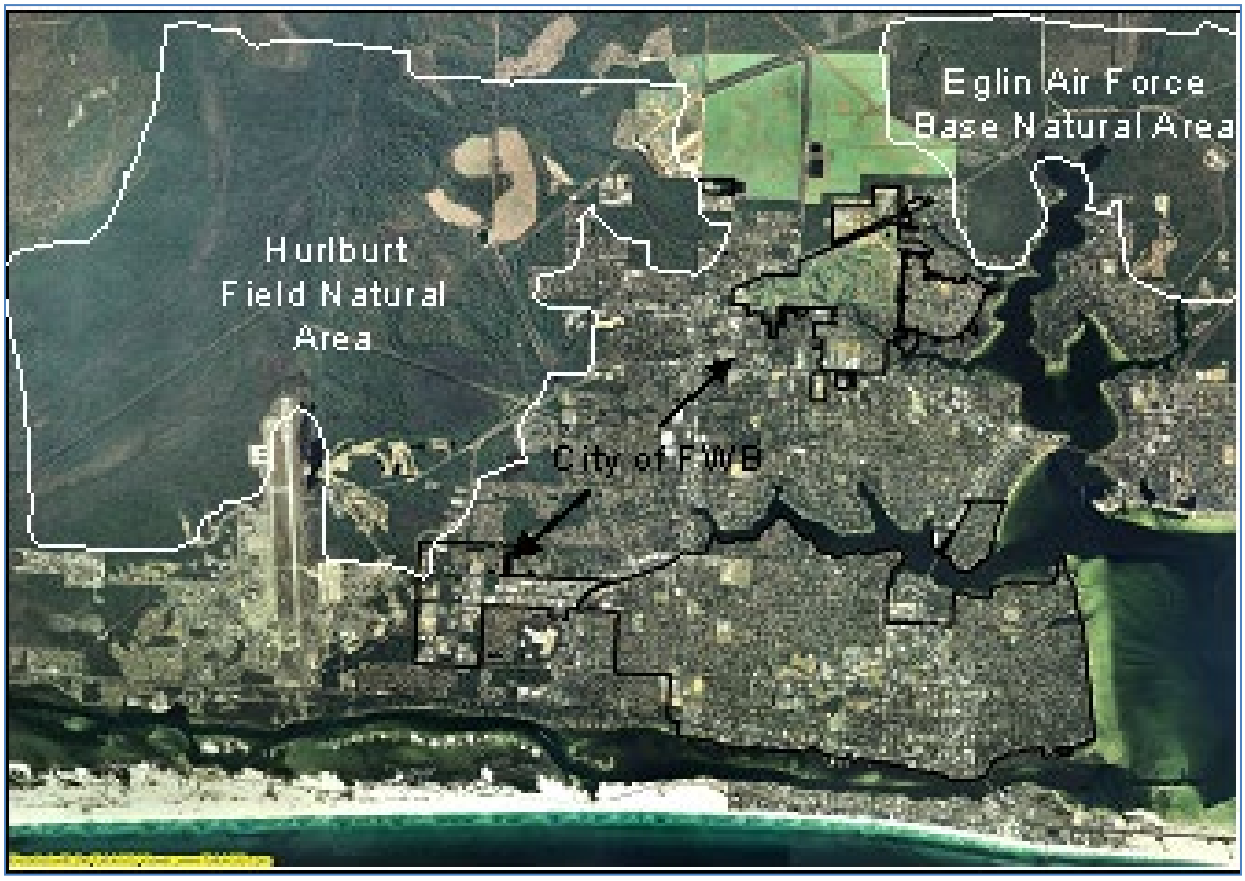
Section 5.03.01.08 Wildfire

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.

Figure 5.03.01.08.1: The City of Fort Walton Beach, Hurlburt Field, and Eglin Air Force Base



Source: Okaloosa County GIS, 2010

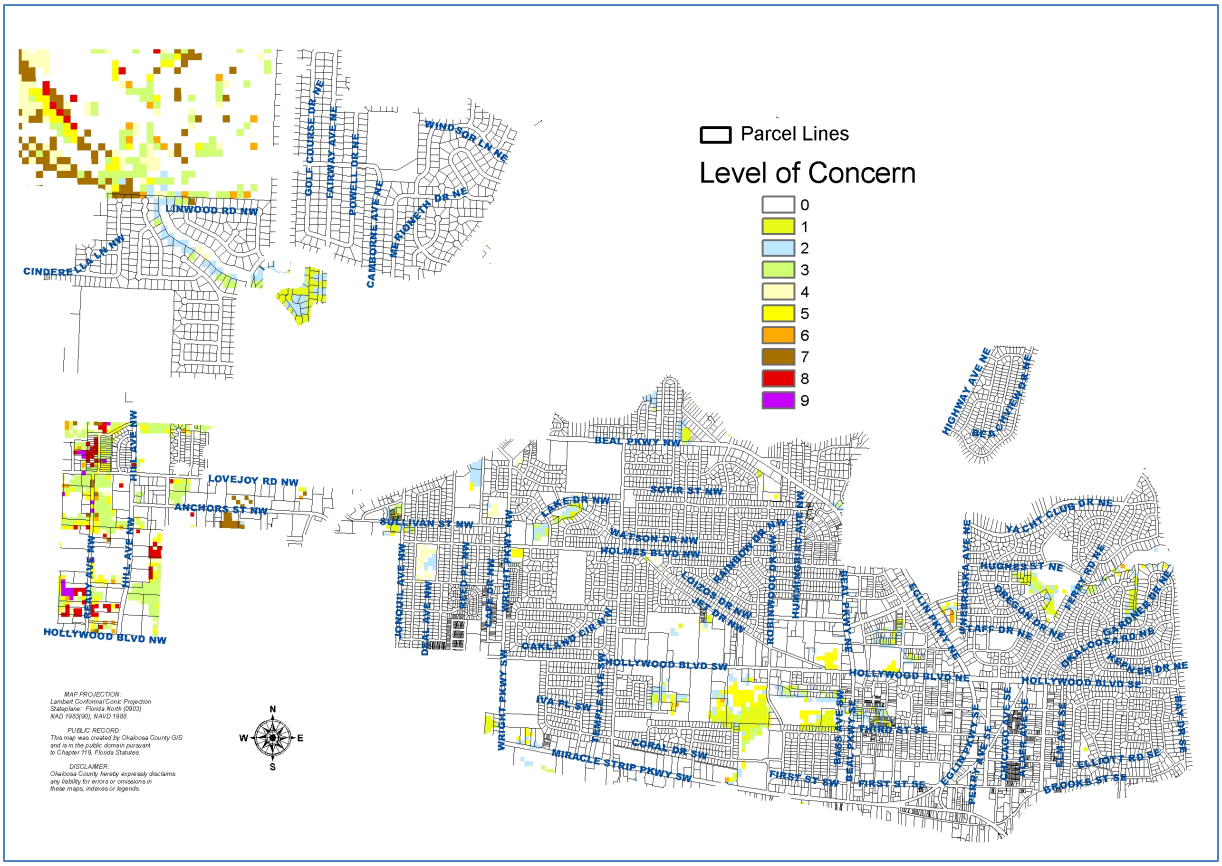
The wildfire record of Okaloosa County is relevant to the City of Fort Walton Beach because all jurisdictions are susceptible to wildfire. Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard. *Note* the data is specific to Okaloosa County as a 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 (2010). 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.

Figure 5.03.01.08.1: Wildfire Levels of Concern for the City of Fort Walton Beach



Source: Florida Division of Forestry, 2010

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. 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 Fort Walton Beach 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 5.03.01.10.02 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.

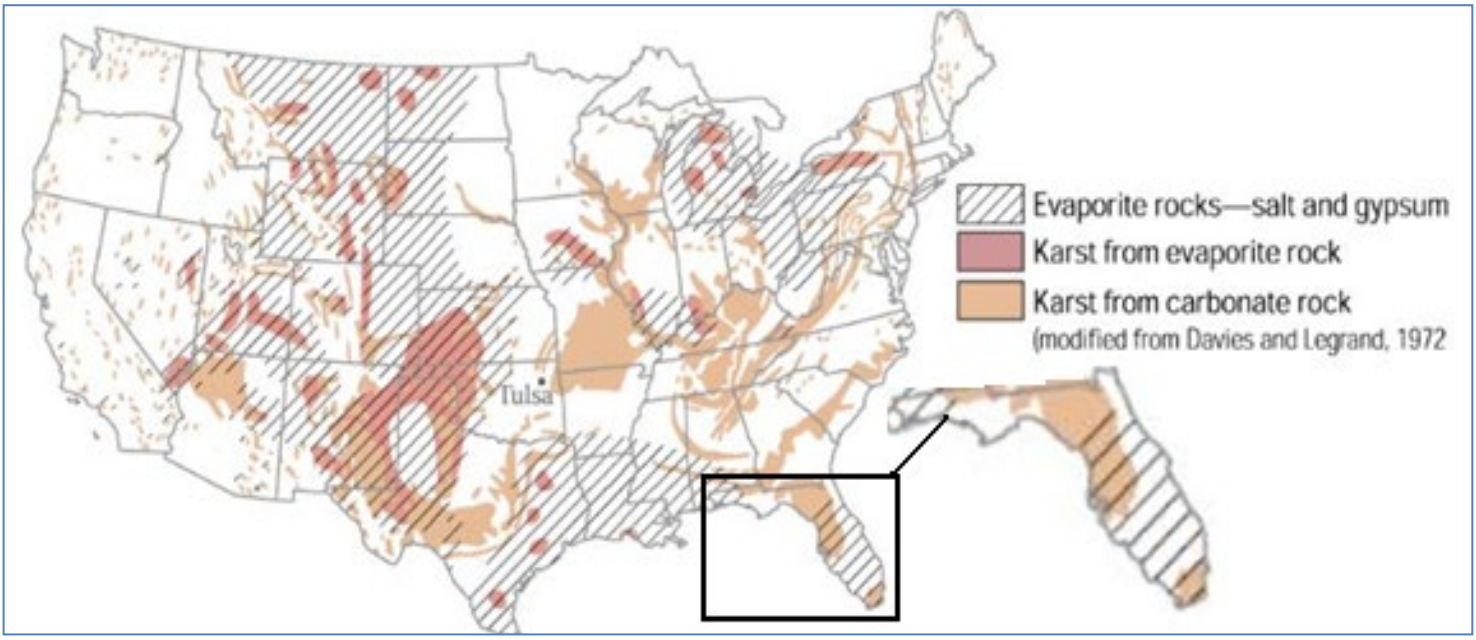
Section 5.03.01.10.05 Avalanche

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.



Source: U.S. Geological Survey

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 5.03.01.11 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.

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 a 2010 Census it was home to 19,507 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.

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, 2018

Population	2010 Census Percent Population	2018 Estimate
Elderly	18.9%	3974
Language Isolation	1.2%	800
Disabled	32.9%	3087
Single Parent	18.6%	1213
Poverty	8.9%	4768
Minority	14.2%	5529

Source: 2010 Census; U.S. Census Population Division
2018 5 Year average: Data. Census. Gov

Section 5.03.02.05 Repetitive Loss Properties

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" (FEMA, 2010). The hazards of 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. The following tables depict the repetitive loss properties and their flood zones in the City of Fort Walton Beach.

Table 5.03.02.05.1: Repetitive Loss Properties in the City of Fort Walton Beach

	Total Building Payment	Total Contents Payment	Total Losses Claimed	Total Paid	Residential Structures	Non-Residential Structures
City of Fort Walton Beach	$3,084,659.72	$581,371.97	118	$3,666,031.69	49	3

Source: FEMA, 2016

Table 5.03.02.05.2: Flood Zones of Repetitive Loss Properties in the City of Fort Walton Beach

Flood Zones	**A**, AE	V, VE	**B**, C, X
Totals	34	1	17

Source: FEMA, 2016

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 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 5.03.02.06.1: Evacuation Zones and the Vulnerable Residential Structures within

Total:	Condominium	SFR-Townhouse	Single-Family	Mobile Home	Multi-Family
Zone A	0	7	61	0	0
Just Value	$0	$1,099,302	$27,832,245	$0	$0
Zone B	1	7	166	0	0
Just Value	$375,000	$1,099,302	$66,370,215	$0	$0
Zone C	1	7	166	0	0
Just Value	$375,000	$1,099,302	$66,370,215	$0	$0
Zone D	17	64	2305	3	12
Just Value	$3,509,000	$11,235,038	$391,733,239	$254,843	$6,041,817
Zone E	38	350	2668	3	82
Just Value	$5,801,000	$36,697,748	$427,575,896	$254,843	$24,975,631

Note Evacuation Zones correspond with Hurricane Categories (Ex. Evacuation Zone 1 = Category 1 Hurricane)
Source: West Florida Regional Planning Council & Okaloosa County Property Appraiser, 2010 (Okaloosa County 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	2	0
Just Value	$862,899	$0
Zone B	22	3
Just Value	$15,872,198	$10,942,999
Zone C	49	11
Just Value	$41,729,638	$22,616,898
Zone D	94	15
Just Value	$81,892,033	$28,357,418
Zone E	420	68
Just Value	$200,779,053	$97,594,473

Note Evacuation Zones correspond with Hurricane Categories (Ex. Evacuation Zone 1 = Category 1 Hurricane)
Source: West Florida Regional Planning Council & Okaloosa County Property Appraiser, 2010 (Okaloosa County 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 16.8 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 5.03.02.07.1: Vulnerable Residential Structures to Storm Surge

Total:	Condominium	SFR-Townhouse	Single-Family	Mobile Home	Multi-Family
Surge Level 1	11	32	328	0	4
Just Value	$2,905,000	$7,496,362	$163,959,600	$0	$3,841,325
Surge Level 2	11	34	366	0	4
Just Value	$2,905,000	$7,955,760	$174,581,972	$0	$3,841,325
Surge Level 3	17	62	2080	1	12
Just Value	$3,509,000	$11,143,018	$380,132,303	$99,046	$6,127,812
Surge Level 4	17	62	2080	1	12
Just Value	$3,509,000	$11,143,018	$380,132,303	$99,046	$6,127,812
Surge Level 5	38	364	2705	2	88
Just Value	$5,801,000	$37,672,814	$449,344,621	$181,175	$27,479,384

Source: West Florida Regional Planning Council & Okaloosa County Property Appraiser, 2010 (Okaloosa County 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	16	5
Just Value	$18,020,665	$10,458,543
Surge Level 2	25	6
Just Value	$23,360,592	$13,952,006
Surge Level 3	37	10
Just Value	$37,938,990	$22,606,669
Surge Level 4	75	13
Just Value	$78,822,003	$27,487,071
Surge Level 5	402	67
Just Value	$193,837,495	$53,003,282

Source: West Florida Regional Planning Council & Okaloosa County Property Appraiser, 2010 (Okaloosa County Staff generated table from overlaying the surge levels and property appraiser data)

Section 5.03.02.08 Flooding

Our definition of flooding only considers flooding that is a result of rainfall, which includes tropical rains during a hurricane. The City of 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, 2010

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
	43	391	2,966	0	92
Just Value	$7,021,000	$42,307,395	$531,028,243	$0	$33,571,343

Source: Okaloosa County Department of Growth Management, 2010

Table 5.03.02.10.2: Other Vulnerable Structures to Severe Storms in City of Fort Walton Beach

Total:	Commercial	Government/ Institutional
Surge Level 1	1,084	175
Just Value	$598,978,252	$226,781,240

Source: Okaloosa County Department of Growth Management, 2010

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 Mapping for Emergency Management, Parallel Hazard Information System (MEMPHIS) study in 2005, nearly all of Okaloosa County, including the City of Fort Walton Beach, 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 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 145 structures along the City of Fort Walton Beach's coastline. The cumulative 'just value' of those structures is $78,074,711. 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

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 4	2	9	0	1
Just Value	$204,124	$2,756,545	$0	$4,353,046
Level 5	2	2	1	0
Just Value	$157,349	$1,162,787	$23,442	$0
Level 6	0	2	0	0
Just Value	$0	$456,711	$0	$0
Level 7	0	1	0	0
Just Value	$0	$236,512	$0	$0

Source: Florida Division of Forestry and Okaloosa County Property Appraiser, 2010 (Okaloosa County Staff generated table from overlaying the wildfire level of concern and property appraiser data)

Table 5.03.02.12.2: Medium to High Wildfire Level of Concern for Other Structures

Total:	Commercial	Government/ Institutional
Level 4	11	10
Just Value	$21,010,820	$30,060,518
Level 5	19	14
Just Value	$36,742,968	$50,726,074
Level 6	5	3
Just Value	$12,689,911	$20,620,177
Level 7	4	3
Just Value	$4,376,816	$10,250,475
Level 8	9	4
Just Value	$16,766,717	$18,773,420
Level 9	2	4
Just Value	$4,468,729	$19,233,069

Source: Florida Division of Forestry and Okaloosa County Property Appraiser, 2010 (Okaloosa County 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 145 structures along the City of Fort Walton Beach's coastline. The cumulative 'just value' of those structures is $78,074,711 (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	7	137	1
Just Value	$1,099,302	$76,693,168	$282,241

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 5.03.02.14 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 5.03.02.15 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.

Section 5.03.03 Critical Facilities

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
PROPERTY APPRAISER	73 EGLIN PKWY NE UNIT 202 FORT WALTON BEACH FL 32548	1304829.102	521381.784
SCHOOL DISTRICT	120 LOWERY PL SE FORT WALTON BEACH FL 32548	1304240.2	517495.061
TAX COLLECTOR	73 EGLIN PKWY NE UNIT 111 FORT WALTON BEACH FL 32548	1304829.102	521514.278

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
CITY OF FWB PUBLIC WORKS CITY GARAGE	205 HOLLYWOOD BLVD NW FORT WALTON BEACH FL 32548	1298383.328	520400.688
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

City of Fort Walton Beach

Section 5.03.03.08 Disaster Recovery Centers/Comfort Stations/Field Clinics

Site Name	Address	X-COORD	Y-COORD
DOCIE BASS RECREATION CENTER	54 FERRY RD NE FORT WALTON BEACH FL 32548	1307673.704	521897.528
FWB SENIOR COMMUNITY CENTER	31 MEMORIAL PKWY SW FORT WALTON BEACH FL 32548	1297417.91	518639.396
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

Section 5.03.03.09 Hurricane Shelters (See Note)

Site Name	Address	X-COORD	Y-COORD
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*, the Fort Walton Beach Land Development Code, the City of Fort Walton Beach Comprehensive Emergency Management Plan (2010), 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 provide 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*

City of Fort Walton Beach

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 a 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.*

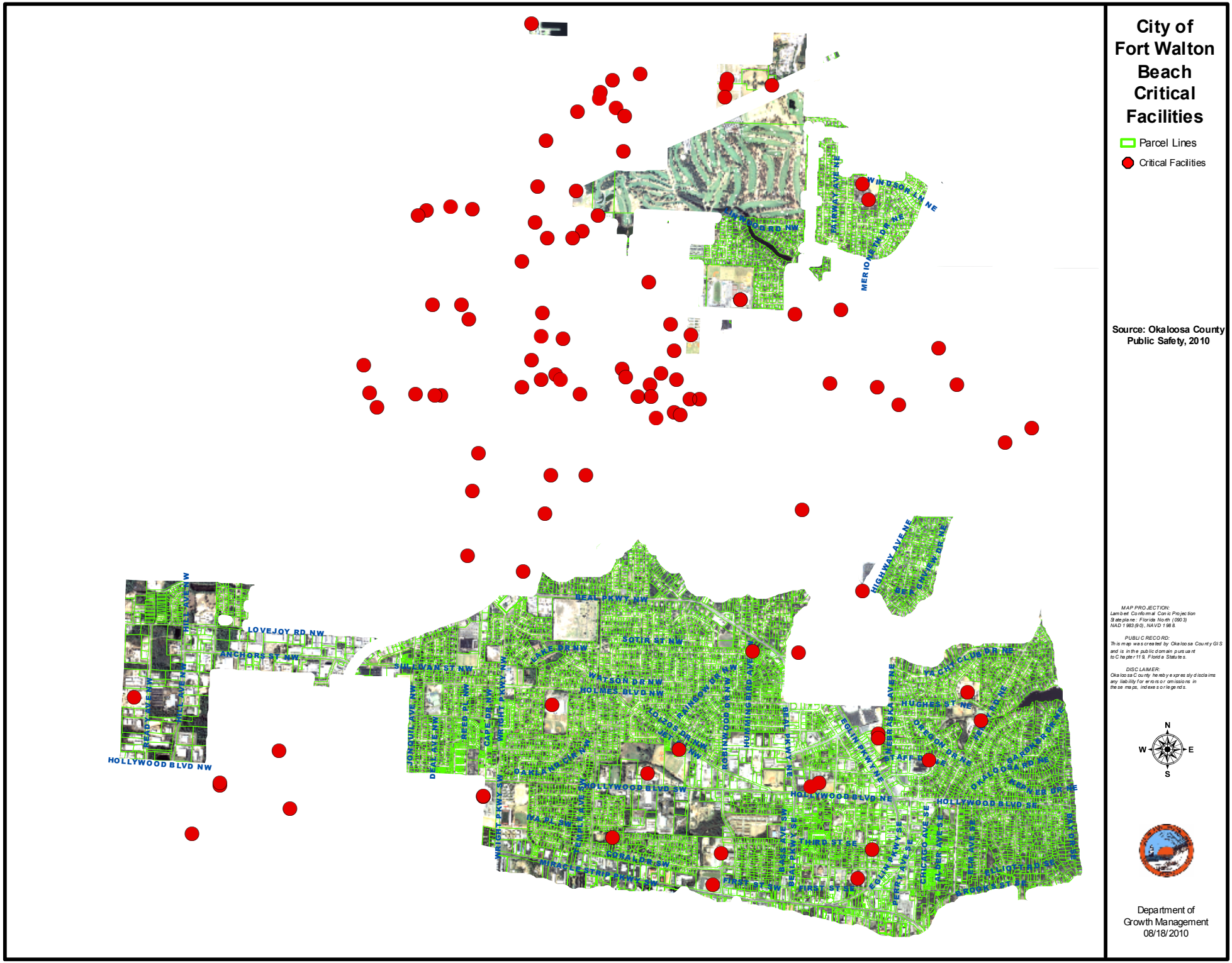
Section 5.03.04.08 Beach Erosion

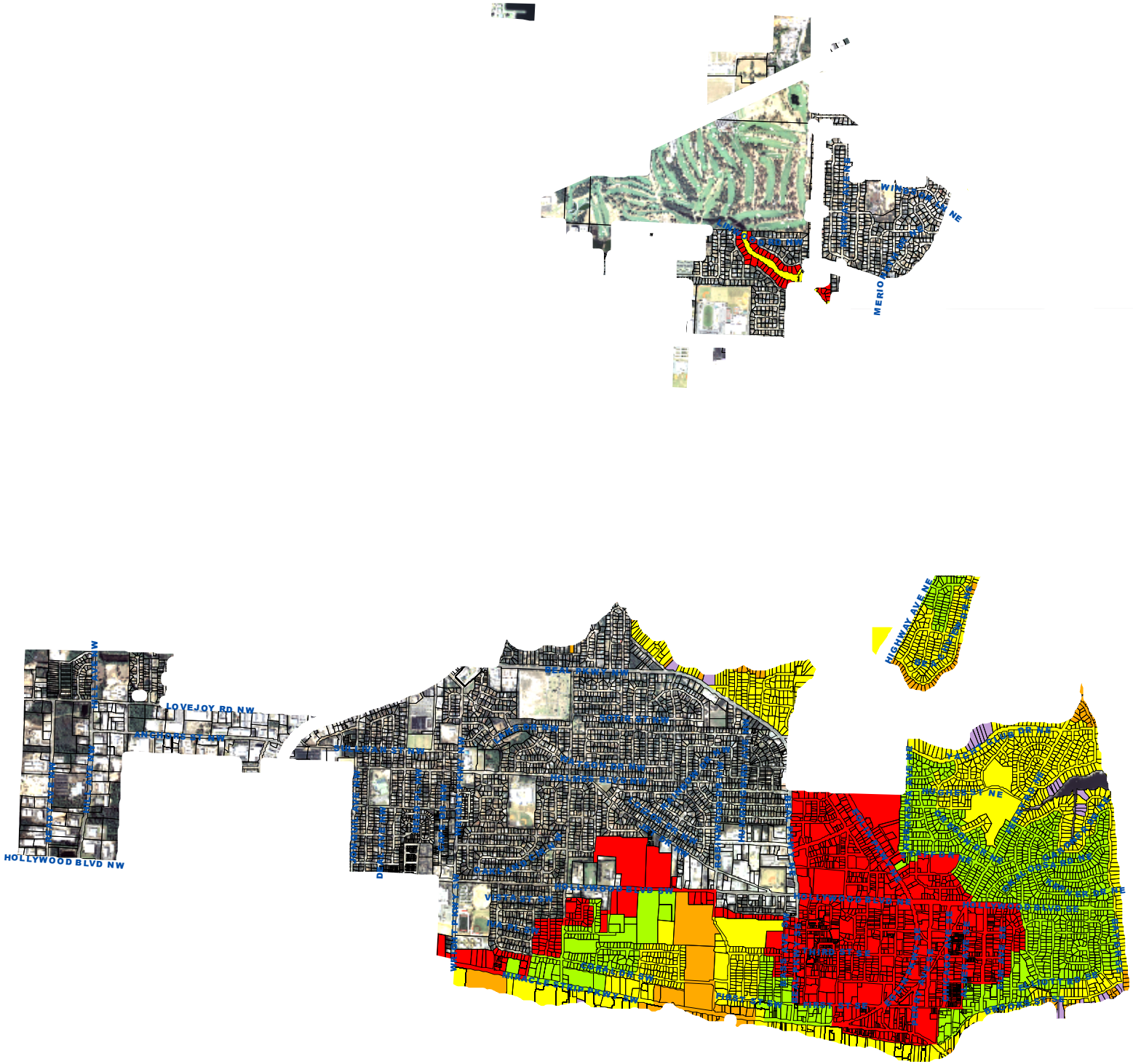
1. Ensure public and private activities do not increase erosion beyond natural erosion cycles. *Status: ongoing; Planning Division and City Engineer.*
2. Ensure the preservation and restoration of native stand-stabilizing vegetation of estuarine beaches. *Status: ongoing; Planning Division.*
3. Ensure 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 5.03.05 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, 2010
MAP PROJECTION:
Lambert Conformal Conic Projection
State plane: 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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W
E
S
Department of Growth Management
08/18/2010
LOVEJOY RD NW
ANCHORS ST NW
HOLLYWOOD BLVD NW
BEAL PKWY NW
SOTIK ST NW
SULLIVAN ST NW
WATSON DR NW
HOLMES BLVD NW
HOLLYWOOD BLVD SW
HOLLYWOOD BLVD NE
HOLLYWOOD BLVD SE
HIGHWAY 85 NW
HIGHWAY 85 NE
HIGHWAY 85 SE
HIGHWAY 85 SW
WINDSOR LN NE
MERIONETH DR NE
HUGHES ST NE
FIRST ST NW
FIRST ST NE
FIRST ST SE
THIRD ST SE
OKALOOSA ISLAND DR NE
OKALOOSA ISLAND DR SE



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, 2010

MAP PROJECTION:
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State plane : Florida North (0903)
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Growth Management
08/18/2010



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, Dec 6 2002

MAP PROJECTION:
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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, Dec 6 2002

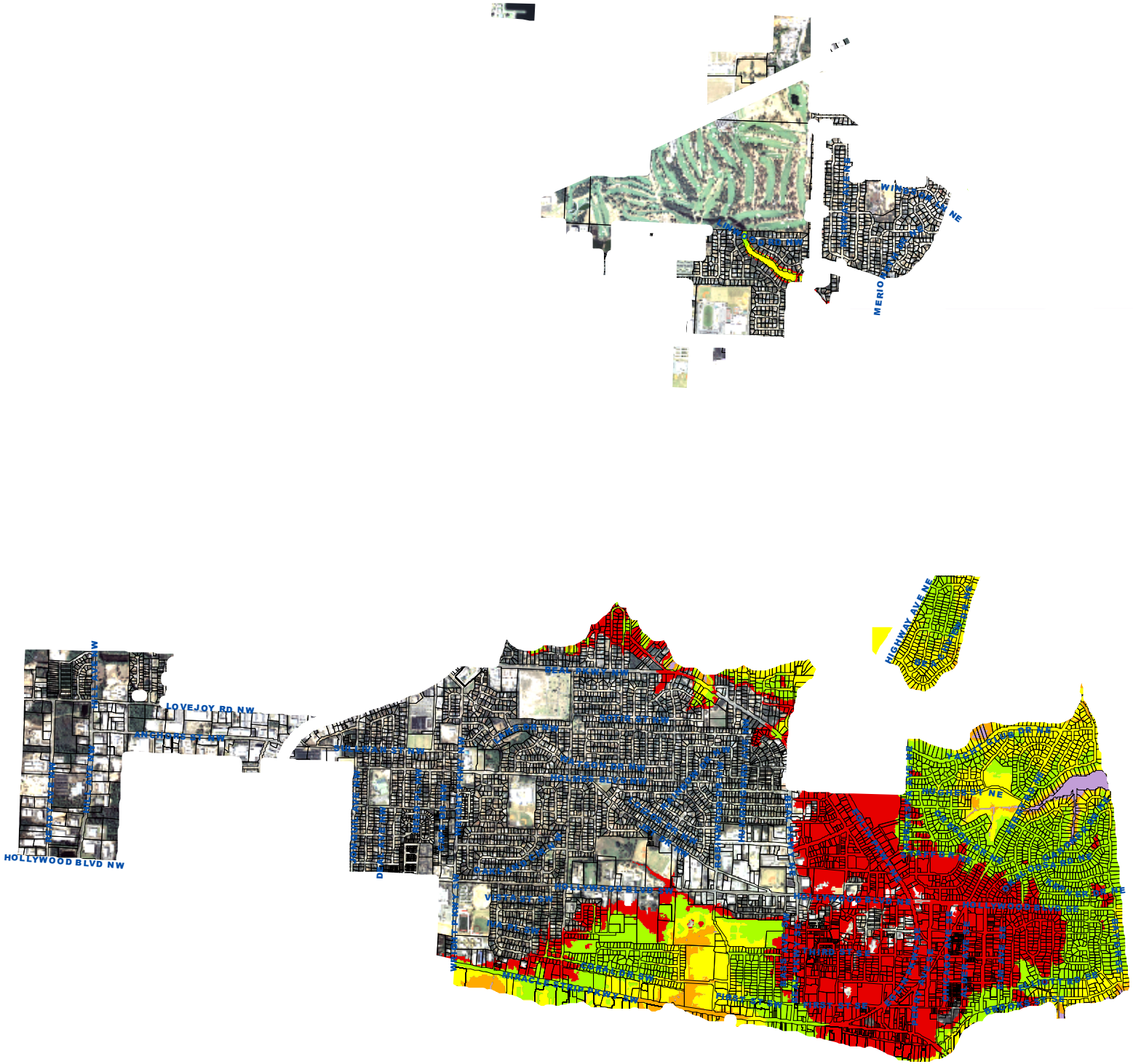
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City of Fort Walton Beach Surge Zones

- Parcel Lines
- Category 1
- Category 2
- Category 3
- Category 4
- Category 5

Source: West Florida Regional Planning Council, 2010

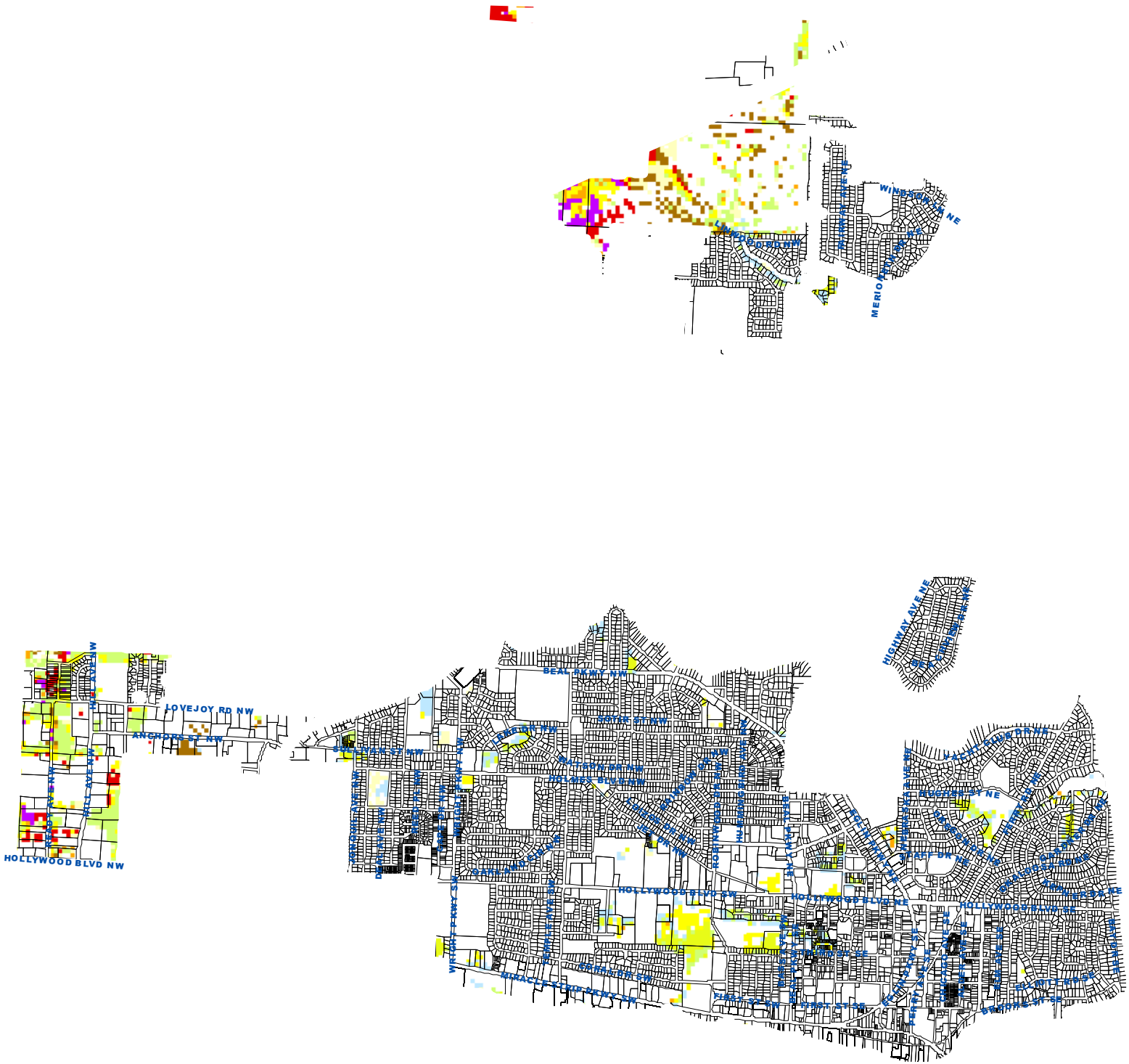
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City of Fort Walton Beach Wildfire Level of Concern

Parcel Lines

Level of Concern

0
1
2
3
4
5
6
7
8
9

Source: Florida Division of Forestry, 2010

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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

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. It is an incorporated city located in northeast Okaloosa County and is home to about 558 people according a 2008 Census estimate. In this section, hazard information relevant to the City of Laurel Hill 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 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, and 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, 2010

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.

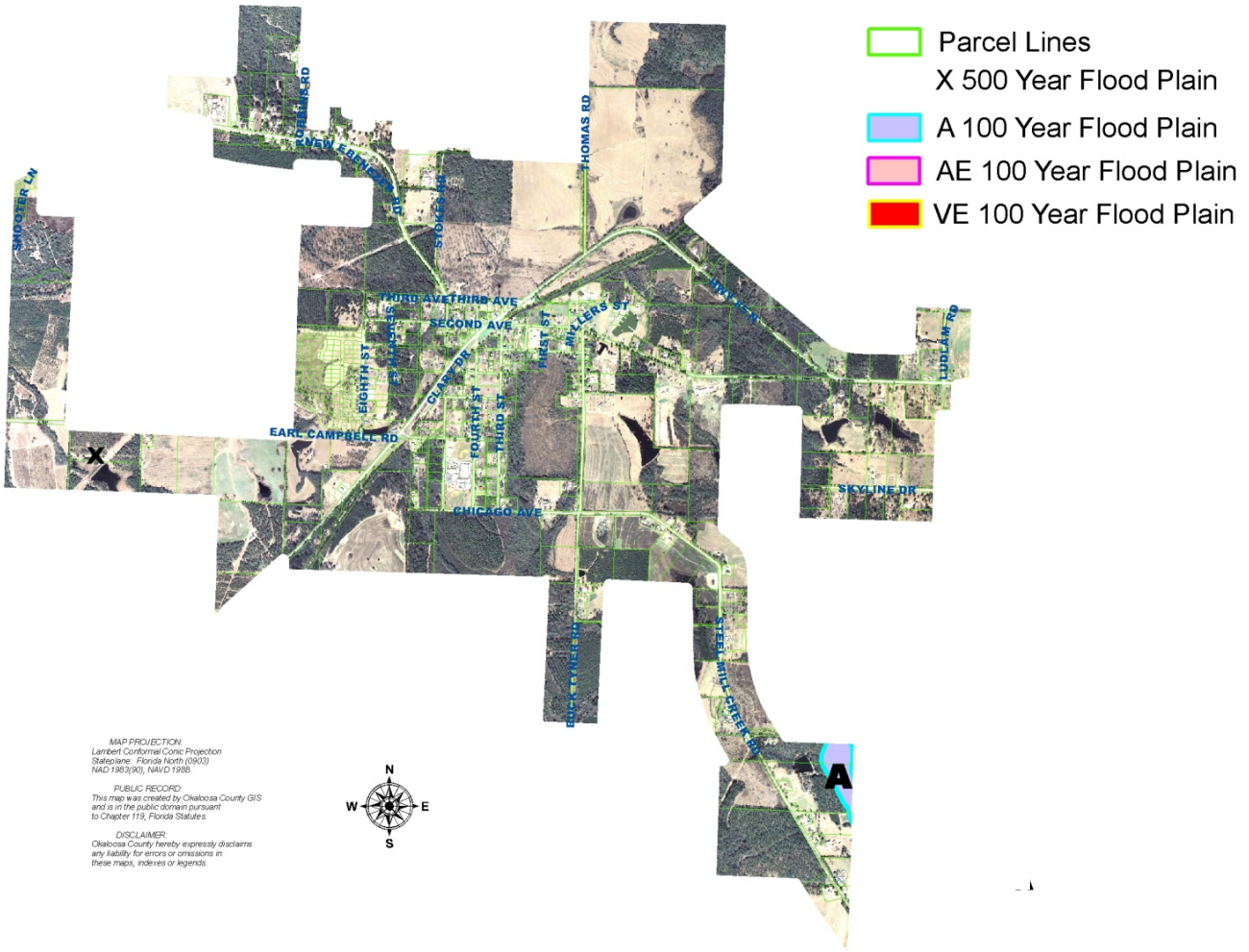
There was no data available at the municipal level regarding the historical occurrences of severe floods. Therefore, please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard because all of Okaloosa County is equally susceptible to this hazard. *Note* 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

City of Laurel Hill



Source: FEMA Map Service Center, Dec 6 2002

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:
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 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 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 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, nd). 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

City of Laurel Hill

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, in February 2010 there were local reports of snow flurries in the northern portion of the County and around the City of Laurel Hill. No official snowfall amount was recorded, as the snow flurries did not accumulate on the ground.

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.

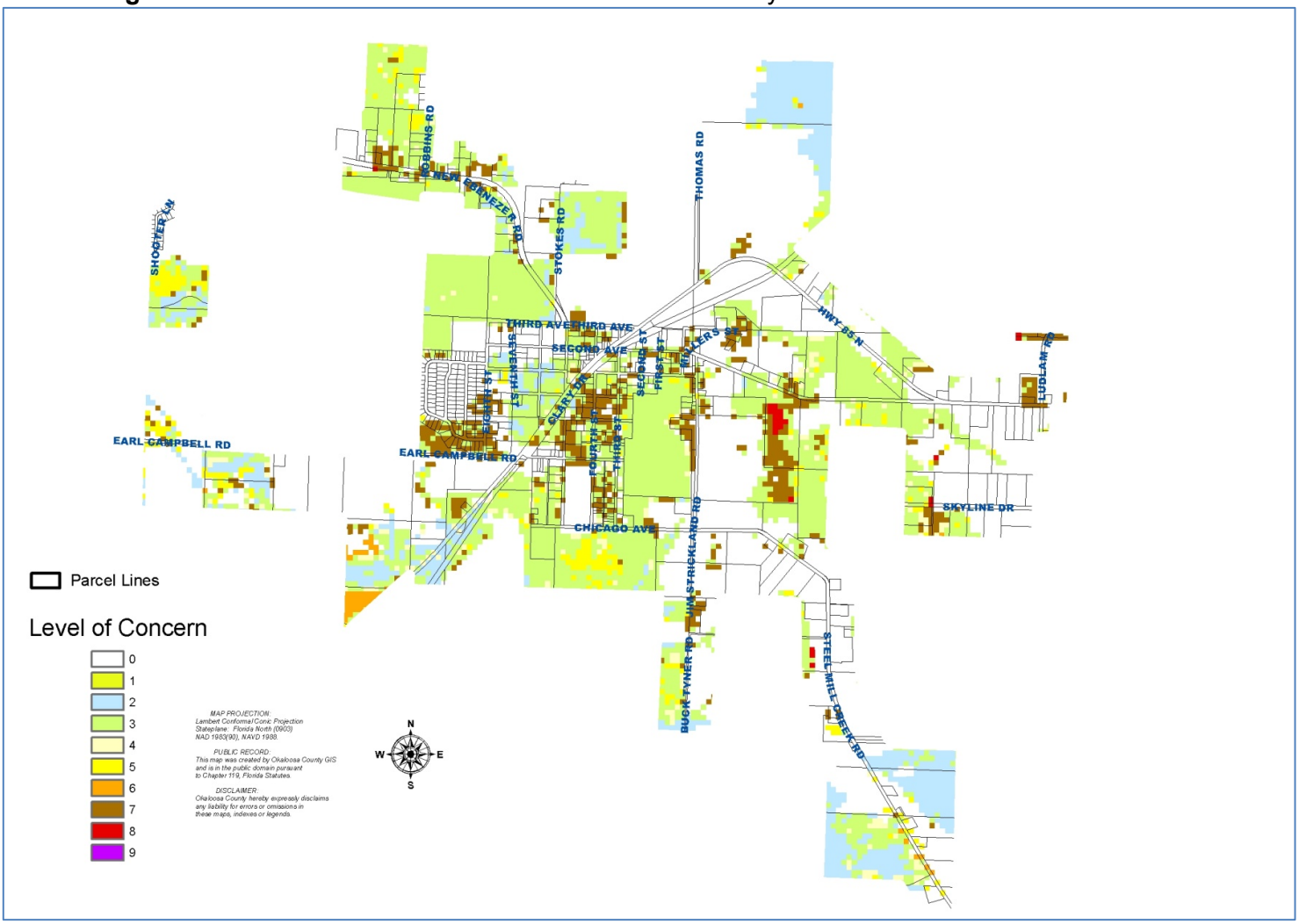
HISTORICAL OCCURRENCE:
The City of Laurel Hill is vulnerable to wildfire. The entire municipality is only 3.17 square miles, and the majority of this acreage is urban or residential, but vast acres of open forest lands surround the City of Laurel Hill, and these lands consists of natural vegetation historically 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.

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.

City of Laurel Hill

Figure 5.04.01.08.1: Wildfire Levels of Concern for the City of Laurel Hill



Source: Florida Division of Forestry

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.

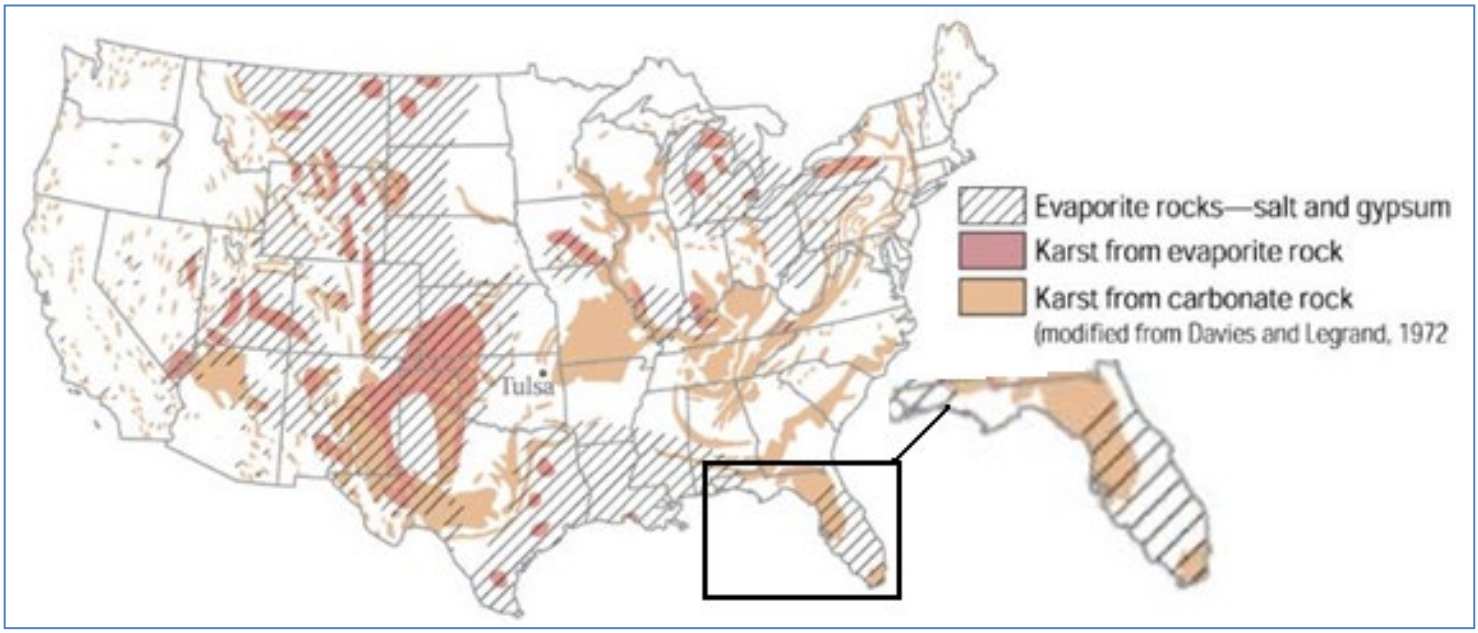
Section 5.04.01.09.04 Avalanche

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.

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. As of a 2010 Census it was home to 537 residents, 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 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, 2010

Population	2010 Census Percent Population	2014 Estimate
Elderly	11.2%	65
Language Isolation	.02%	1
Disabled	53.8%	309
Single Parent	13.5%	10
Poverty	31.5%	160
Minority	24.4%	149

Source: 2010 Census; U.S. Census Population Division

Section 5.04.02.05 Repetitive Loss Properties

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" (FEMA, 2010). 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. As of 2015 the City of Laurel Hill does not have any current 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 very 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

Our definition of 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. Most of these are small agricultural dams. 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. The concern with dam safety is if one of these dams failed, the area surrounding the dam has to potential to experience flooding and agricultural losses.

Section 5.04.02.09 Land Erosion

The City of Laurel Hill 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 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 represents 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
	158	2	15	5
Just Value	$11,722,310	$202,150	$1,568,603	$3,109,970

Source: Okaloosa County Department of Growth Management, 2010

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.

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 so 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. 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 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.

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, and the majority of this acreage is urban or residential, but vast acres of open forest lands surround the City, and these lands consists 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. 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 5.04.02.12.1: Medium to High Wildfire Level of Concern for Structures

Total:	Single-Family	Mobile Home	Commercial	Government/ Institutional	Trailer Park
Level 4	24	6	1	0	0
Just Value	$2,528,056	$356,763	$423,911	$0	$0
Level 5	17	5	1	0	0
Just Value	$1,612,130	$361,093	$423,911	$0	$0
Level 6	1	0	1	0	0
Just Value	$152,981	$0	$423,911	$0	$0
Level 7	59	19	4	3	1
Just Value	$5,485,286	$882,914	$633,205	$2,992,541	$151,194
Level 8	1	2	0	0	0
Just Value	$224,143	$195,502	$0	$0	$0

Source: Florida Division of Forestry and Okaloosa County Property Appraiser, 2010 (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, 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

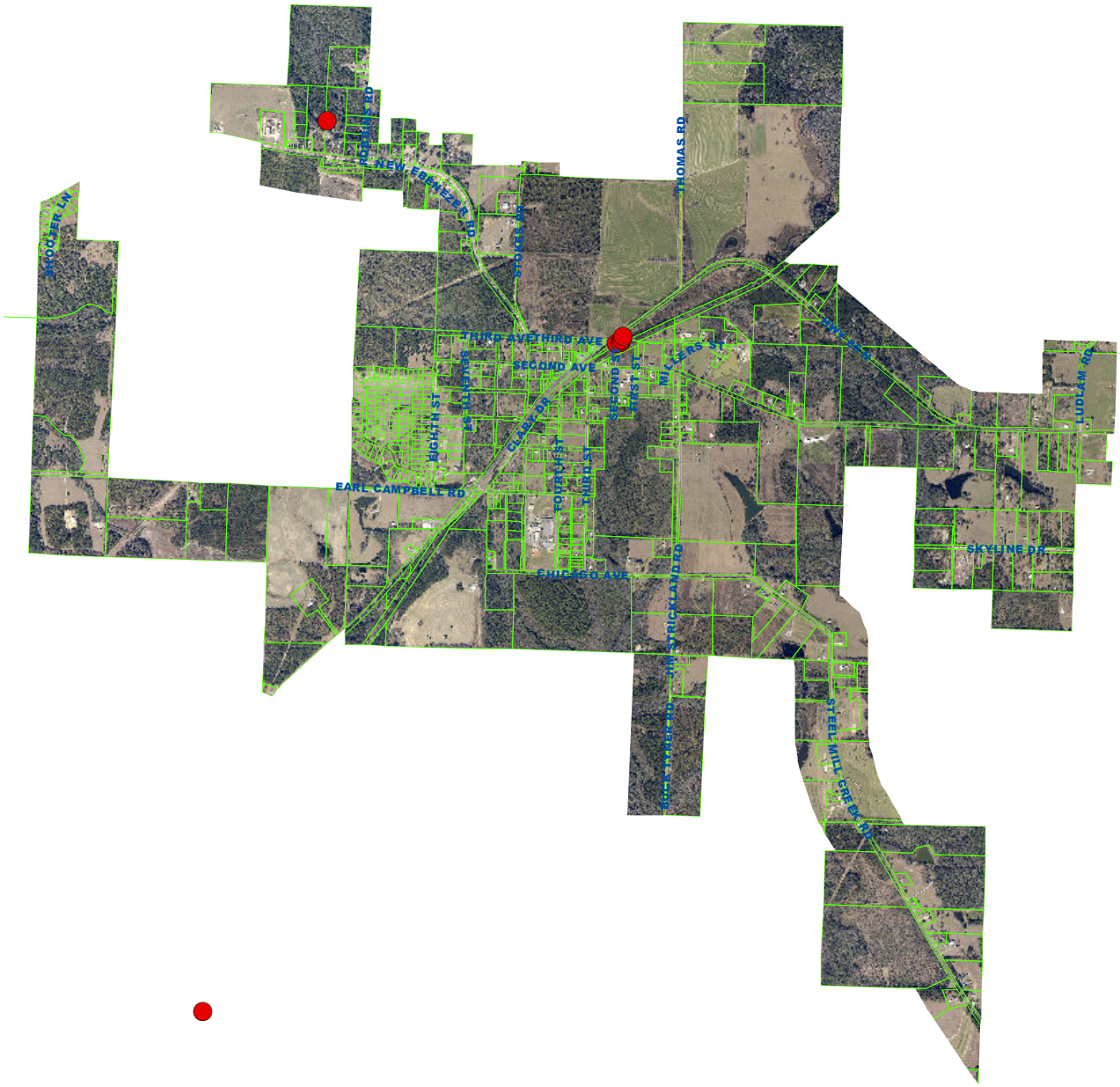
(All such sites are considered to be in a hurricane evacuation area due to their poor wind resistance. Damage Assessment Teams should attempt to visit these areas since damage is likely to be high in a major hurricane)

Section 5.04.05 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, 2010

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

PUBLIC RECORD:
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Department of Growth Management
08/18/2016

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, 2010

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

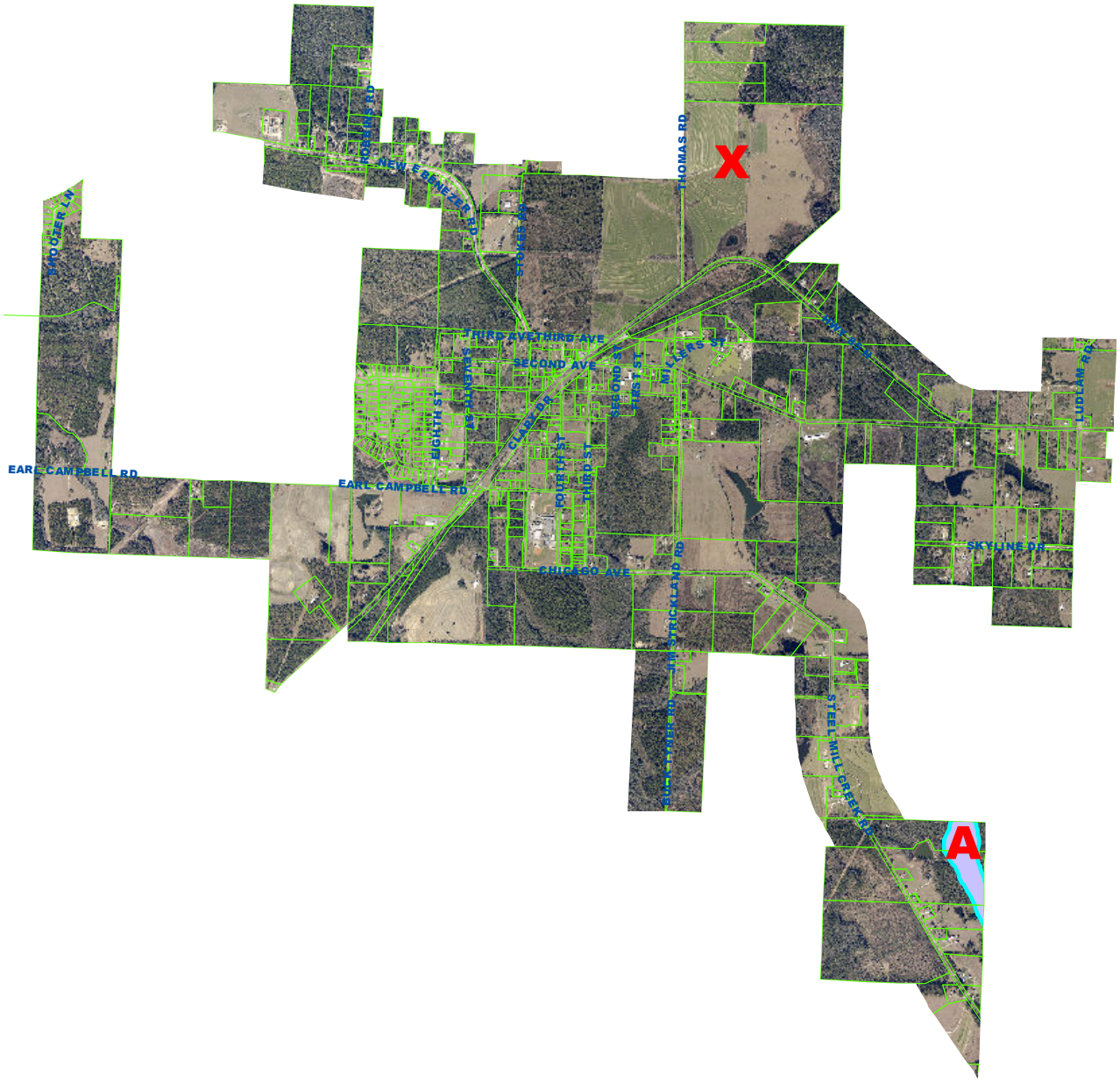
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City of Laurel Hill Flood Zones



- 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, Dec 6 2002

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

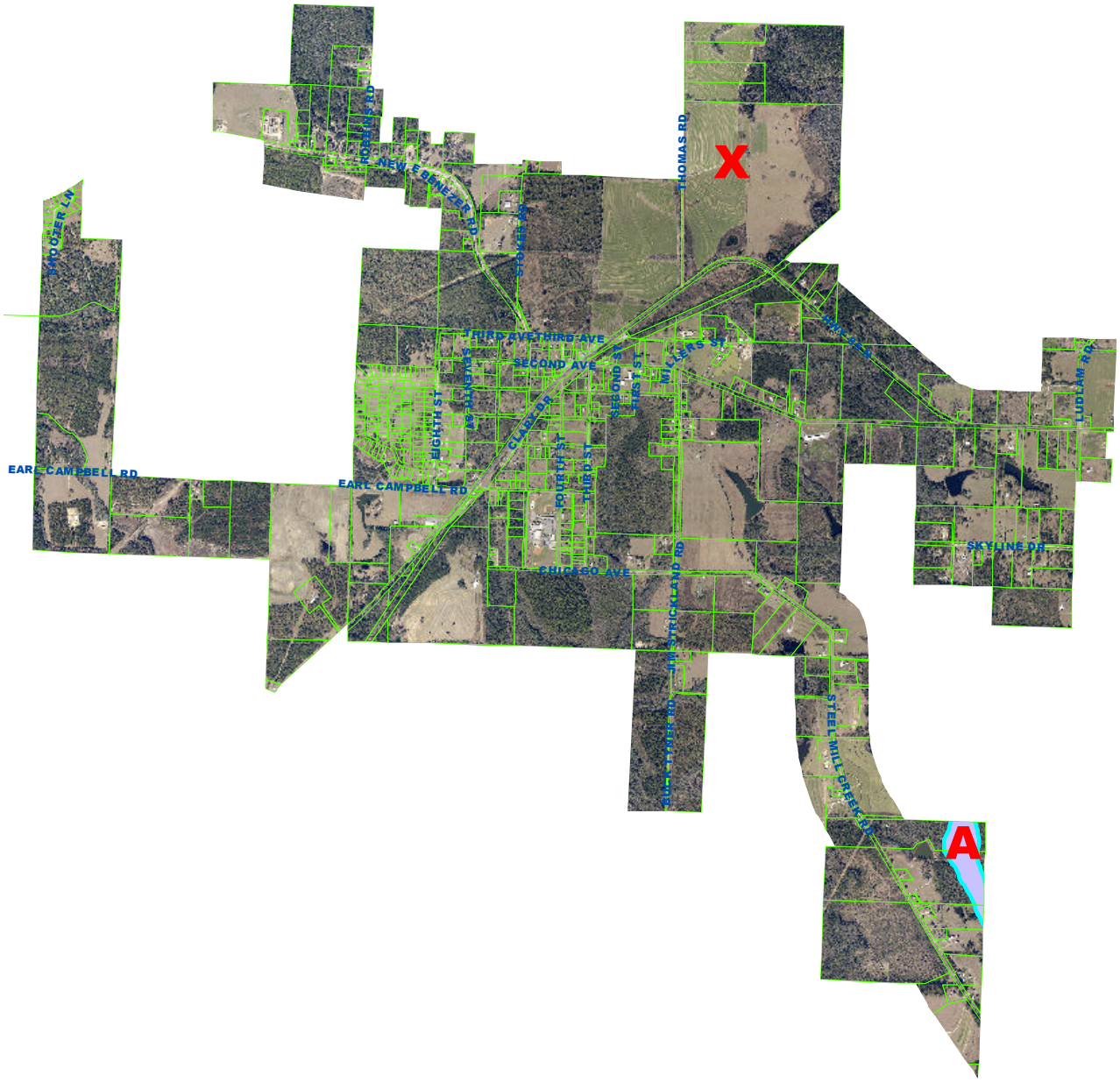
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City of Laurel Hill Repetitive Loss Properties



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, Dec 6 2002

MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
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City of Laurel Hill Surge Zones



Note: There are no Surge Zones in the City of Laurel Hill

Source: West Florida Regional Planning Council, 2010

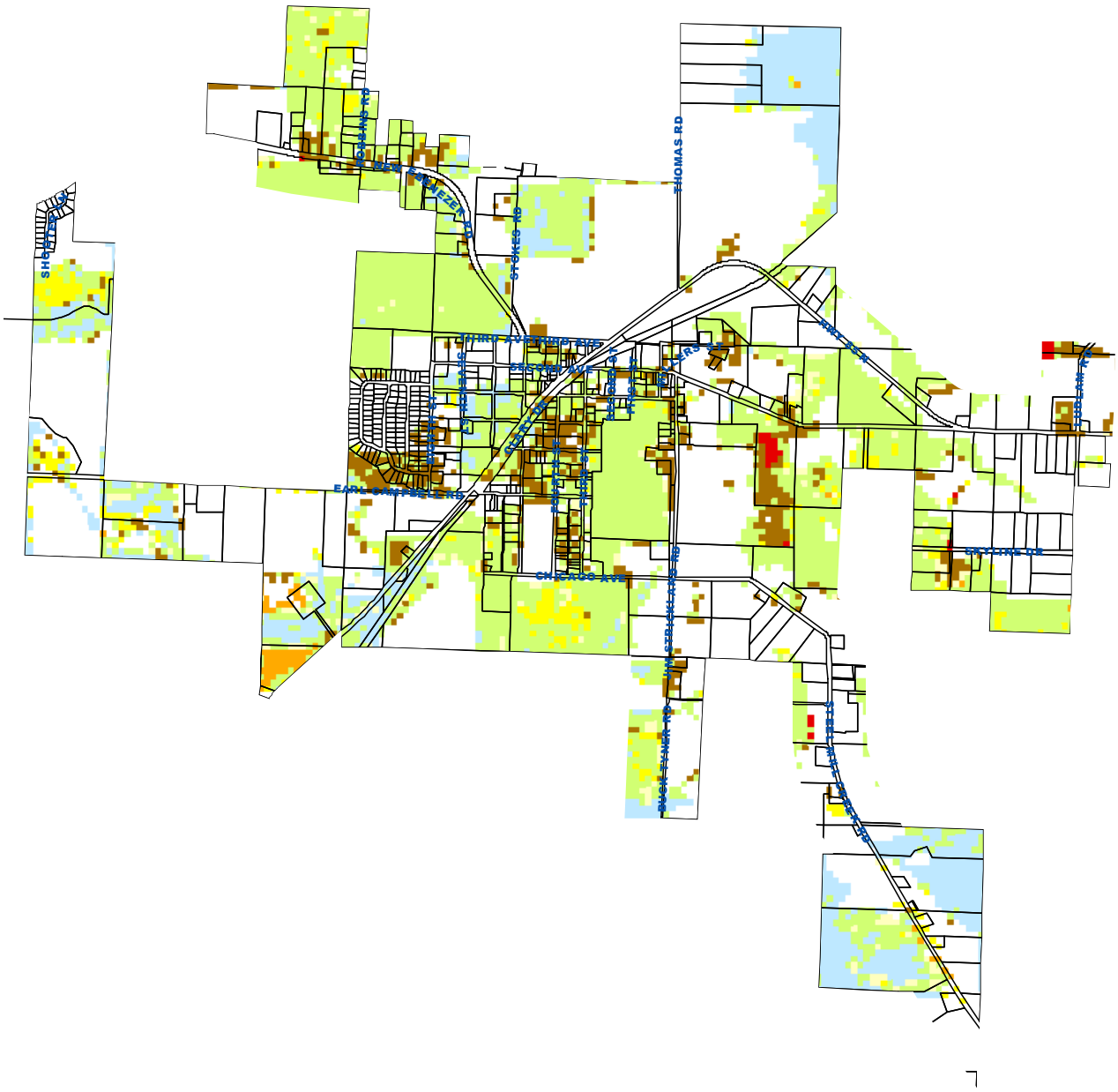
MAP PROJECTION:
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City of Laurel Hill Wildfire Level of Concern

Parcel Lines

Level of Concern

0
1
2
3
4
5
6
7
8
9

Source: Florida Division of Forestry, 2010

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

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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

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. The 2019 population estimate conducted by the University of Florida Bureau of Economic and Business Research estimated that the City has a population of 4,013 residents. In this section, information relevant to City Mary Esther 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 ~~affects~~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

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 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 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 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.

City of Mary Esther

Figure 5.05.01.02.1: Evacuation Zones for the City of Mary Esther



Source: Okaloosa County Public Safety / Okaloosa County GIS, 2010

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, 2010

Section 5.05.01.03 Storm Surge

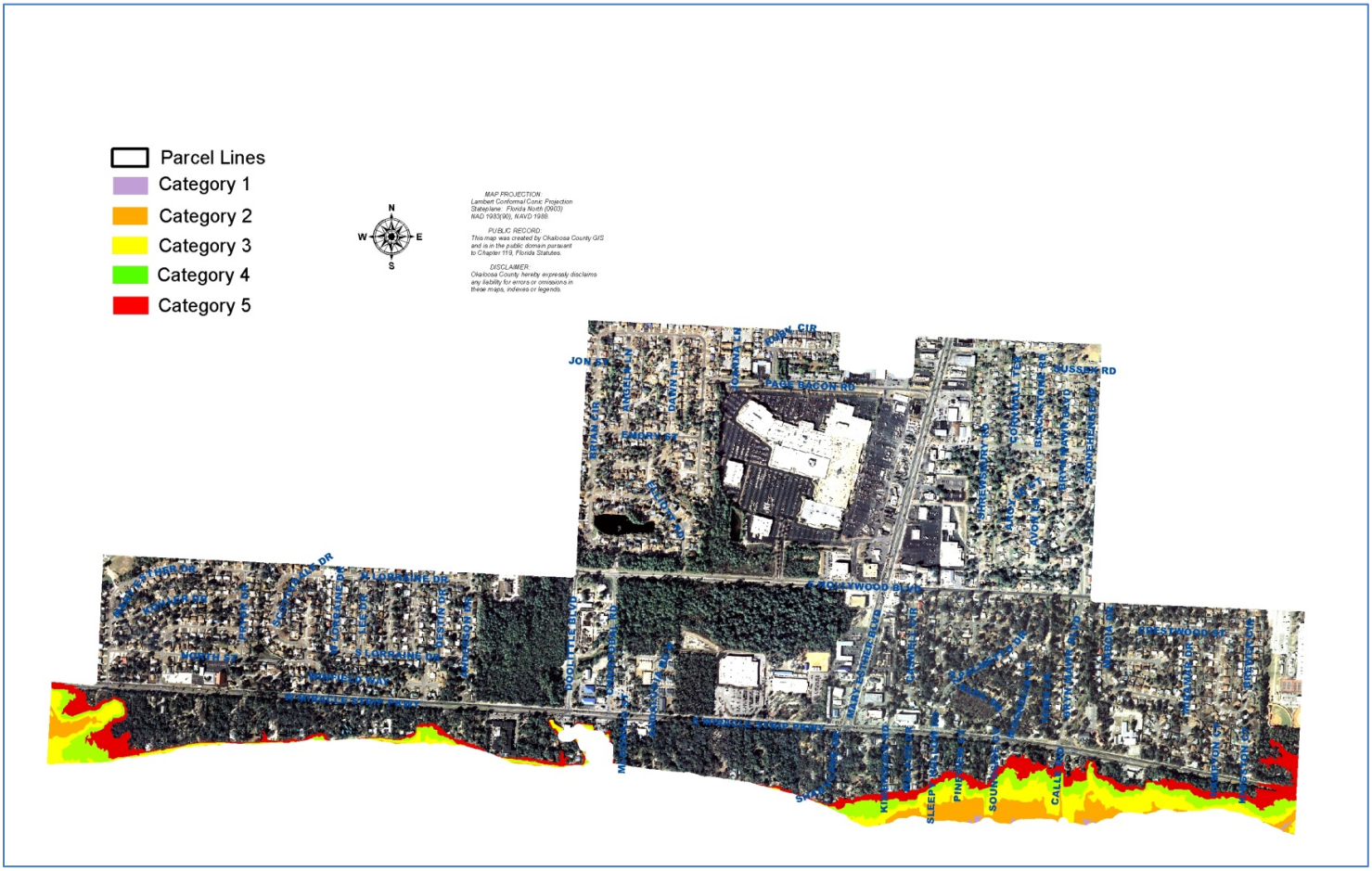
DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

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: West Florida Regional Planning Council, 2010

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 2010 hurricane scale update.
Source: West Florida Regional Planning Council, 2010

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~~25~~, 20~~02~~20 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. ~~; the rainfall amount was estimated between 2 and 5 inches.~~ 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, Dec 6 2002

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 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 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:
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 Mary Esther 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 5.05.01.05.02 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

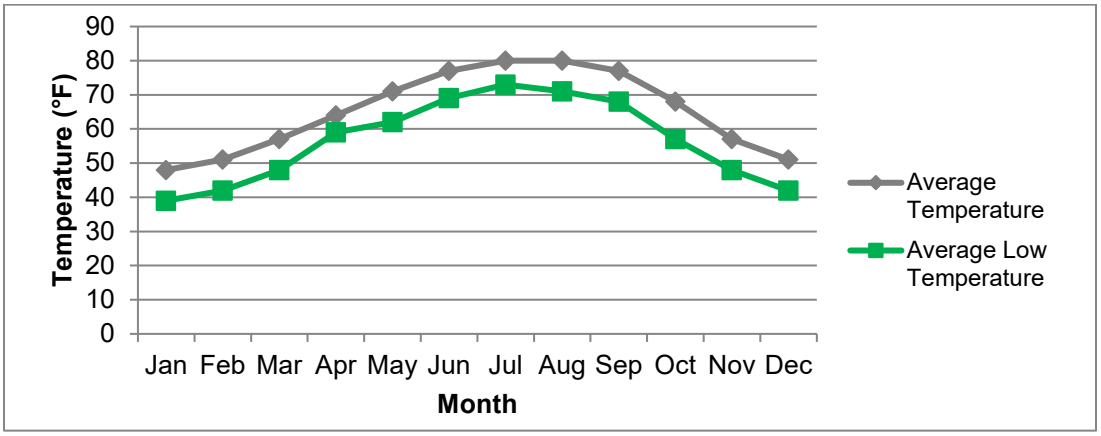
for this hazard's historical occurrences), the City of Mary Esther is likely to experience 4 to 16 flashes of lightning per square kilometer per year.

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:
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 (*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

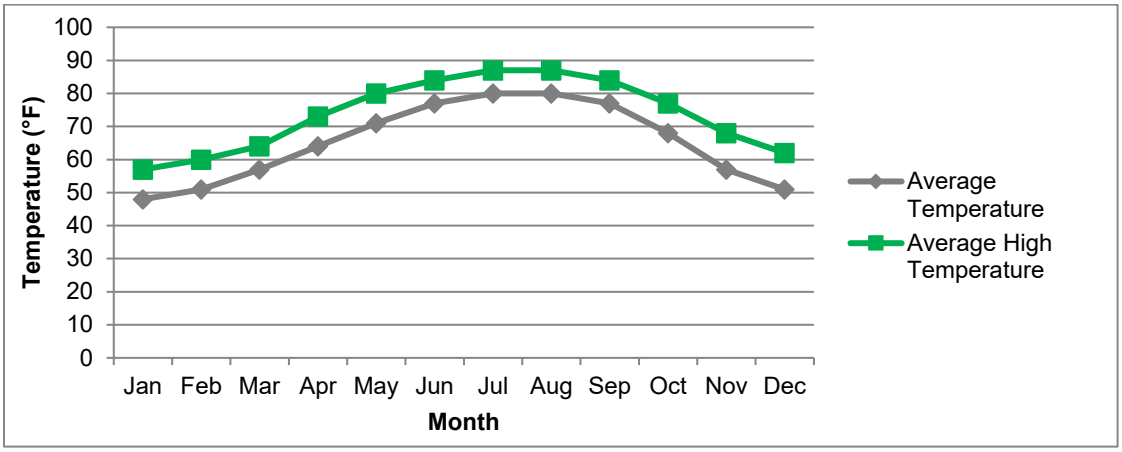
DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of heat waves.

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., 2010).

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.

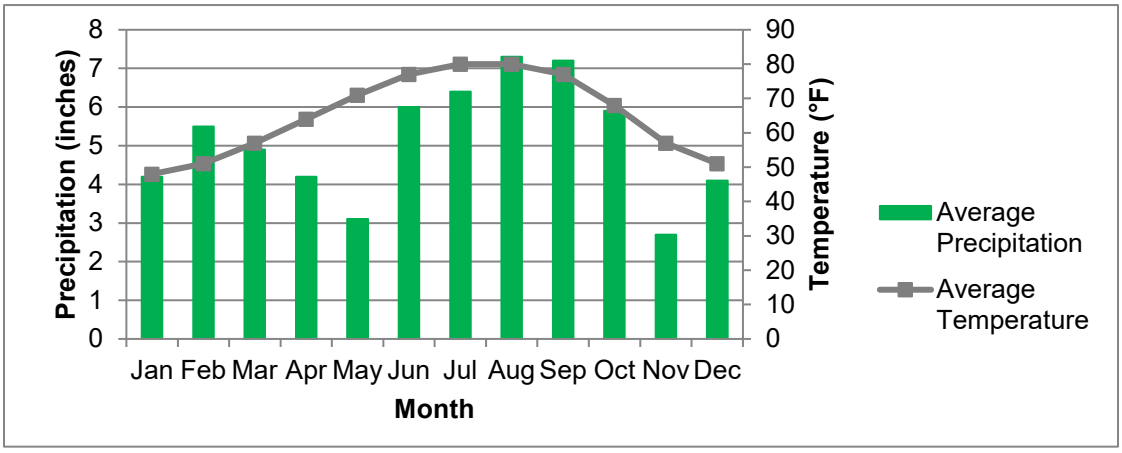
Drought

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, 2010).

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 back to the Risk Assessment of the overall County for the definition of this hazard.

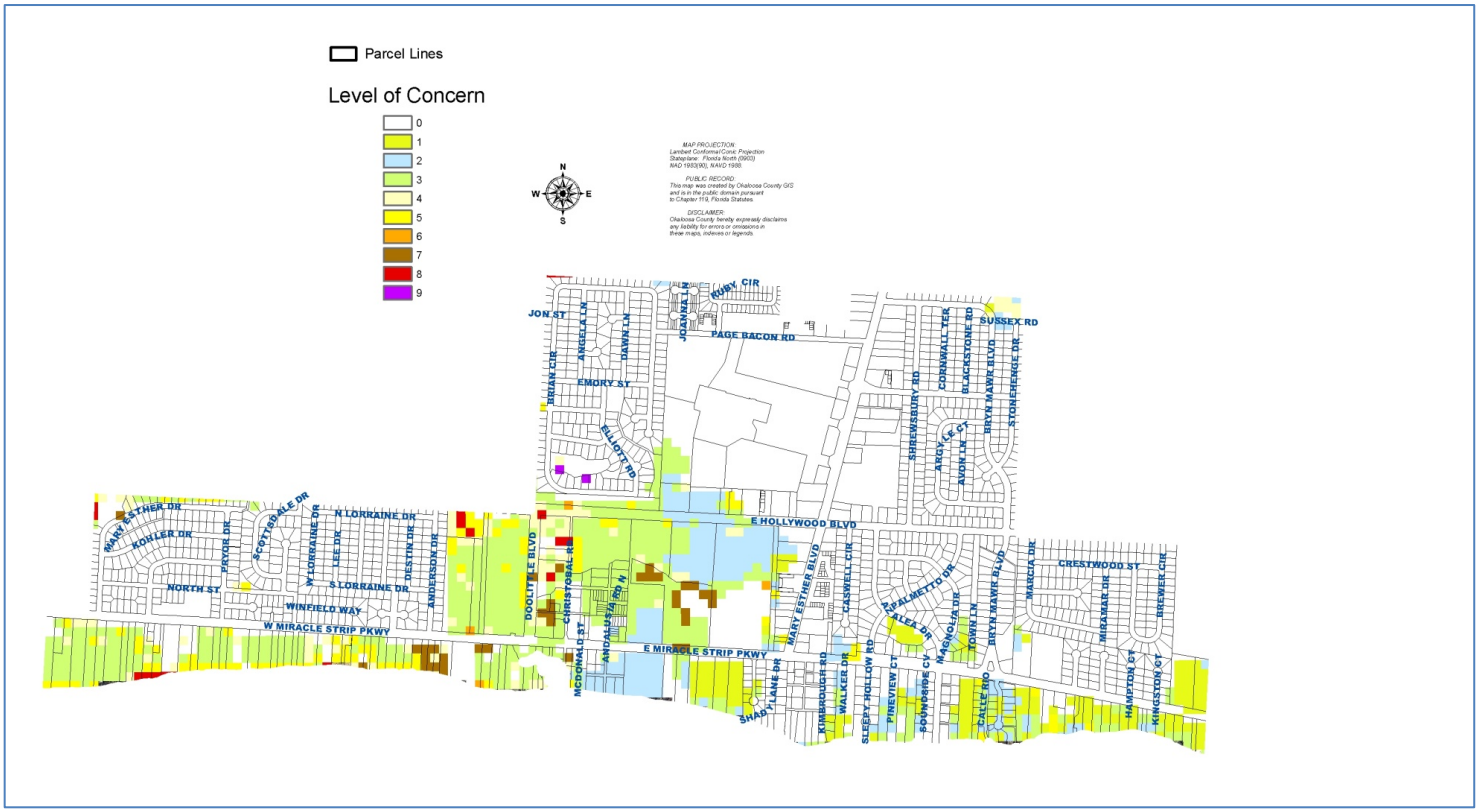
HISTORICAL OCCURRENCE:
The City of Mary Esther is susceptible to wildfire. The majority of the incorporated area is urban or residential, but many acres of open forest lands surround the city, and these lands consist of natural vegetation historically related to the Longleaf Pine or upland Southeastern 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

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.

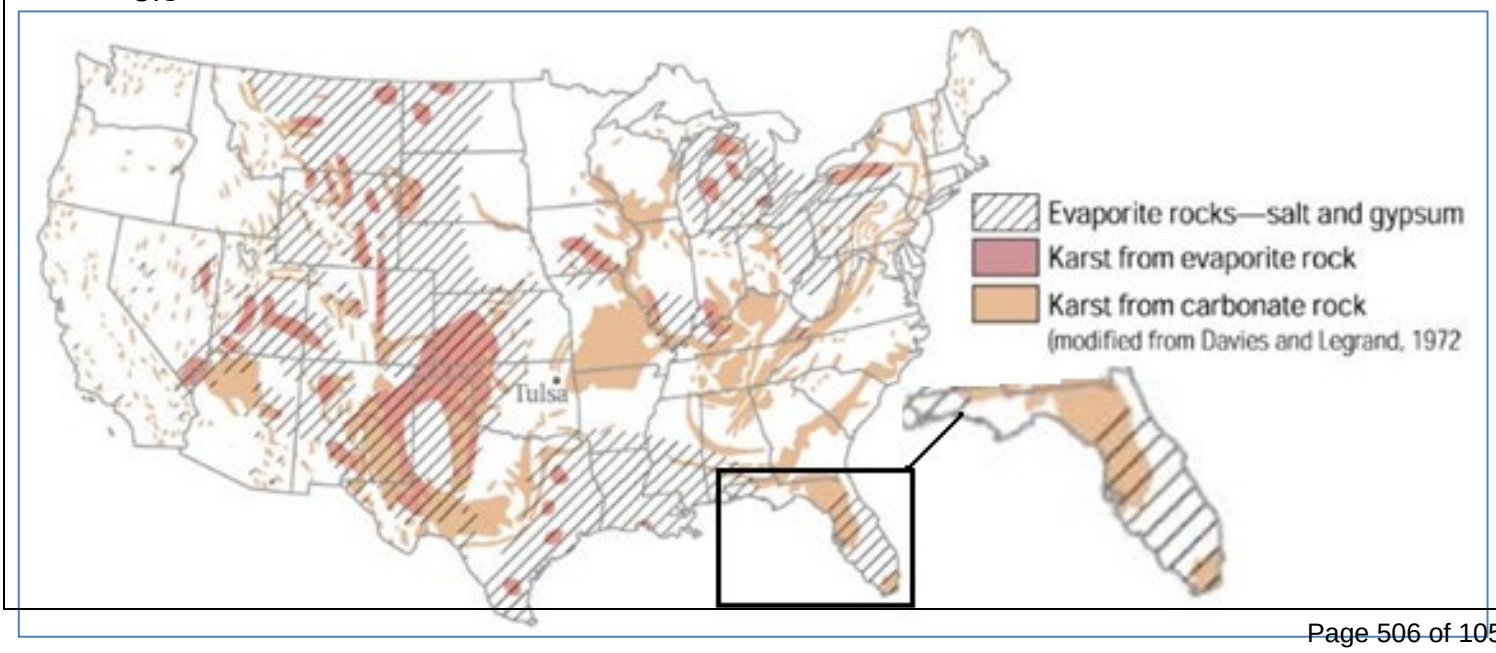
Section 5.05.01.09.06 Avalanche

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 5.05.01.10 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.

City of Mary Esther

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 a 201~~0~~9 Census it was home to ~~3,851~~ 4,013 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 boarders Santa Rosa Sound. Since 2004, residential development has been minimal and the majority has been in the form of apartments and re-development of single-family housing~~, condominiums, and town homes~~.

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 back to the overall County's Vulnerability for further explanation on these vulnerable populations. The table below displays the City of Mary Esther's vulnerable populations.

City of Mary Esther

Table 5.05.02.04.1: Estimated Vulnerable Populations in the City of Mary Esther, 2010

Population	2010 Census Percent Population	2014 Estimate
Elderly	15.9%	598
Language Isolation	.8%	31
Disabled	30.5%	1236
Single Parent	5.6%	65
Poverty	5.2%	198
Minority	4.2%	165

Source: 2010 Census; U.S. Census Population Division

Section 5.05.02.05 Repetitive Loss Properties

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" (FEMA, 2010). 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 City of Mary Esther because they have already experienced significant flood damage. The following tables depict the repetitive loss properties and their flood zones in the City of Mary Esther.

Table 5.05.02.05.1: Repetitive Loss Properties in the City of Mary Esther

	Total Building Payment	Total Contents Payment	Total Losses Claimed	Total Paid	Residential Structures	Non-Residential Structures
City of Mary Esther	$1,610,732.82	$615,082.01	23	$2,225,814.83	11	0

Source: FEMA, 2016

Table 5.05.02.05.2: Flood Zones of Repetitive Loss Properties in the City of Mary Esther

Flood Zones	A,AE	V,VE	B,C,X
Total Properties	6	0	5

Source: FEMA, 2016

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	6	0	1	0
Just Value	$0	$1,815,028	$0	$181,016	$0
Zone B	0	47	6	1	0
Just Value	$0	$20,759,911	$2,659,951	$181,016	$0
Zone C	0	47	6	3	0
Just Value	$0	$20,759,911	$2,659,951	$1,890,541	$0
Zone D	0	103	8	3	0
Just Value	$0	$39,956,223	$3,760,146	$1,890,541	$0
Zone E	1	177	12	6	1
Just Value	$65,000	$72,719,484	$5,870,267	$2,549,121	$96,124

Note Evacuation Zones correspond with Hurricane Categories (Ex. Evacuation Zone 1 = Category 1 Hurricane)
Source: West Florida Regional Planning Council & Okaloosa County Property Appraiser, 2010 (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	1	67	9	1
Just Value	$65,000	$37,202,702	$5,255,482	$1,095,717
Surge Level 2	1	97	9	1
Just Value	$65,000	$54,686,205	$5,255,482	$1,095,717
Surge Level 3	1	124	9	2
Just Value	$65,000	$61,052,047	$5,255,482	$1,709,525
Surge Level 4	1	124	9	2
Just Value	$65,000	$61,052,047	$5,255,482	$1,709,525
Surge Level 5	1	131	10	3
Just Value	$65,000	$62,797,766	$5,491,848	$1,890,541

Source: West Florida Regional Planning Council & Okaloosa County Property Appraiser, 2010
(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	10	$6,889,999	1	$1,652,216	6	$659,494
Multi-Family	5	$3,088,884	0	$0	0	$0
Commercial	2	$1,709,525	0	$0	0	$0

Source: Okaloosa County Department of Growth Management, 2010

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
	1	6	21	6
Just Value	$65,000	$1,815,028	$11,217,274	$652,549

Source: Okaloosa County Department of Growth Management, 2010

Table 5.05.02.10.2: Other Structures Vulnerable to Severe Storms in City of Mary Esther

Total:	Commercial	Government/ Institutional
	163	8
Just Value	$111,280,886	$14,143,266

Source: Okaloosa County Department of Growth Management, 2010

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

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, 2010 (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 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 5.05.02.14 Summary

The vulnerability assessment section of this LMS document highlighted how vulnerable the City of Mary Esther 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 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 5.05.03.03 Adult Congregate Living Facilities

~~Site Name~~	~~Address~~	~~X-COORD~~	~~Y-COORD~~
~~MARY JANE BOWLING~~	~~199 W MIRACLE STRIP PKWY MARY ESTHER FL 32569~~	~~1285661.657~~	~~518744.986~~

Formatted Table

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

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 5.05.06 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, 2010

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

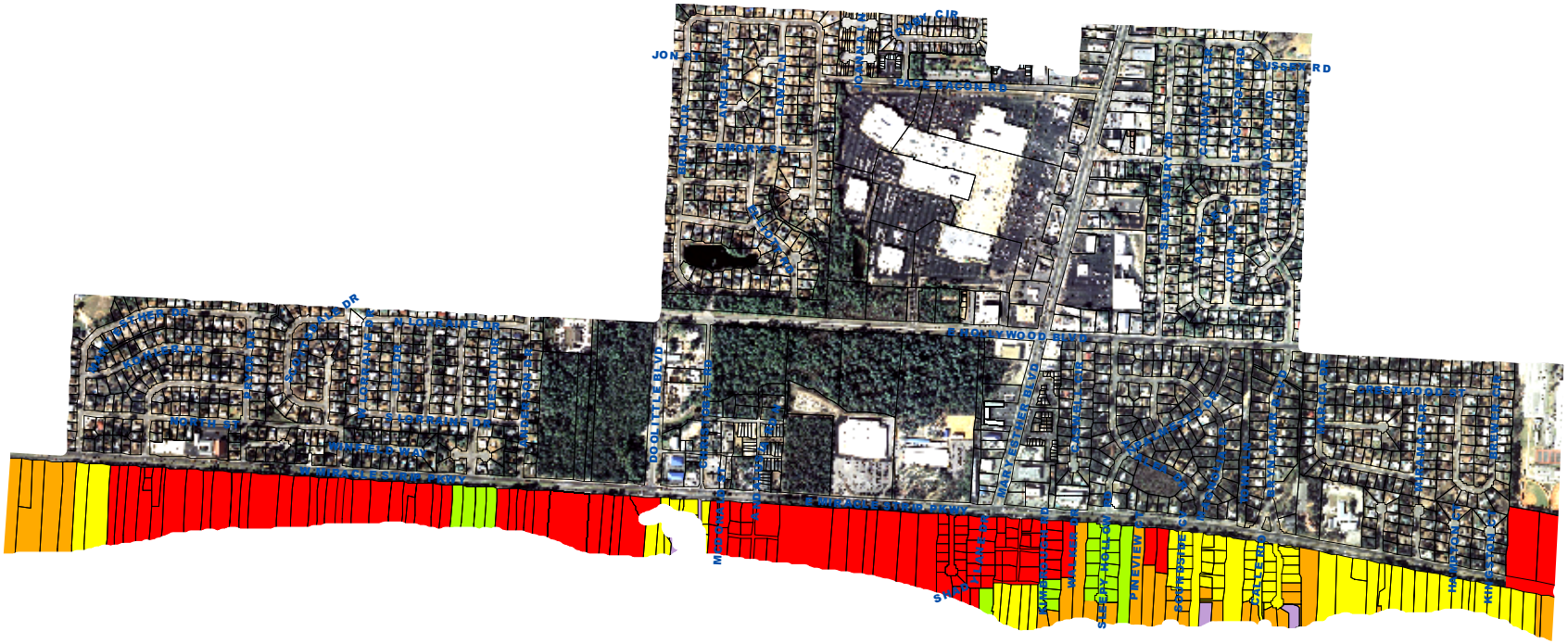
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Growth Management
08/18/2010

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, 2010

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

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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, Dec 6 2002

MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
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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, Dec 6 2002

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

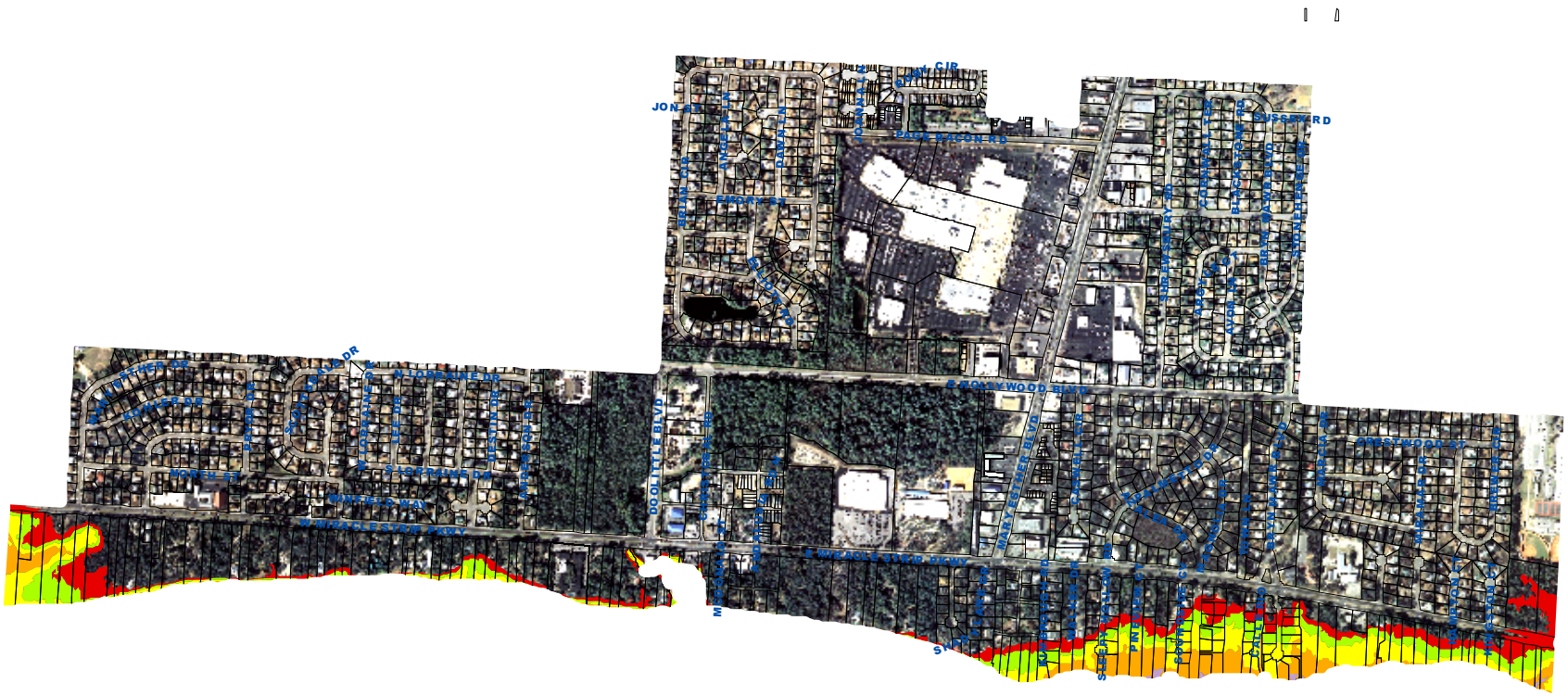
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City of Mary Esther Surge Zones



Parcel Lines
Category 1
Category 2
Category 3
Category 4
Category 5

Source: West Florida Regional Planning Council, 2010

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

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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, 2010

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

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Growth Management
08/18/2010

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 COMP
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: 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:

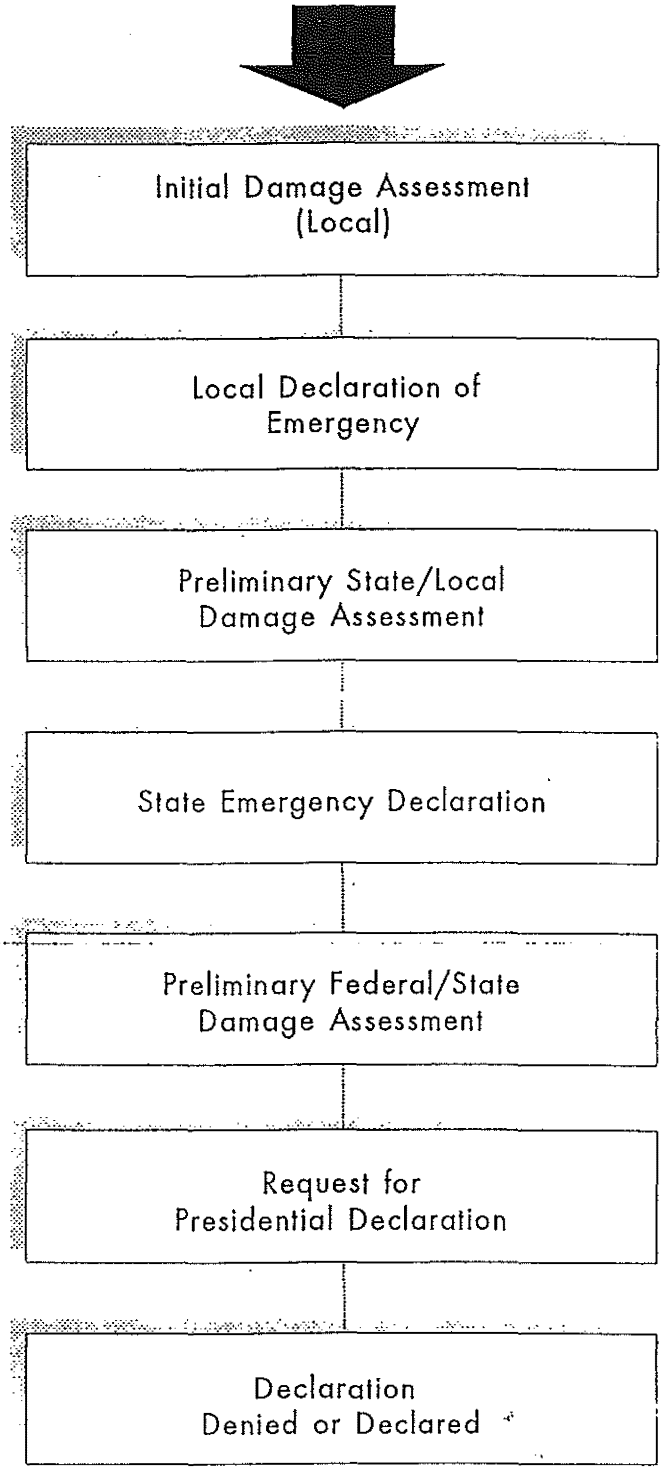
- activates the emergency response, recovery, mitigation phases of the State and local emergency management plans; and
- provides authority for mobilization and deployment of all resources to which the plans refer, pursuant to Section 252.31-60, F.S., or any other provisions of law relating to emergencies.

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.

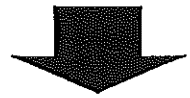
8.2.3.5 Site Plan Review: Site plans which have been submitted to the City prior to the disaster shall not be reviewed by the staff, Planning and Zoning Board or City Council for a period of thirty (30) days following the expiration of initial moratorium. All submitted dates and review periods shall be adjusted accordingly to reflect a time period covered by the thirty (30) day moratorium.

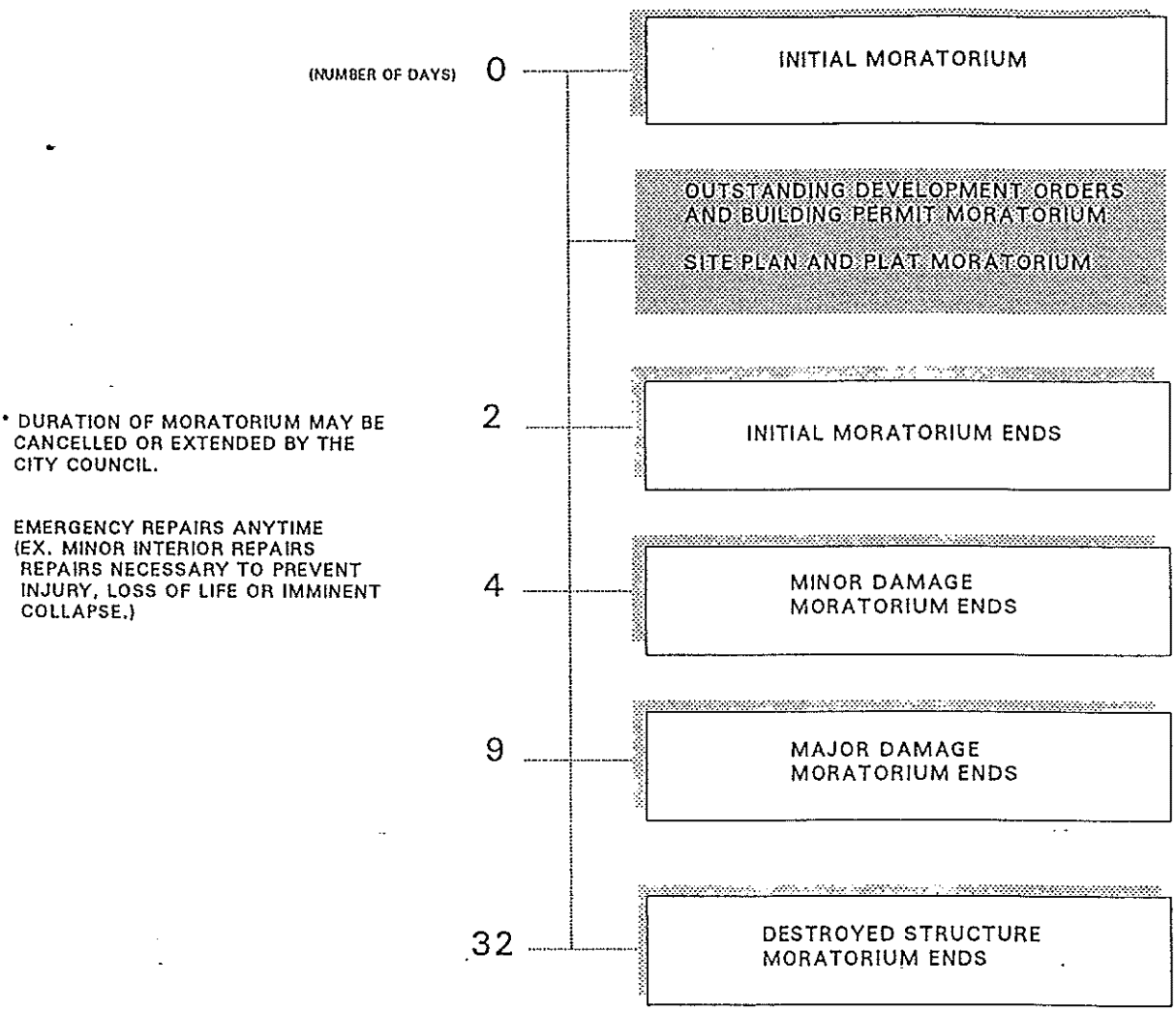
8.2.3.6 Review Procedures Moratorium: No new site plans, zoning requests or subdivision plats shall be accepted by the City for a period of thirty (30) days following the expiration of the initial moratorium. All submittal dates and review periods shall be adjusted accordingly to reflect the time period covered by this thirty (30) day moratorium.

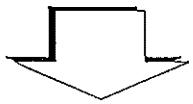
8.2.3.7 Duration of Moratorium: All moratoriums other than the initial moratorium as in Section 9.2.3 shall be in effect for the length of time described above and may be cancelled or extended by the City Council.

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







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.

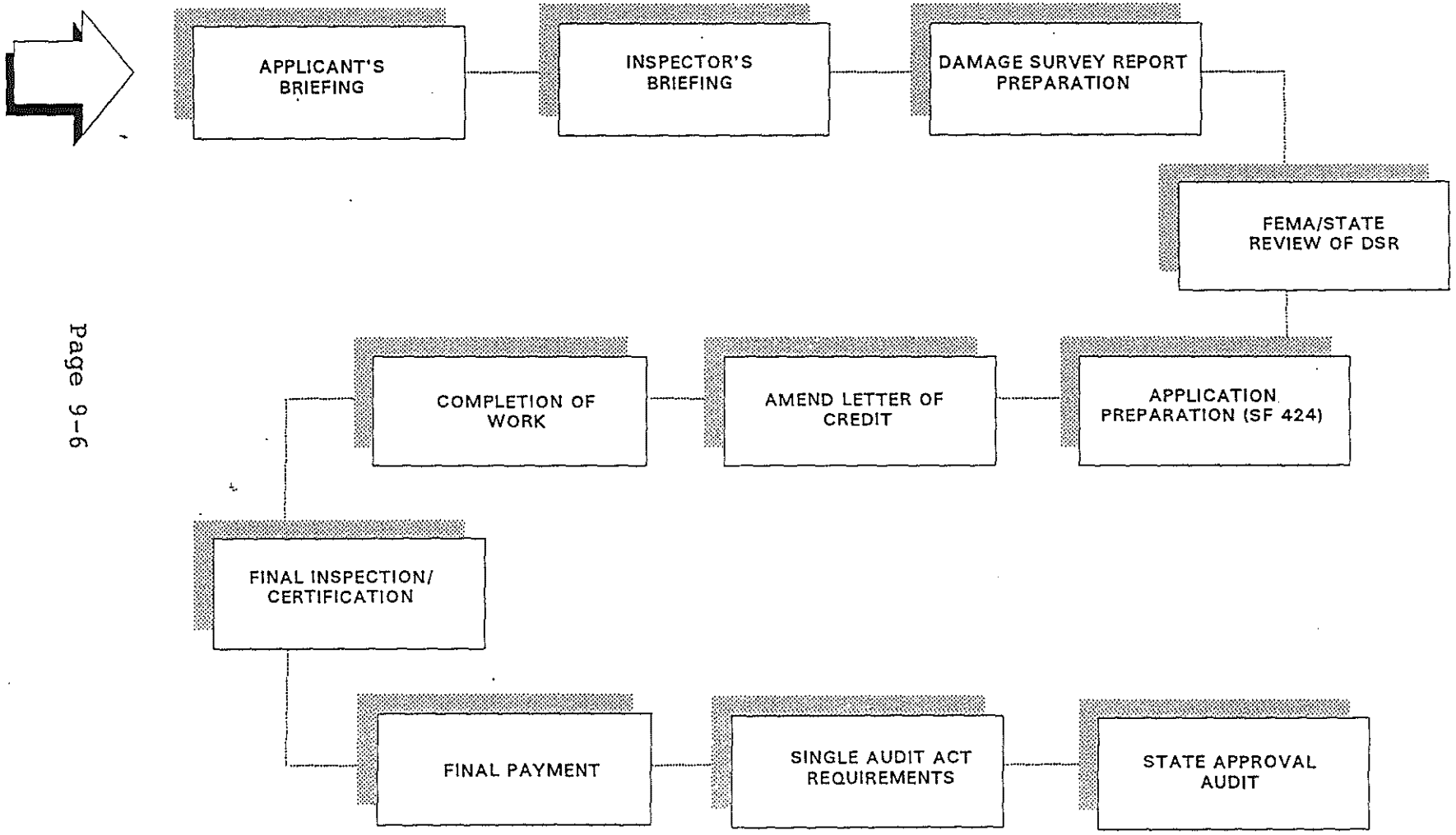
9.6.8 Final Inspection and Certification (Step 8). The State will perform the final inspection to ensure the project was completed per the scope of work, and certify that the work and cost are in compliance with the provisions of the FEMA/State Agreement.

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)

FORM A

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)

FORM B

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

APPENDIX F

POST-DISASTER REDEVELOPMENT PLAN

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.
A.	B.	C.	D.	E.	F.	G.	H.	I.	J.	K.	L.	M.	N.	O.	P.	Q.	R.	S.	T.	U.	V.	

FORM

Section 5.06

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. It 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. In this section, information relevant to the City of Niceville 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 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

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.

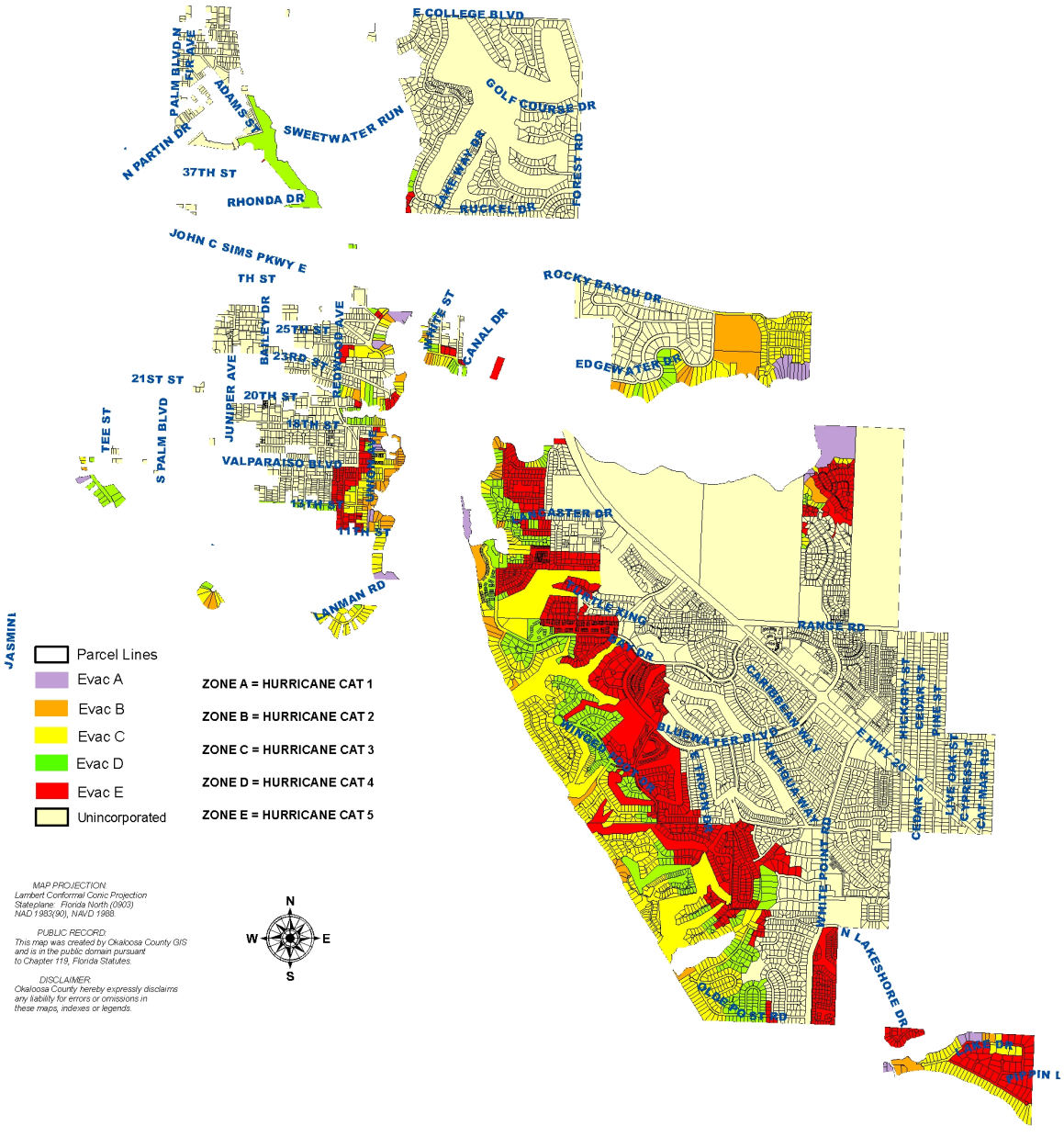
EXTENT:
High winds from hurricanes are a substantial threat to all homes, especially manufactured housing. Category 3 or higher force winds would likely cause substantial damage throughout the city. Winds in excess of 155 MPH could be experienced in a major Category 5 hurricane in some locations. Traditional 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.

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.

City of Niceville

Figure 5.06.01.02.1: Evacuation Zones for the City of Niceville



Source: Okaloosa County Public Safety / Okaloosa County GIS, 2010

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, 2010

Section 5.06.01.03 Storm Surge

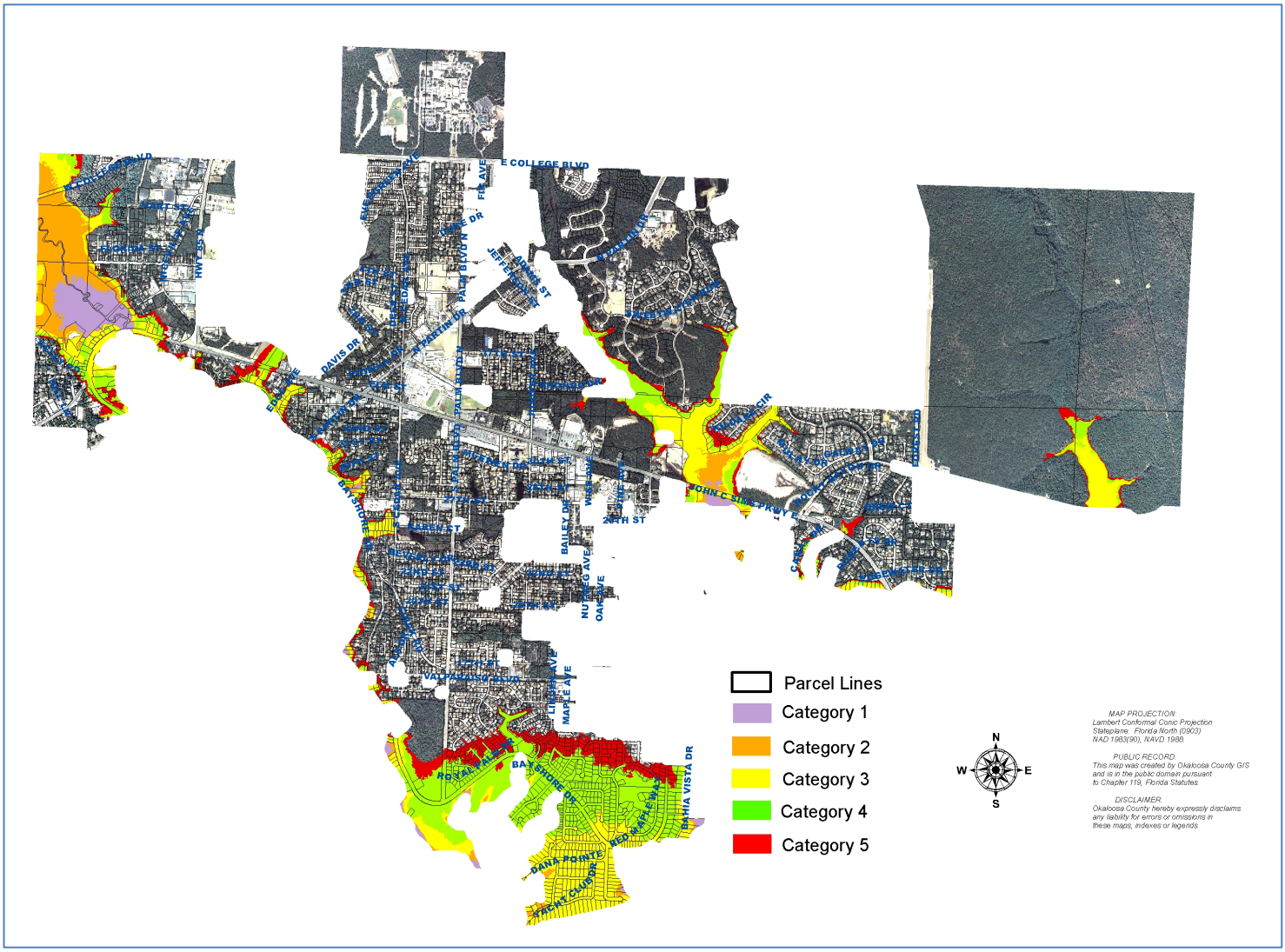
DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

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, 2010

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 2010 hurricane scale update.
Source: West Florida Regional Planning Council, 2010

Section 5.06.01.04 Flooding

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

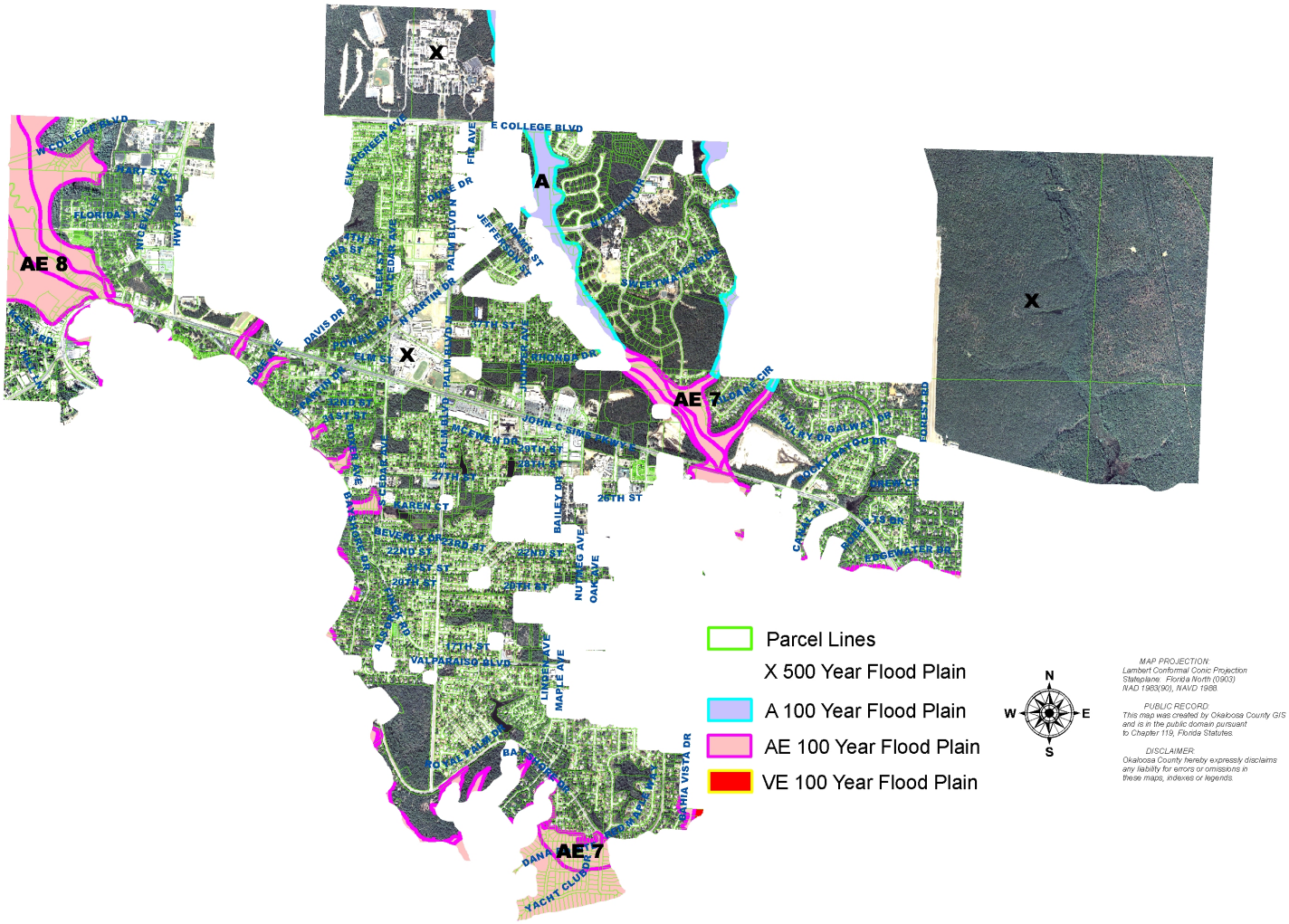
HISTORICAL OCCURRENCE:
In 1995, heavy rains caused streets to flood in the City of Niceville. The water receded and thus there was no need for road-closures. (NCDC, 2010). Given the minimal amount of data available at the municipal level regarding the historical occurrences of severe floods or flash-floods, 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: Okaloosa County Department of Growth Management, 2010

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 1958-2009 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 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, and 2003, 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 $315,000 in reported property damage. (NCDC, 2010).

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).

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, 1971-2009

	Nov	Dec	Jan	Feb	Mar
Niceville, FL	37.2°	31.7°	26.8°	30.2°	39.7°

Source: Southeast Regional Climate Center, 2010

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, 1971-2009

	May	Jun	Jul	Aug
Niceville, FL	88.1°	94°	95.6°	94.5°

Source: Southeast Regional Climate Center, 2010

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, 2010).

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 2000-2009, a total of 49 out of 120 months were abnormally dry. Based on this data, the City of Niceville 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 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.

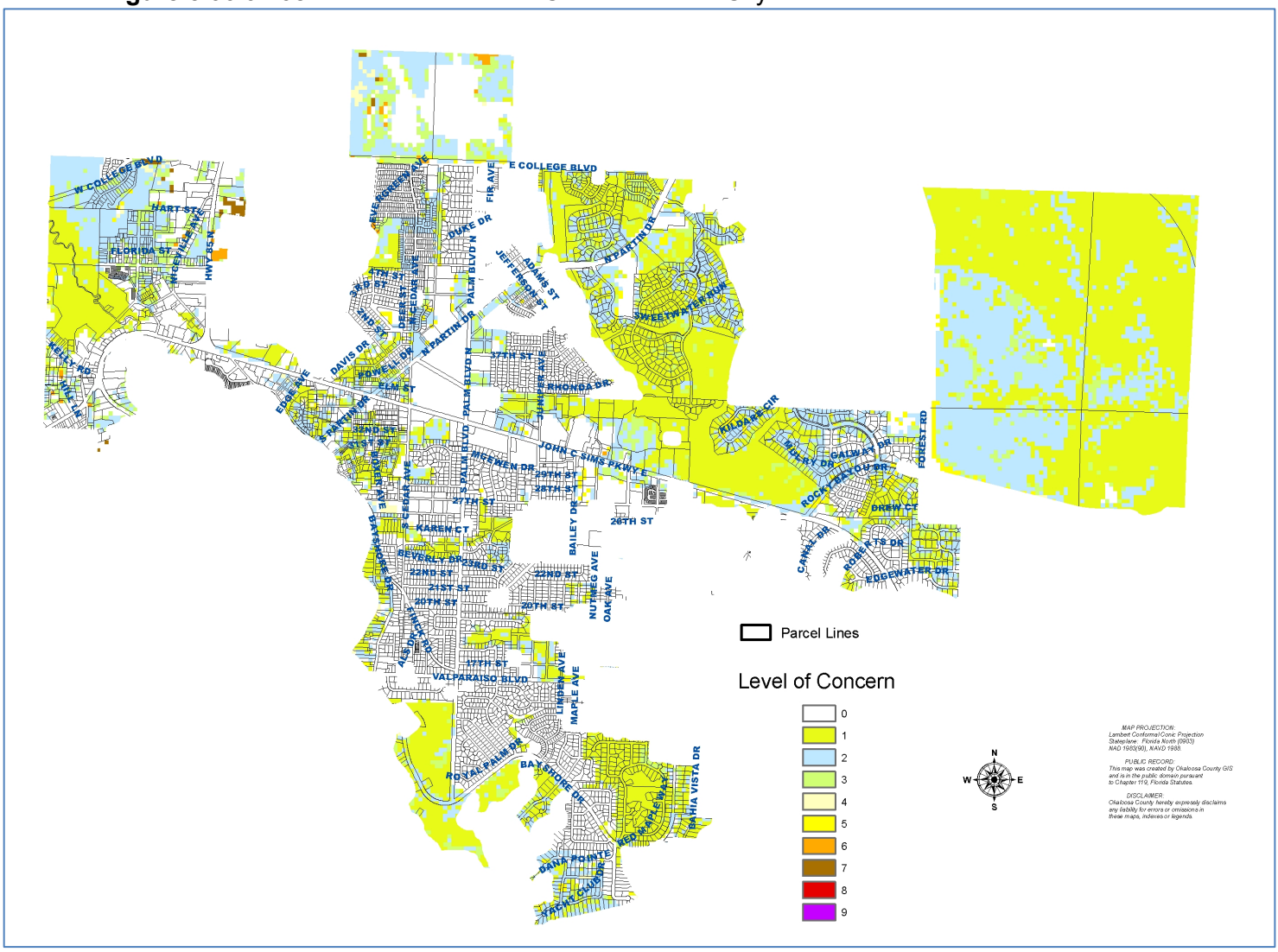
City of Niceville

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, 2010

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.

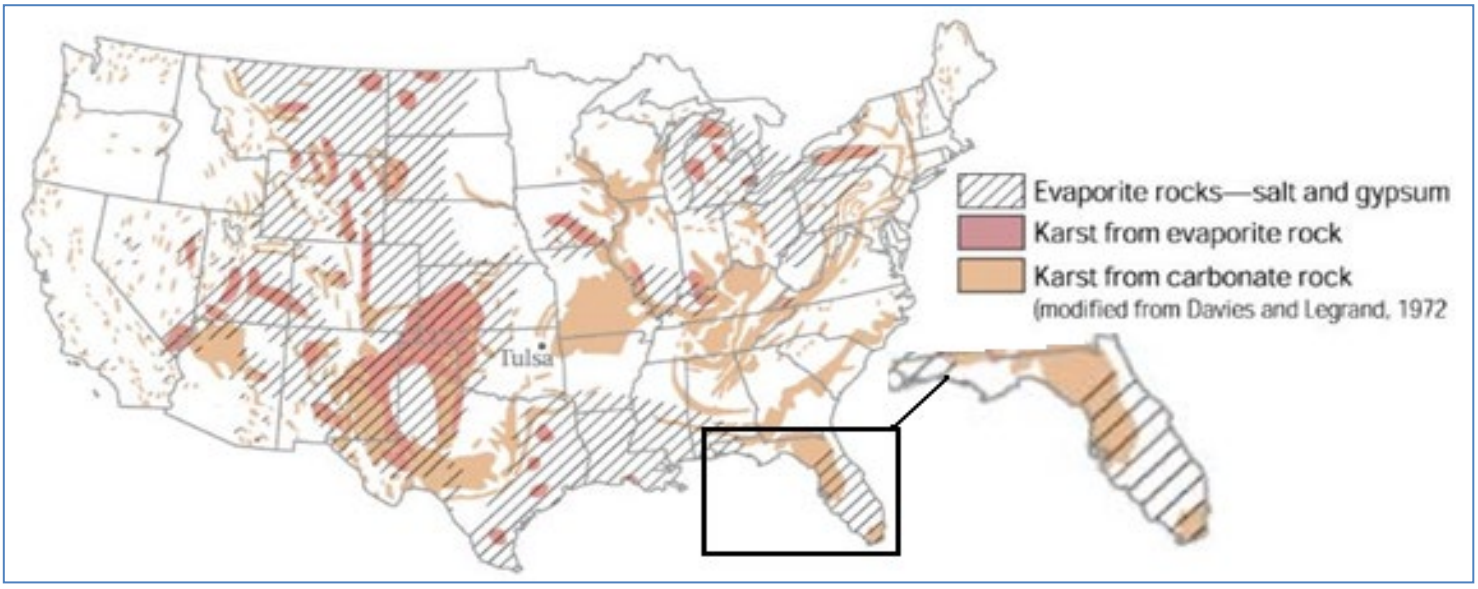
Section 5.06.01.10.05 Avalanche

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 5.06.01.11 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.

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, 2010

Population	2010 Census Percent Population	2020 Estimate
Elderly	16.5%	2,660
Language Isolation	1.9%	306
Disabled	28.9%	4,658
Single Parent	11.5%	1,854
Poverty	10.2%	1,644
Minority	5.7%	919

Source: 2010 Census; U.S. Census Population Division

Section 5.06.02.05 Repetitive Loss Properties

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" (FEMA, 2010). 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 City of Niceville because they have already experienced significant flood damage. The following tables depict the repetitive loss properties and their flood zones in the City of Niceville.

Table 5.06.02.05.1: Repetitive Loss Properties in the City of Niceville

	Total Building Payment	Total Contents Payment	Total Losses Claimed	Total Paid	Residential Structures	Non-Residential Structures
City of Niceville	$695,582.67	$121,525.64	33	$817,108.31	12	2

Source: FEMA, 2016

Table 5.06.02.05.2: Flood Zones of Repetitive Loss Properties in the City of Niceville

Flood Zones	A,AE	V,VE	B,C,X
Total Properties	8	2	4

Source: FEMA, 2016

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, 2020 (City of Niceville Staff generated table from overlaying the surge levels and property appraiser data)

Table 5.06.02.06.2: Evacuation Zones and the Vulnerable Structures within

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, 2020 (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, 2020 (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, 2020 (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, 2020 (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, 2010

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, 2010

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, 2010 (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 the Choctawhatchee Bay. As previously mentioned, within its jurisdiction, there are 11.95 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 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
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 5.06.02.14 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 VFD	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
BAY HERITAGE NURSING HOME	115 HART ST NICEVILLE FL 32578	1340161.372	562209.459
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

Section 5.06.03.07 Mobile Home Parks and RV Campgrounds

Site Name	Address	X-COORD	Y-COORD
EMERALD COAST MOBILE HOME PARK	224 MADISON ST NICEVILLE FL 32578	1347782.499	560991.346
G&H INVESTMENT HOLDINGS, LLC	1504 REEVES ST LOT 26 NICEVILLE FL 32578	1350138.95	554538.399
HAYES TP	214 E PARK AVE NICEVILLE FL 32578	1345386.999	560113.625
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

(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 Works*
2. Enforce Florida Building Codes for new structures. *Status: ongoing; Florida Building Codes, Building Official*
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; Public Works*
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 Public Works, 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 Public Works*
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: 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 Information Systems, State of Florida, FEMA, City of Niceville Public Works and Private entities*
8. Ensure internet systems are redundant to ensure continued availability of disaster management software. *Status: ongoing; City of Niceville Information 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 Public Works*

Section 5.06.04.02 Storm Surge

1. Promote public awareness of storm surge. *Status: ongoing; City of Niceville Public Works and Okaloosa County Public Safety*
2. Ensure the public is informed of pending conditions. *Status: ongoing; City of Niceville Public Works 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 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 Public Works*

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*
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*
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*
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; Flood Damage Prevention Ordinance, and Building Official; for NFIP Compliance*
5. Ensure roads are designed and engineered for the amount of flooding that can be expected. *Status: ongoing; 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; Public Works and Information 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 and FEMA*
9. Support activities that educate the public about the dangers of flooding. *Status: ongoing; City of Niceville 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 and Okaloosa County Public Safety; for NFIP Compliance*

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; Land Development Code*
2. Require proposed temporary and permanent erosion and sediment control plans are submitted with each application for construction approval. *Status: ongoing; 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; Land Development Code, Public Works, 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; 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; 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; 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 Public Works and Okaloosa County Public Safety*
2. Ensure communications systems are capable to communicate during and following severe storms. *Status: ongoing; City of Niceville Public Works, City of Niceville Information Systems, 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 Information Systems, 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 Public Works 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 Public Works, City of Niceville Information Systems, 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 Public Works 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: Information Systems and Building Official*
4. Ensure the public is informed of pending conditions. *Status: ongoing; City of Niceville Public Works 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*

Information Systems, 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 Public Works, City of Niceville Information Systems, 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 Public Works 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; Information Systems and Private entities*
4. Ensure the public is informed of pending conditions. *Status: ongoing; City of Niceville Public Works 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 Information 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 Public Works, City of Niceville Information Systems, 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 Public Works 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; Public Works*
4. Ensure the public is informed of pending conditions. *Status: ongoing; City of Niceville Public Works 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 Public Works, City of Niceville Information Systems, 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 Public Works and Okaloosa County Public Safety*
3. Ensure the public is informed of pending conditions. *Status: ongoing; City of Niceville Public Works 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 Public Works, City of Niceville Information 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 Public Works and Okaloosa County Public Safety*
3. Support activities that educate the public about the dangers of wildfire. *Status: ongoing; 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*

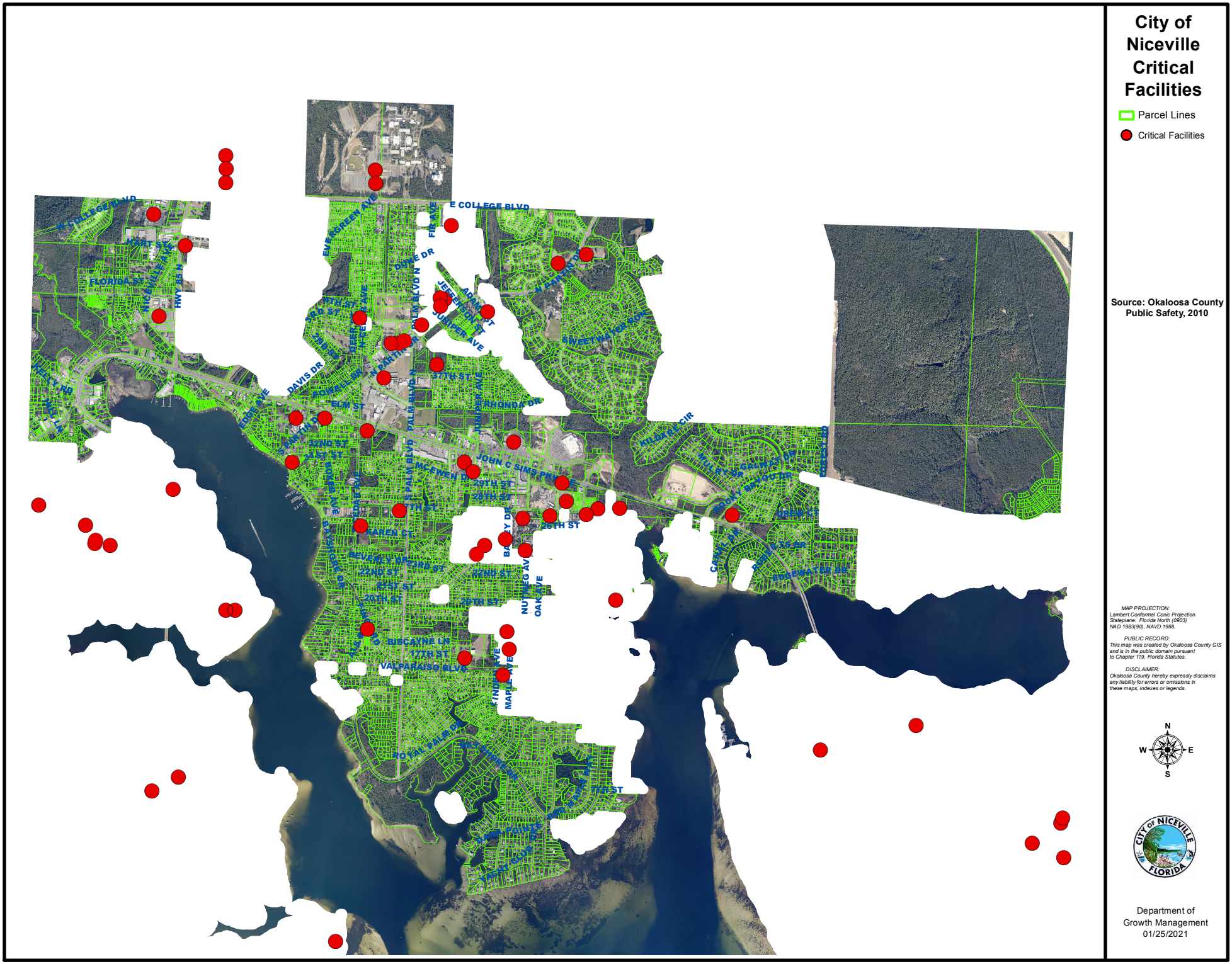
Section 5.06.04.08 Beach Erosion

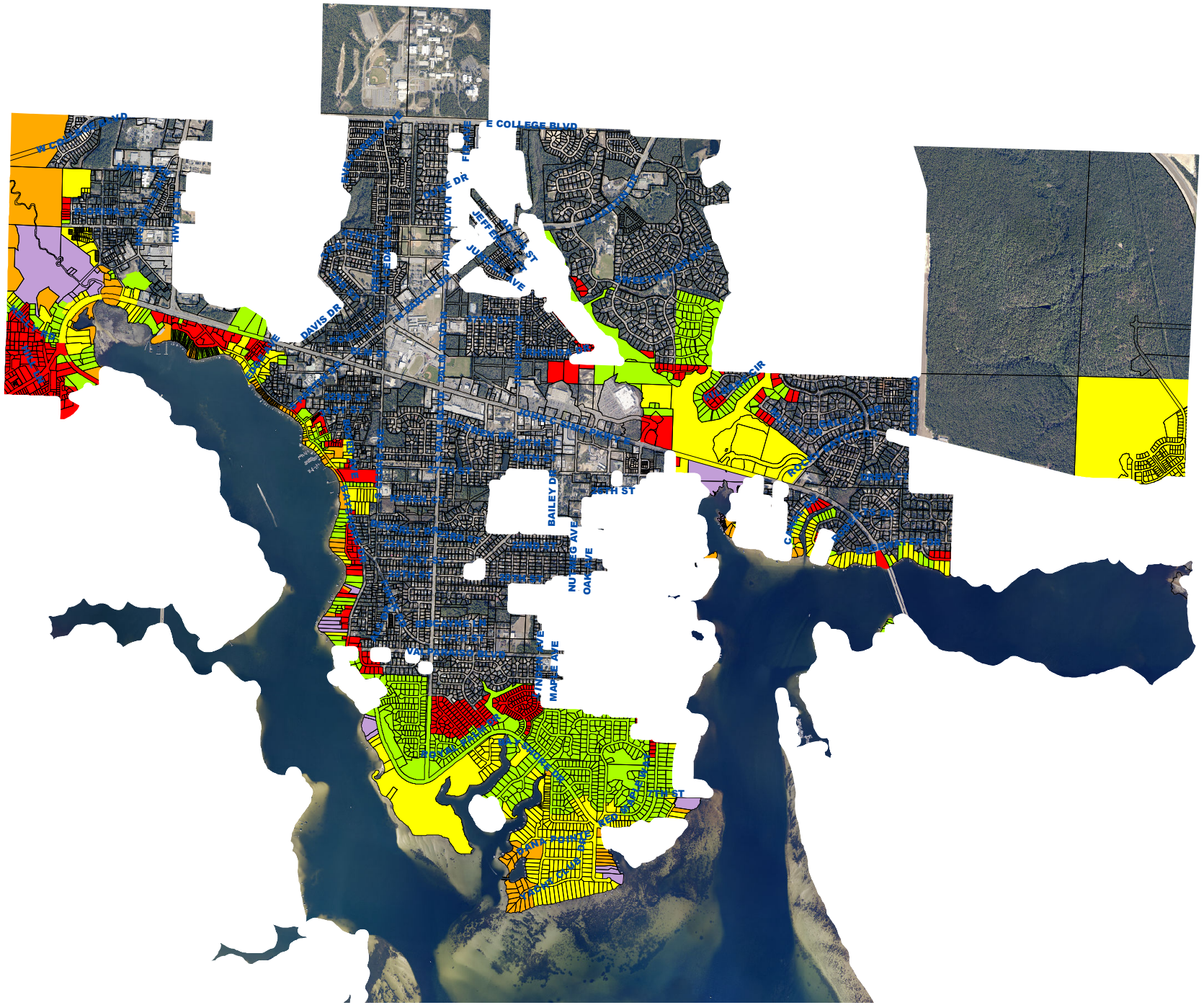
1. Beach management actions that address eroding shoreline include these options: (1) hard stabilization, such as seawalls and revetments; (2) soft stabilization, such as beach restoration; (3) retreat, such as abandonment of shoreline development or relocation of threatened buildings; and (4) no action. The long-term beach behavior and its causes usually dictate the appropriate options. *Status: ongoing; Public Works*

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, 2010
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
NAD 1983(90), NAVD 1988.
PUBLIC RECORD:
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CITY OF NICEVILLE FLORIDA
Department of Growth Management
01/25/2021



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, 2010

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Department of Growth Management
08/26/2020



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, Dec 6 2002

MAP PROJECTION:
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Department of
Growth Management
01/25/2021



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, Dec 6 2002

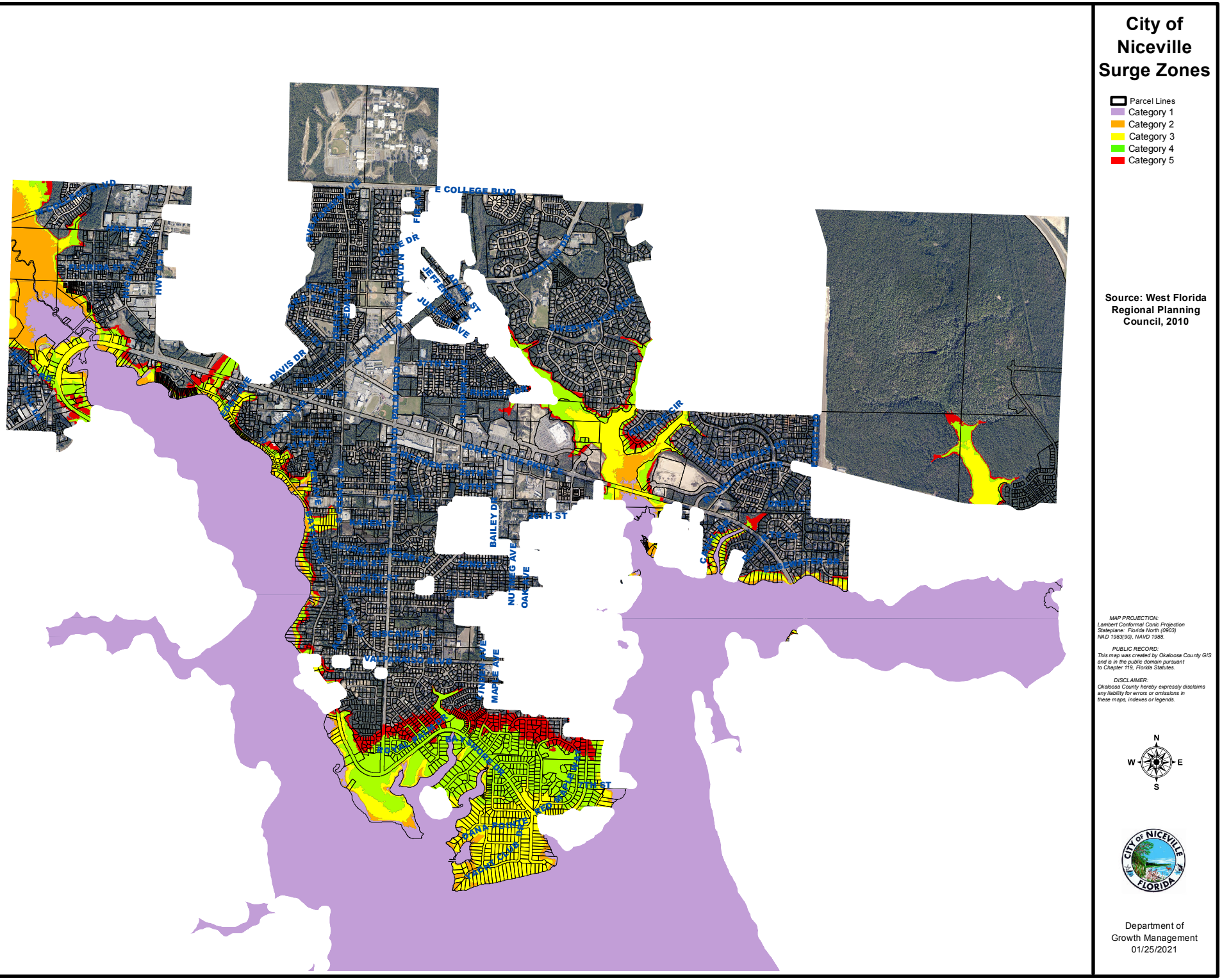
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01/25/2021



City of Niceville Surge Zones

- Parcel Lines
- Category 1
- Category 2
- Category 3
- Category 4
- Category 5

Source: West Florida Regional Planning Council, 2010

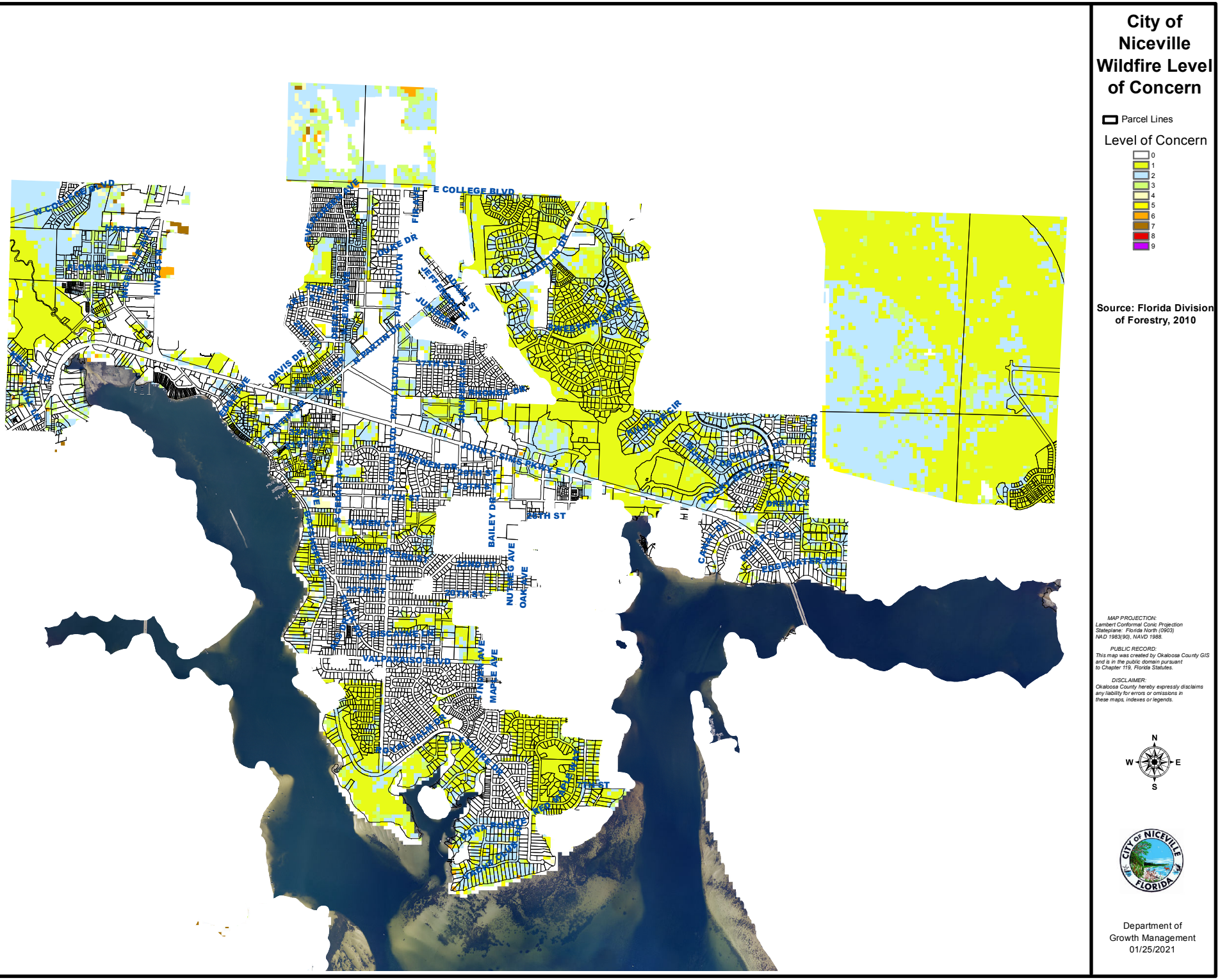
MAP PROJECTION:
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E COLLEGE BLVD
W COLLEGE BLVD
DAVIS DR
JOHN SIMS PKWY E
20TH ST
BAILEY DR
NURSERY AVE
OAK AVE
MAPLE AVE
PALM BLVD N
JUNIPER AVE
ADAMS ST
JEFFERSON ST
FLORIDA AVE
HWY 90
City of Niceville Wildfire Level of Concern
Parcel Lines
Level of Concern
0
1
2
3
4
5
6
7
8
9
Source: Florida Division of Forestry, 2010
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
NAD 1983(90), NAVD 1988.
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Department of Growth Management
01/25/2021

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 [illegible])

1. Use one line for each dwelling or [illegible]
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

American Red Cross Form 5738 (Rev. 9-79)

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

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 6,336 people according a 2008 Census estimate. In this section, hazard information relevant to the City of Valparaiso 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 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

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.

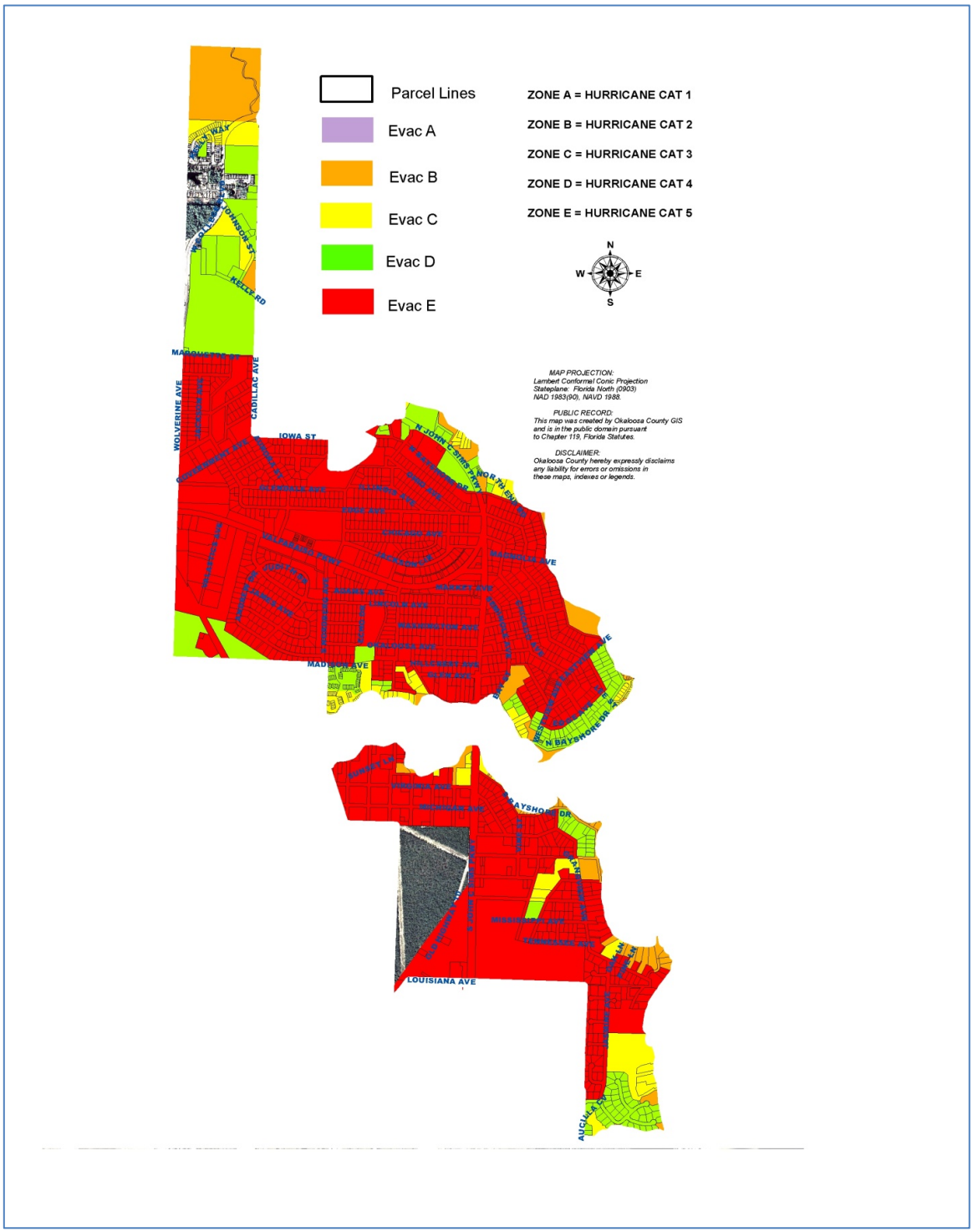
EXTENT:
High winds from hurricanes are a threat to houses in the City of Valparaiso, especially manufactured housing. Category 3 or higher force winds would likely cause substantial damage. Winds in excess of 155 MPH could be experienced in a major Category 5 hurricane in some locations. Traditional 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.

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, 2010).

City of Valparaiso

Figure 5.07.01.02.1: Evacuation Zones for the City of Valparaiso



Source: Okaloosa County Public Safety / Okaloosa County GIS, 2010

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, 2010

Section 5.07.01.03 Storm Surge

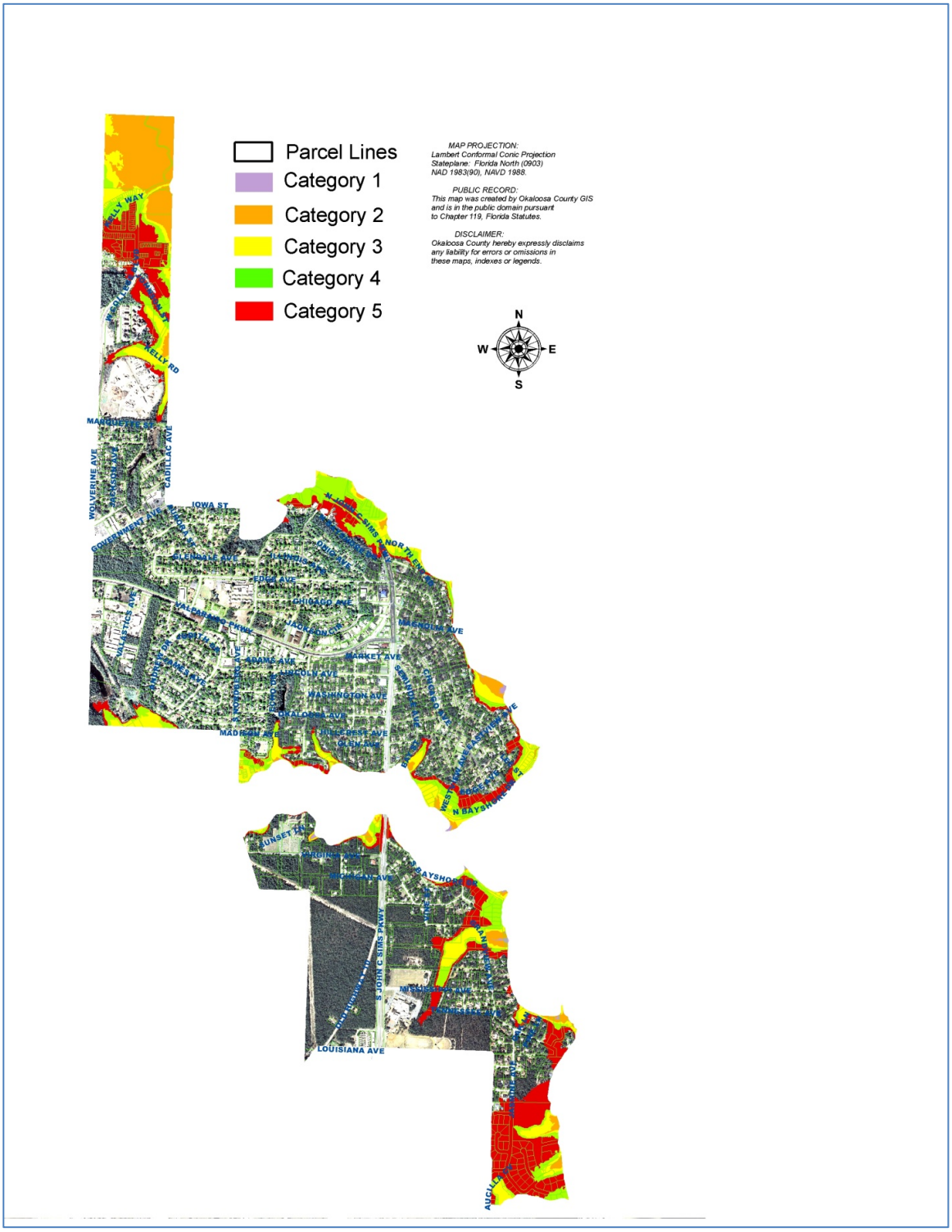
DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definitions of this hazard.

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 back 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, 2010

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, 2010

Section 5.07.01.04 Flooding

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

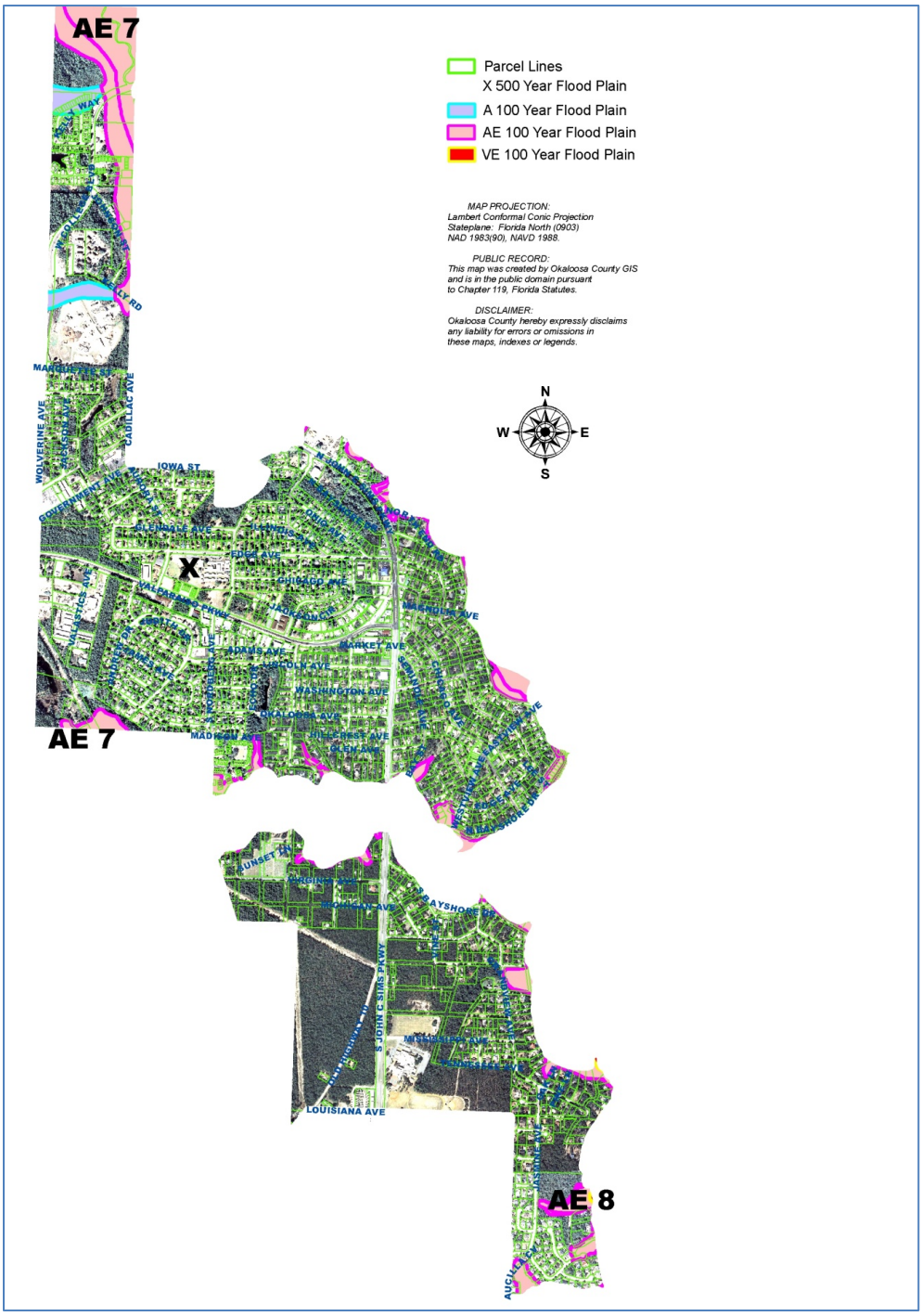
HISTORICAL OCCURRENCE:
A flash flood warning was issued in the City of Valparaiso on May 10, 1995. Heavy rains caused streets to flood but none were closed. The water receded after a few hours. On July 01, 2003 heavy rains from Tropical Storm Bill also resulted in temporary roadway flooding in the City 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, Dec 6 2002

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

City of Valparaiso

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 back 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 back 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, 2010

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. No historical, scientific data was found regarding snowfall in the City of Valparaiso although there have been rumors of snow flurries in the past.

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:

City of Valparaiso

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, 2010

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 2000-2009, a total of 49 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

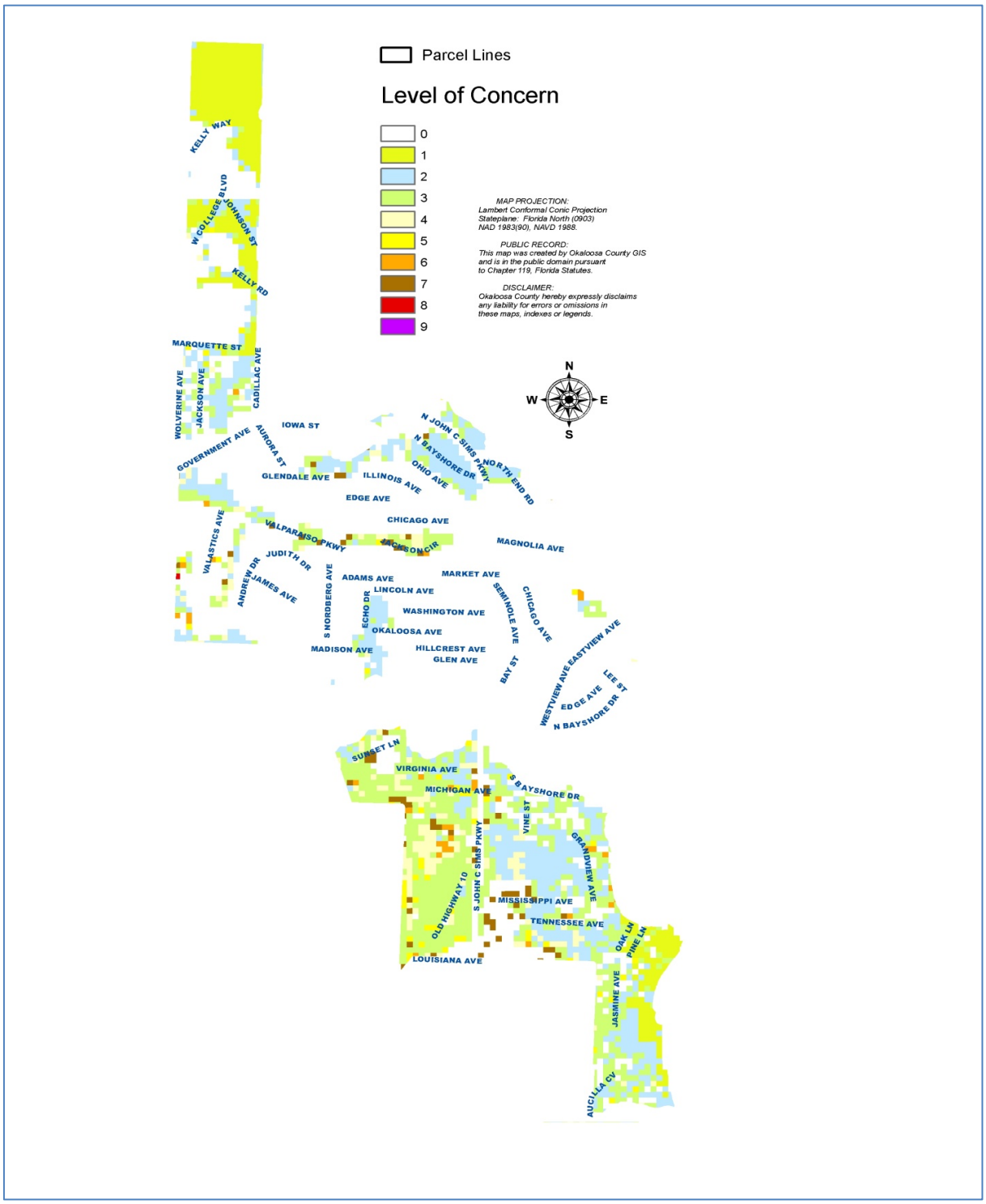
DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

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

City of Valparaiso



Source: Florida Division of Forestry, 2010

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 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 5.07.01.10.01 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 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 5.07.01.10.02 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 5.07.01.10.02: 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 5.07.01.10.03 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 5.07.01.10.04 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.

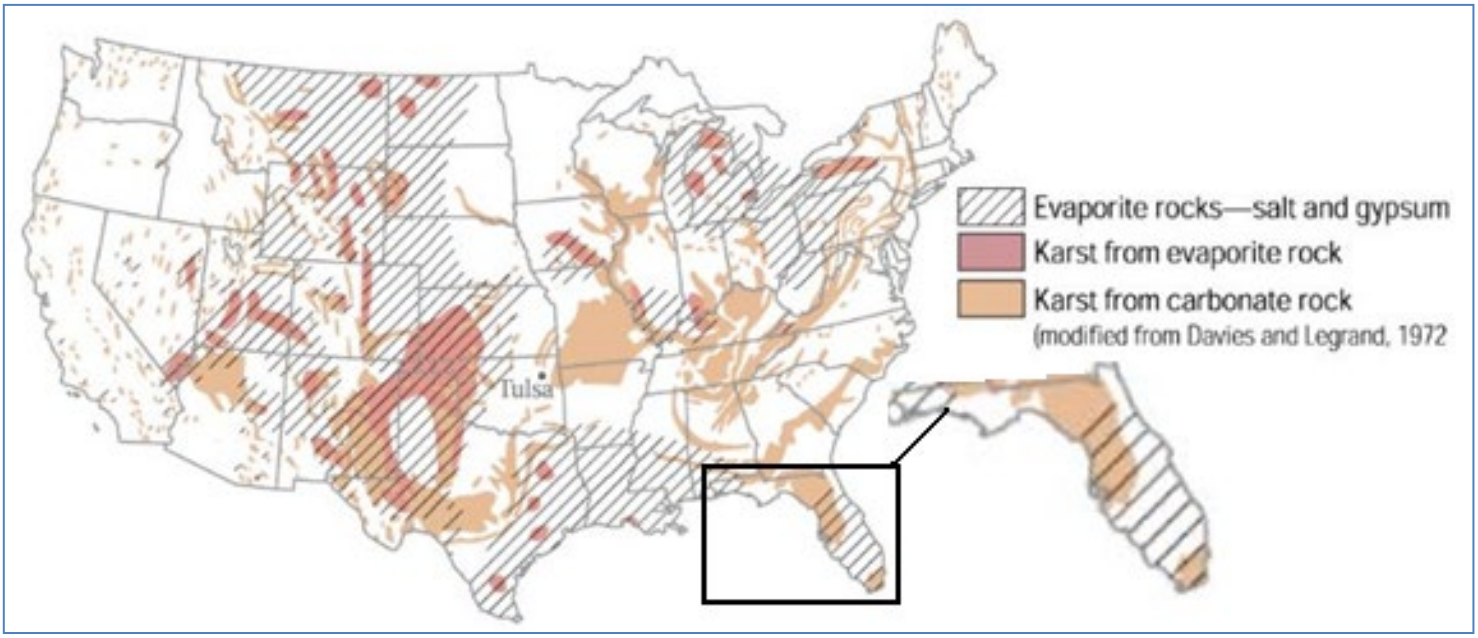
Section 5.07.01.10.05 Avalanche

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 5.07.01.10.06 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” (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 5.07.01.10.06.1: Rock types connected to collapse (subsurface cavities/sinkholes) in the U.S.



Source: U.S. Geological Survey

Section 5.07.01.10.07 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 5.07.01.10.08 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 5.07.01.10.09 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 5.07.01.11 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 for 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

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 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 a 2010 Census it was home to 5,036 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.

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 back to the overall County's Vulnerability

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	13.2%	598
Language Isolation	1.2%	74
Disabled	25.6	1598
Single Parent	9.8%	126
Poverty	8.6%	521
Minority	3.8%	195

Source: 2010 Census; U.S. Census Population Division

Section 5.07.02.05 Repetitive Loss Properties

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" (FEMA, 2010). 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 City of Valparaiso because they have already experienced significant flood damage. The following tables depict the repetitive loss properties and their flood zones in the City of Valparaiso.

Table 5.07.02.05.1: Repetitive Loss Properties in the City of Valparaiso

	Total Building Payment	Total Contents Payment	Total Losses Claimed	Total Paid	Residential Structures	Non-Residential Structures
City of Valparaiso	$484,147.03	$89,523.43	19	$573,670.46	9	0

Source: FEMA, 2010

Table 5.07.02.05.2: Flood Zones of Repetitive Loss Properties in the City of Valparaiso

Flood Zones	A,AE	V,VE	B,C,X
Total Properties	6	0	3

Source: FEMA, 2010

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, 2010 (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

City of Valparaiso

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, 2010 (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, 2010 (Okaloosa County Staff generated table from overlaying the surge levels and property appraiser data)

Section 5.07.02.08 Flooding

Our definition of flooding only considers flooding that is a result of rainfall, which includes tropical rains during a hurricane. The City of 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, 2010

Section 5.07.02.09 Land Erosion

The City of Valparaiso 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 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 represents 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, 2010

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, 2010

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, 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 5.07.02.14 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 5.07.02.15 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	1339061.13	554441.43

Section 5.07.03.02 Law Enforcement

Site Name	Address	X-COORD	Y-COORD
VALPARAISO PD	465 VALPARAISO PKWY VALPARAISO FL 32580	1338646.29	554493.273

Section 5.07.03.03 Government Centers

Site Name	Address	X-COORD	Y-COORD
VALPARAISO CITY HALL	465 VALPARAISO PKWY VALPARAISO FL 32580	1338679.139	554575.396

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	1336033.309	555125.892

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; Contractural 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

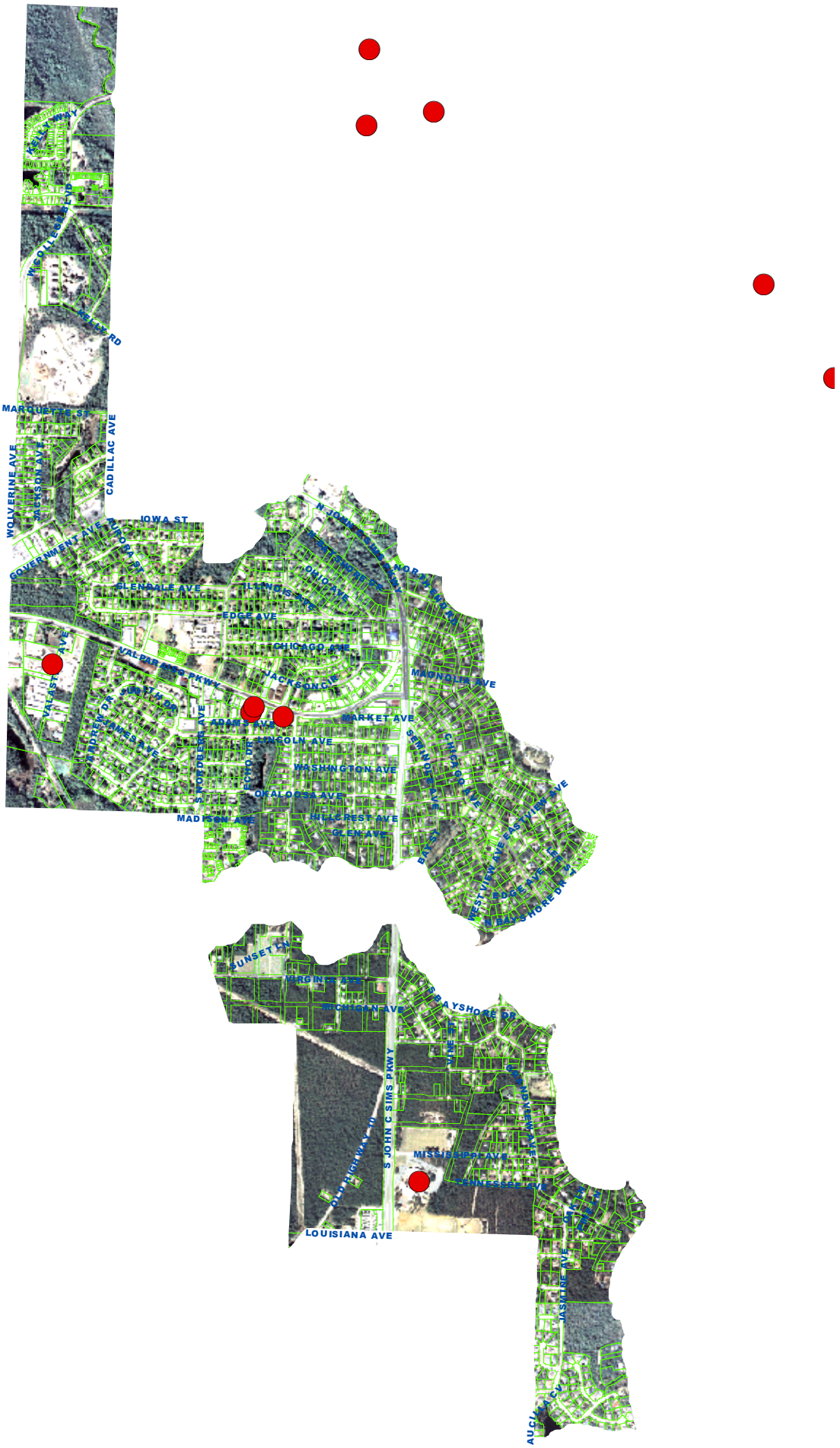
grasses. *Status: on-going; City Engineer, Planning Commission, Public Works, City Administrator*

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 5.07.05 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, 2010

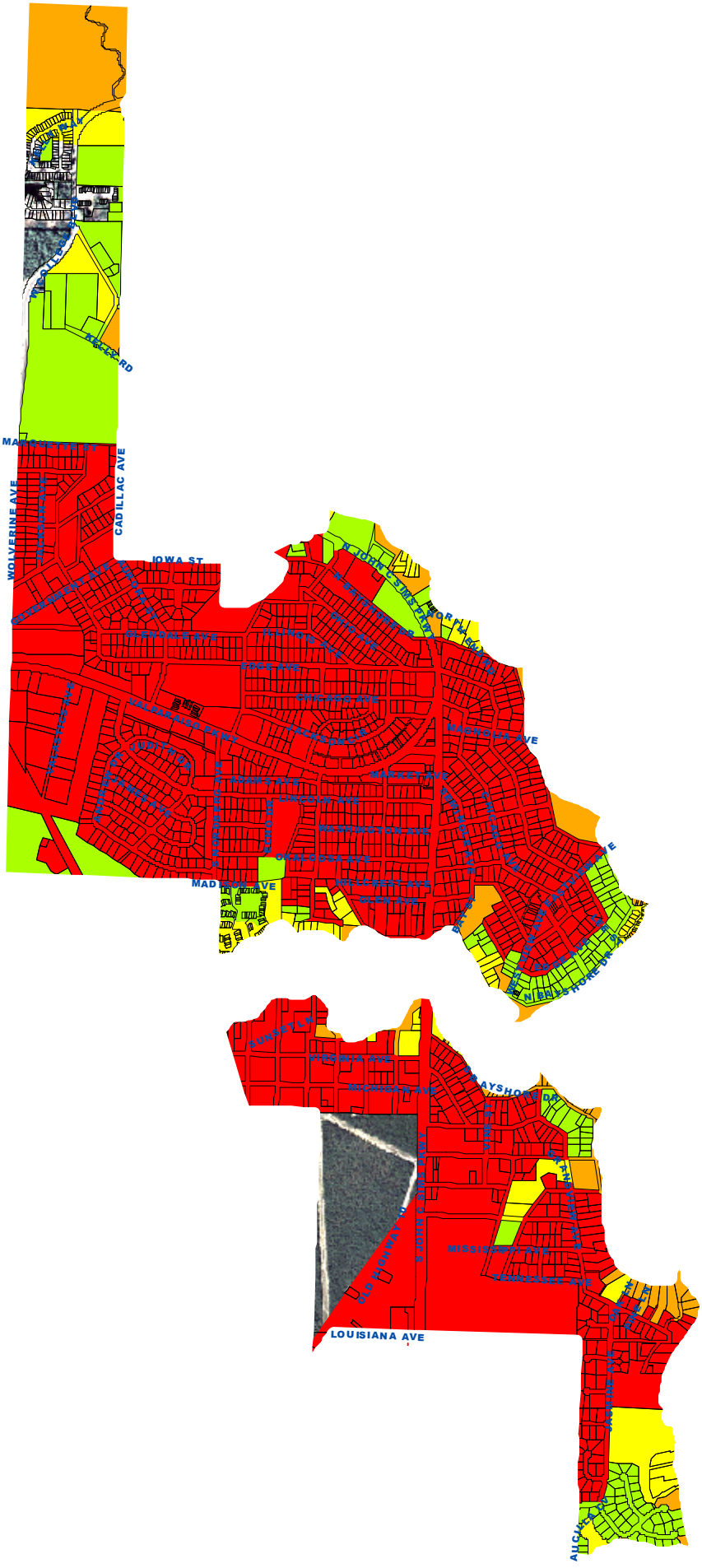
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08/18/2010



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, 2010

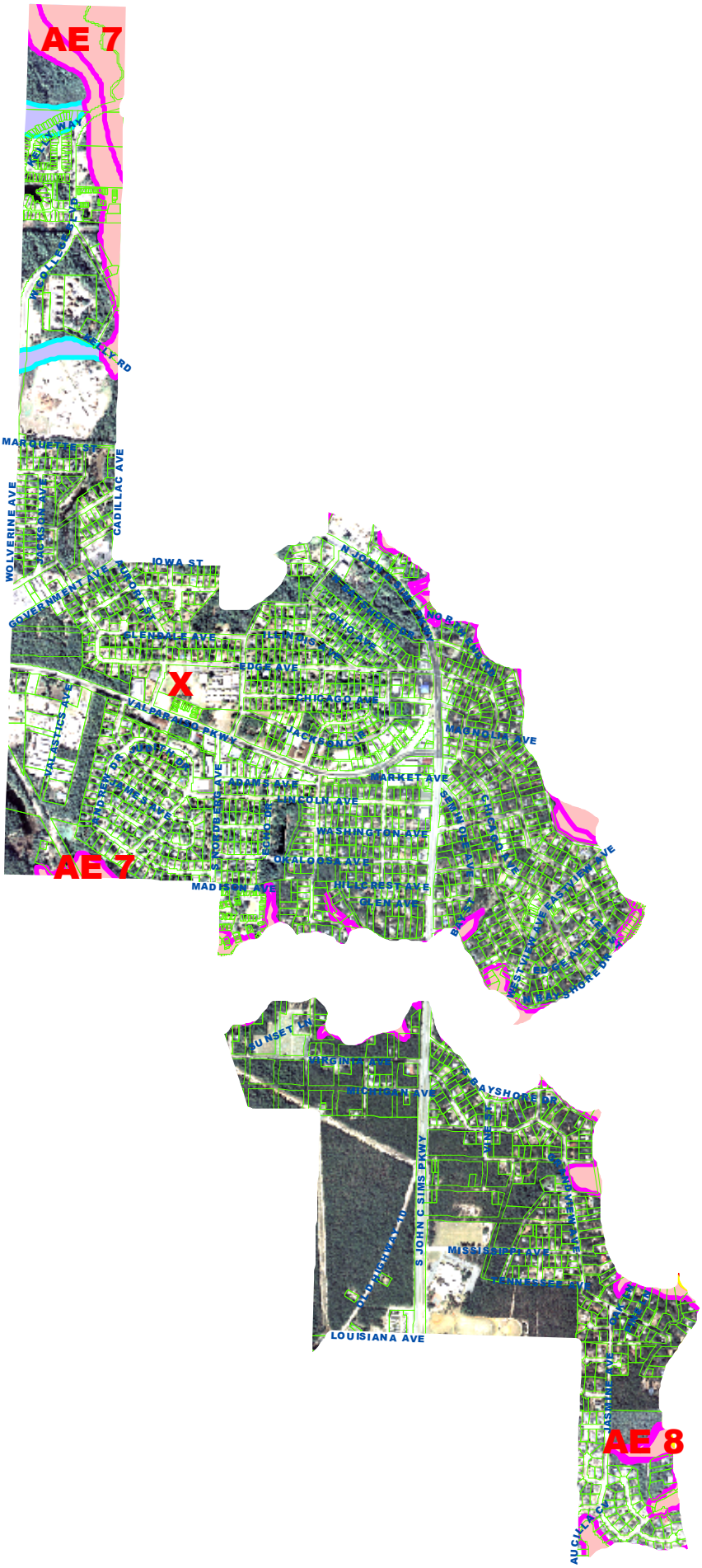
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City of Valparaiso Flood Zones

- 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, Dec 6 2002

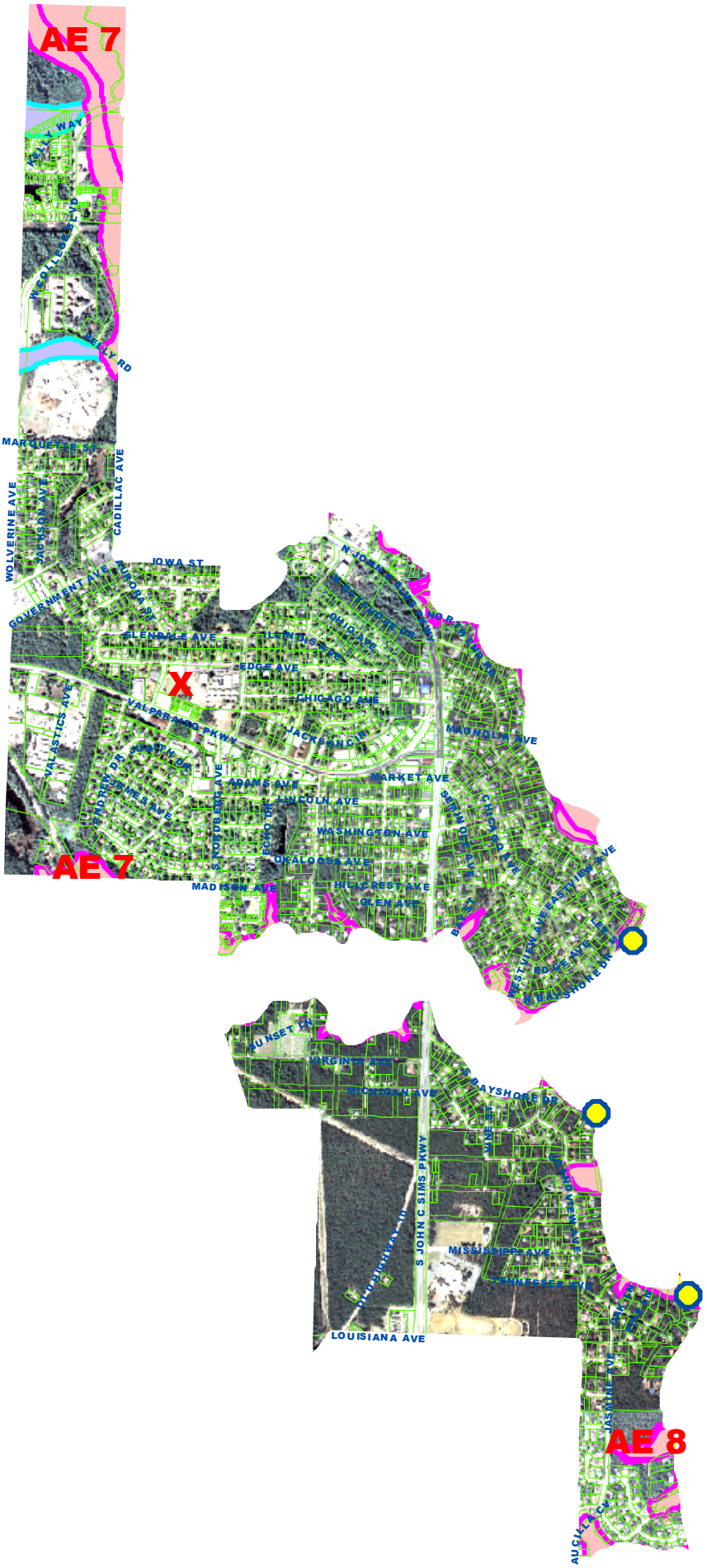
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City of Valparaiso Repetitive Loss Properties

- 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, Dec 6 2002

MAP PROJECTION:
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Stateplane: Florida North (0903)
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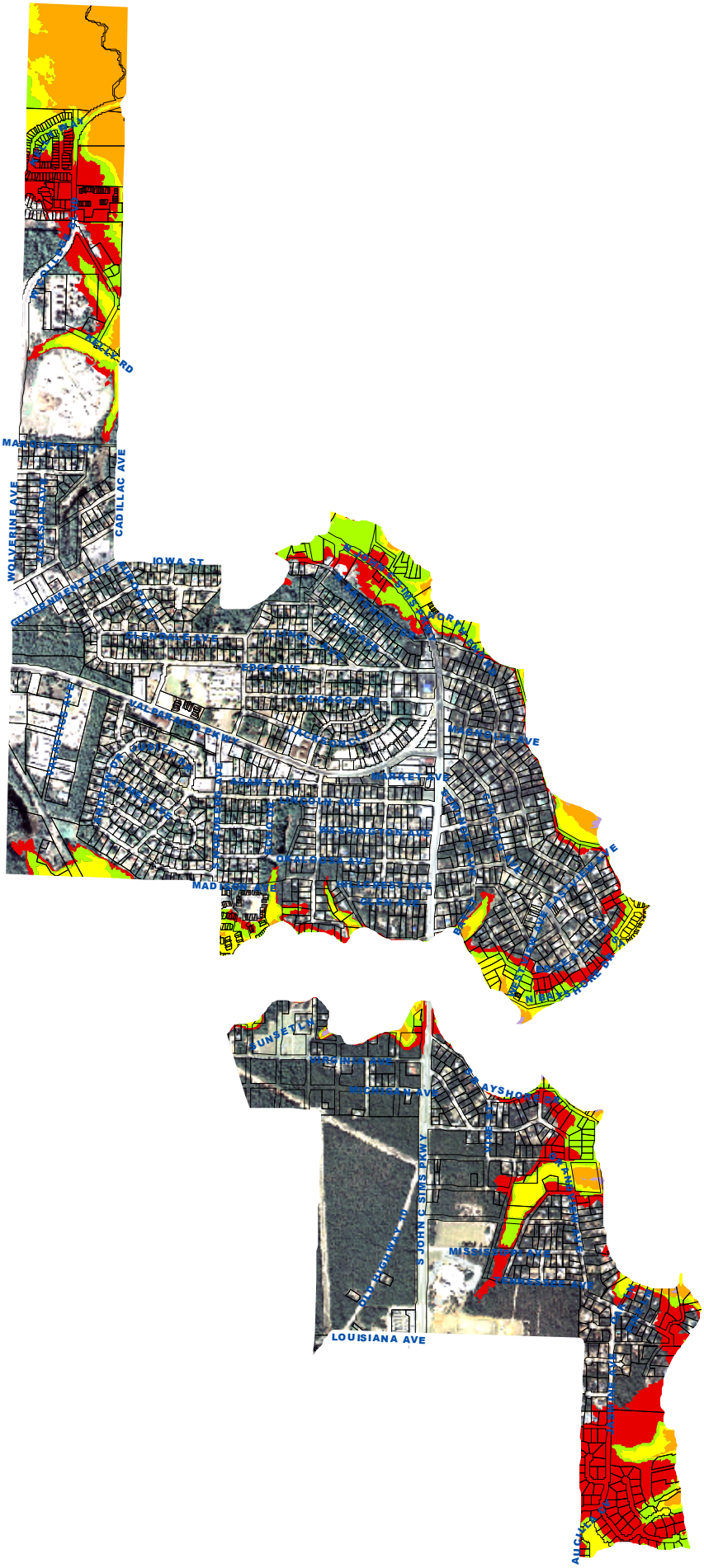
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City of Valparaiso Surge Zones



- Parcel Lines
- Category 1
- Category 2
- Category 3
- Category 4
- Category 5

Source: West Florida Regional Planning Council, 2010

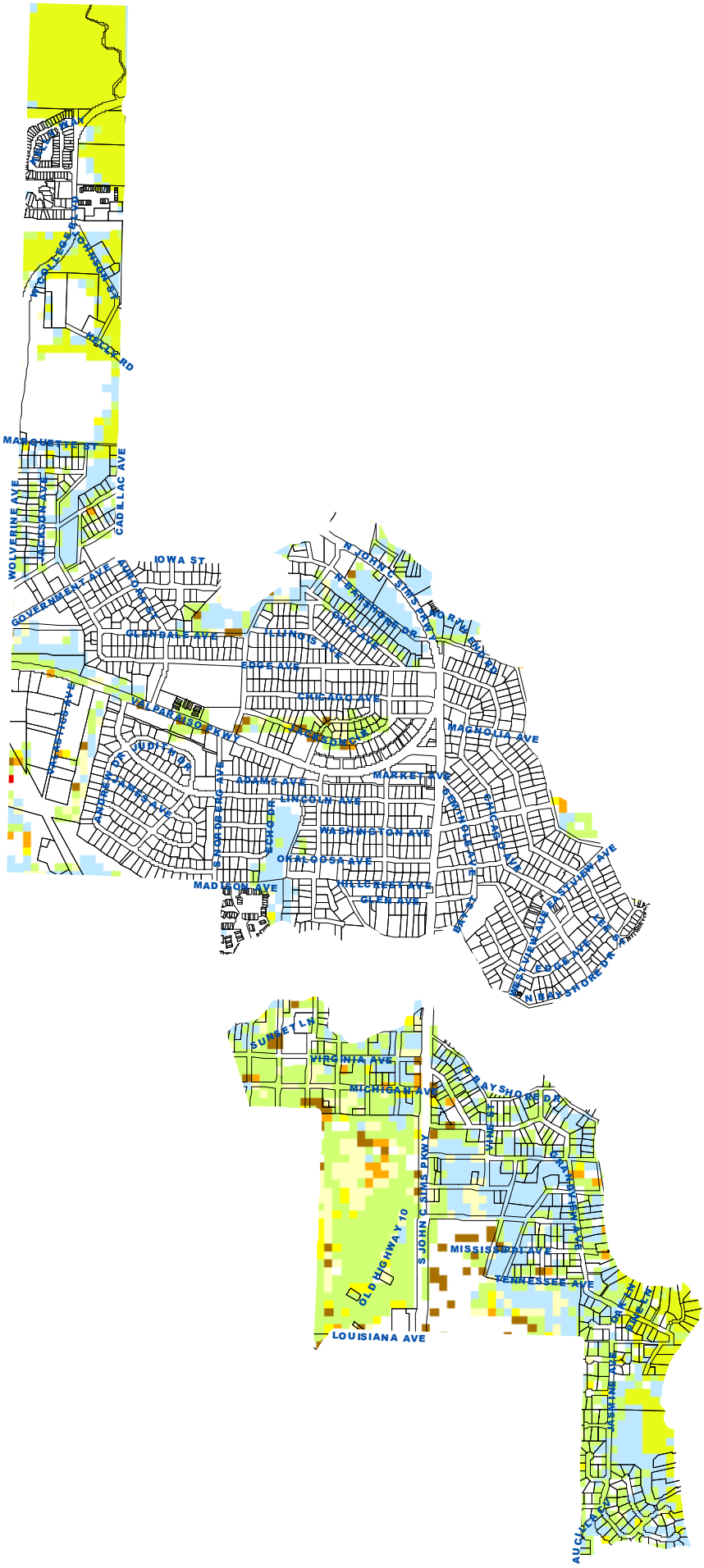
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City of Valparaiso Wildfire Level of Concern

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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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

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 367 residents according to a 2008 census estimate. In this section, information relevant to the Town of Cinco Bayou 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 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 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

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 back to the Risk Assessment of the overall County for the definitions of this hazard.

Town of Cinco Bayou

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.

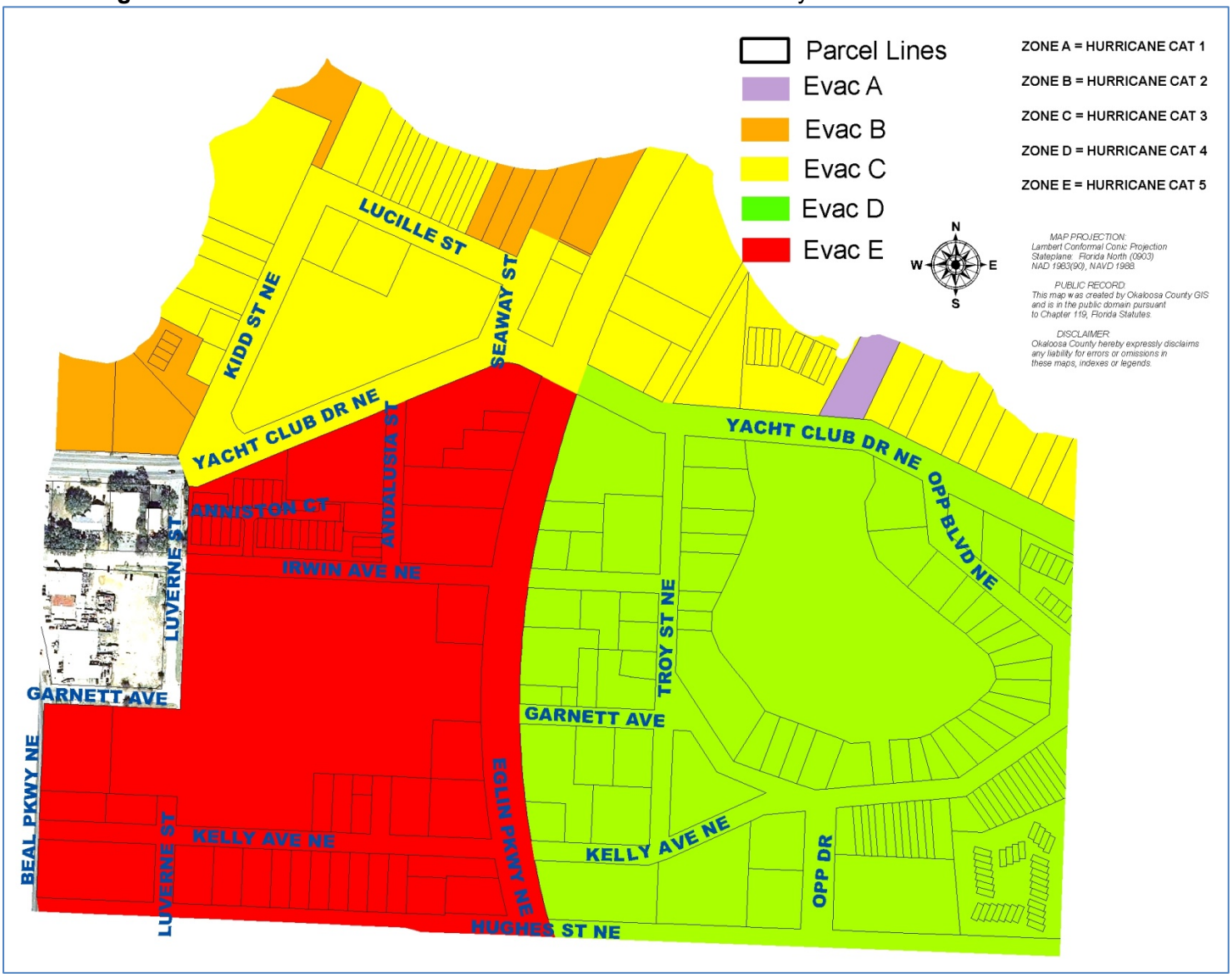
EXTENT:
High winds from hurricanes are a substantial threat to all homes, especially manufactured housing. Category 3 or higher force winds would likely cause substantial damage throughout Cinco Bayou. Winds in excess of 155 MPH could be experienced in a major Category 5 hurricane in some locations. 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 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 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. 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 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. Storm surge will be examined in greater depth in the following section. (NOAA, 2010). The figure below displays the Town of Cinco Bayou's evacuation zones, which corresponds to the various hurricane categories.

Town of Cinco Bayou

Figure 5.08.01.02.1: Evacuation Zones for the Town of Cinco Bayou



Source: Okaloosa County Public Safety / Okaloosa County GIS, 2010

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 (2010 Tropical Cyclone Landfall Probabilities)

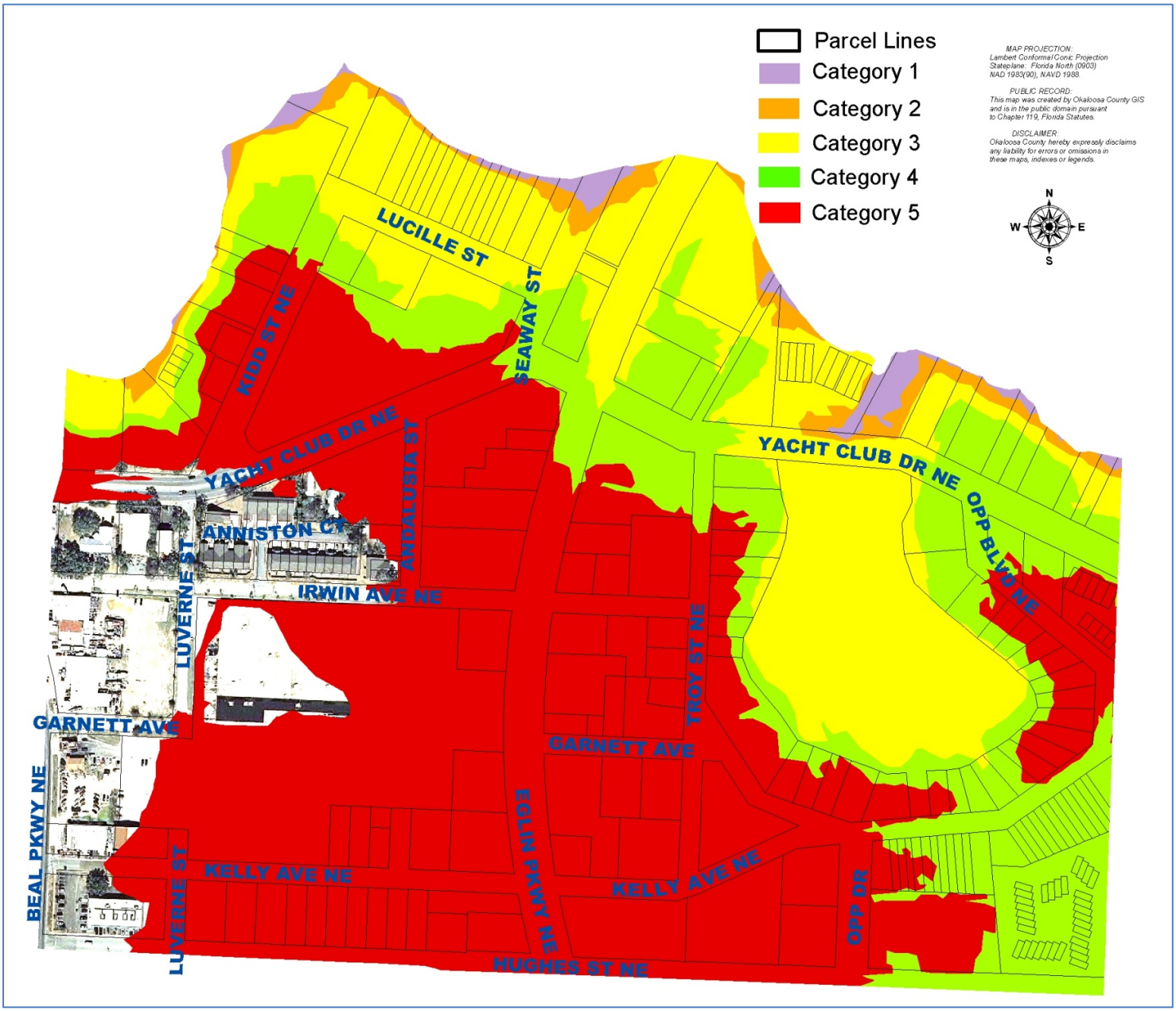
Section 5.08.01.03 Storm Surge

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, 2010

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 2010 hurricane season.
Source: West Florida Regional Planning Council, 2010

Section 5.08.01.04 Flooding

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

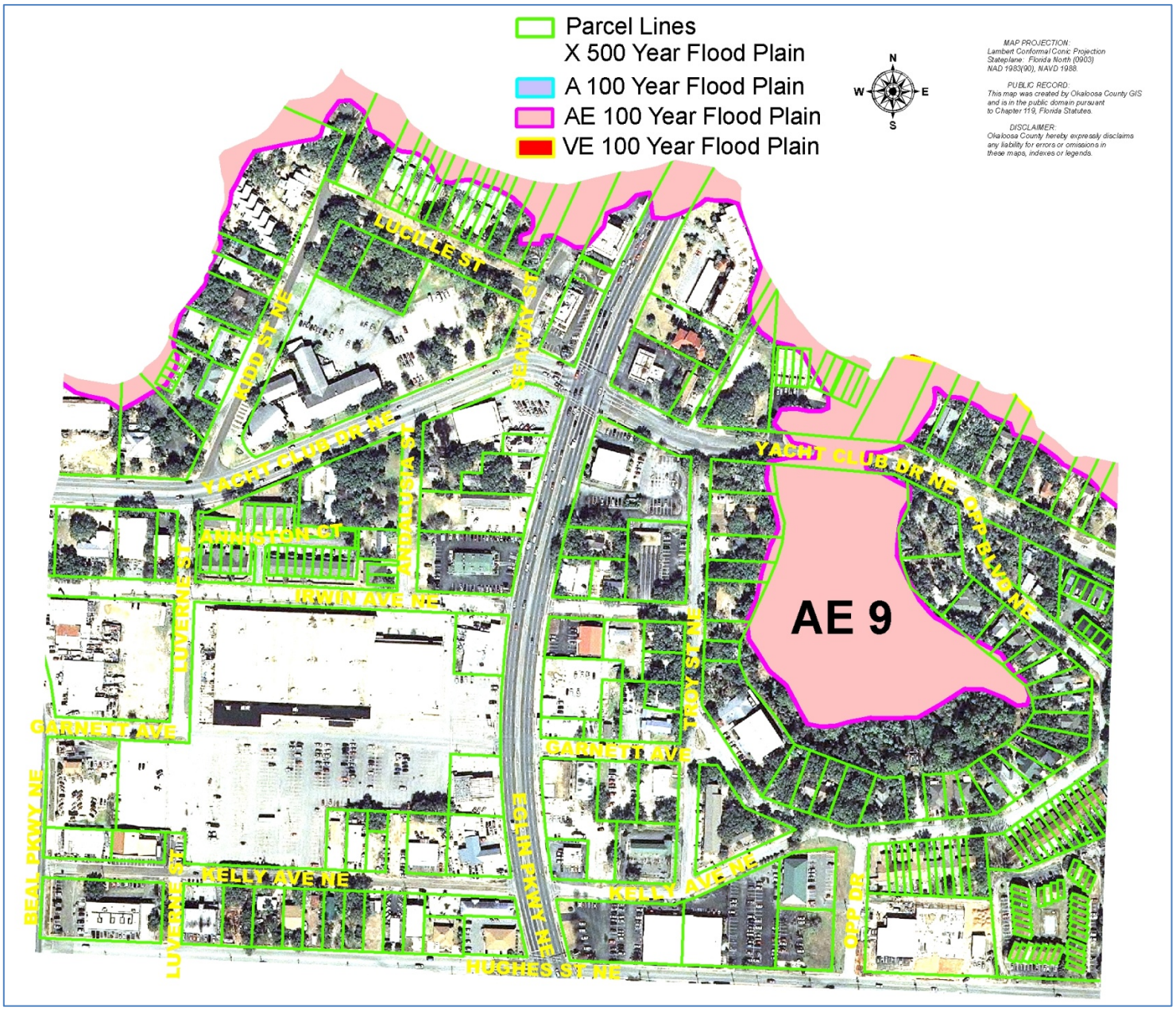
HISTORICAL OCCURRENCE:
There was no data available at the municipal level regarding the historical occurrences of severe floods or flash-floods. Therefore, please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard because all of Okaloosa County is equally 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 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 .98 miles of arterial and collector roads in the Town of Cinco Bayou. 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 Cinco Bayou

Figure 5.08.01.04.1: The Town of Cinco Bayou's Flood Zones



Source: FEMA Map Service Center, Dec 6 2002

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 will not 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 back 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 since the year 1950. 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 possible scenario in terms of tornado damage would be if an F-5 tornado hit 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 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 Cinco Bayou has been determined to be less than 2 per year. Also, since there were only 9 reported waterspouts from 1996-2001, 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 back 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, 2010). According to the National Climatic Data Center, there were no other occurrences of thunderstorm winds or lightning in the Town of Cinco Bayou. 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 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 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 year 2009.

Table 5.08.01.05.03.1: Monthly Mean Temperature Minimums in degrees Fahrenheit, 2009

	Nov	Dec	Jan	Feb	Mar
Cinco Bayou, FL	50.3°	44.1°	45.8°	47.3°	56.9°

Source: Weather Underground, Inc., 2010

Historical temperature data specific to the Town of Cinco Bayou are not readily available. The closet municipality with a daily temperature record is Niceville, Florida. 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 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.

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 time frame. Because a snow event in the Town of Cinco Bayou is so rare, a single snow "event" over five or ten 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 2009.

Table 5.08.01.06.1: Monthly Mean Temperature Maximums in degrees Fahrenheit, 2009

	May	Jun	Jul	Aug
Cinco Bayou, FL	82.6°	90.0°	88.0°	88.1°

Source: Weather Underground, Inc., 2010

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 Cinco Bayou are difficult to locate. 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 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 Cinco Bayou. 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 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 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 5.08.01.08.01 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 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 5.08.01.08.02 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 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 5.08.01.08.03 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 5.08.01.08.03.1: 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 Cinco Bayou is minimal because this issue is addressed during the time of construction and there are no previous records of occurrence.

Section 5.08.01.08.04 Dam Safety

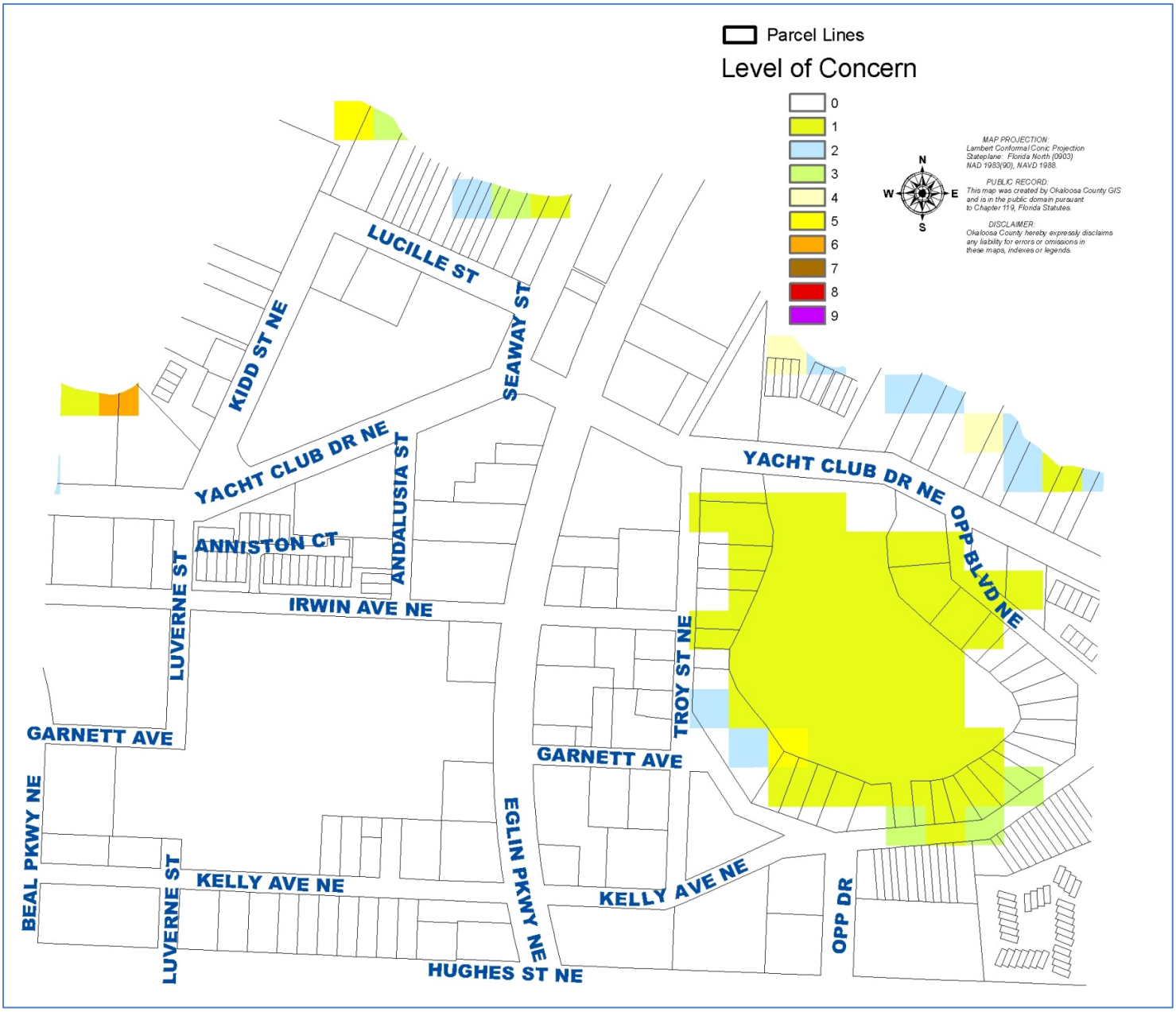
There are no permitted dams located in the Town of Cinco Bayou. Therefore, the Town of Cinco Bayou is not susceptible to flooding due to dam failure. However, if there are any permitted in the future, the LMS committee will update the plan to reflect those changes.

Section 5.08.01.08.05 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.

Town of Cinco Bayou

Figure 5.08.01.08.05.1: Wildfire Risk Assessment for the Town of Cinco Bayou



Source: Florida Division of Forestry, 2010

Section 5.08.01.08.06 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 5.08.01.08.07 Avalanche

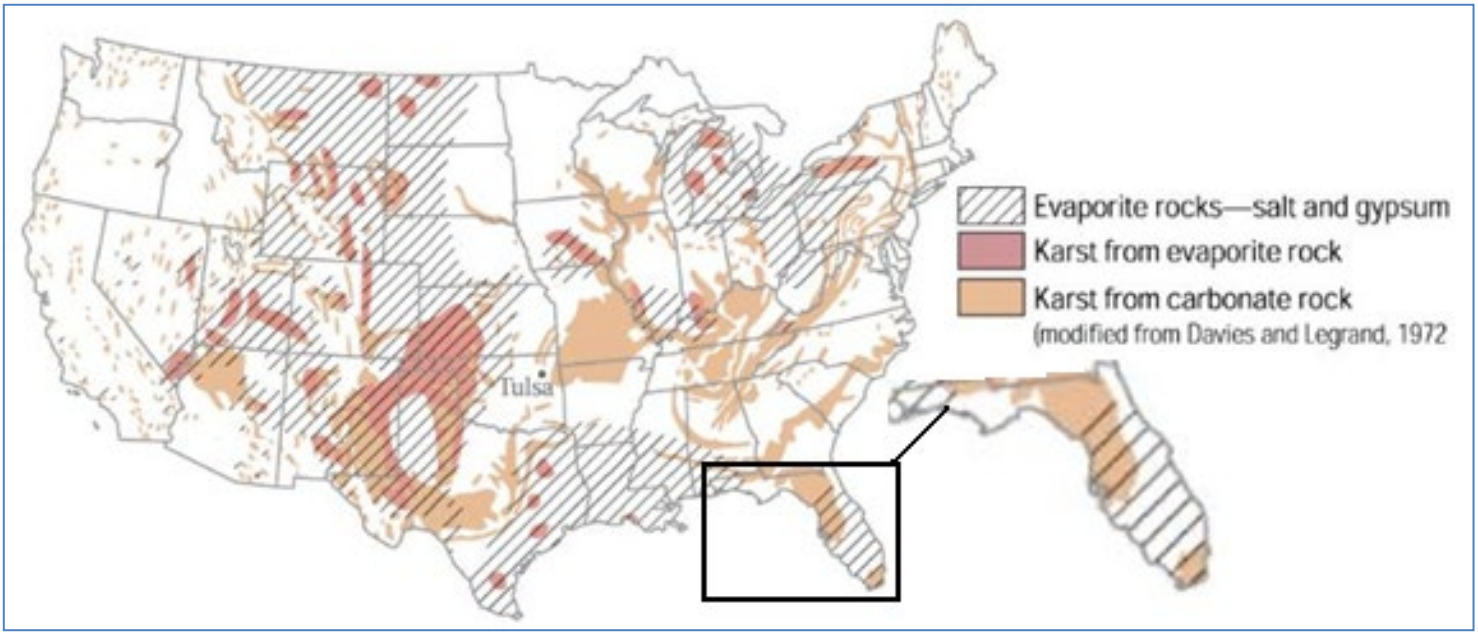
The Town of Cinco Bayou does not have topography or snowfall amounts that would create conditions for an avalanche. Since there is no history of this hazard in the county, no further analysis or risk assessment will be conducted for this plan. The future probability of an avalanche occurring in the Town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

Section 5.08.01.08.08 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 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 5.08.01.08.08.1: Rock types connected to collapse (subsurface cavities/sinkholes) in the U.S.



Source: U.S. Geological Survey

Section 5.08.01.08.09 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 5.08.01.08.10 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 5.08.01.08.11 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 5.08.01.09 Summary

The risk assessment section of this LMS 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 for 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. As of a 2010 Census it was home to 383 residents, which makes it the smallest municipality in Okaloosa County by population. The Town of Cinco Bayou is surrounded by the City of Fort Walton Beach. Within its jurisdiction, there are .71 miles of shoreline that border Cinco Bayou. The Town of Cinco Bayou is virtually built out. There are only two residential lots that remain undeveloped and just one commercial lot open for development. 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 recently awarded a Community Development Block Grant for commercial revitalization of the streetscape along Eglin Parkway. The revitalization includes relocating above ground utilities to underground and adding pavers to sidewalks and landscaping. The project will be conducted in two phases. The Town of Cinco Bayou hopes to receive another grant to extend the project out to the Cinco Bayou Bridge. The future development trends within the Town of Cinco Bayou will necessarily be revitalization of both commercial and residential buildings, and the upgrading of public infrastructure.

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 for further explanation on 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, 2010

Population	2010 Census Percent Population	2014 Estimate
Elderly	9.8%	36
Language Isolation	.6%	2
Disabled	28.9%	126
Single Parent	18.9%	22
Poverty	12.2%	45
Minority	15.4%	53

Source: 2010 Census; U.S. Census Population Division

Section 5.08.02.05 Repetitive Loss Properties

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" (FEMA, 2010). 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. As of 2015 the Town of Cinco Bayou does not have any current repetitive loss properties; however, the 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 the 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	1	0
Just Value	$0	$0	$477,962	$0
Zone B	1	0	3	1
Just Value	$58,700	$0	$1,028,123	$176,245
Zone C	1	6	3	1
Just Value	$58,700	$1,399,772	$1,028,123	$176,245
Zone D	2	93	38	9
Just Value	$214,700	$13,702,551	$7,610,246	$2,503,164
Zone E	2	116	43	11
Just Value	$214,700	$16,385,949	$7,870,585	$2,778,876

Note Evacuation Zones correspond with Hurricane Categories (Ex. Evacuation Zone 1 = Category 1 Hurricane)
Source: West Florida Regional Planning Council & Okaloosa County Property Appraiser, 2010 (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	1
Just Value	$1,315,088	$496,384
Zone C	8	2
Just Value	$4,834,610	$843,672
Zone D	28	2
Just Value	$11,815,577	$843,672
Zone E	50	2
Just Value	$21,666,773	$843,672

Note Evacuation Zones correspond with Hurricane Categories (Ex. Evacuation Zone 1 = Category 1 Hurricane)
Source: West Florida Regional Planning Council & Okaloosa County Property Appraiser, 2010 (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 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 5.08.02.07.1: Vulnerable Residential Structures to Storm Surge

Total:	Condominium	SFR-Townhouse	Single-Family	Multi-Family
Surge Level 1	2	13	13	1
Just Value	$214,700	$3,987,659	$4,636,878	$614,270
Surge Level 2	2	14	13	1
Just Value	$214,700	$4,375,516	$4,636,878	$614,270
Surge Level 3	2	93	37	5
Just Value	$214,700	$13,702,551	$7,535,022	$1,197,302
Surge Level 4	2	93	37	5
Just Value	$214,700	$13,702,551	$7,535,022	$1,197,302
Surge Level 5	2	95	43	11
Just Value	$214,700	$13,936,703	$7,870,585	$2,778,876

Source: West Florida Regional Planning Council & Okaloosa County Property Appraiser, 2010 (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	2
Just Value	$1,315,088	$843,672
Surge Level 2	1	2
Just Value	$1,315,088	$843,672
Surge Level 3	7	2
Just Value	$3,268,580	$843,672
Surge Level 4	11	2
Just Value	$5,622,570	$843,672
Surge Level 5	52	2
Just Value	$22,706,960	$843,672

Source: West Florida Regional Planning Council & Okaloosa County Property Appraiser, 2010 (Okaloosa County Staff generated table from overlaying the surge levels and property appraiser data)

Section 5.08.02.08 Flooding

Our definition of flooding only considers flooding that is a result of rainfall, which 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. 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 5 structures located in the AE flood zone. The cumulative 'just value' of those structures is $2,358,996. 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
Condominium	1	$58,700
Commercial	2	$1,456,624
Government/Institutional	2	$843,672

Source: Okaloosa County Department of Growth Management, 2010

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 represents 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
	3	211	86	22
Just Value	$273,400	$30,322,652	$15,741,170	$5,557,752

Source: Okaloosa County Department of Growth Management, 2010

Table 5.08.02.09.1: Other Vulnerable Structures to Severe Storms in Town of Cinco Bayou

Total:	Commercial	Government/ Institutional
	108	9
Just Value	$52,342,945	$3,322,160

Source: Okaloosa County Department of Growth Management, 2010

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 functionof 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 the Mapping for Emergency Management, Parallel Hazard Information System (MEMPHIS) study in 2005, nearly all of Okaloosa County, including the Town of Cinco Bayou, 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 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 $5,782,915. 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 the Mapping for Emergency Management, Parallel Hazard Information System (MEMPHIS) study in 2005, all of Okaloosa County, including the Town of Cinco Bayou, 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 5.08.02.09.03 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. The Town of Cinco Bayou is vulnerable to snow, freezing rain, icing and glazing events 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 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

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 .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 $5,782,915 (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	Multi-Family	Government/ Institutional
Total	1	3	9	1	1
Just Value	$156,000	$1,193,862	$3,471,495	$614,270	$347,288

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 5.08.02.12 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 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 5.08.02.13 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

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. (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)

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*

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 5.08.05 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, 2010

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

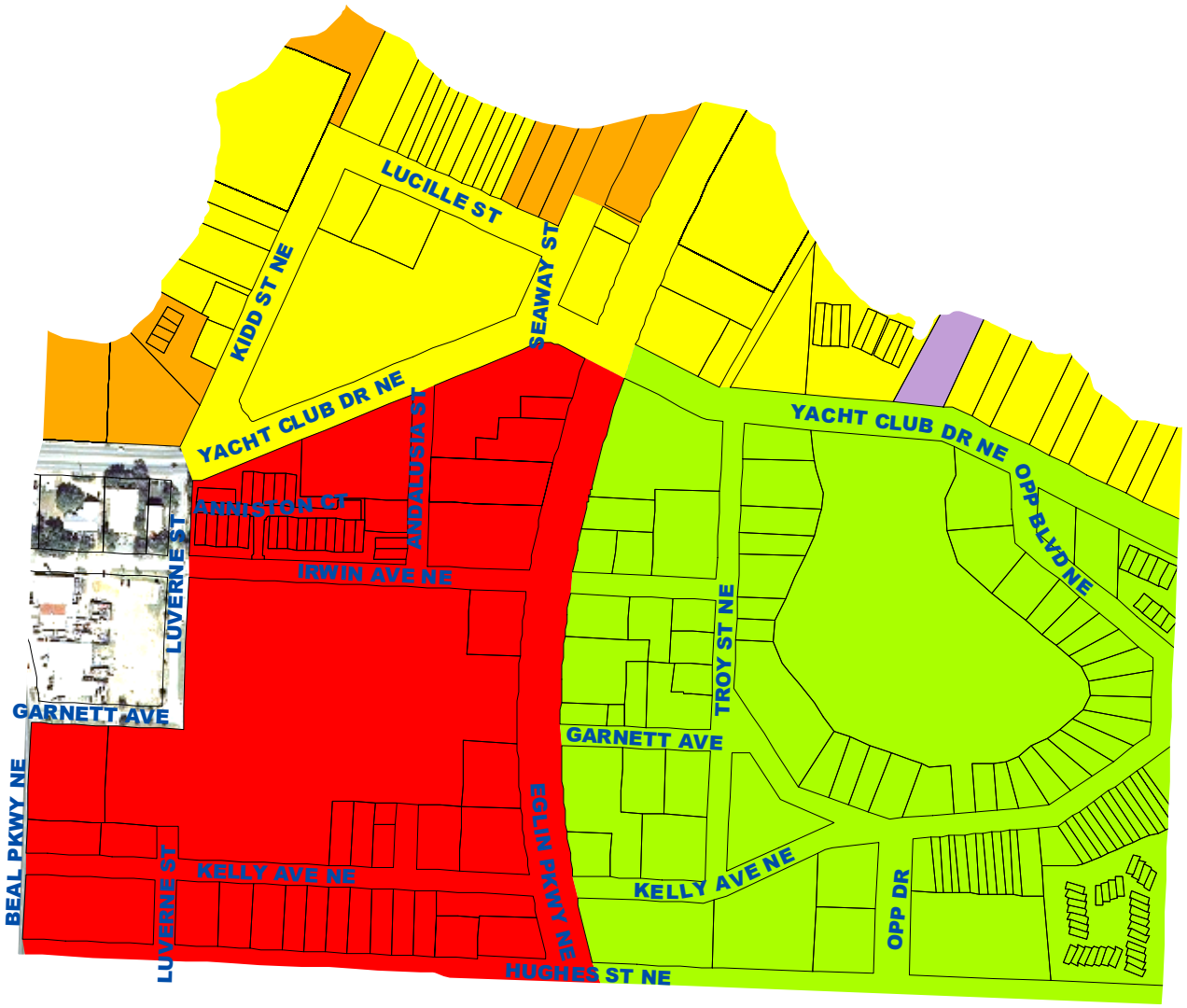
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Department of Growth Management
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Town of Cinco Bayou Evacuation Zones



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, 2010

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

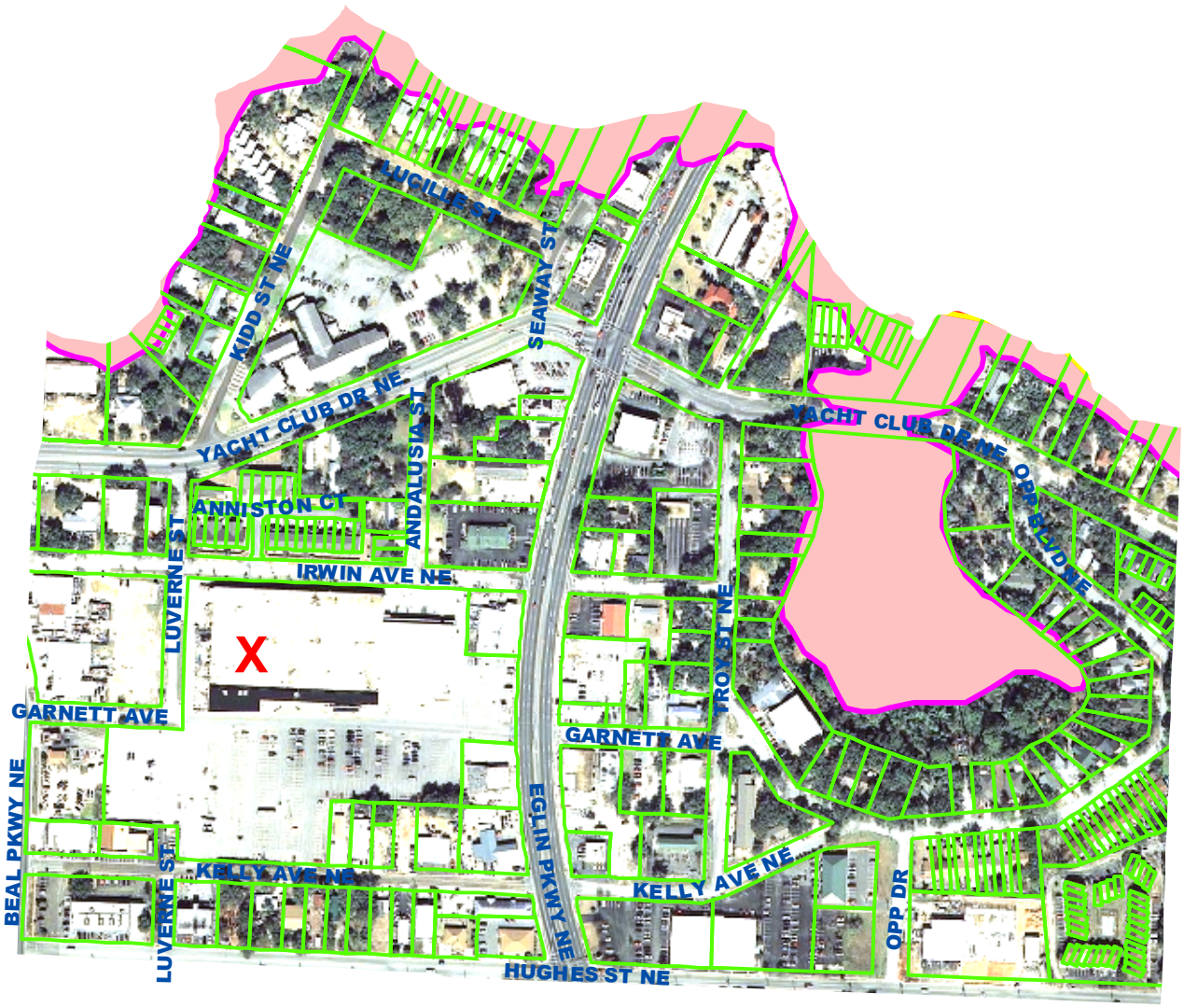
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Town of Cinco Bayou Flood Zones



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, Dec 6 2002

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

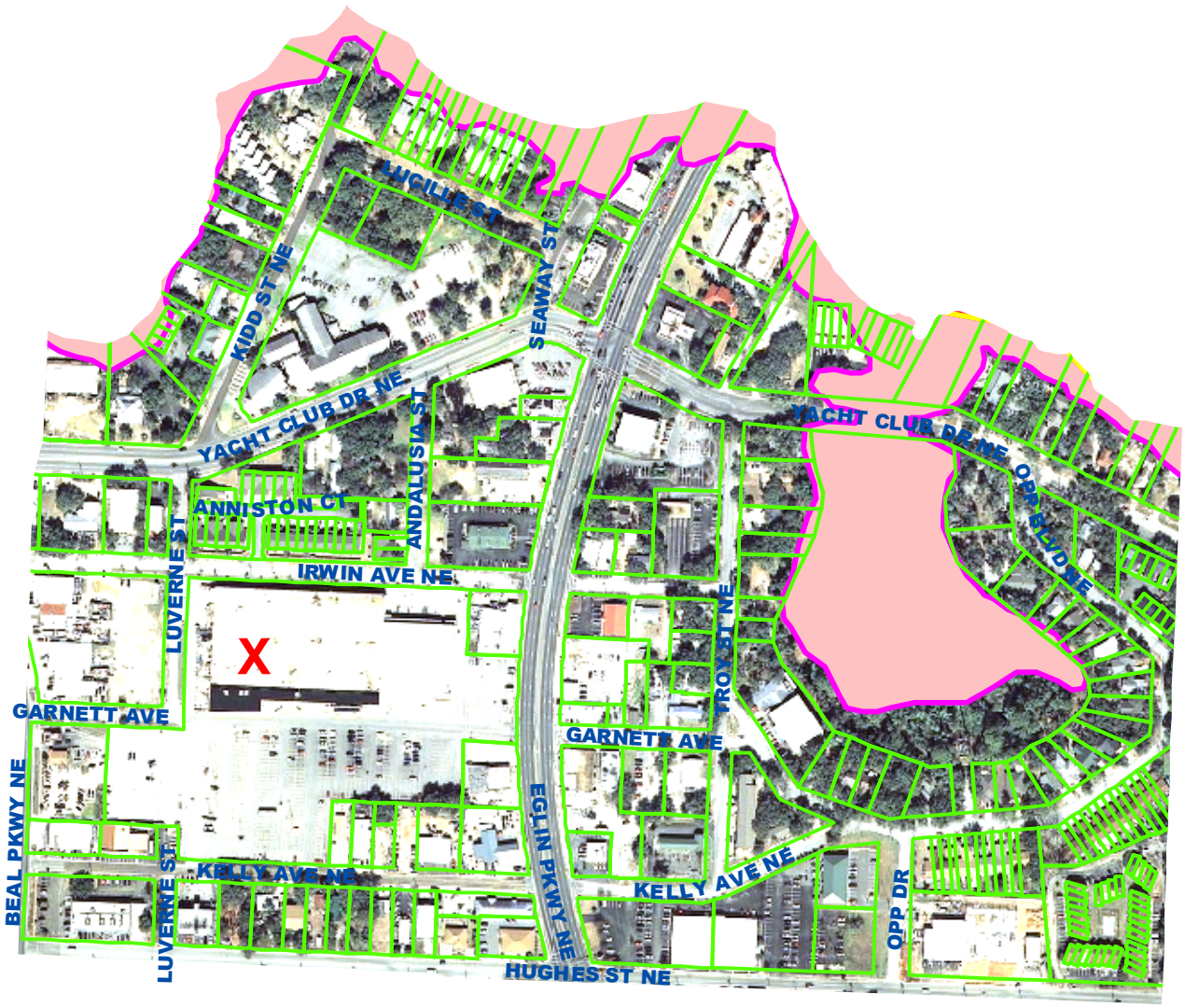
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Town of Cinco Bayou Repetitive Loss Properties



- 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, Dec 6 2002

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

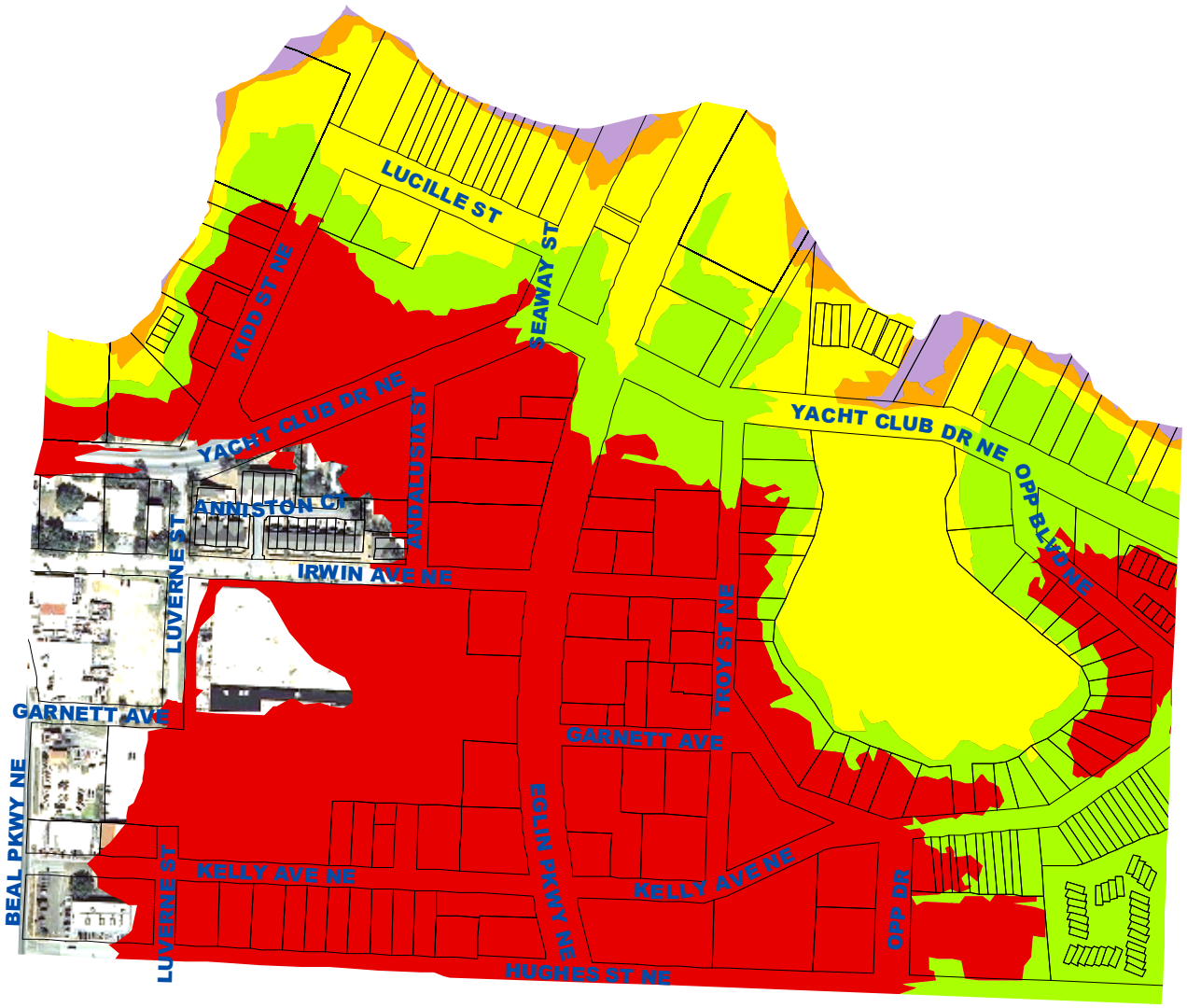
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Town of Cinco Bayou Surge Zones



Parcel Lines
Category 1
Category 2
Category 3
Category 4
Category 5

Source: West Florida Regional Planning Council, 2010

MAP PROJECTION:
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Stateplane: Florida North (0903)
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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

MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
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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 city 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

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 2008 Census estimate it was home to 701 residents. In this section, information relevant to the Town of Shalimar 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 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 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

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 back to the Risk Assessment of the overall County for the definitions of this hazard.

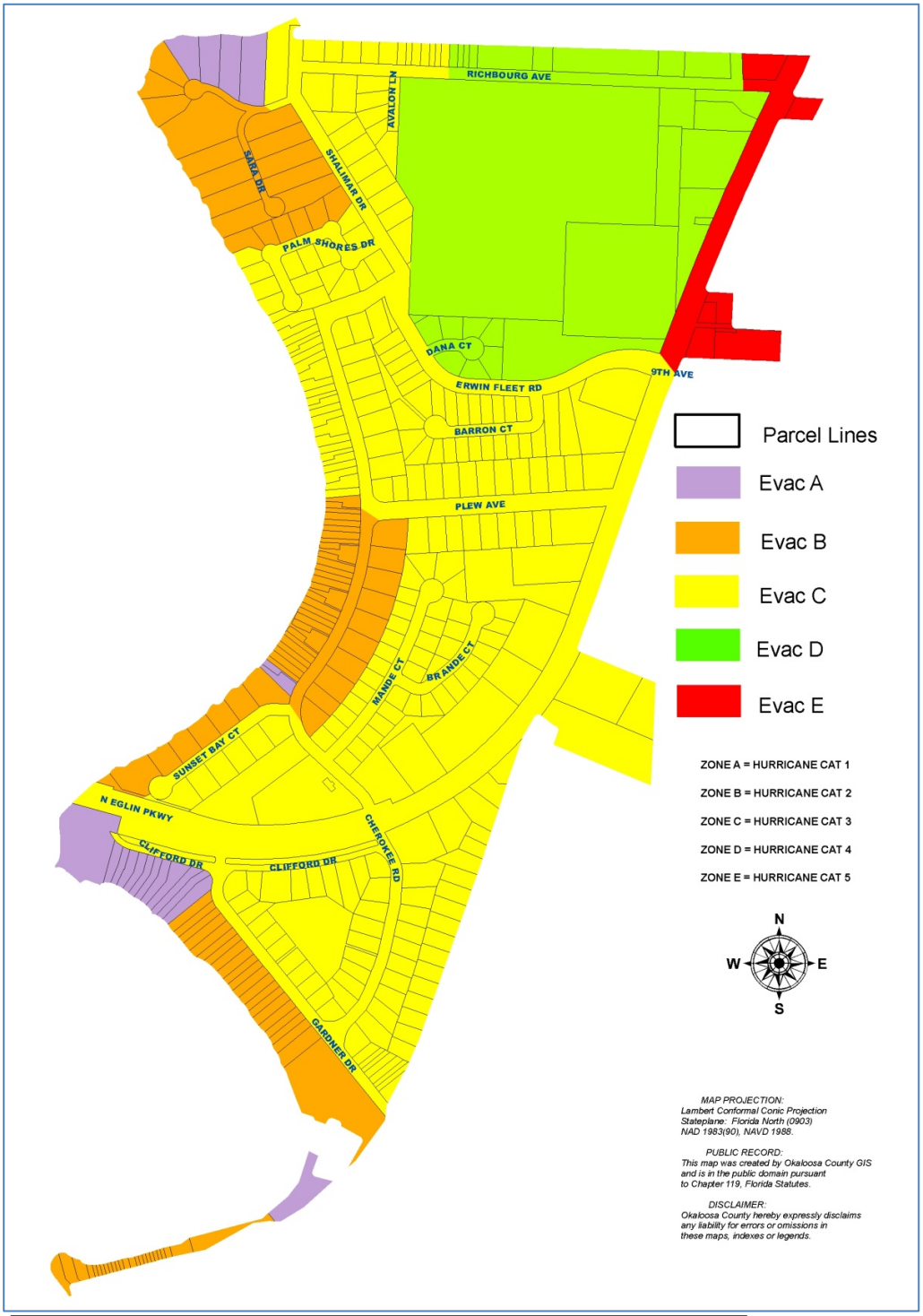
HISTORICAL OCCURRENCE:
The Town of Shalimar and Okaloosa County are equally susceptible to hurricanes and tropical storms, as the town is located near the coast on Choctawhatchee Bay. Due to the large area that hurricanes and tropical storms impact, it is assumed that the Town of Shalimar and the overall County experienced the same storms. Therefore, the historic hurricane record of Okaloosa County is applicable to the Town of Shalimar. Please refer 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. 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. 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.

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, 2010

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, 2010

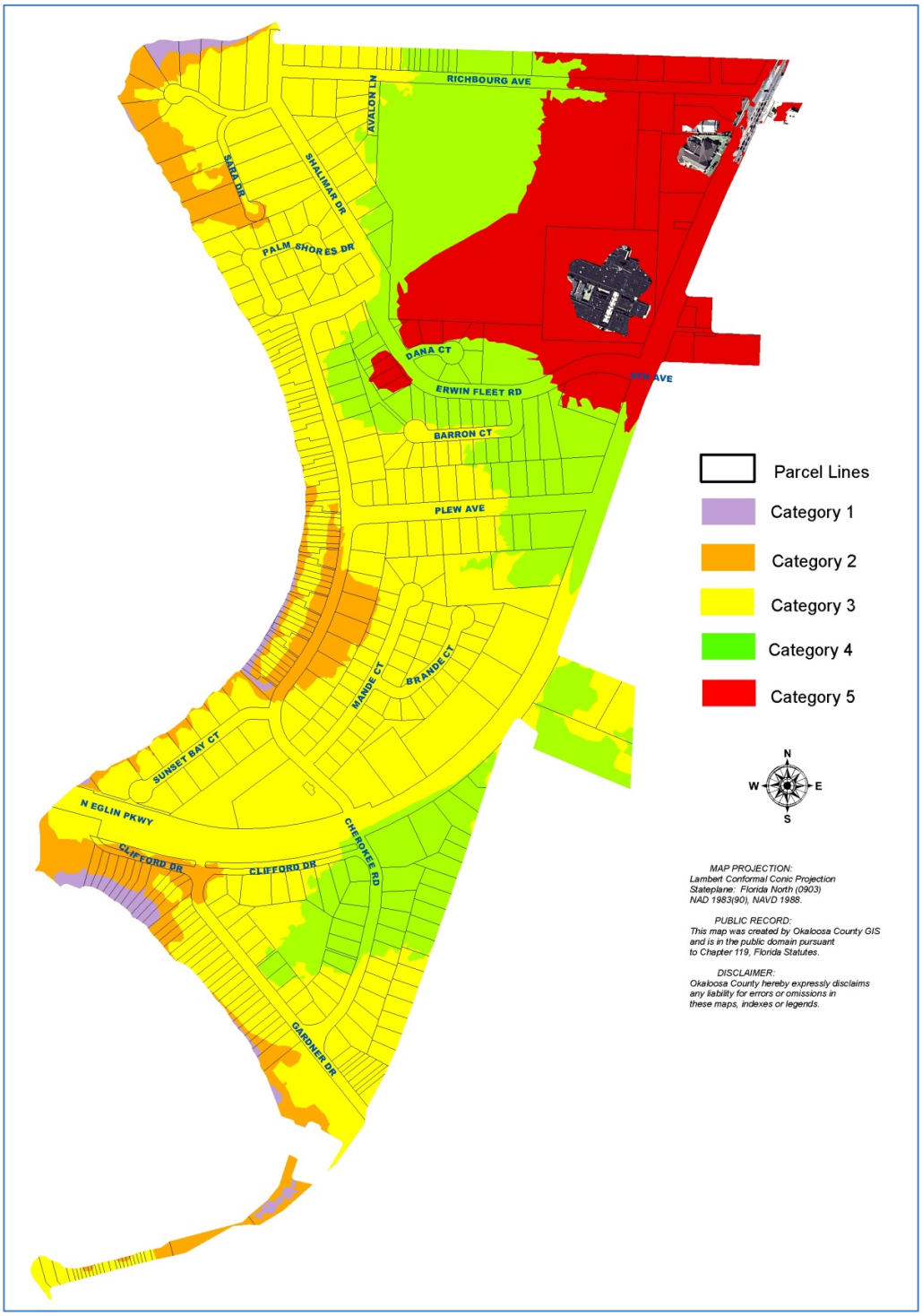
Section 5.09.01.03 Storm Surge

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 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.

Figure 5.09.01.03.1: The Town of Shalimar's Exposure to Storm Surge



Source: West Florida Regional Planning Council, 2010

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 2010 hurricane scale update.
Source: West Florida Regional Planning Council, 2010

Section 5.09.01.04 Flooding

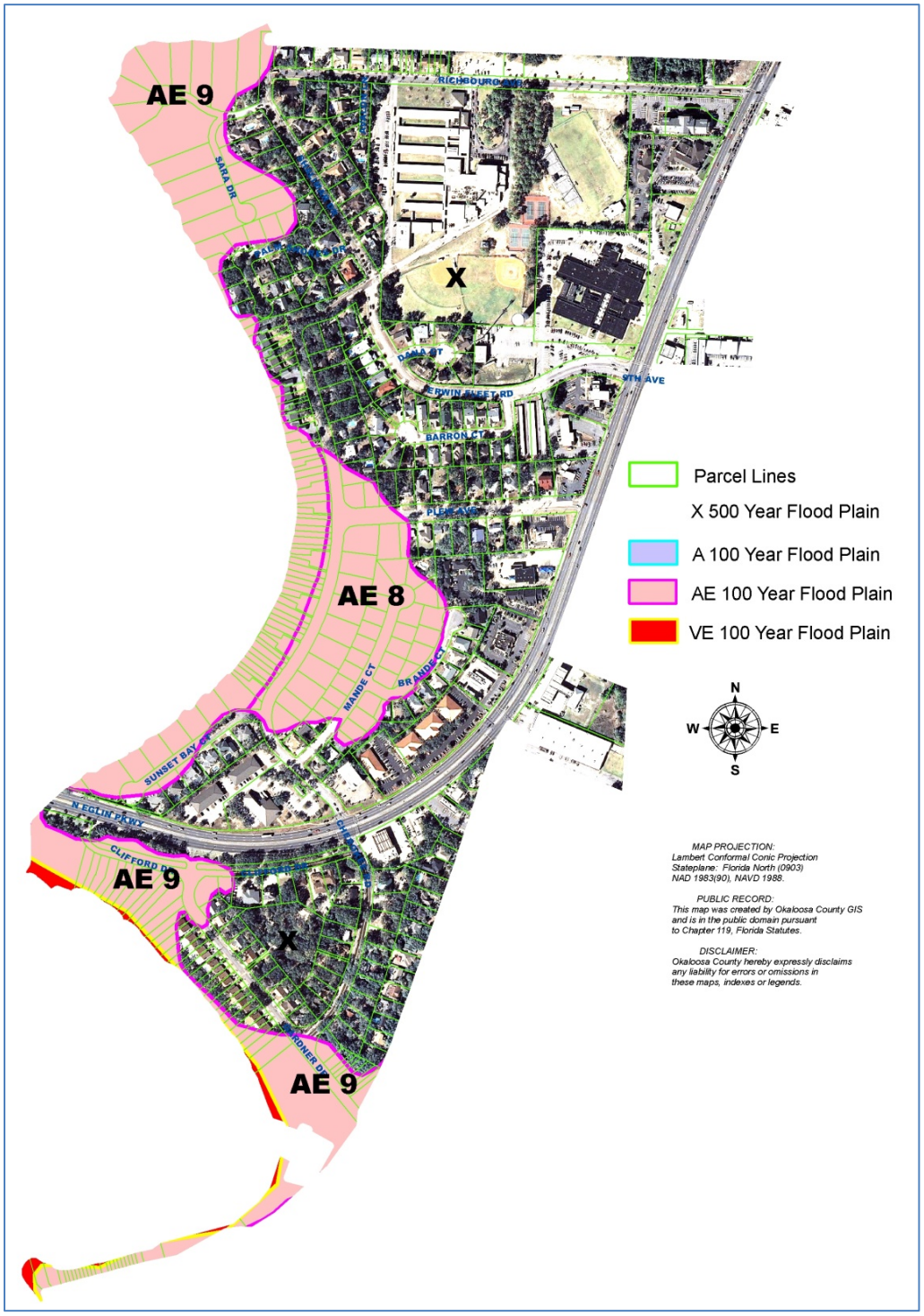
DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

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-8, AE-9, 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-8 and AE-9 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.

Figure 5.09.01.04.1: The Town of Shalimar's Flood Zones



Source: FEMA Map Service Center, Dec 6 2002

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 back 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 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 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, 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 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 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 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 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.

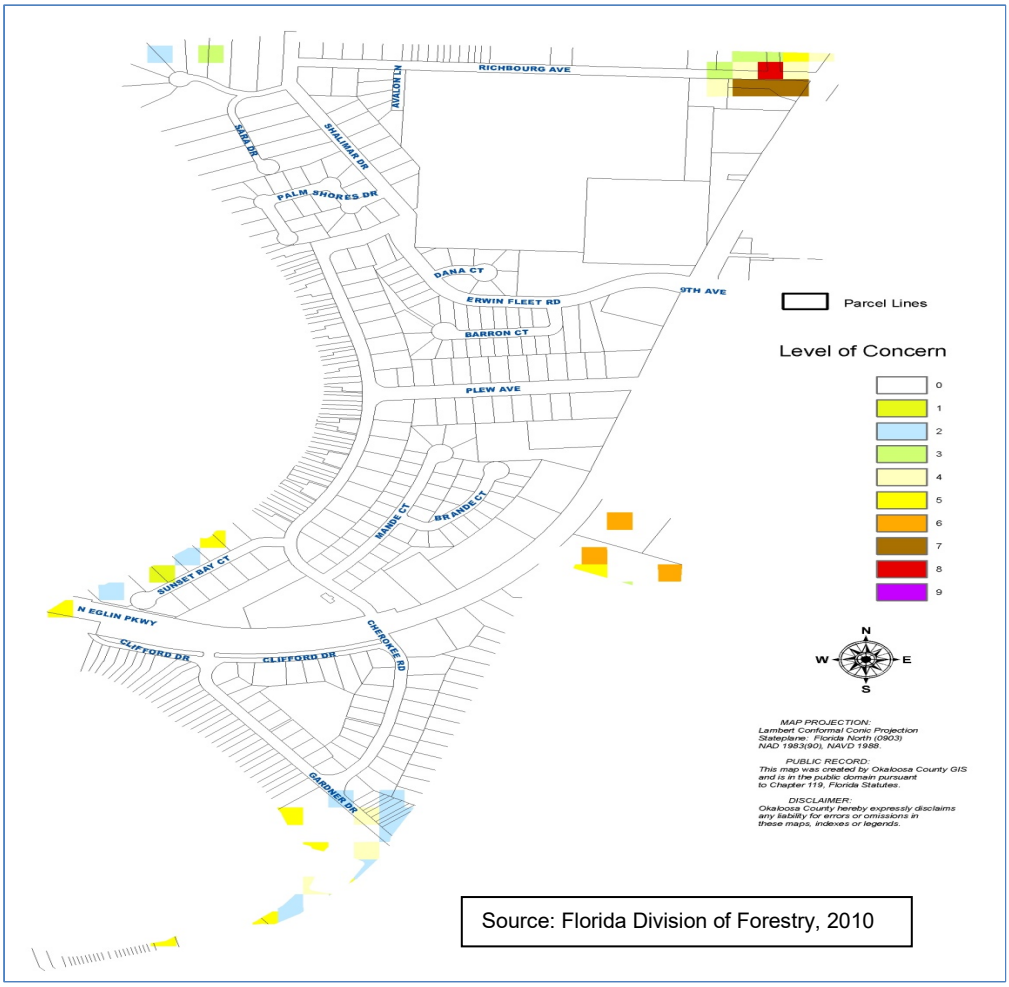
Section 5.09.01.08.04 Dam Safety

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.

Figure 5.09.01.08.05.1: Wildfire Levels of Concern for the Town of Shalimar



Source: Florida Division of Forestry, 2010

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.

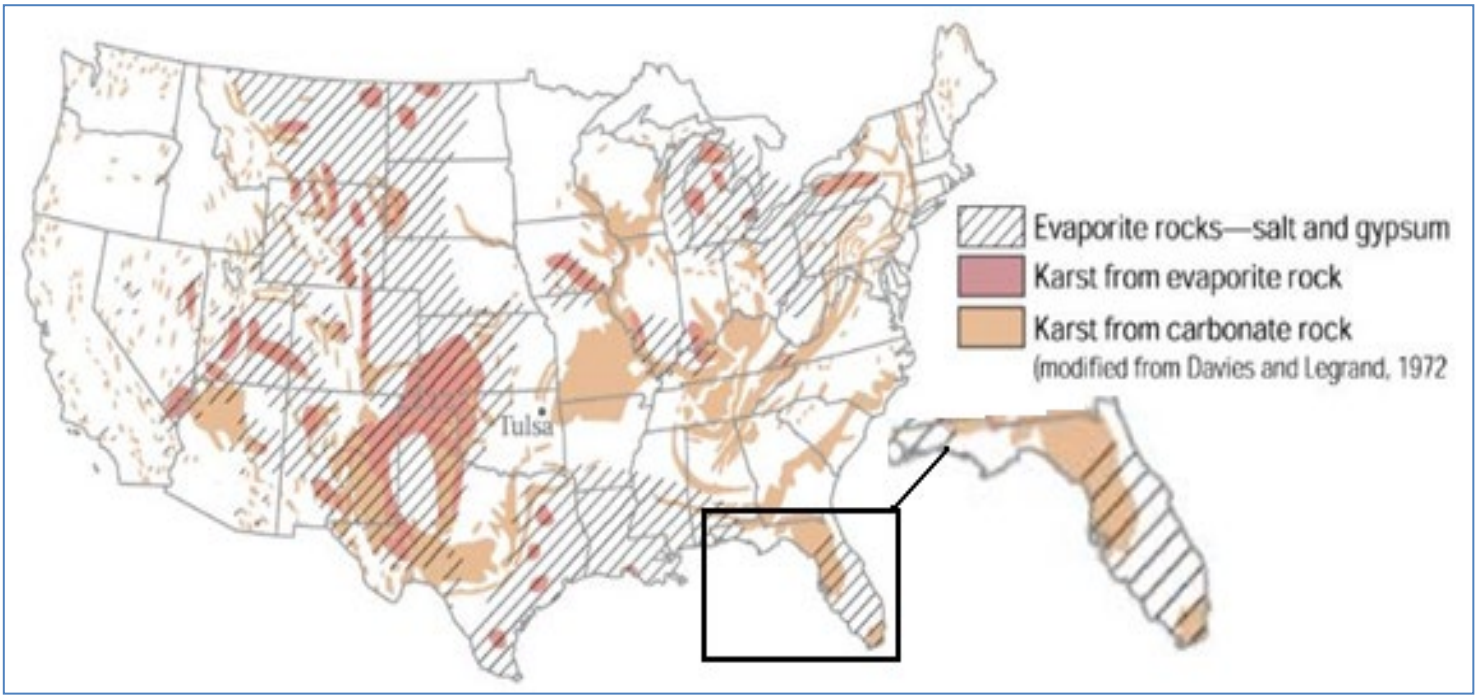
Section 5.09.01.08.07 Avalanche

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.

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 5.09.01.09 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. As of a 2010 Census it was home to 717 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. The majority of the existing residential development is 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.

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: 2010 Census; U.S. Census Population Division

Section 5.09.02.05 Repetitive Loss Properties

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" (FEMA, 2010). 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 Town of Shalimar because they have already experienced significant flood damage. The following tables depict the repetitive loss properties and their flood zones in the Town of Shalimar.

Table 5.09.02.05.1: Repetitive Loss Properties in the Town of Shalimar

	Total Building Payment	Total Contents Payment	Total Losses Claimed	Total Paid	Residential Structures	Non-Residential Structures
Town of Shalimar	$1,481,019.79	$526,975.17	70	$2,007,994.96	35	0

Source: FEMA, 2016

Table 5.09.02.05.2: Flood Zones of Repetitive Loss Properties in the Town of Shalimar

Flood Zones	A,AE	V,VE	B,C,X
Total Properties	28	1	6

Source: FEMA, 2016

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 the 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 within

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, 2010 (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 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 17.7 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, 2010 (Okaloosa County Staff generated table from overlaying the surge levels and property appraiser data)

Section 5.09.02.08 Flooding

Our definition of flooding only considers flooding that is a result of rainfall, which includes tropical rains during a hurricane. The Town of 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, 2010

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, 2010

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. 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 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 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 5.09.02.13 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	2 CHEROKEE RD SHALIMAR FL 32579	1312092.921	529316.419

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 5.09.05 Maps

Attached to this page are maps of the Town of Shalimar. They include:

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Town of Shalimar Critical Facilities

Parcel Lines

Critical Facilities

Source: Okaloosa County Public Safety, 2010

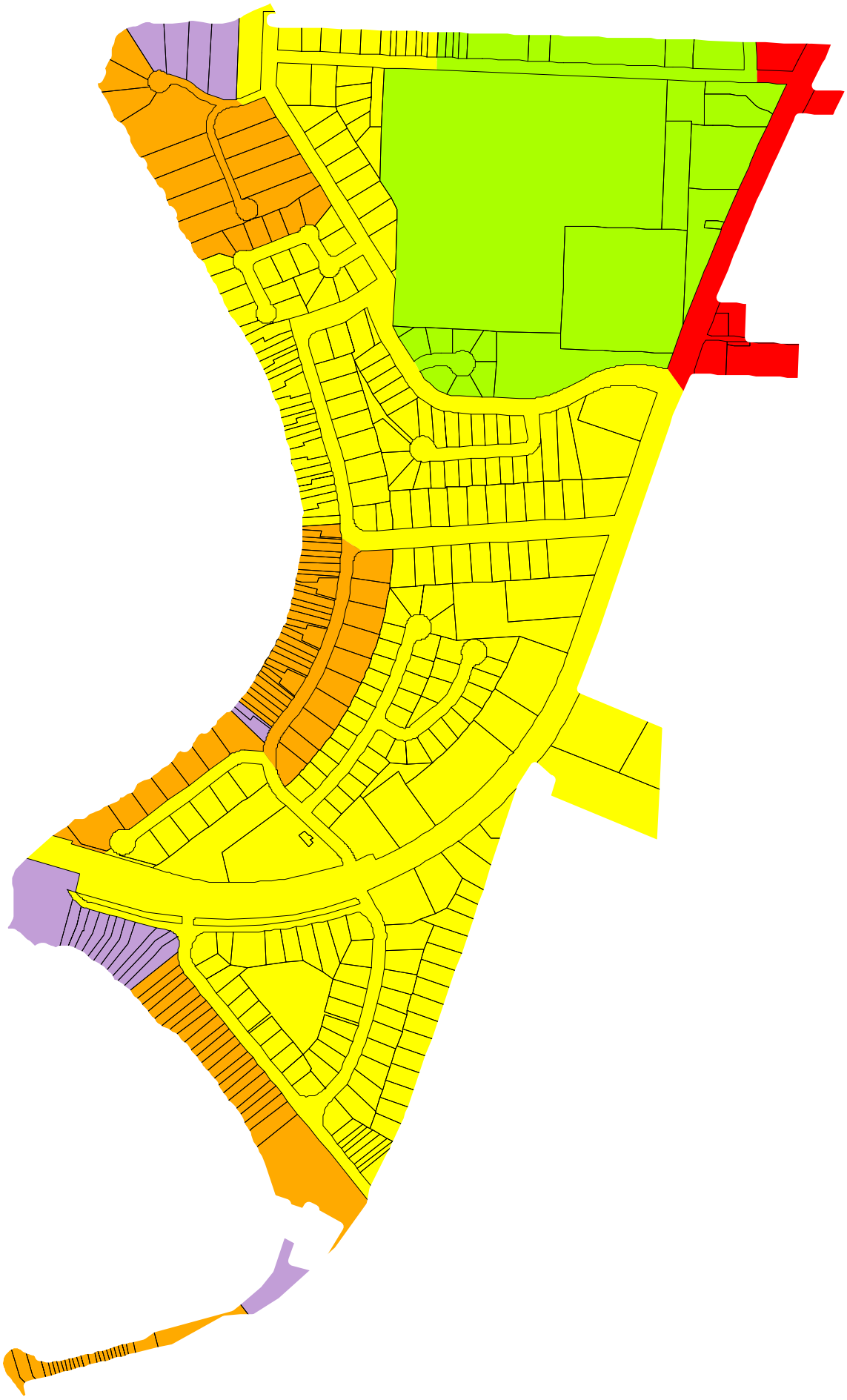
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Department of Growth Management
08/18/2010



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, Dec 6 2002

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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, Dec 6 2002

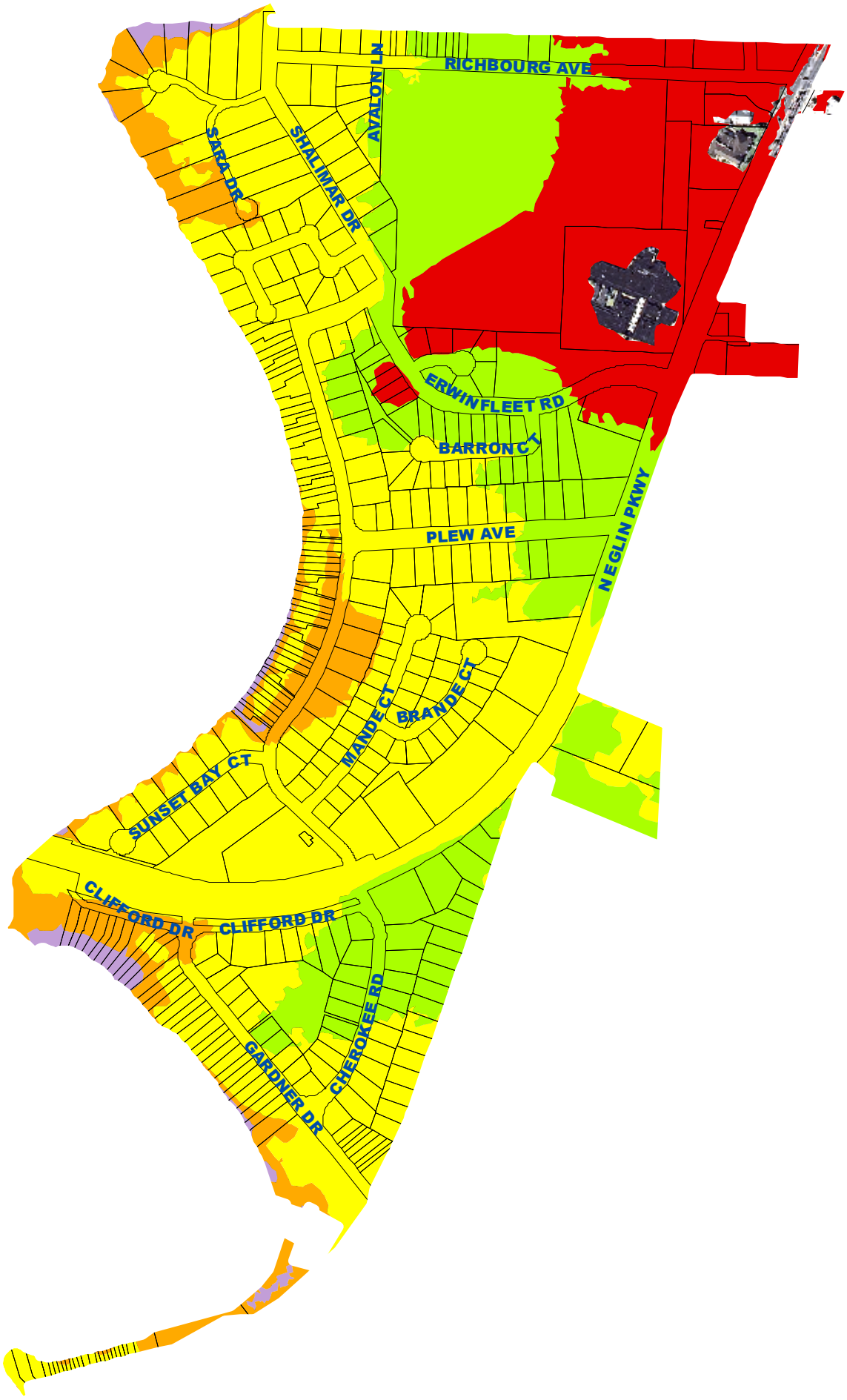
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Town of Shalimar Surge Zones

- Parcel Lines
- Category 1
- Category 2
- Category 3
- Category 4
- Category 5

Source: West Florida Regional Planning Council, 2010

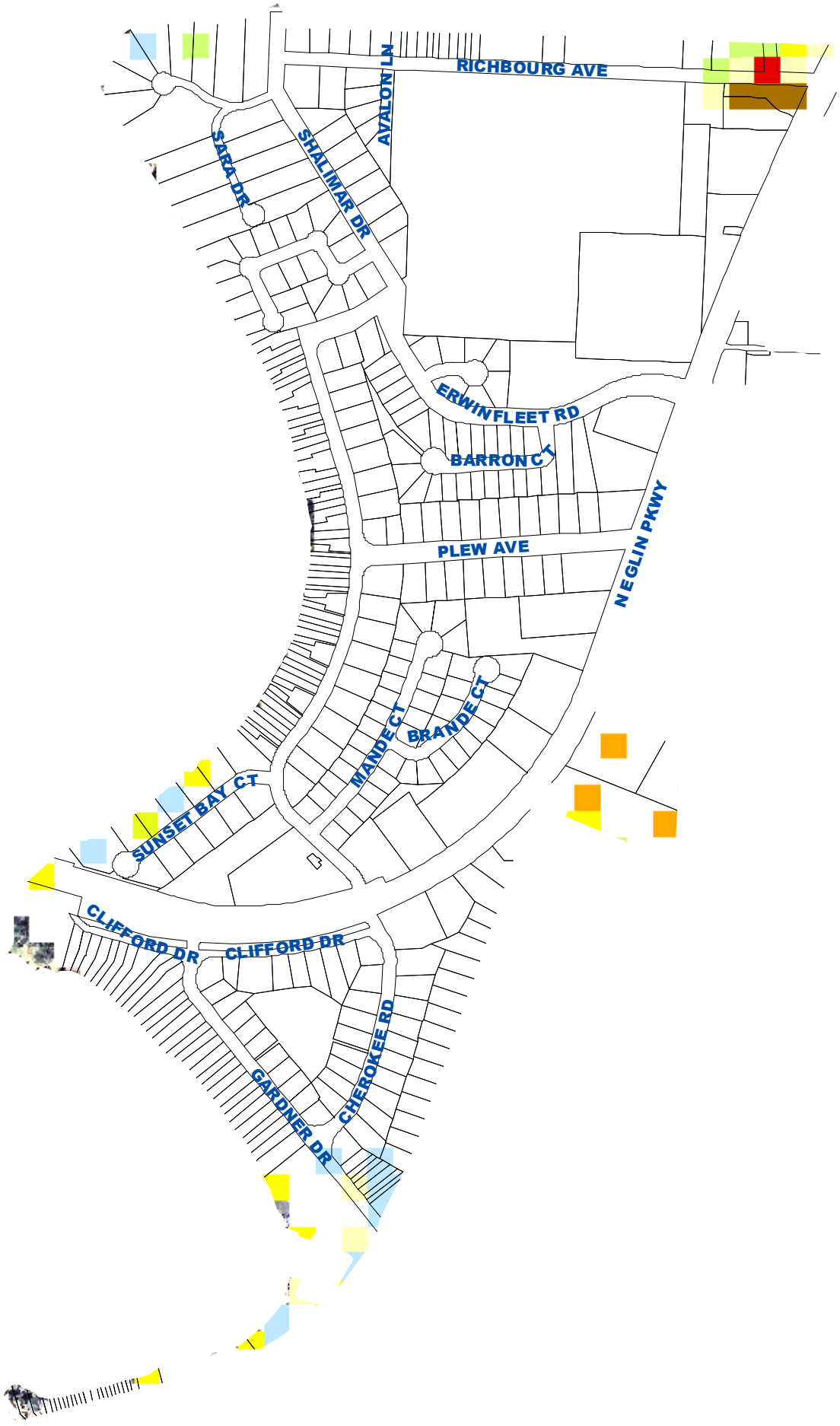
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Town of Shalimar Wildfire Level of Concern

Parcel Lines

Level of Concern

0
1
2
3
4
5
6
7
8
9

Source: Florida Division of Forestry, 2010

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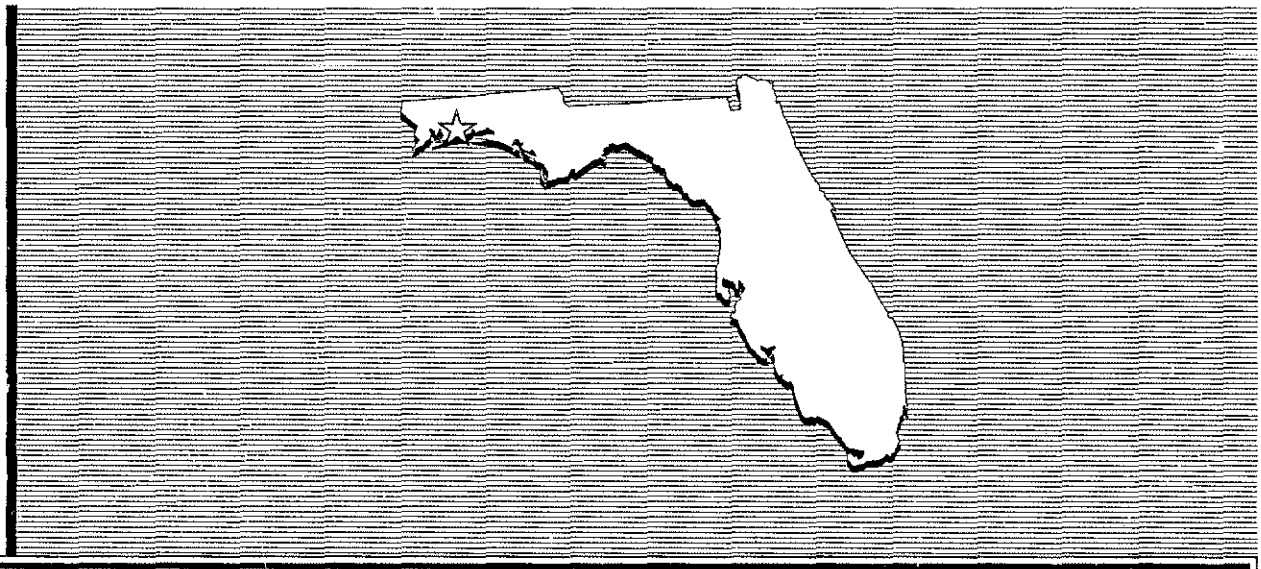
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08/18/2010

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.



Town of Shalimar

POST - DISASTER REDEVELOPMENT PLAN

prepared by

J.E. Dorman & Associates, Inc.
Destin, Florida

July 21, 1992

July 21, 1992

Town of Shalimar
Post Disaster Redevelopment Plan

ORDINANCE 92-09

prepared for the

Town of Shalimar

by

J.E. Dorman & Associates, Inc.
Destin, Florida

on behalf of the

Mayor and Town Commission

Preparation of this document was aided through financial assistance received from the State of Florida under the Small Municipalities Supplemental Planning Assistance Grant Program authorized by Chapter 91-113, Laws of Florida, and administered by the Florida Department of Community Affairs.

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1.4 **Intent:** Following a damaging hurricane or any other disaster, and/or enactment of a building moratoria, it is the intent of the Town to allow rebuilding and reconstruction in an orderly manner. The Town in coordination with the County 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 Town 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 Town Commission. A main responsibility of the body will be to advise the Town Commission on the policies of the Plan which are structures to mitigate future hurricane damages through the management of reconstruction. To further the intent of this Plan, the Town 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 July 21, 1992.

Harry V. Montague
Mayor Harry V. Montague

ATTEST:
Jean Wilkinson
Jean Wilkinson, Town Clerk

July 15, 1992
Date of First Reading

July 21, 1992
Date of Second & Final Reading

Reviewed and approved as to form only
by the Town Attorney

D. Michael Chesser
D. Michael Chesser, Attorney

ORDINANCE 92-09

AN ORDINANCE ADOPTING THE POST-DISASTER REDEVELOPMENT PLAN

1.1 LEGAL:

WHEREAS, the Town of Shalimar 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, the Town of Shalimar 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; and

WHEREAS, Chapter 252, F.S., provides the Town Commission 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 Town of Shalimar has prepared a Comprehensive Plan in compliance with Chapter 163, F.S. and Rule 9J-5, F.A.C.; and

WHEREAS, the Town of Shalimar has adopted its Comprehensive Plan and Objective 11.A.8 requires the Town 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 TOWN COMMISSION OF SHALIMAR, FLORIDA that this Ordinance is hereby adopted in conformance with Chapter 163, F.S., and Rule 9J-5, F.A.C. and the Town 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 Town of Shalimar Post-Disaster Redevelopment Plan" and also may be known as Ordinance No. 92-09.

1.3 **Jurisdiction:** The lands subject to this Plan shall be the incorporated areas of Shalimar except lands owned by Federal, State or local political entities.

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 Disaster 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, Shalimar 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 Town to prepare a Post-Disaster Redevelopment Plan by 1992. This Plan is a continuation of the Town'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 Town of Shalimar is periodically threatened by severe weather phenomena: tornados, hail storms, flooding, high winds and hurricanes. A major highway running through the heart of the Town 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 fall-out, 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 Town 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.

DONT WALK

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 damages. An indicator for this category is if the cost of repair is 25% or less of the replacement cost at the time of damages.

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) Mayor

b) Special Services Commissioner

c) Streets and Roads Commissioner

d) County engineer or his representative

e) Utility company personnel

f) Public safety and fire officals

g) Tax assessor representative

h) County building inspectors

i) Health officials

j) Red Cross officials

k) Real estate appraisers

l) Insurance agency representatives

4.5 Post-Disaster Reconstruction Task Force - The Reconstruction Task Force shall be responsible for advising and making recommendations to the Town Commission on a wide range of post-storm reconstruction/redevelopment issues. The Task Force should be composed of the following individuals, reflecting a broad based representation of community interests:

a) Mayor

b) Special Services Commissioner

c) Streets and Roads Commissioner

d) Town Clerk

e) County building inspector

f) County water and sewer representative

g) Public Safety Representative

h) Fire Department Representative

i) 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 Town.

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 Town 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 administrative officals, the Mayor and members of the Town Commissison. 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 Town 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 Shalimar, 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 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 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 Town 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 the 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 may 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 the Town'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 Town 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 Town to assess the impact of the disaster. An official of the Town will be designated to conduct this generalized, preliminary

post-disaster damage assessment and provide it to the Town Administration 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 and County governments who will also perform their own damage assessments. Once the information has been generated, it should be transmitted to the Town Administration 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 the Town 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 town 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 the Town, 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 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 assessor to affected sites. The more expeditiously the data can be collected, the quicker a potential disaster Declaration can be obtained.

7.3.4 State of Emergency by the Governor. If the Town 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:

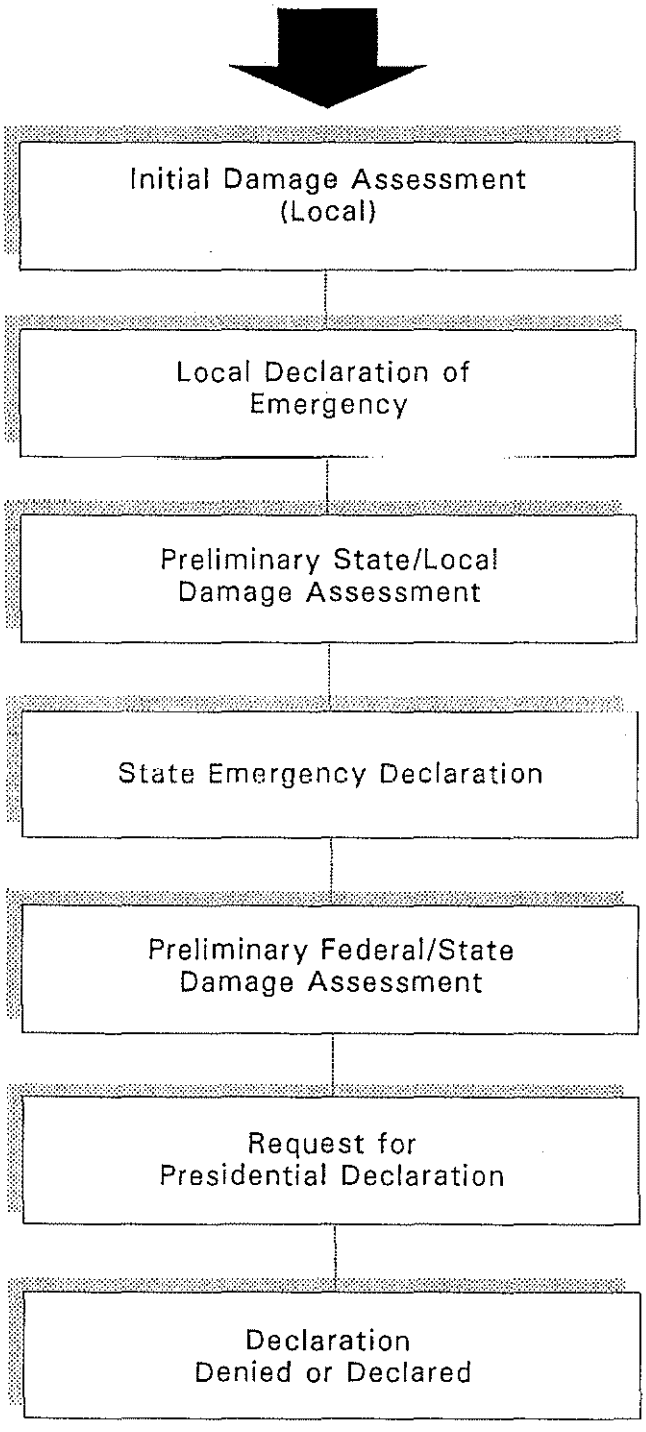
- activates the emergency response, recovery, mitigation phases of the State and local emergency management plans; and
- provides authority for mobilization and deployment of all resources to which the plans refer, pursuant to Section 252.31-60, F.S., or any other provisions of law relating to emergencies.

7.3.5 Preliminary Federal/State Damage Assessment. Prior to recommending a disaster declaration for the Town, 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.

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 wash-out 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. 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 for each political jurisdiction within the Town that received damage to public property (Appendix C).

7.4.2 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 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 assessors 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 Businesses - privately owned businesses that

were damaged or destroyed by the disaster can qualify for individual assistance programs. Businesses include buildings, inventory and equipment.

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 Town to allow rebuilding and redevelopment in an orderly manner. The Town 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 Town 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 Town Commission 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 Town 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 Town 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 Town Administration and the County 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 Town 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 Town Commission declares a local "state of emergency" and begins the initial building moratorium when the Commission finds that a moratorium is necessary for the protection of lives, safety and property, or due to the inability of the Town to maintain acceptable levels of public order and service. The Town Commission, 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 Town 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 Town 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 Town and Municipal Ordinances and applicable codes prior to issuance of a building permit.

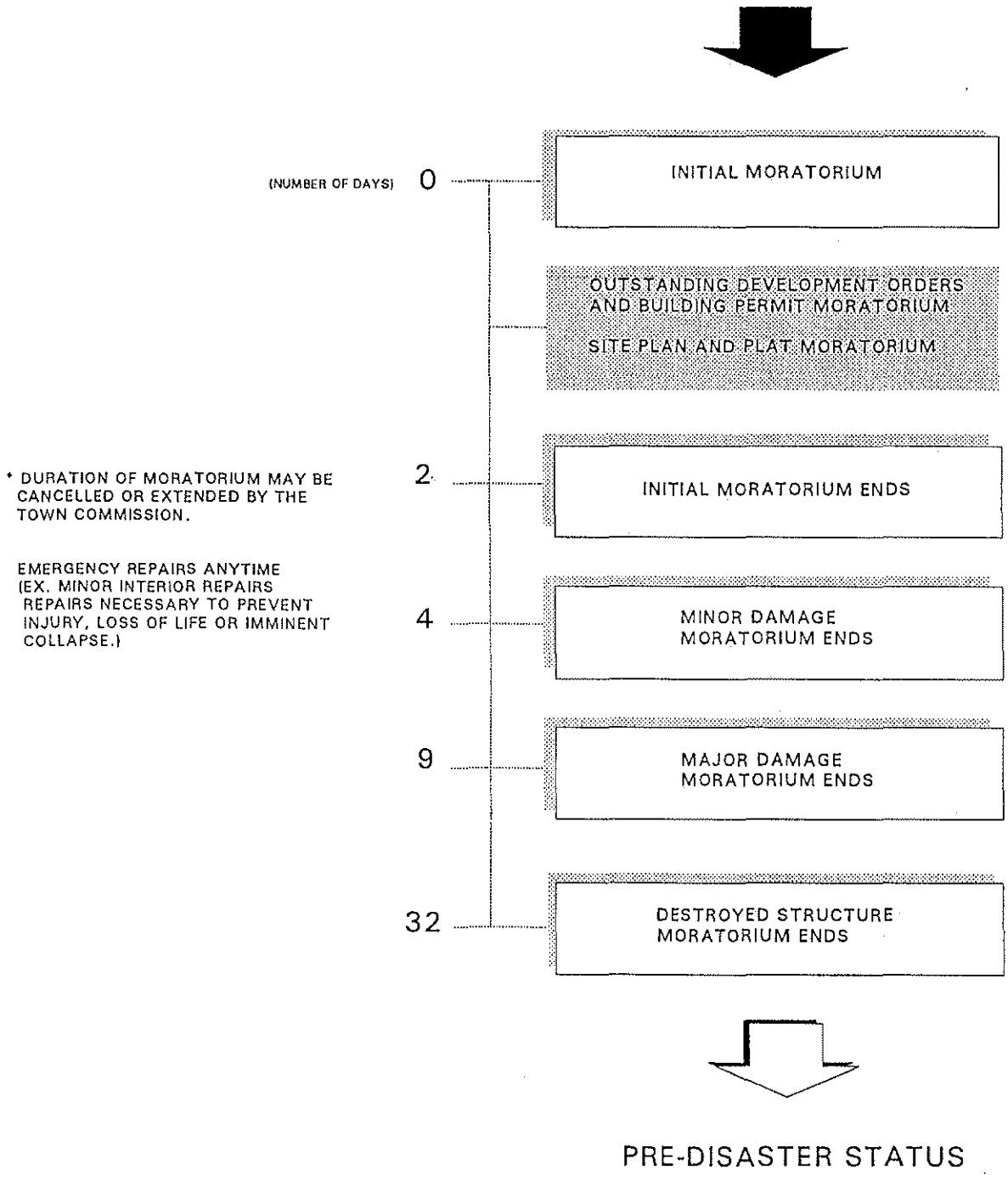
8.2.3.4 **Outstanding Building Permits Moratorium:** All building permits which were issued prior to the storm event shall be revoked and shall not be reissued for a minimum period of thirty (30) days following the expiration of the initial moratorium, unless upon finding by the County Building Inspector 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 may be reissued at no charge.

8.2.3.5 **Site Plan Review:** Site plans which have been submitted to the Town prior to the disaster shall not be reviewed by the staff, Planning and Zoning Board or Town Commission 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 Town 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 8.2.3 shall be in effect for the length of time described above and may be cancelled or extended by the Town Commission.

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.


(NUMBER OF DAYS)
0
INITIAL MORATORIUM
OUTSTANDING DEVELOPMENT ORDERS AND BUILDING PERMIT MORATORIUM
SITE PLAN AND PLAT MORATORIUM
2
INITIAL MORATORIUM ENDS
4
MINOR DAMAGE MORATORIUM ENDS
9
MAJOR DAMAGE MORATORIUM ENDS
32
DESTROYED STRUCTURE MORATORIUM ENDS
* DURATION OF MORATORIUM MAY BE CANCELLED OR EXTENDED BY THE TOWN COMMISSION.
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 Town Administration 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 Town Administration
- 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 "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 Town 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 Town Commission'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
- other objectives which further the stated goals and policies of the Town's Comprehensive Plan and Land Development Code

8.4 Conditions for Issuance of Building Permits: Upon expiration or cancellation of an applicable building moratorium enacted in Section 8.2 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 plan 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 County 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 County 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 County 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 Town shall coordinate the planning and provision of emergency water and sewer services with Okaloosa County. 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 affecting water and sewer facilities, contact the County Emergency Management Director at 651-7150 (office), 664-8152 (beeper), 244-2522 (home) or 582-1239 (cellular). Also, for emergency water supply to critical areas, contact Okaloosa County Water and Sewer at 651-7171 or 651-7174 (nights and holidays).

8.5.2 Public Roads and Easements: Prior to the consideration of an expenditure of public funds for the repair or construction of Town roads which are destroyed or damaged by a disaster, the Town 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 Town, 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 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.

8.5.4 Private Roads and Easements: It shall be the policy of the Town 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 County'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 Town will take advantage of opportunities which may arise to acquire or purchase

land following disaster. To this extent, the Town 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 Town shall identify 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 Town 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, 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.

9.2 **Policy.** It should be the policy of the Town to appoint a facilitator who, as directed by the Town, will be responsible for:

- determining the types of assistance available to the Town 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 Town Administration programs which are available to the Town 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 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.

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 at 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, 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.

9.5.2 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.

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 Town 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 Town, 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 damage assessment is performed in the field using Form A. It is to be used to report the damage done on each individual site. Three 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.

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 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 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; 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 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 "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

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 Town that received damage to public property. Brief instrutions for completing Form B are as follows:

DATE: Date form is filled out.

TOWN: Town/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.

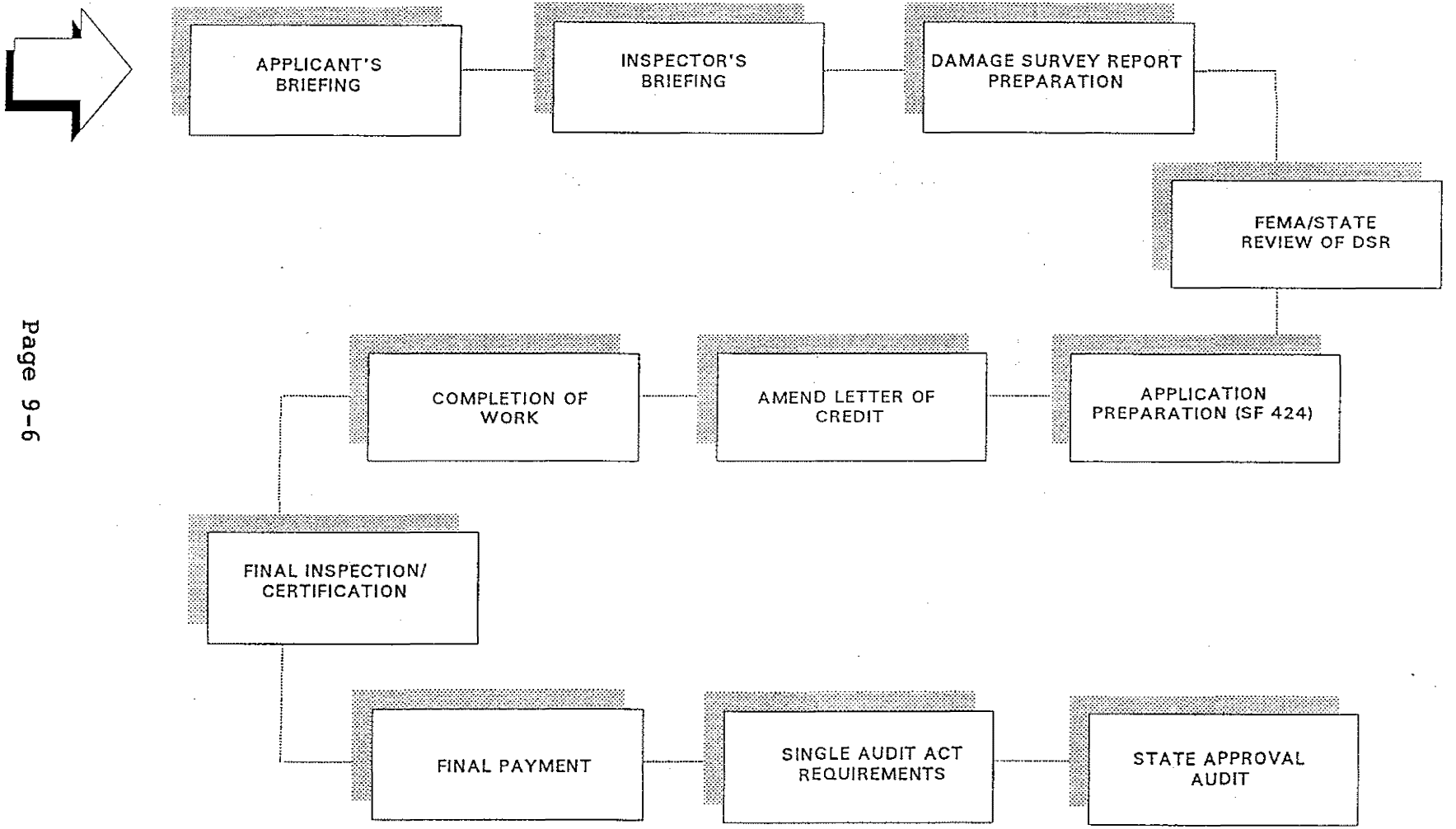
IMPACT ON PUBLIC SERVICES
IF DECLARATION IS NOT MADE: Provide brief explanation.

NAME OF INSPECTORS: Name of person who did inspection.

AGENCY: Who the inspector works for.

PHONE NUMBER: Telephone number of inspector.

PUBLIC ASSISTANCE FLOW CHART



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)

FORM B

PUBLIC PROPERTY PRELIMINARY DAMAGE ASSESSMENT SUMMARY FORM AND INSTRUCTIONS

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)

FORM A

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 follows, starting with Form C.

HEADING: Fill in the town, county, state, and type 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 (h-i): Check if home is single family, multi-family or mobile home.

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, and exceeds $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 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.

The instruction for Form D are as follows:

BUSINESS AND INDUSTRY PRELIMINARY DAMAGE ASSESSMENT RECORD FORM AND INSTRUCTIONS

PRELIMINARY HOUSING
DAMAGE ASSESSMENT ESTIMATES

CITY	COUNTY	STATE	PAGE	OF

TYPE OF DISASTER

☐ TORNADO ☐ FLOOD ☐ HURRICANE *other*

SURVEY AREA	DATE	MAP

OUSE # UILDING/APT# OX	ADDRESS	HOME		TYPE			STATUS		UNINHABITABLE				INHAB	WATER DEPTH		SUIT MH	EST. INCOME					OFFICE USE ONLY P/ASSIST.
		PRIN	SEQ	SR	MR	MH	OWN	RENT	MIN	MAJ	DEST	INACC NO UT	AFFEC	1-FL	2-FL		LOW	MED	HIGH	SUB STD	UNINS. LOSS	

The instructions for Form D are as follows:

HEADING: Fill in affected town, county, state, type of disaster, designation of disaster assessment team.

COLUMN (1): Enter name of business or plant.

COLUMN (2): Enter the best available address.

COLUMN (3): Provide one or two word description of business type.

COLUMN (4): Is this business only one of its kind in the community?

COLUMN (5): Does business provide a direct service to the community (e.g. food, gas, medical)?

COLUMN (6): Is damaged business a major community employer?

COLUMN (7): If loss of business impacts community in other fashion, provide description on back of form.

COLUMN (8): Operable, but affected - business is damaged, but still operable.

COLUMN (9): Inoperable, but it would only require minor repairs for business to become operable.

COLUMN (10): Inoperable, requiring major repairs for the business to resume.

COLUMN (11): Inoperable and not feasible to repair - destroyed.

COLUMN (12): If business is inaccessible due to isolation by way of water, roads, etc.

COLUMN (13): If business has no utilities and cannot operate.

COLUMN (14): Enter the level of water depth over the main floor.

COLUMN (15): Provide the amount of insured loss to the business.

COLUMN (16): Determine how many days the business will be out of operation.

COLUMN (17): Total employment provide by the business.

COLUMN (18): Determine how many employees are unemployed in the business due to the disaster.

COLUMN (19): Estimate the number of days employees will be out of work.

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)

FEMA Form 90-49, AUG 97 REPLACES EDITION OF MAY 82, WHICH IS OBSOLETE.

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

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.

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 (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

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.

As of the writing of this 2021 LMS the 2020 Census Data is unavailable. As soon as possible, the LMS Committee will update this plan to include the newest data available.

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.

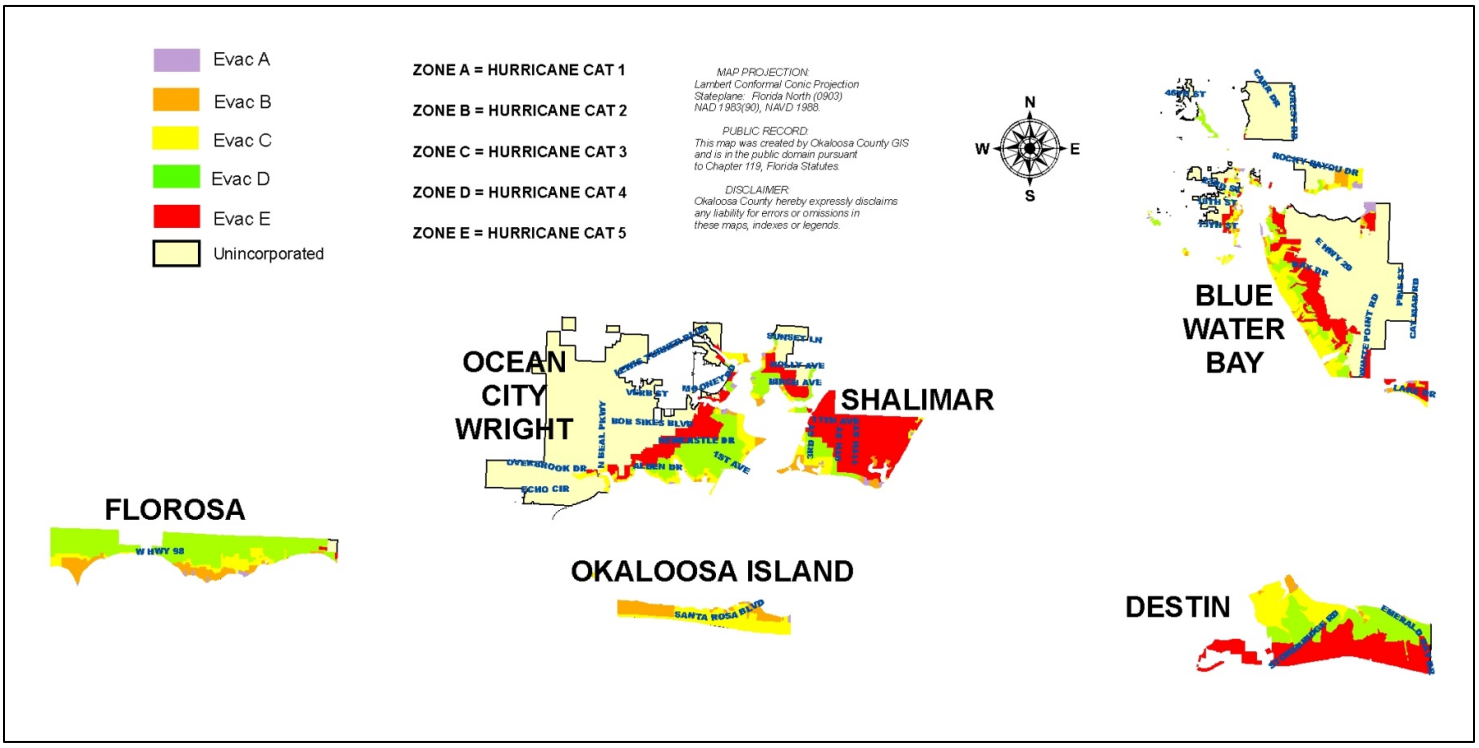
In the worst-case scenario of a Category 5 hurricane, there will be catastrophic damage to homes and buildings, trees, power poles, and signage. Category 5 winds of in excess of 155 MPH will cause significant damage to all buildings, with loss of roof sheathing, broken windows, and in some cases wall 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.

Updated Evacuation zones are under development at the time of this update, therefore, the data contained herein is the best data available at this time. As the new data becomes available, updates will be submitted. Evacuation zones have been established for each category of hurricane as depicted in Figures 5.10.01.02.1 through 5.10.01.02.7 which follow. In addition to winds, the expected storm surge, up to 21 feet associated with a Category 5 hurricane, will substantially impact the unincorporated coastal and bay areas in Okaloosa County, causing beach erosion to the coastal areas. Also, severe flooding will occur and likely cause polluted water, storm sewer overflow, and damage to roadways (NOAA, 2010). Storm surge will be examined in greater depth in the following section (5.10.01.3). Figure 5.10.01.02.1 displays the evacuation zones for all the southern unincorporated areas in Okaloosa County. The figures following depict the evacuation zones of the specific areas within unincorporated Okaloosa County, which corresponds to the various hurricane categories.

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)

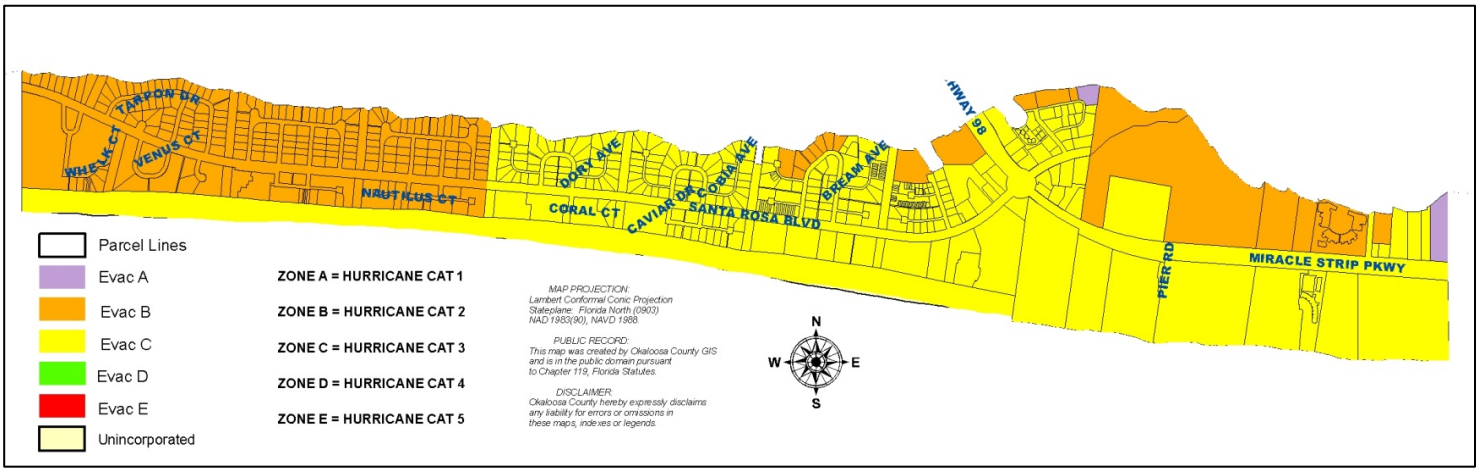
Unincorporated Okaloosa County

Figure 5.10.01.02.1: Evacuation Zones for the southern unincorporated area of Okaloosa County



Source: Okaloosa County Public Safety / Okaloosa County GIS, 2010

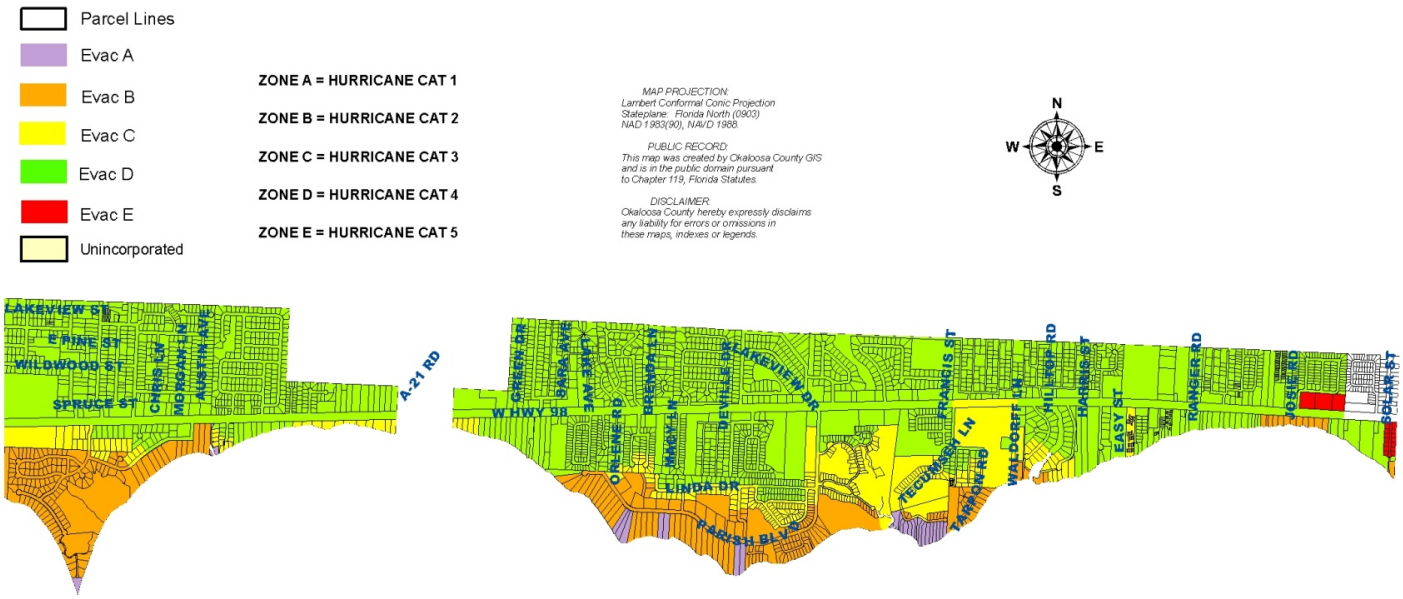
Figure 5.10.01.02.2: Evacuation Zones for the unincorporated area of Okaloosa Island



Source: Okaloosa County Public Safety / Okaloosa County GIS, 2010

Unincorporated Okaloosa County

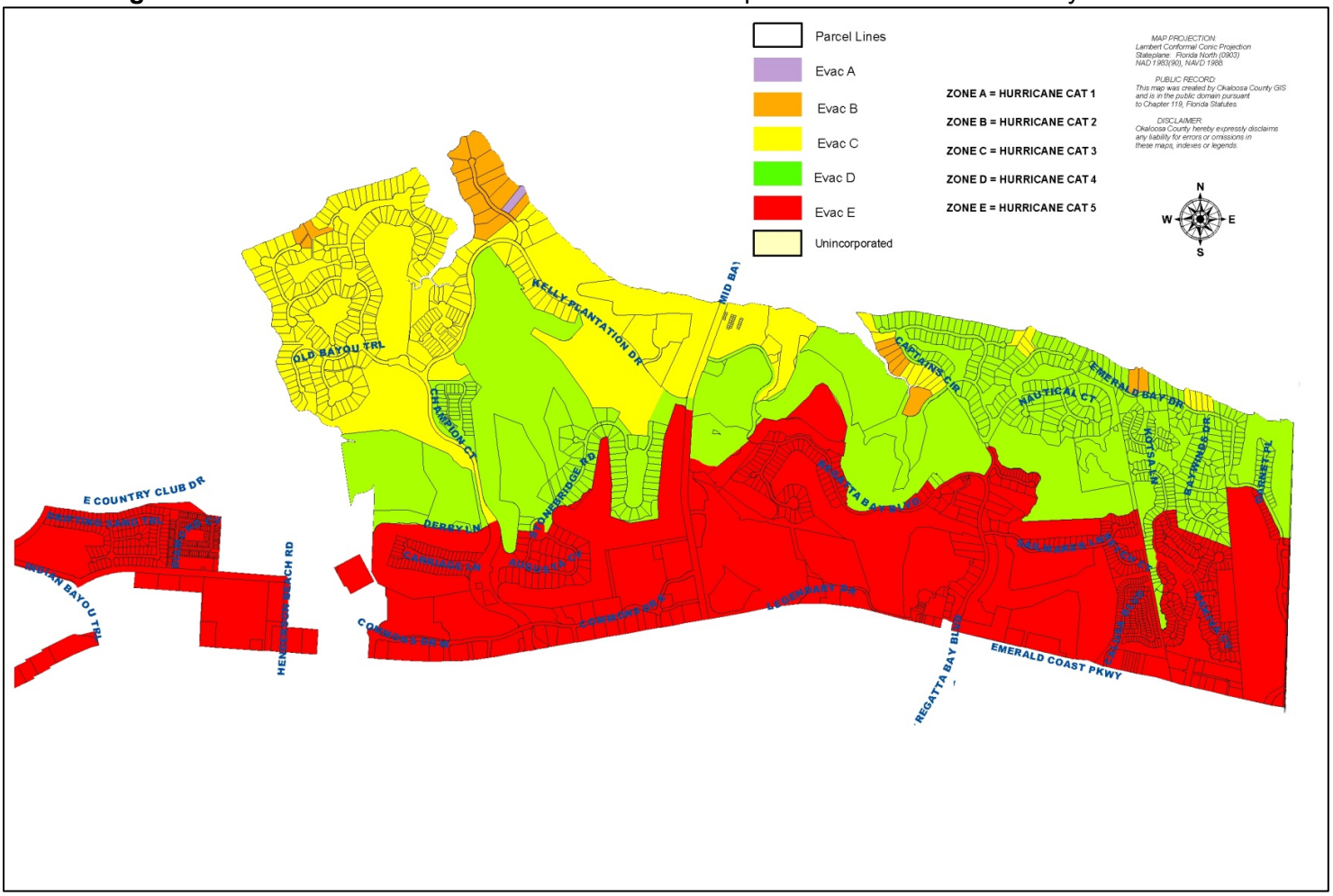
Figure 5.10.01.02.3: Evacuation Zones for the unincorporated area of Florosa



Source: Okaloosa County Public Safety / Okaloosa County GIS, 2010

Unincorporated Okaloosa County

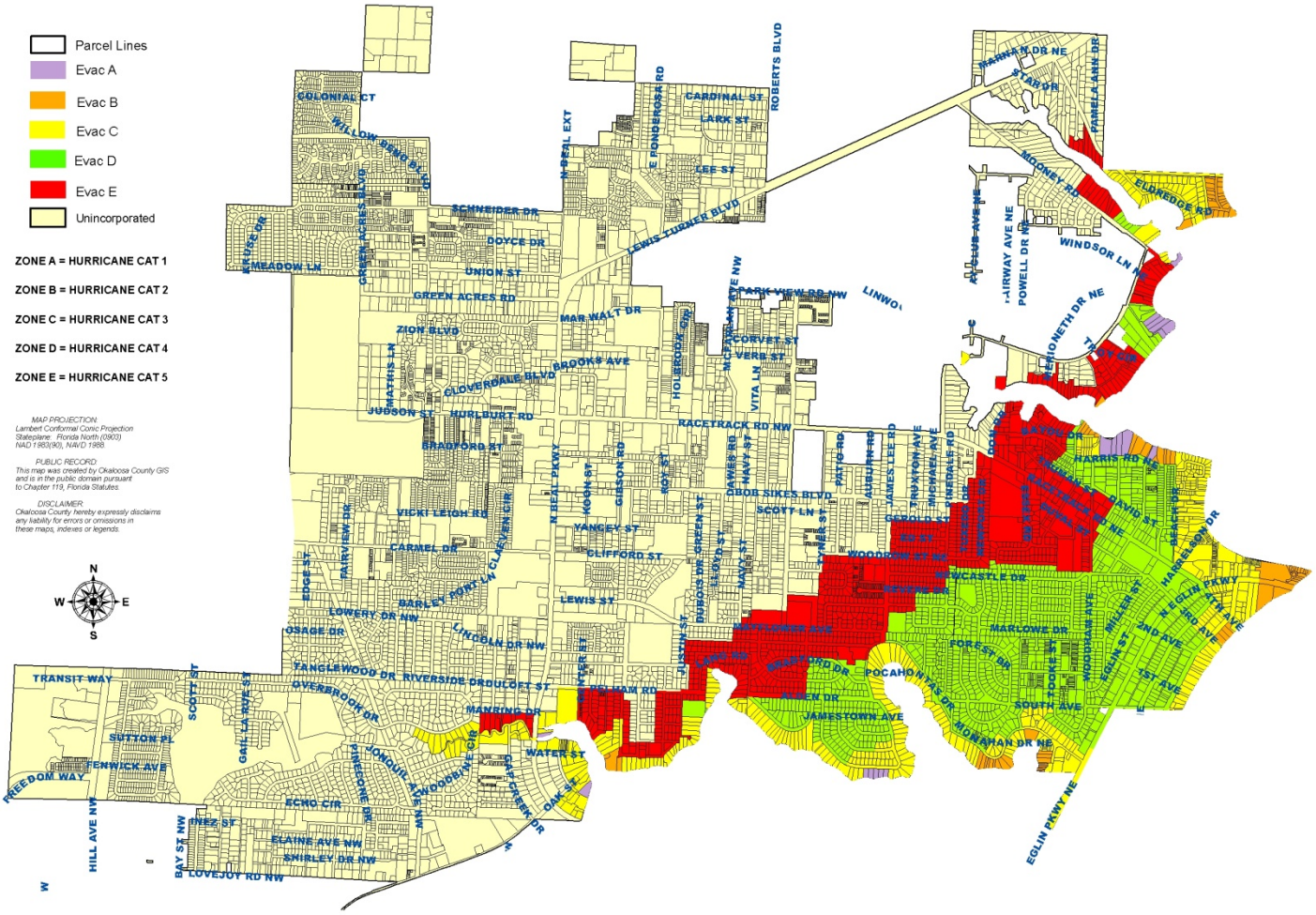
Figure 5.10.01.02.4: Evacuation Zones for the unincorporated area around the City of Destin



Source: Okaloosa County Public Safety / Okaloosa County GIS, 2010

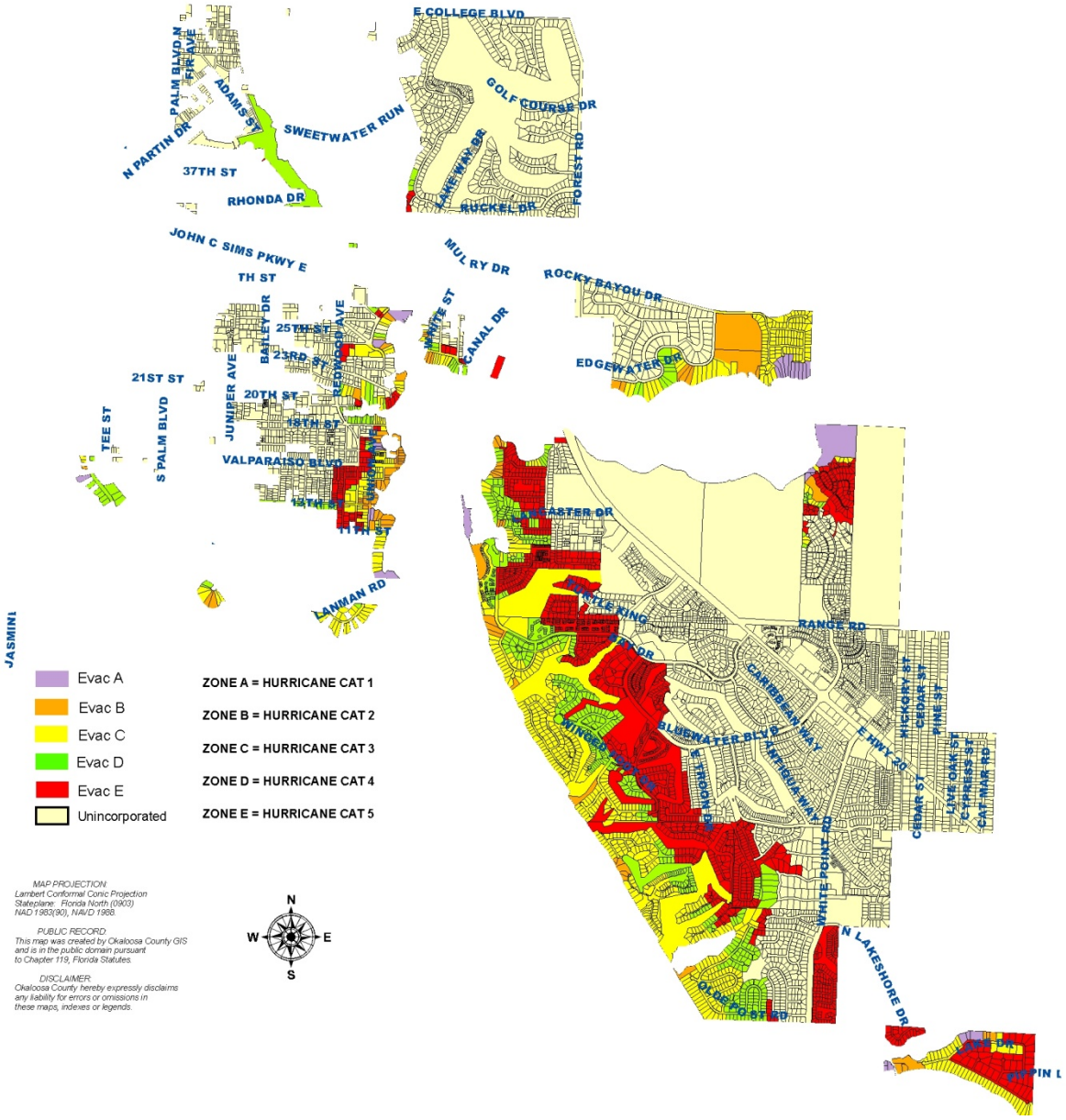
Unincorporated Okaloosa County

Figure 5.10.01.02.5: Evacuation Zones for the unincorporated area of Ocean City Wright


Parcel Lines
Evac A
Evac B
Evac C
Evac D
Evac 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
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: 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.
N
W
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COLONIAL CT
CARDINAL ST
LARK ST
LEE ST
ROBERTS BLVD
LEWIS TURNER BLVD
SCHNEIDER DR
DOYCE DR
UNION ST
GREEN ACRES RD
MAR WALT DR
ZION BLVD
BROOKS AVE
CLOVERDALE BLVD
JUDSON ST
HURLBURT RD
BRADFORD ST
RACETRACK RD NW
BOB SIKES BLVD
SCOTT LN
CLIFFORD ST
YANCEY ST
LEWIS ST
LOWERY DR NW
OSAGE DR
LINCOLN DR NW
VICKI LEIGH RD
CARMEL DR
FAIRVIEW DR
TRANSIT WAY
SCOTT ST
OAK LN
SUTTON PL
FENWICK AVE
FREEDOM WAY
ECHO CIR
INEZ ST
ELAINE AVE NW
SHIRLEY DR NW
LOVEJOY RD NW
HILL AVE NW
BAY ST NW
OVERBROOK DR
MANNING DR
WATER ST
OAK ST
MARLOWE DR
FOREST DR
POCAHONTAS DR
JAMESTOWN AVE
MONAHAN DR NE
SOUTH AVE
1ST AVE
2ND AVE
4TH AVE
EGLIN PKWY
EGLIN PKWY NE
HARRIS RD NE
WINDSOR LN NE
ELDREDGE RD
MOONEY RD
STARR DR
PAMELA ANN DR
AIRWAY AVE NE
POWELL DR NE
PARK VIEW DR NW
LINWOOD AVE NW
SCORVET ST
VERB ST
VITA LN
HOLLEMAN DR
MCCLAIN AVE NW
MAPLE ST
DUPONT DR
GREEN ST
DOWNES RD
HOLT ST
KOON ST
GIBSON RD
N REAL PKWY
PATIO RD
AUBURN RD
JAMES LEE RD
TRUXTON AVE
HIGHWAY 85 N
PINEDALE RD
DOUGLAS RD
SAXON DR
BEECH DR
HARRELSON DR
WILLIS ST
HOOPER AVE
BROOKS ST
WOODROW ST NE
WOODROW ST NW
MAPLE ST
JUSTIN ST
LAKE RD
MCCLELLAN AVE
CRESTVIEW DR
ALLEN DR
ROBERTS RD
ROBERTS CIR
ROBERTS ST
DAVID ST
DAVID ST NE
ROBERTS ST NE
ROBERTS CIR NE
ROBERTS RD NE
ROBERTS ST NW
ROBERTS CIR NW
ROBERTS RD NW

Unincorporated Okaloosa County

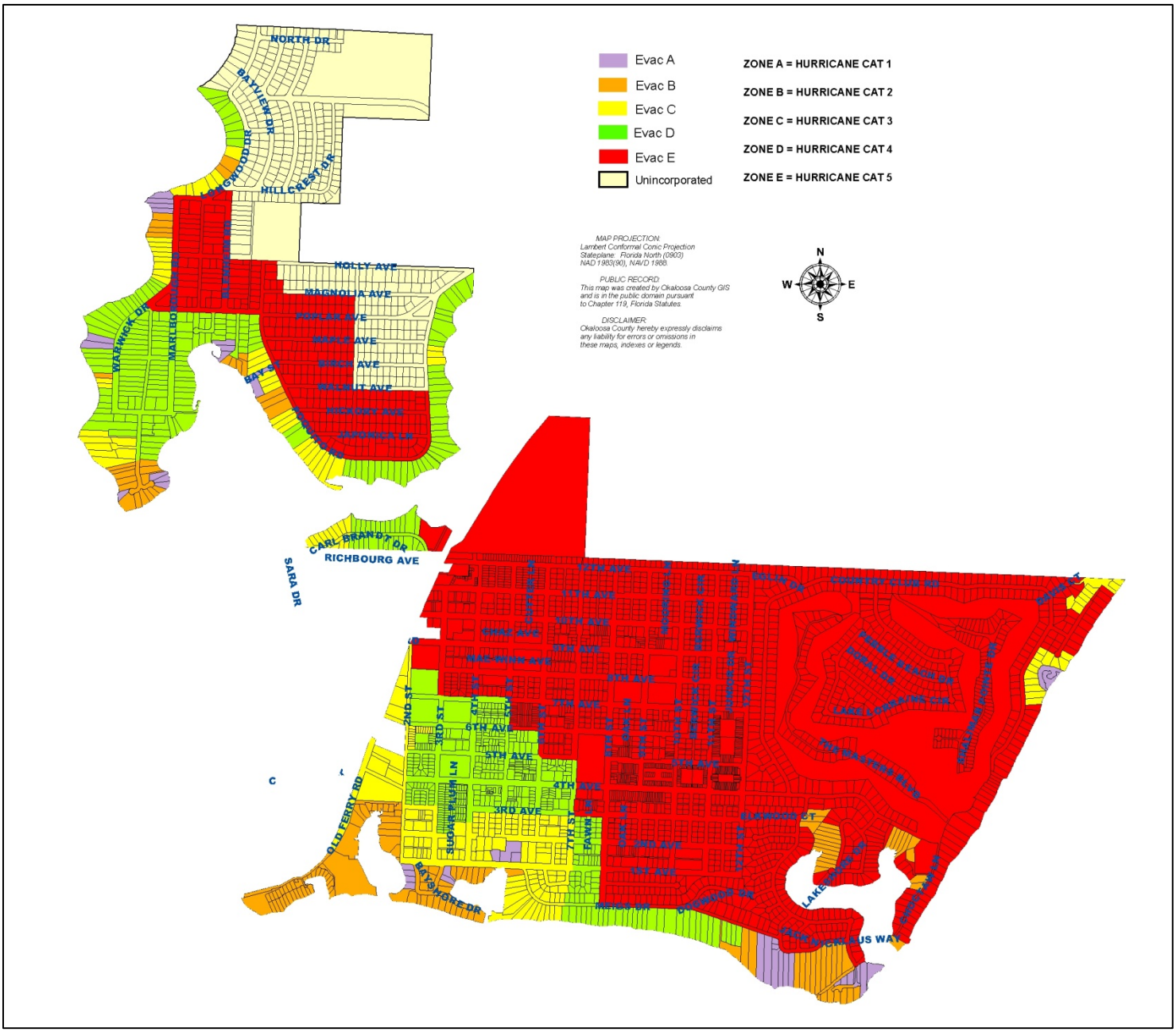
Figure 5.10.01.02.6: Evacuation Zones for the unincorporated area of Bluewater Bay



Source: Okaloosa County Public Safety / Okaloosa County GIS, 2010

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, 2010

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, 2010

Section 5.10.01.03 Storm Surge

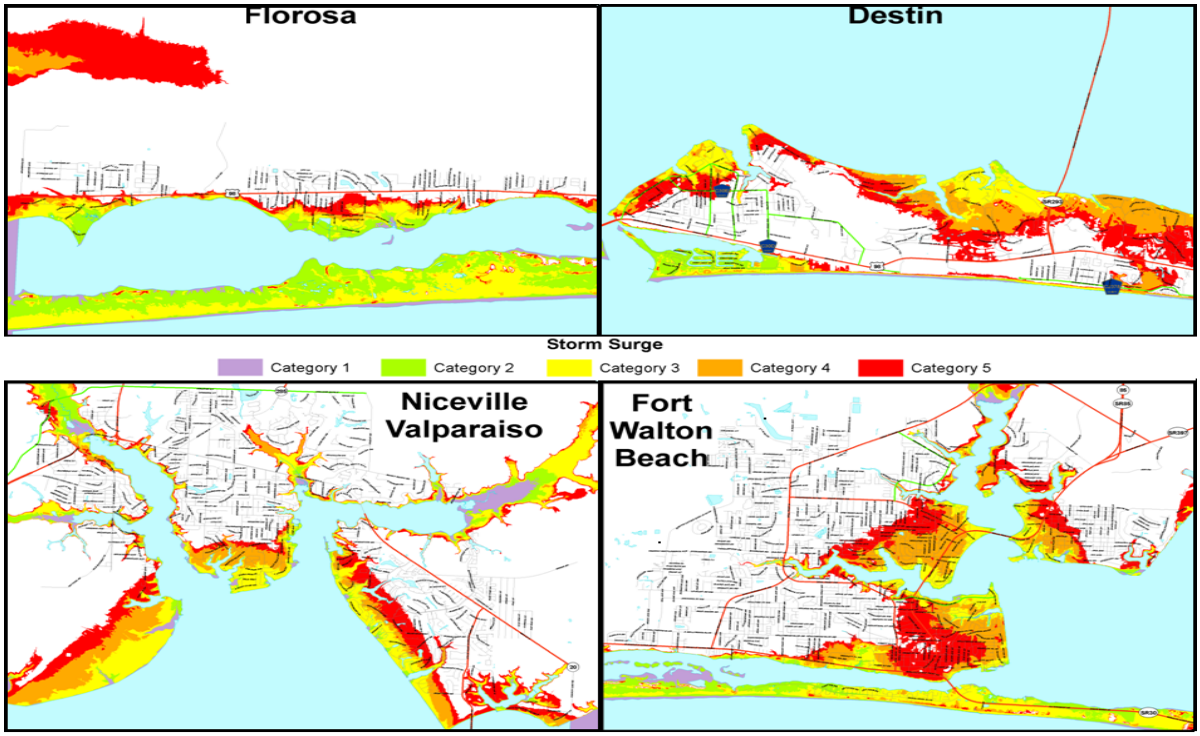
DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

HISTORICAL OCCURRENCE:
Please refer back 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: West Florida Regional Planning Council, 2010

The largest area of the county susceptible to storm surge are the areas lying adjacent to the Choctawhatchee Bay Area Basin and the Gulf of Mexico. These areas include virtually the entire southern portion of the county, totaling roughly 69,629 people in the unincorporated area. This population estimate was extrapolated from 2010 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).

Unincorporated Okaloosa County

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: West Florida Regional Planning Council, 2010

Section 5.10.01.04 Flooding

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

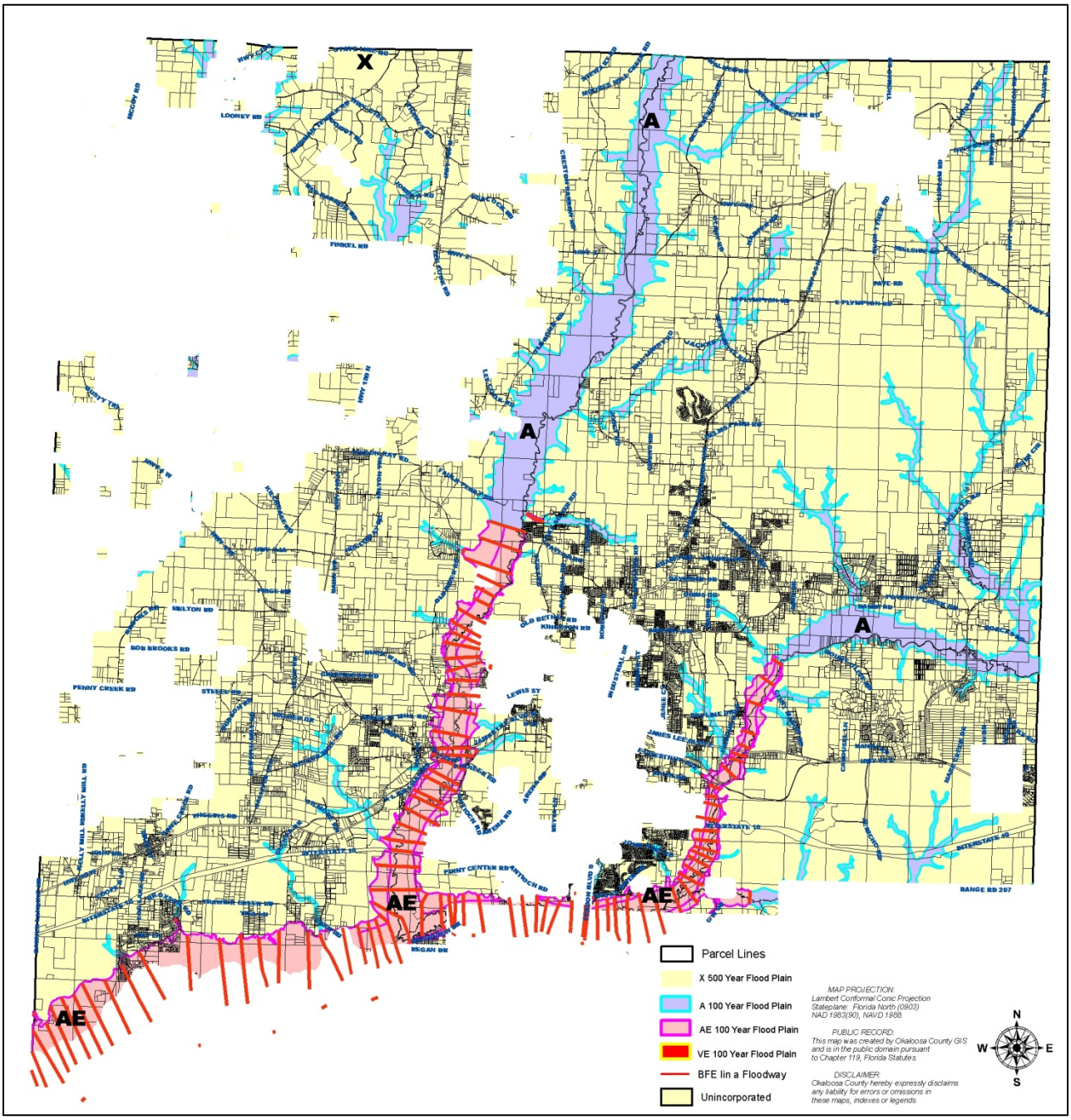
HISTORICAL OCCURRENCE:
Please refer back to the Risk Assessment of the overall County for the historical occurrences of this hazard because all of Okaloosa County is equally susceptible to this hazard.

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.

Unincorporated Okaloosa County

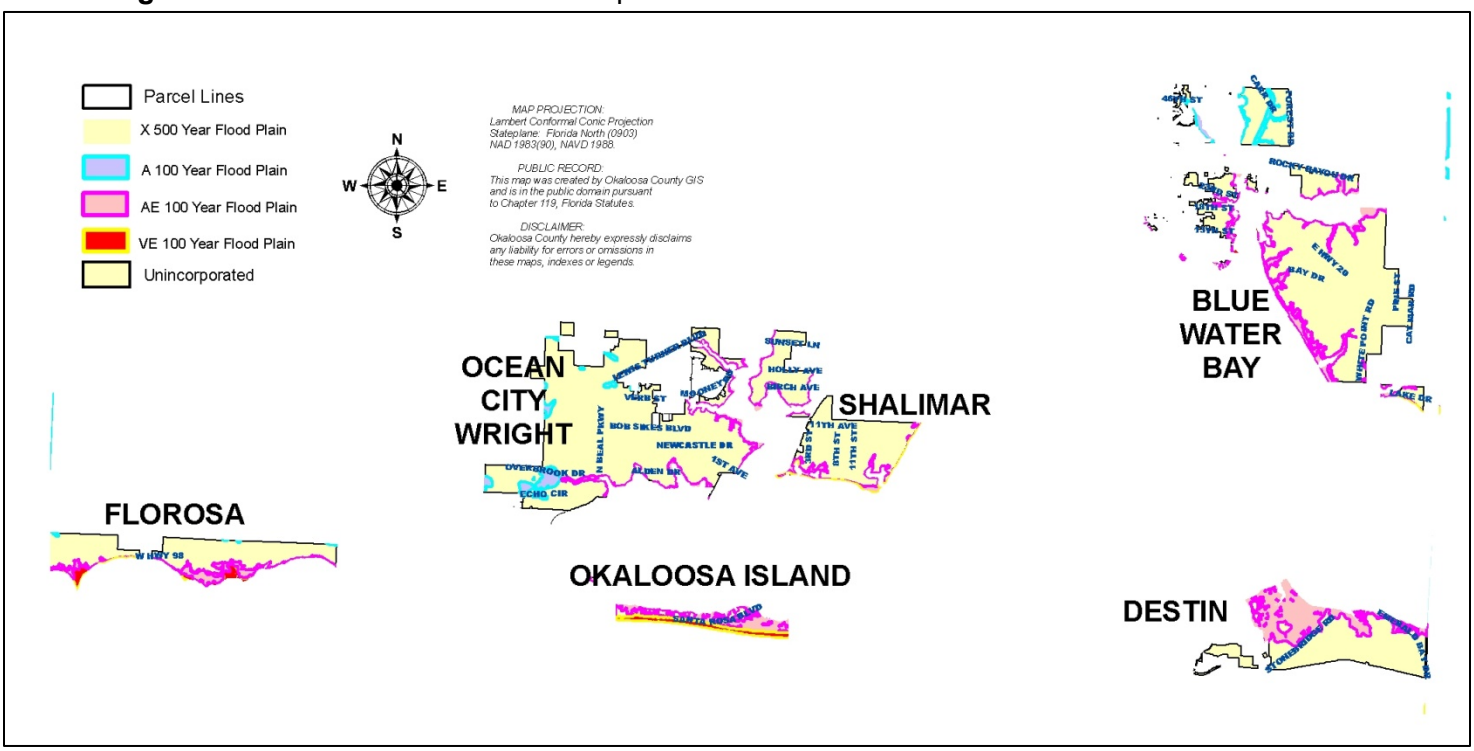
Figure 5.10.01.04.1: Northern Unincorporated Okaloosa County Flood Zones



Source: FEMA Map Service Center, Dec 6 2002

Unincorporated Okaloosa County

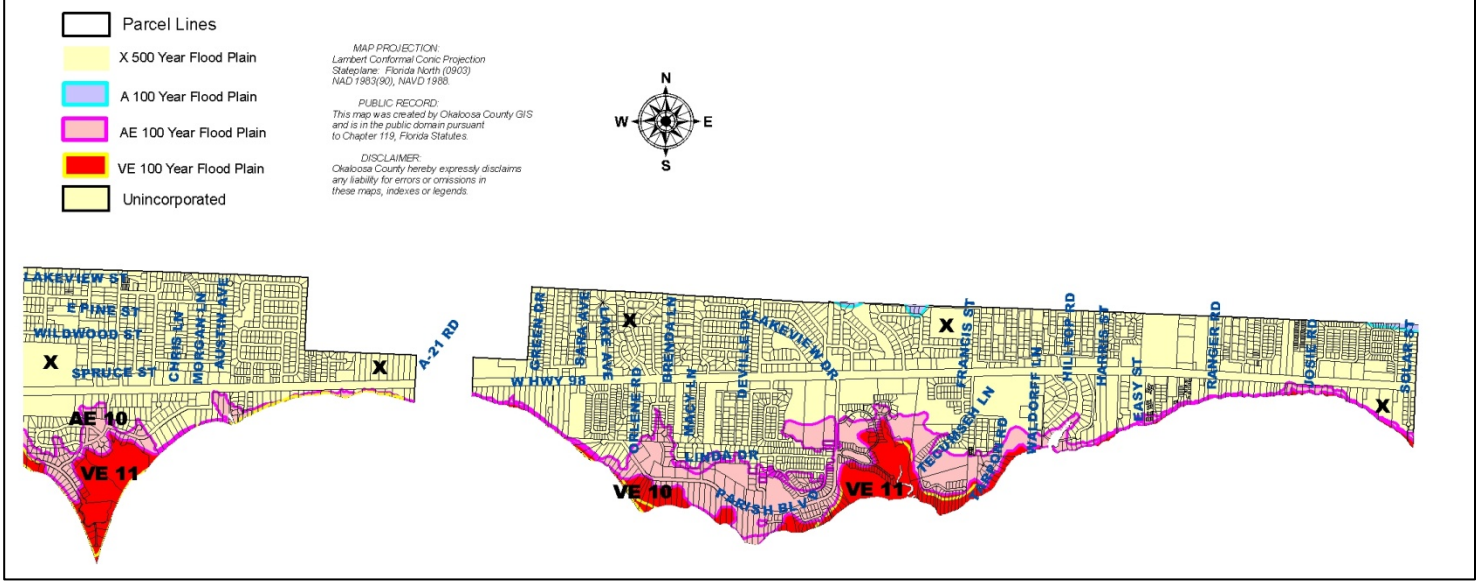
Figure 5.10.01.04.2: Southern Unincorporated Flood Zones



Source: FEMA Map Service Center, Dec 6 2002

Unincorporated Okaloosa County

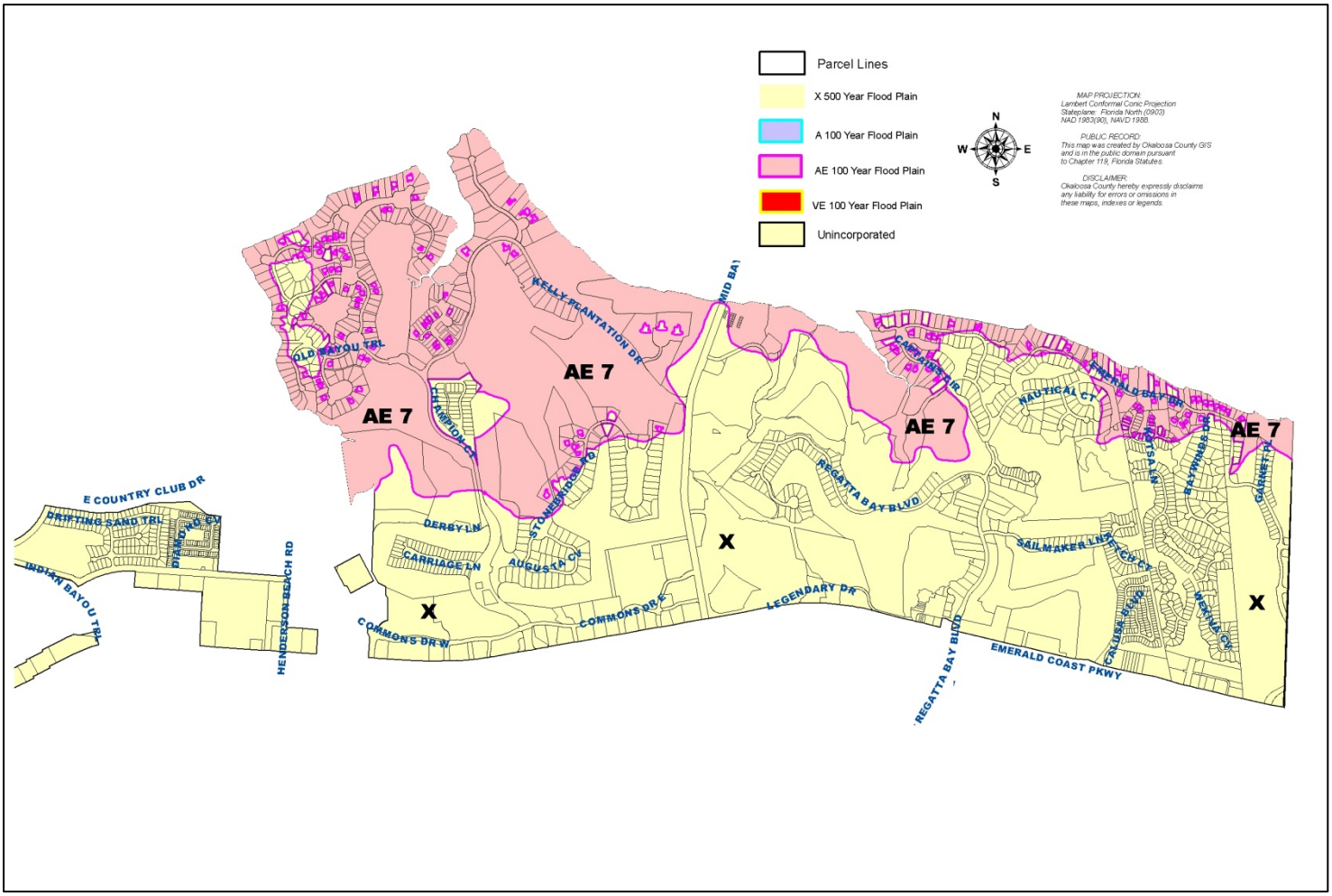
Figure 5.10.01.04.3: Unincorporated Area of Florosa Flood Zones



Source: FEMA Map Service Center, Dec 6 2002

Unincorporated Okaloosa County

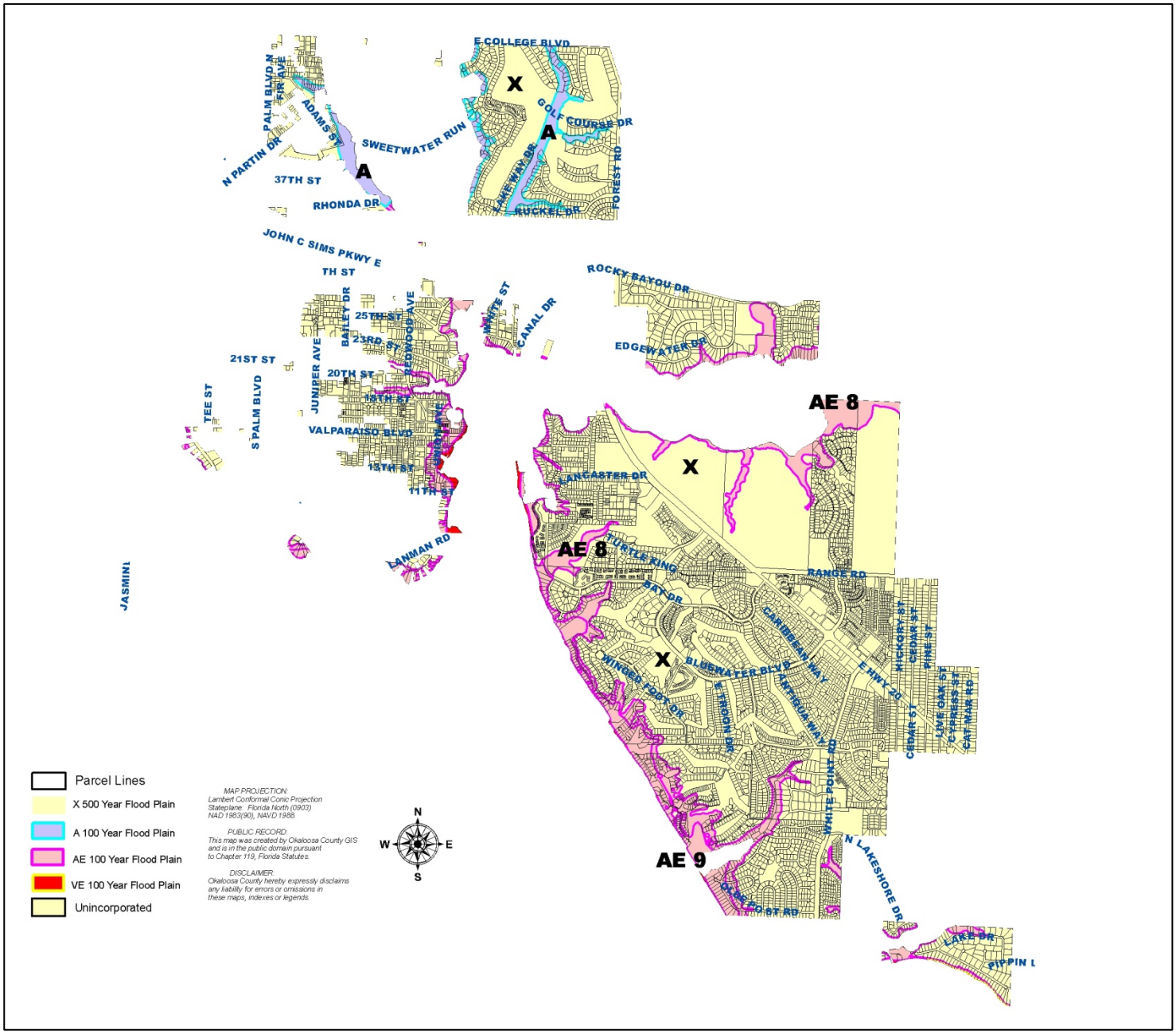
Figure 5.10.01.04.4: Flood Zones of the Unincorporated Area around the City of Destin



Source: FEMA Map Service Center, Dec 6 2002

Unincorporated Okaloosa County

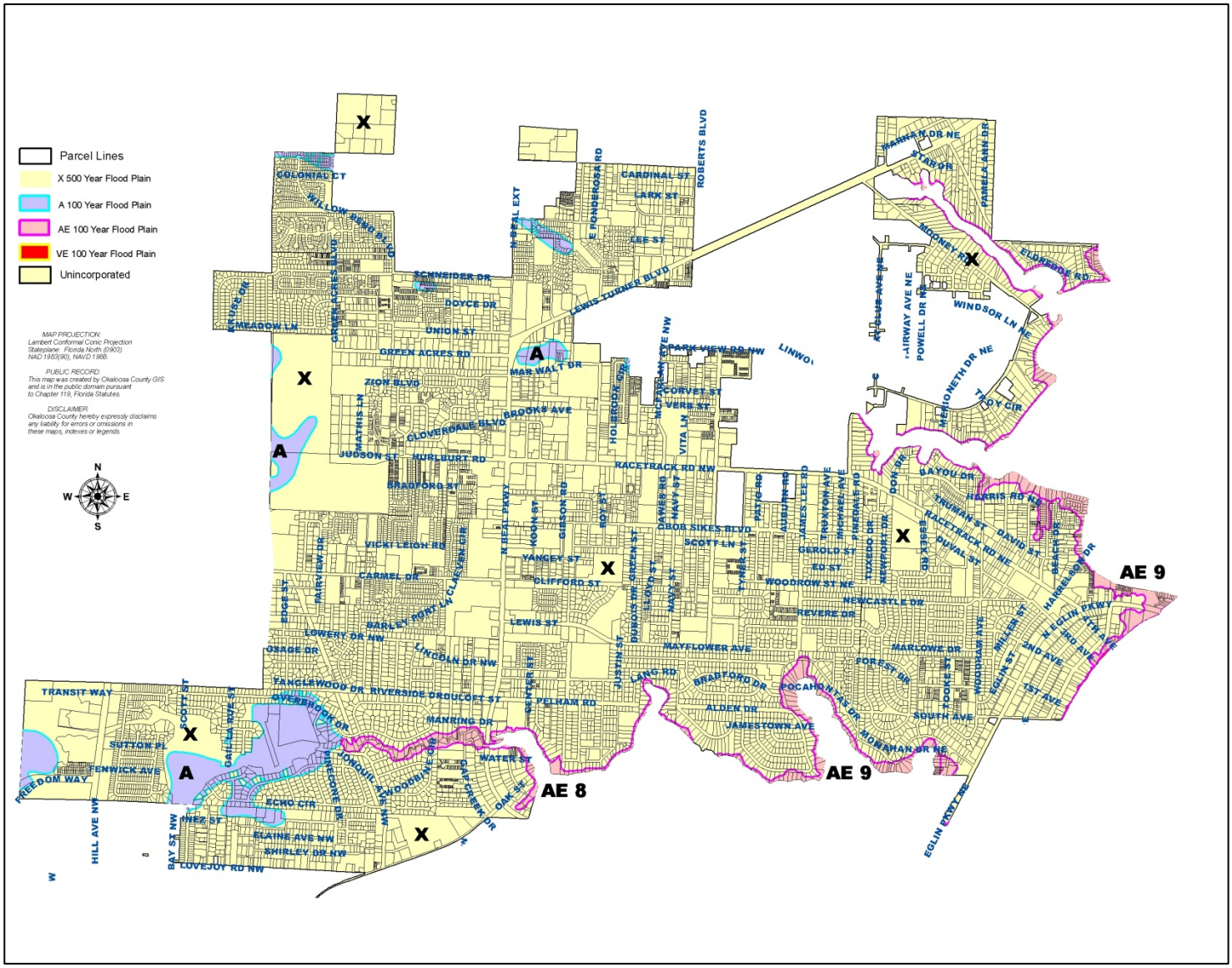
Figure 5.10.01.04.5: Flood Zones of the Unincorporated Area of Bluewater Bay



Source: FEMA Map Service Center, Dec 6 2002

Unincorporated Okaloosa County

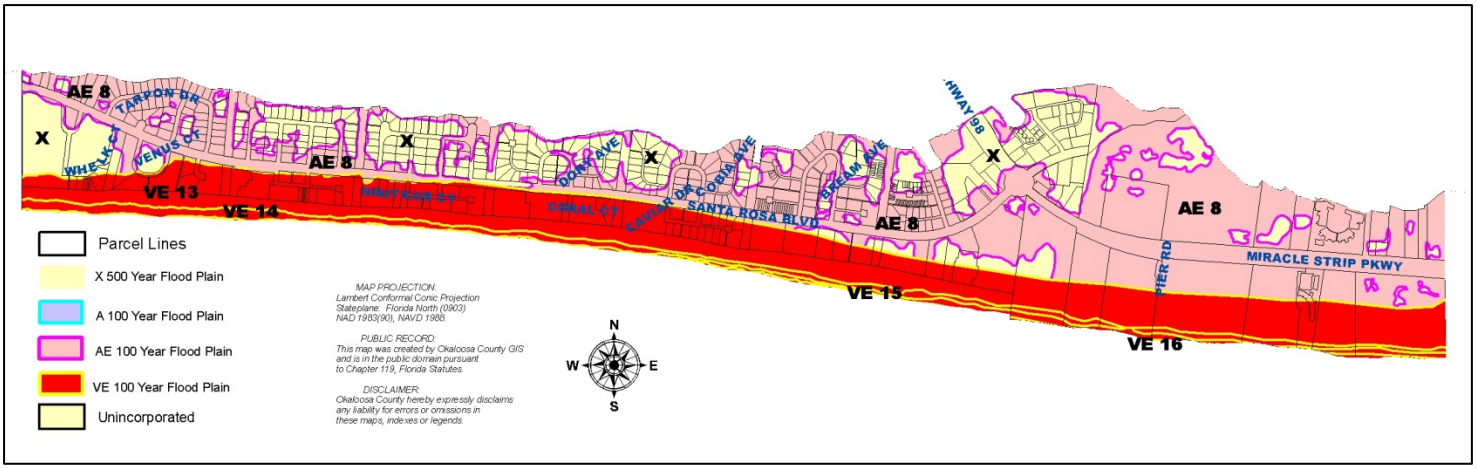
Figure 5.10.01.04.6: Flood Zones of the Unincorporated Area of Ocean City Wright



Source: FEMA Map Service Center, Dec 6 2002

Unincorporated Okaloosa County

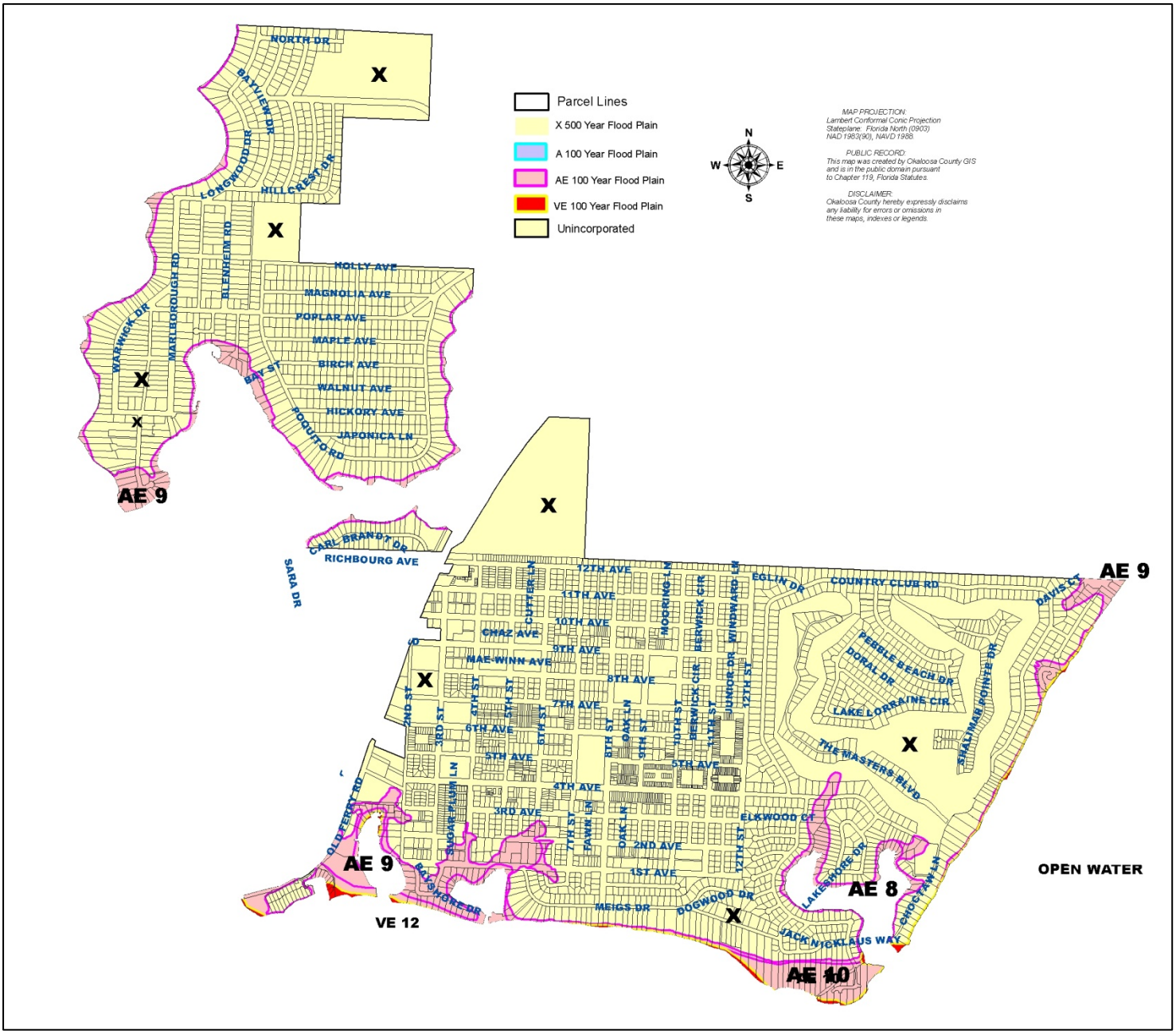
Figure 5.10.01.04.7: Flood Zones of the Unincorporated Area of Okaloosa Island



Source: FEMA Map Service Center, Dec 6 2002

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, Dec 6 2002

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	2000 Census	Estimate Base	2008 Estimate
Okaloosa County	170,498	170,497	179,693
Total Unincorporated	100,849	100,515	104,919
Census Tracts South of Eglin A.F.B.	123,963		
Unincorporated Population	69,629		

Note: The unincorporated population was calculated by subtracting the incorporated population from the total population of the census tracts south of Eglin A. F.B.
Source: 2000 Census, P1 Total Population; U.S. Census Bureau, Population Division

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 back to 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 back to 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 back 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.

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 1958-2009 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 back 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 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:
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.

Unincorporated Okaloosa County

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. All of the unincorporated areas in Okaloosa County are susceptible to heat waves.

HISTORICAL OCCURRENCE:
Please refer back to the Risk Assessment of the overall County for the historical occurrences of heat waves because all of Okaloosa County is equally susceptible to this hazard.

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 back 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 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. *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).

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.

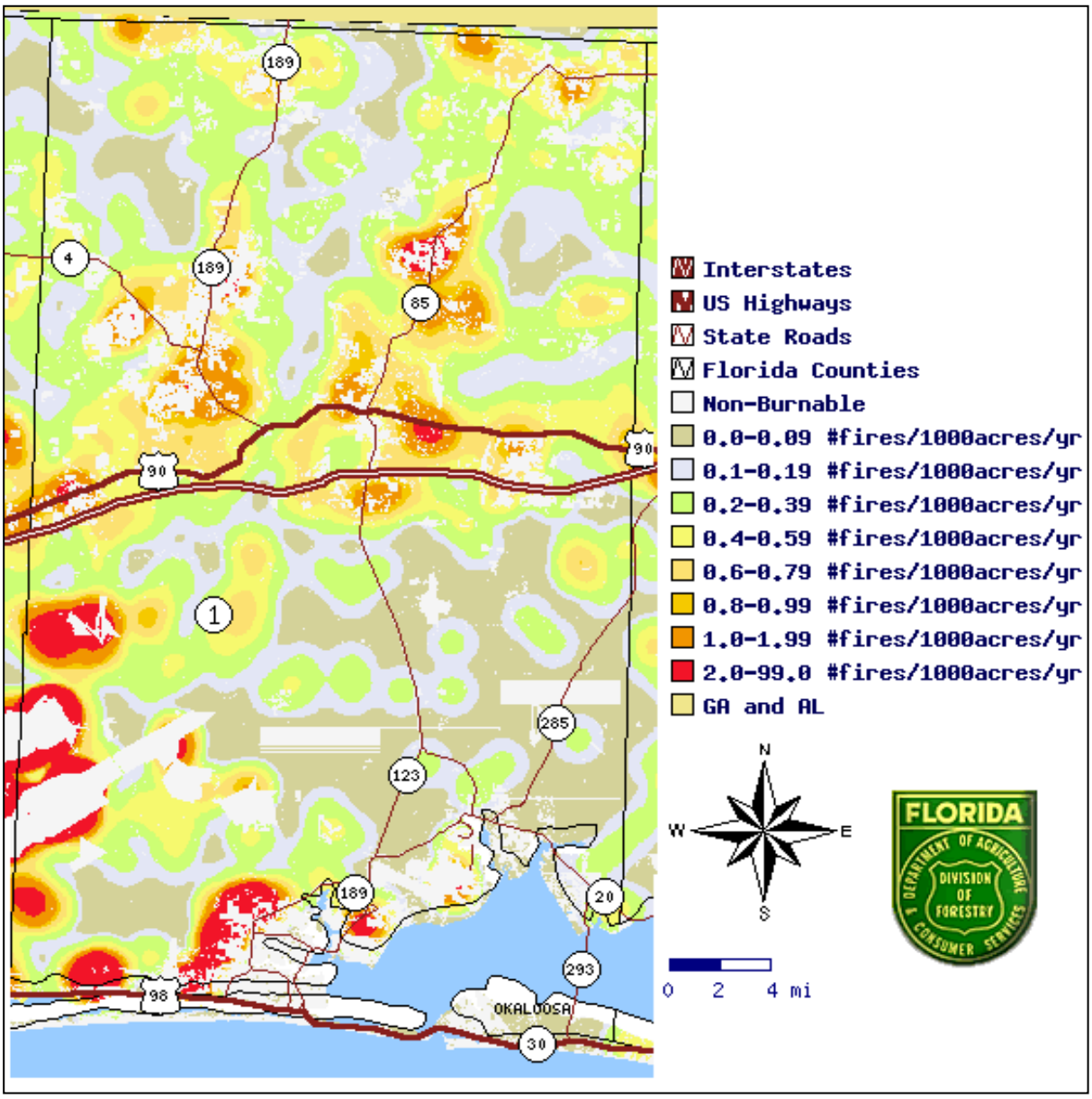
EXTENT:
Based on the Wildland Fire Risk Assessment of Okaloosa County, the worst case scenario would be if the areas with the greatest Level of Concern (LOC) experienced a massive wildfire. These areas have a greater likelihood of danger and destruction due to their inadequate infrastructure, inaccessibility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

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 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. 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



Source: Florida Division of Forestry (WRAS Mapping System)

Unincorporated Okaloosa County

Section 5.10.01.10 Beach Erosion

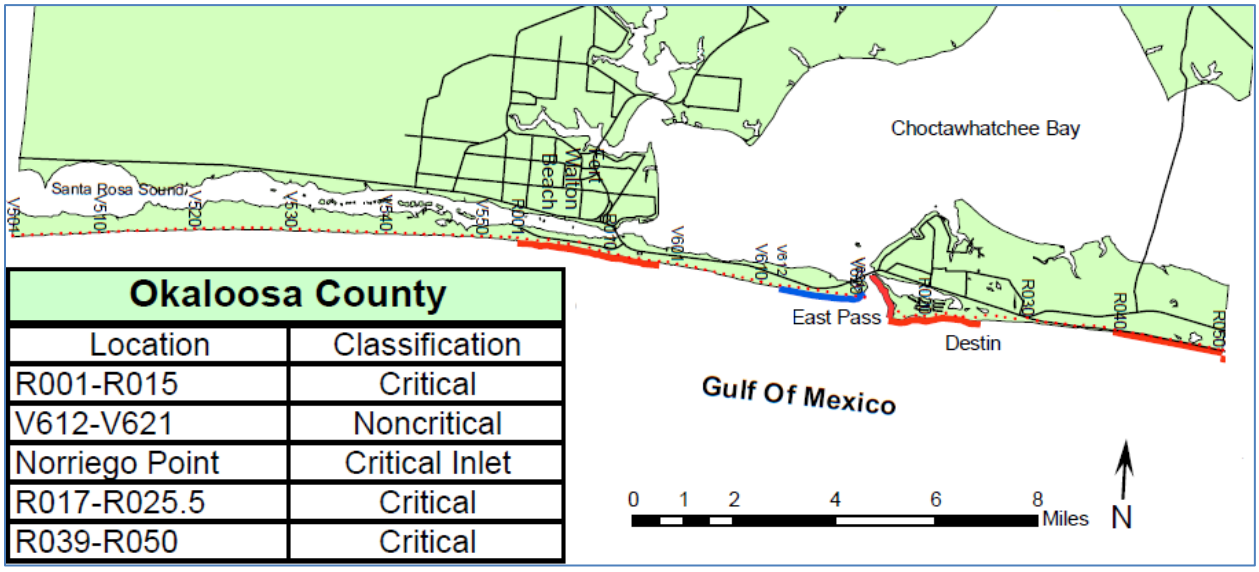
DEFINITION:
Please refer back to the Risk Assessment of the overall County for the definition of this hazard.

The issue of beach erosion is only a coastal issue, 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."

Figure 5.10.01.10.1: Beach Erosion Classification in Okaloosa County, 2009



Okaloosa County	
Location	Classification
R001-R015	Critical
V612-V621	Noncritical
Norriego Point	Critical Inlet
R017-R025.5	Critical
R039-R050	Critical

Source: FDEP Bureau of Beaches and Coastal Systems, 2009

PROBABILITY:
Based on the recent historical data, 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. 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 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 5.10.01.11.01 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 5.10.01.11.02 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:

Unincorporated Okaloosa County

Table 5.10.01.11.02.1: 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.

Section 5.10.01.11.03 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.

Section 5.10.01.11.04 Avalanche

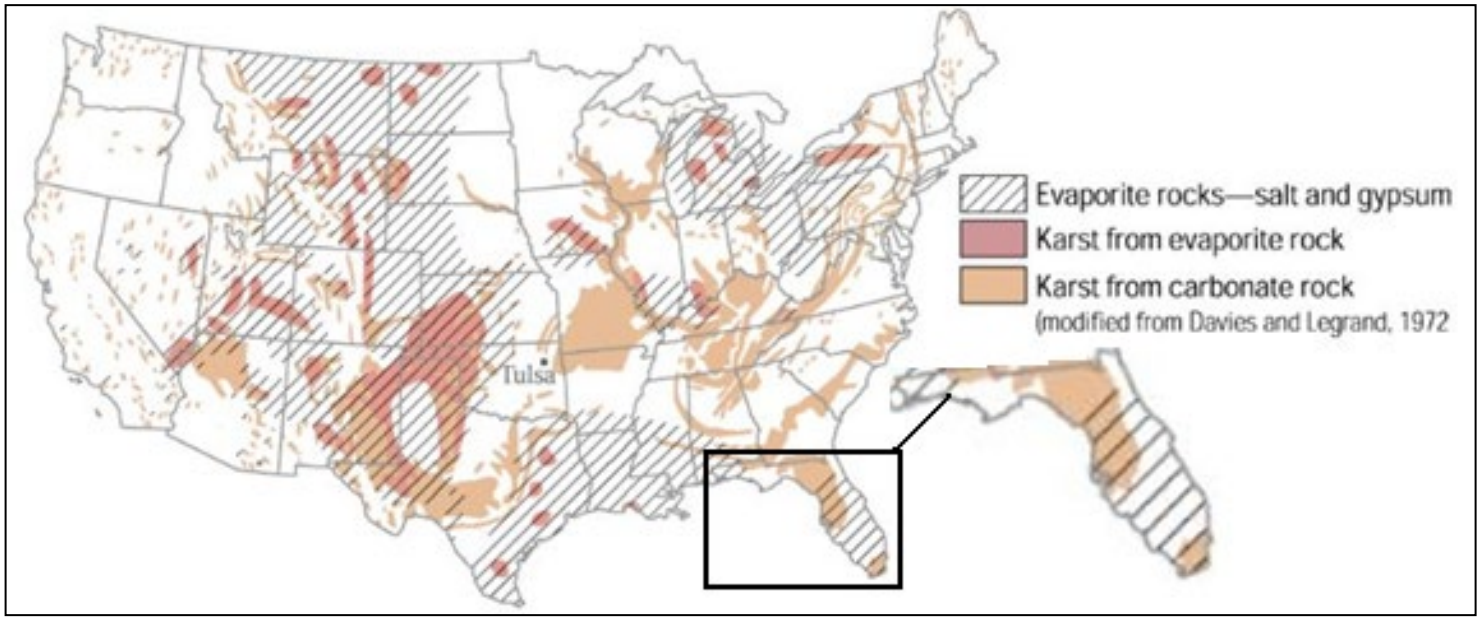
Okaloosa County does not have topography nor snowfall amounts that would create conditions for an avalanche. Since there is no history of this hazard in the county, no further analysis or risk assessment will be conducted for this plan. The future probability of an avalanche occurring in Okaloosa County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

Section 5.10.01.11.05 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 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 5.10.01.11.05.1: Rock types connected to collapse (subsurface cavities/sinkholes) in the U.S.



Source: U.S. Geological Survey

Section 5.10.01.11.06 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.

Section 5.10.01.11.07 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 5.10.01.11.08 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.

Section 5.10.01.12 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. As of this update, the 2020 U.S. Census data is not available. Future updates will contain the new data.

Section 5.10.02.03 Summary Description of Unincorporated Okaloosa County

The unincorporated areas of Okaloosa County house the largest concentration of residents with a total estimated population of 180,822 based on a 2010 Census. There are approximately 53,143 parcels of land in the unincorporated areas that have a "Just Value" of approximately $10,333,259,032.

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 of Mexico, Choctawhatchee Bay, 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.

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. As of this update, the 2020 U.S. Census data is not available. Future updates will contain the new data.

Table 5.10.02.04.1: Estimated Vulnerable Populations in Unincorporated Okaloosa County, 2014

Population	2010 Census Percent Population	2014 Estimate
Elderly	18.6% %	13731
Language Isolation	0.75%	642
Disabled	35.6%	25146
Single Parent	20.15%	2617
Poverty	9.6%	7974
Minority	49.2%	8370

Note: The table was generated through the extrapolation of U.S. Census data (it is only an estimate).
Source: 2010 Census; U.S. Census Population Division

Section 5.10.02.05 Repetitive Loss Properties

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" (FEMA, 2010). 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. The following tables depict the repetitive loss properties and their flood zones in the unincorporated areas in Okaloosa County. As of this update, new Repetitive Loss Property information is being sought through appropriate processes.

Unincorporated Okaloosa County

Table 5.10.02.05.1: Repetitive Loss Properties in Okaloosa County's Unincorporated Area

	Total Building Payment	Total Contents Payment	Total Losses Claimed	Total Paid
Unincorporated	$56,785,038.03	$9,005,406.17	726	$65,790,444.20

Source: FEMA, 2012

Table 5.10.02.05.2: Flood Zones of Repetitive Loss Properties in Okaloosa County's Unincorporated Area

Flood Zones	A,AE	V,VE	B,C,X
Total Properties	154	17	138

Source: FEMA, 2016

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.

Unincorporated Okaloosa County

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, 2010 (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, 2010 (Okaloosa County Staff generated table from overlaying the evacuation zones and property appraiser data)

Unincorporated Okaloosa County

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, 2010 (Okaloosa County Staff generated table from overlaying the surge levels and property appraiser data)

Unincorporated Okaloosa County

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, 2010 (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.

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.

Unincorporated Okaloosa County

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, 2010 and Okaloosa County Property Appraiser Office, 2010

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.

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, 2010 and Okaloosa County Property Appraiser, 2010

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, 2010

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. 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.

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, 2010 (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, 2010 (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 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 5.10.02.16 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.

Unincorporated Okaloosa County

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.

Four of the facilities listed below – the Shoal River Bridge East, Harbor Oaks Hospital, 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 site on which the Harbor Oaks Hospital is constructed was elevated using fill material to above the base flood elevation. It is the County's intention to have this portion of the Floodplain Map changed during the development of the new flood zone maps so that it is no longer within the 100-Year Floodplain.

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.

Unincorporated Okaloosa County

Section 5.10.03.01 Fire Stations

Site Name	Address	X-COORD	Y-COORD
ALMARANTE VFD	3710 OLD CALIFORNIA RD LAUREL HILL FL 32567	1347795.29	709736.339
BAKER VFD	1375 19TH ST BAKER FL 32531	1284182.863	661610.824
BLACKMAN VFD	1850 HWY 2 BAKER FL 32531	1299099.56	706278.388
DORCAS FIRE DEPARTMENT	4418 POVERTY CREEK RD CRESTVIEW FL 32539	1364699.02	660961.18
DORCAS VFD #1	5871 HWY 393 CRESTVIEW FL 32539	1365656.199	659277.6
DORCAS VFD #2	5232 DEER SPRINGS DR CRESTVIEW FL 32539	1357755.62	642472.739
FLOROSA VFD #5	1900 W HIGHWAY 98 MARY ESTHER FL 32569	1263205.265	520543.665
HOLT VFD	490 HWY 90 W HOLT FL 32564	1261189.614	630042.284
NORTH BAY FD	1024 WHITE POINT RD NICEVILLE FL 32578	1364764.04	539541.281
NORTH OKALOOSA AIRPORT	5545 JOHN GIVENS RD CRESTVIEW FL 32539	1332838.6	651256.599
NORTH OKALOOSA FD #1	3050 HEMPHILL RD CRESTVIEW FL 32536	1328822.218	668546.902
NORTH OKALOOSA FD #3	5241 HWY 4 BAKER FL 32531	1294735.041	644653.969
NORTH OKALOOSA FIRE	429 JOHN KING RD CRESTVIEW FL 32539	1326791.074	631255.582
OCEAN CITY/WRIGHT FD #1	2 RACETRACK RD NE FORT WALTON BEACH FL 32547	1302488.186	533207.394
OCEAN CITY/WRIGHT FD #3	24 OAK ST FORT WALTON BEACH FL 32548	1294901.249	526047.162
OKALOOSA ISLAND FD #4	104 SANTA ROSA BLVD FORT WALTON BEACH FL 32548	1306647.319	514297.711

Section 5.10.03.02 Government Centers

Site Name	Address	X-COORD	Y-COORD
COUNTY WATER & SEWER	1804 LEWIS TURNER BLVD STE 400 FORT WALTON BEACH FL 32547	1297718.456	537775.713
COUNTY ADMINISTRATION BUILDING	1250 NORTH EGLIN PKWY SHALIMAR	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

Section 5.10.03.04 Adult Congregate Living Facilities

Site Name	Address	X-COORD	Y-COORD
BEVERLY HEALTHCARE	500 SOUTH AVE FORT WALTON BEACH FL 32547	1302706.642	527770.464
FWB DEVELOPMENT CENTER	113 BARKS DR FORT WALTON BEACH FL 32547	1295261.173	535791.02
GULF COAST TREATMENT CENTER	120 BARKS DR FORT WALTON BEACH FL 32547	1295570.066	535354.276
MANOR AT BLUEWATER BAY	1500 NORTH WHITE POINT RD ROOM 101 NICEVILLE FL 32578	1365917.641	544414.428
PARTHENON OF FWB	1 LBJ SR DR FORT WALTON BEACH FL 32547	1295543.392	538075.59
STERLING HOUSE OF	1551 MERCHANTS WAY ROOM 101 NICEVILLE FL 32578	1364291.65	546176.21
WELLINGTON PLACE	233 CARMEL DR FORT WALTON BEACH FL 32547	1292451.88	530962.852

Section 5.10.03.05 Public Works Facilities

Site Name	Address	X-COORD	Y-COORD
CRESTVIEW INDUSTRIAL PARK WWTP	5581 FAIRCHILD RD CRESTVIEW FL 32539	1335793.2	652677.4
GARNIER'S WASTE WATER TREATMENT	714 ESSEX RD FORT WALTON BEACH FL 32547	1303466.068	531289.413
OKALOOSA CO FACILITY MAINTENANCE	5489 OLD BETHEL RD CRESTVIEW FL 32536	1310222	650629
WATER RECLAMATION FACILITY	3182 W HIGHWAY 98 MARY ESTHER FL 32569	1244313.22	520348.398

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Section 5.10.03.06 Rapid Impact Assessment Team Reference Points

Site Name	Address	X-COORD	Y-COORD
BAKER COMMUNITY	5808 HWY 189 N BLDG B BAKER FL 32531	1283506.383	660384.987
FLOROSA COMMUNITY	1700 W HIGHWAY 98 MARY ESTHER FL 32569	1263233.649	520504.845
OKALOOSA ISLAND	1250 MIRACLE STRIP PKWY FORT WALTON BEACH FL 32548	1308090.252	514052.674
SEA SHORE VILLAGE COMMUNITY		1262358.063	520354.833
SHALIMAR BRIDGE		1309096.116	530041.66
SHOAL RIVER BRIDGE EAST		1365452.374	656352.173
SHOAL RIVER BRIDGE NORTH		1337425.743	643233.505
SHOAL RIVER BRIDGE SOUTH		1317514.415	623172.813
WYNNHAVEN BEACH		1254240.696	520157.561

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

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.

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Section 5.10.03.10 Mobile Home Parks and RV Campgrounds

Site Name	Address	X-COORD	Y-COORD
LOG LAKE ROAD RV PARK	4504 LOG LAKE RD HOLT FL 32564	1261045.056	627255.168
RIVERS EDGE RV CAMPGROUND	4001 LOG LAKE RD HOLT FL 32564	1261236.97	615905.29
ACTION ON BLACKWATER RIVER	6293 W HWY 4 BAKER FL 32531	1268107.822	673594.228
ADAM'S MOBILE HOME PARK	800 CARDINAL ST LOT 4 FORT WALTON BEACH FL 32547	1297385.939	539750.435
ANCHOR TRAILER PARK	509 23RD ST LOT 8 NICEVILLE FL 32578	1348969.65	554439.618
ASTOR MOBILE RENTALS	21 8TH AVE SHALIMAR FL 32579	1314808.944	531042.465
AZALEA TRAILER PARK	326 CARMEL DR LOT 41 FORT WALTON BEACH FL 32547	1290819	530615.187
BAY COVE TRAILER PARK	60 BAYOU DR LOT 20 FORT WALTON BEACH FL 32547	1303778.372	533364.614
BEACH DRIVE MOBILE HOME PARK	117 BEACH DR FORT WALTON BEACH FL 32547	1306996.807	531262.091
BETHEA MOBILE HOME PARK	505E SCOTT LN FORT WALTON BEACH FL 32547	1298750.511	531570.762
BETTY'S TP	662 DENTON BLVD FORT WALTON BEACH FL 32547	1299123.249	530495.187
BOEHNERS VILLAGE	105 HARDING RD NICEVILLE FL 32578	1349616.25	551703.062
BRAD MAR TRAILER PARK	843 GIBSON RD LOT 2 FORT WALTON BEACH FL 32547	1296013.002	532547.175
BRAD MAR TRAILER PARK #1	155 AIR FORCE ST FORT WALTON BEACH FL 32547	1299014.171	532959.808
CAMERON'S TP	208 CASPER DR LOT 4 FORT WALTON BEACH FL 32547	1295529	527669.187
CANNONS TP	2210 JAMES LEE BLVD W LOT 11 CRESTVIEW FL 32536	1306162.6	645133.199
CAPRI COMMONS	928 CARLOS DR FORT WALTON BEACH FL 32547	1298396.749	534143.874
CARDINAL COVE	821 CARDINAL ST LOT G FORT WALTON BEACH FL 32547	1298178.251	539908.124

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Site Name	Address	X-COORD	Y-COORD
CEDAR CREEK MOBILE HOME PARK	5301 HARE ST LOT 23 CRESTVIEW FL 32539	1332247.125	645093.624
COACHLIGHT PARK	705 LLOYD ST LOT 4 FORT WALTON BEACH FL 32547	1298102.124	530931.937
COUNTRY BREEZE	510 UNION ST LOT 9 FORT WALTON BEACH FL 32547	1292901.524	536213.389
CROSSWINDS	208 SPRUCE ST LOT 1 MARY ESTHER FL 32569	1246995.068	520460.498
D&D MH PARK	8B BRADFORD ST FORT WALTON BEACH FL 32547	1293396.897	533069.468
DENTON MH PARK	675 DENTON BLVD LOT 19 FORT WALTON BEACH FL 32547	1299552	530859.874
DESTIN WEST RV RESORT	1310 MIRACLE STRIP PKWY FORT WALTON BEACH	4703615.007069	5299878.853313
DURHAM MOBILE HOME PARK	49 BRENDA LN MARY ESTHER FL 32569	1256893.99	520645.921
EAST BLUEBERRY COUNTRY ESTATES	5975 COBBLER LN CRESTVIEW FL 32539	1326622.156	662975.993
EMILY'S MOBILE HOME PARK	156 RICKEY AVE NE LOT 4 FORT WALTON BEACH FL 32547	1306507.875	532284.124
EVAN'S TP	729 GREEN ST LOT 7 FORT WALTON BEACH FL 32547	1297682.875	531700.5
FAIRVIEW HEIGHTS MOBILE HOME P	818 FAIRVIEW DR LOT 1 FORT WALTON BEACH FL 32547	1290446.948	531795.357
FOREST GROVE MH PARK	1318 LEWIS TURNER BLVD LOT 20 FORT WALTON BEACH FL 32547	1295322.875	536802.437
FORSTROMS MOBILE HOME PARK	1504 18TH ST NICEVILLE FL 32578	1349551.57	552160.358
FRED GANNON STATE PARK(ROCKY B	4281 HWY 20 E NICEVILLE FL 32578	1360387.817	549678.818
FUNLAND TRAILER COURT	825 N EGLIN PKWY LOT 9 FORT WALTON BEACH FL 32547	1308336.25	529651.999
GRANTS TRAILER PARK	411 LAKEVIEW ST MARY ESTHER FL 32569	1246913.663	522186.477
GRAY'S TRAILER PARK	678 KEHLHEM RD FORT WALTON BEACH FL 32547	1298600.319	530324.373

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Site Name	Address	X-COORD	Y-COORD
GREENWOOD MOBILE HOME COMMUNITY	103 JACKSON ST LOT 13 FT WALTON BEACH FL 32547	1304773.625	531210.375
HILLTOP TP	931 JAMES LEE BLVD W LOT 7 CRESTVIEW FL 32536	1310753.154	647590.173
HOUSTON PARK	239 CARMEL DR LOT 5 FORT WALTON BEACH FL 32547	1291910.75	531004.686
HUDSONS MH PARK	826 MAYO TRL LOT 16 CRESTVIEW FL 32536	1311434.6	647198.4
KILLINGSWORTH MH PARK	106 LINCOLN DR NW LOT 4 FORT WALTON BEACH FL 32547	1293650.625	529340.936
LAURENT MOBILE HOME PARK	2496 HWY 98 W LOT 1 MARY ESTHER FL 32569	1255576.04	520342.663
LAZY OAKS TRAILER PARK	4600 WILKERSON BLUFF RD LOT A HOLT FL 32564	1284673.01	627442.33
LLOYD STREET MOBILE HOME PARK	724 LLOYD ST LOT 3 FORT WALTON BEACH FL 32547	1297773.375	531467.75
MAJOR MANOR	801 FAIRVIEW DR LOT 1 FORT WALTON BEACH FL 32547	1290613.344	531029.716
MINNIE MANOR	114 SKIPPER AVE LOT C FORT WALTON BEACH FL 32547	1305371.375	530678.937
MOORE'S TRAILER PARK	15 9TH ST SHALIMAR FL 32579	1316642.458	528696.693
NORTH STAR TRAILER PARK	310 FORREST AVE MARY ESTHER FL 32569	1244899.574	521586.265
OAKDALE VILLAGE MOBILE HOME PA	820 GIBSON RD LOT 1 FORT WALTON BEACH FL 32547	1295828.912	531546.594
PALM TRAILER PARK	1015 PARTIN DR N LOT 8 NICEVILLE FL 32578	1347301.499	560278.25
PARKER'S TP	814 TANAGER RD LOT 1 FORT WALTON BEACH FL 32547	1297038.083	539235.647
PATTY'S TP	781 NAVY ST FORT WALTON BEACH FL 32547	1298450.5	531252.999
PAULETTES TRAILER COURT	1778 HURLBURT RD LOT 1 FORT WALTON BEACH FL 32547	1292395.999	533495.784
PEGGY MARLER MOBILE HOME PARK	1303A BEVERLY ST FORT WALTON BEACH FL 32547	1293482.999	536149.318

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PINECREST TRAILER PARK	441 RACETRACK RD NW LOT 20 FORT WALTON BEACH FL 32547	1295435.75	533254.937
PINEOAKS TRAILER PARK	622 GAP CREEK DR LOT 9 FORT WALTON BEACH FL 32548	1293348.124	526495.562
PLANTATION COVE	816 TANAGER RD LOT 1 FORT WALTON BEACH FL 32547	1297496.392	538984.478

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Site Name	Address	X-COORD	Y-COORD
PLAYGROUND MH PARK	777 N BEAL PKWY LOT 34 FORT WALTON BEACH FL 32547	1295424.626	531396.937
PLAYGROUND MOBILE HOME PARK II	807 GIBSON RD FORT WALTON BEACH FL 32547	1295967.047	531403.417
QUALITY TRAILER PARK	1814 HURLBURT RD LOT 1 FORT WALTON BEACH FL 32547	1293193.637	533471.246
ROBERTS TP	1649 JAMES LEE BLVD E LOT 15 CRESTVIEW FL 32539	1325251.8	645351.2
ROSES TRAILER PARK	3389 W HIGHWAY 98 LOT 16 MARY ESTHER FL 32569	1244368.824	519659.353
RUZOWSKI TRAILER PARK	134 FETTING AVE NW LOT 4 FORT WALTON BEACH FL 32547	1295419.125	532619.187
RYALS' TRAILER PARK	800 LARK ST LOT 1 FORT WALTON BEACH FL 32547	1297071.425	539432.063
SANDERS TRAILER PARK	703 SHADY LANE DR FORT WALTON BEACH FL 32547	1293500.418	528294.491
SCROGGINS TRAILER PARK	711C NAVY ST FORT WALTON BEACH FL 32547	1298472.25	530927.875
SHADY LANE TP	118 KOON ST LOT 4 FORT WALTON BEACH FL 32547	1295144.125	531940.999
SHALIMAR PARK	46 3RD ST LOT 23 SHALIMAR FL 32579	1313921	530345.312
SHANYN'S MH PARK	820 TANAGER RD LOT 5 FORT WALTON BEACH FL 32547	1297753.33	538751.863
SIMPLERS TP	1303 GREEN ACRES AVE FORT WALTON BEACH FL 32547	1292205.5	536105.561
SIR ROBERTS TP	1302 GREEN ACRES AVE LOT 18A FORT WALTON BEACH FL 32547	1291990.839	535980.128
T H MOBILE HOME PARK	5294 CAVALIER DR CRESTVIEW FL 32539	1333275	644833.399
THOMAS TP	701 LEONARD RD LOT 4 FORT WALTON BEACH FL 32547	1294867.125	531212.375
TJP ENTERPRISE	1041 48TH ST LOT B NICEVILLE FL 32578	1348076.661	562919.72
TYNER COURT	700 TYNER ST LOT 3 FORT WALTON BEACH FL 32547	1299836	530850.437
VACHE ROYALE	800 DENTON BLVD LOT 8 FORT WALTON BEACH FL 32547	1299105.75	532216.624

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Site Name	Address	X-COORD	Y-COORD
VILLA WINDS TP	678 DENTON BLVD LOT 7 FORT WALTON BEACH FL 32547	1299175.25	531386.5
WADE TRAILER PARK	101 SASSER ST NICEVILLE FL 32578	1349514.875	554600.437
WARD'S MH PARK	1502 W PONDEROSA RD FORT WALTON BEACH FL 32547	1296407.875	538867.187
WHISPERING PINES TRAILER PARK	1 NEWCASTLE DR LOT A FORT WALTON BEACH FL 32547	1299303.181	530418.759
WILLIAMS COURT VENTURES	916 WILLIAMS CT FORT WALTON BEACH FL 32547	1296505.494	530987.587
ZUPCO MOBILE HOME COURT	226A OAKHILL AVE FORT WALTON BEACH FL 32547	1295686.801	528725.816

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 sec. 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*
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 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*
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*
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*

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*
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*

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 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 affects 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*

Unincorporated Okaloosa County

Section 5.10.05 Maps

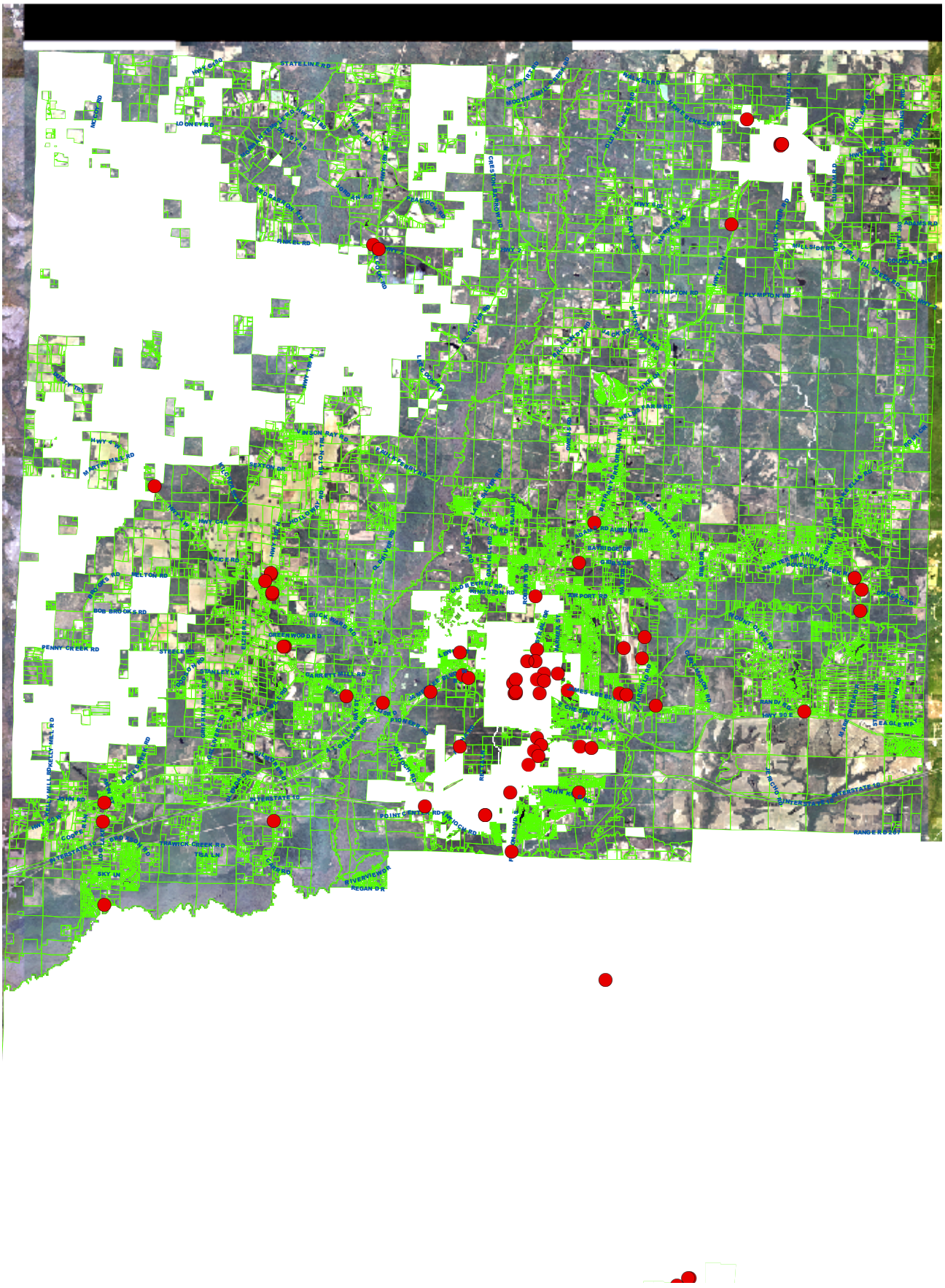
Attached to this page are maps of Okaloosa County. They include:

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Unincorporated Okaloosa County

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North Okaloosa Critical Facilities



Parcel Lines
Critical Facilities

Source: Okaloosa County Public Safety, 2010

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Stateplane: Florida North (0903)
NAD 1983(90), NAVD 1988.

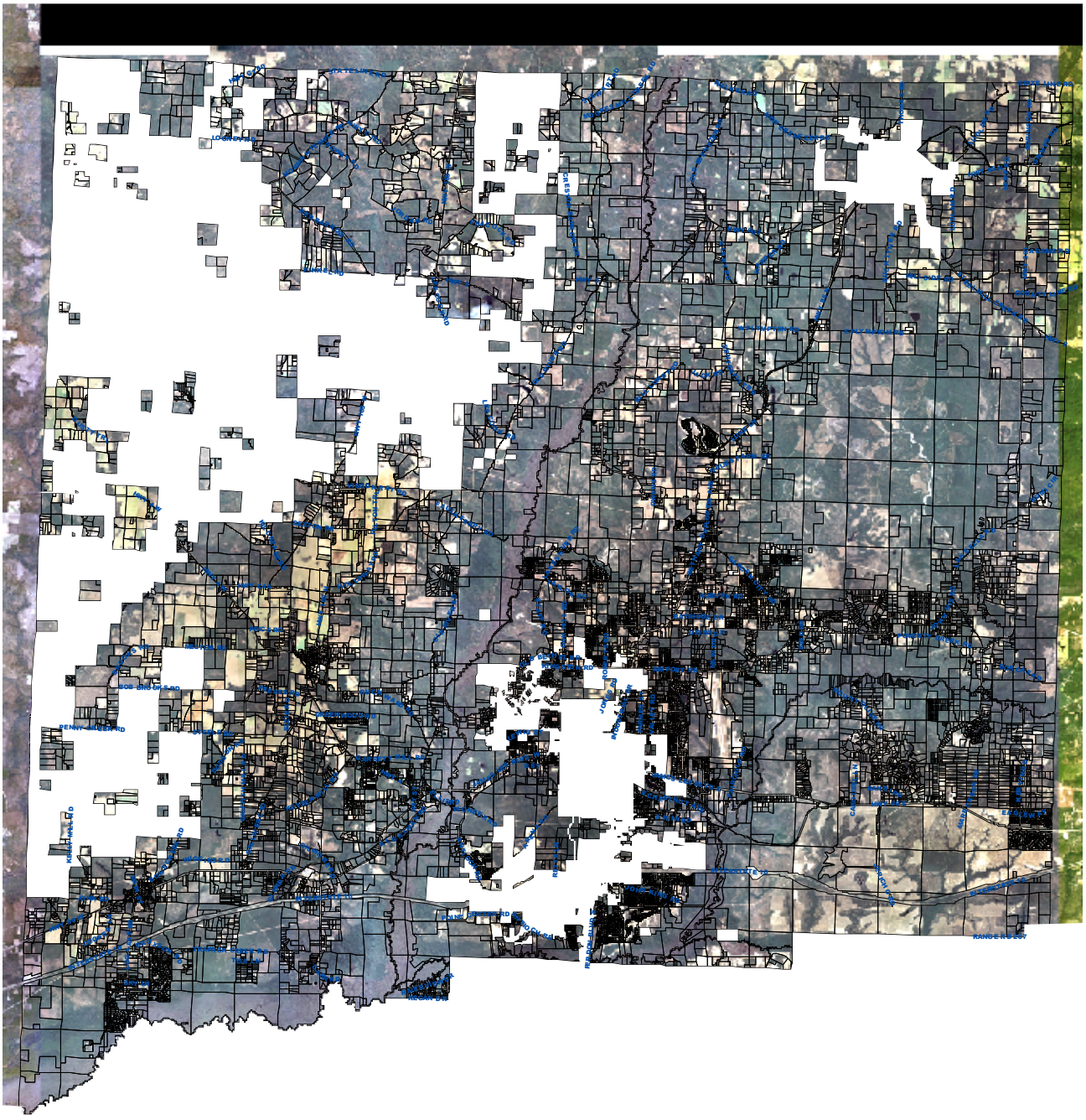
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North Okaloosa Evacuation Zones



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 North End of the County

Source: Okaloosa County Public Safety, 2010

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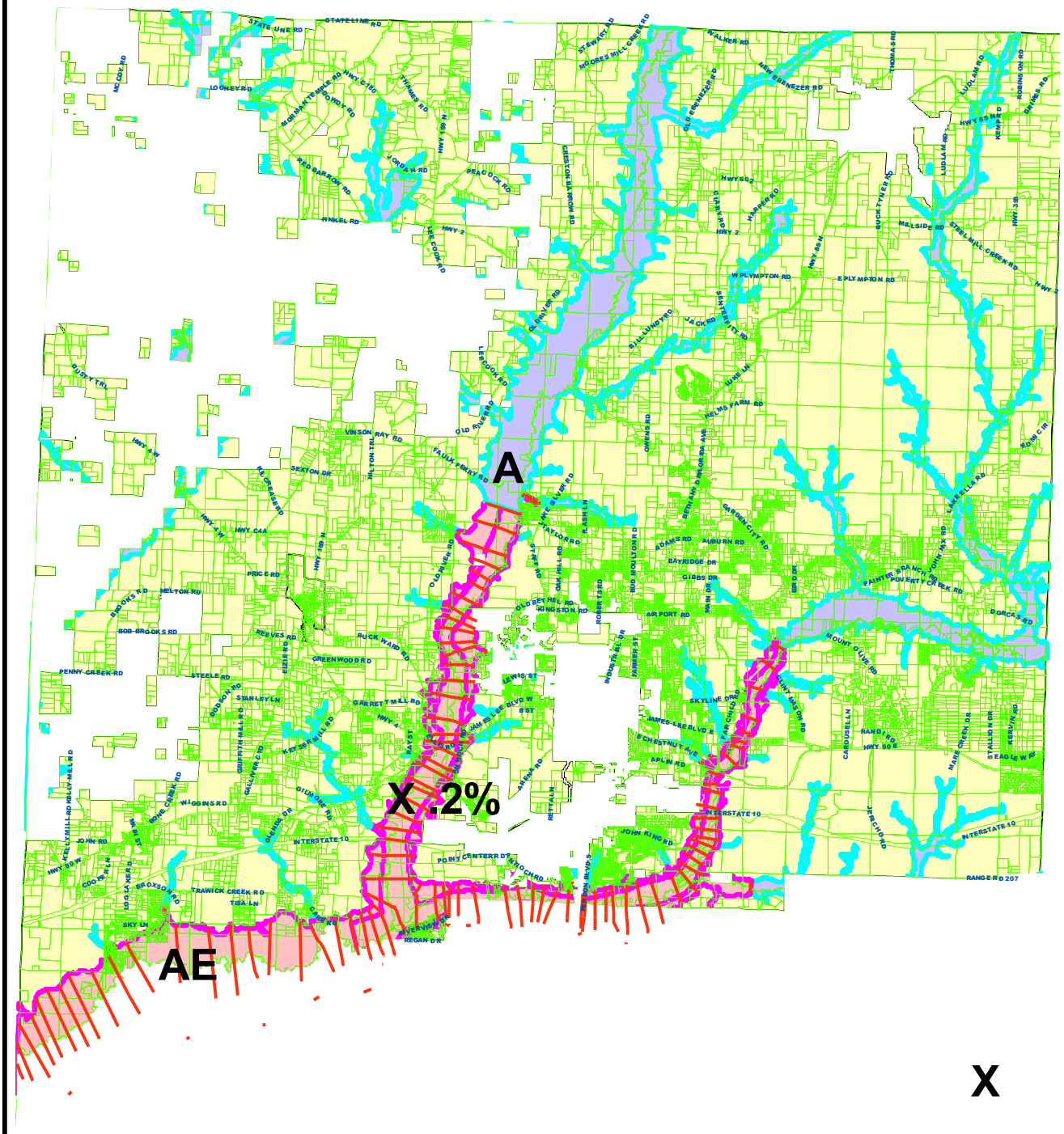
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North Okaloosa Flood Zones



- 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

Source: FEMA Map Service Center, Dec 6 2002

MAP PROJECTION:
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NAD 1983(90), NAVD 1988.

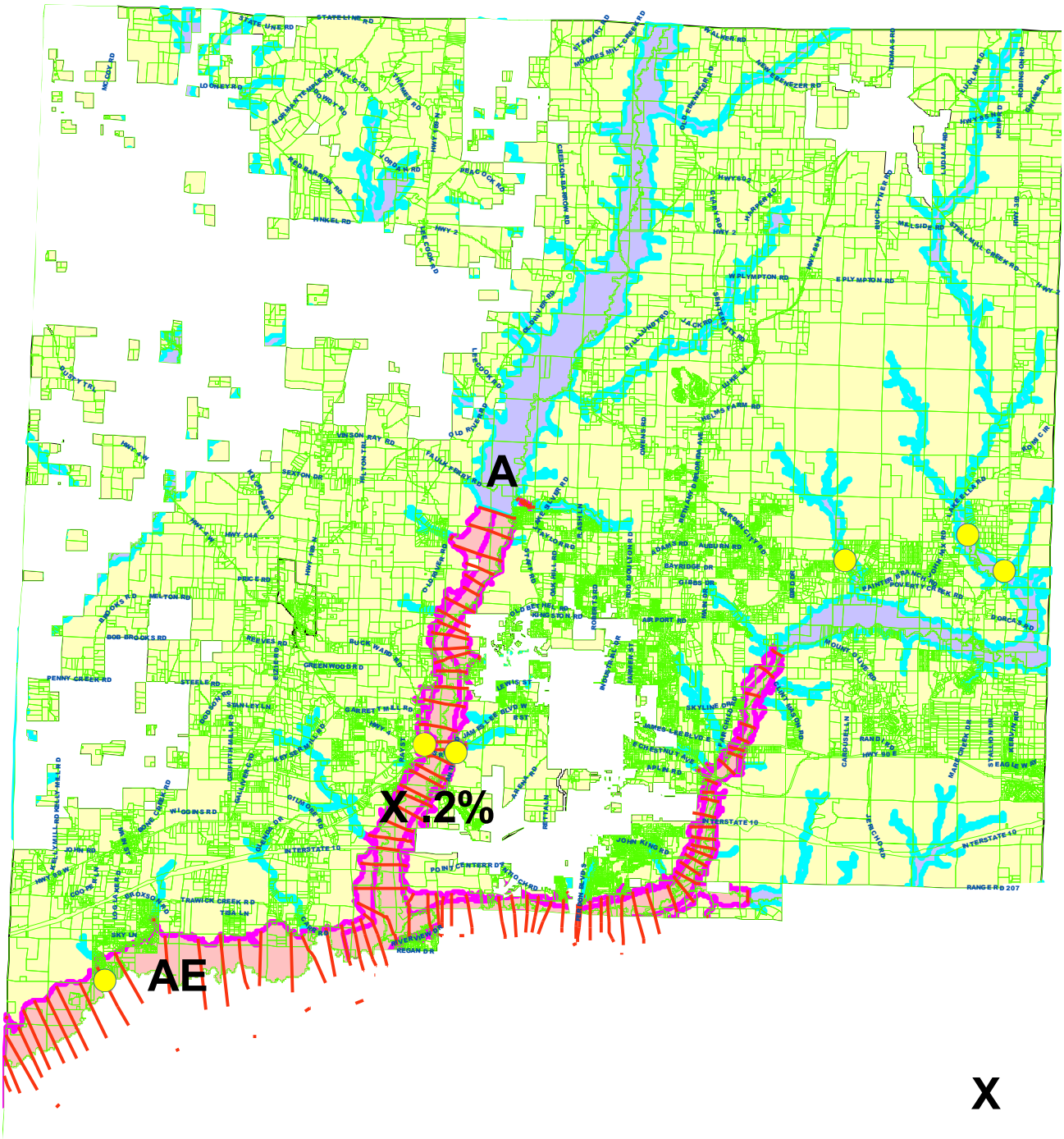
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North Okaloosa Repetitive Loss Properties



- 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

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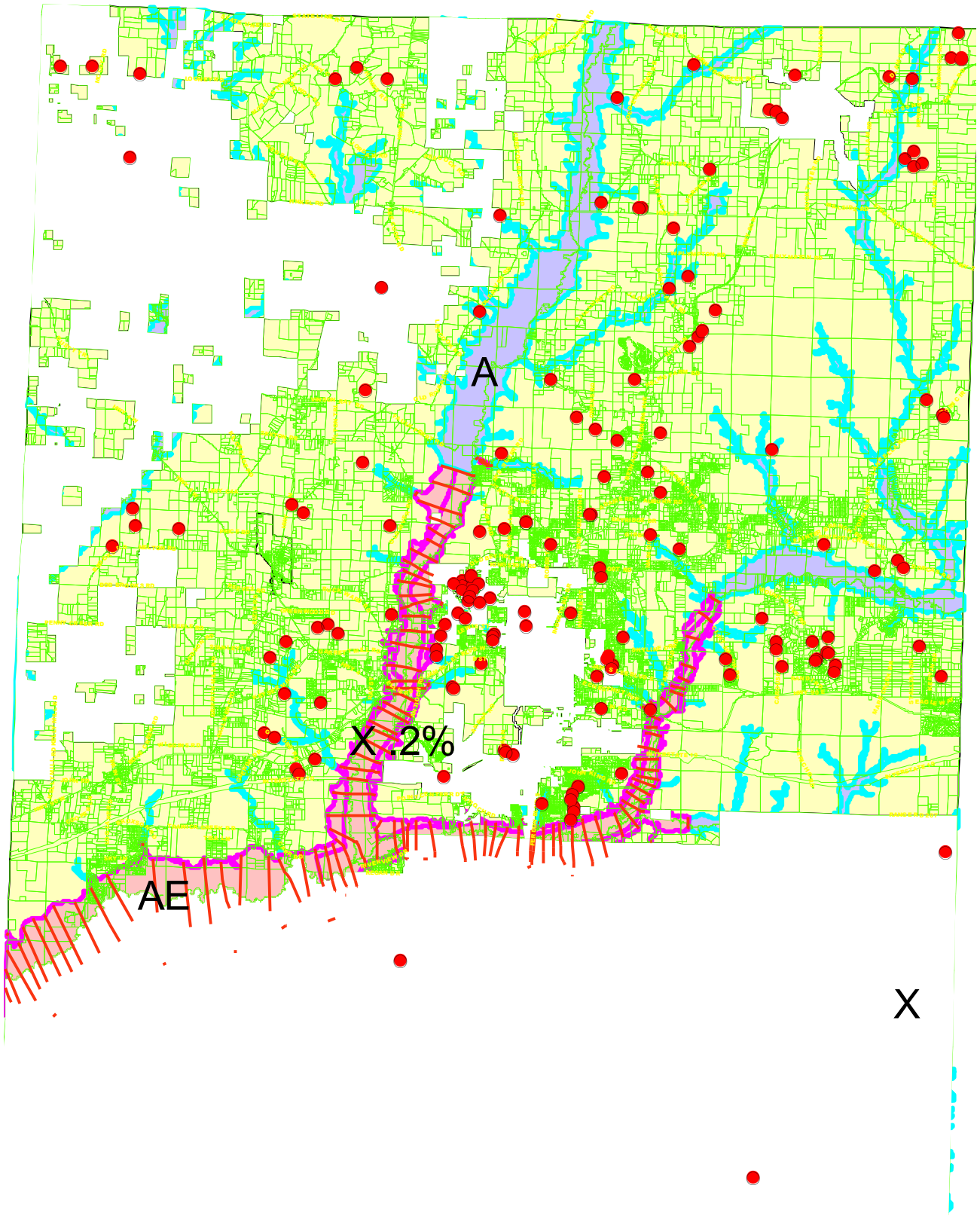
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North Okaloosa Flood Zones & Dam Sites



- 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
- Dams
- Unincorporated

Source: North West Florida Water Management District FEMA Map Service Center, Dec 6 2002

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NAD 1983(90), NAVD 1988.

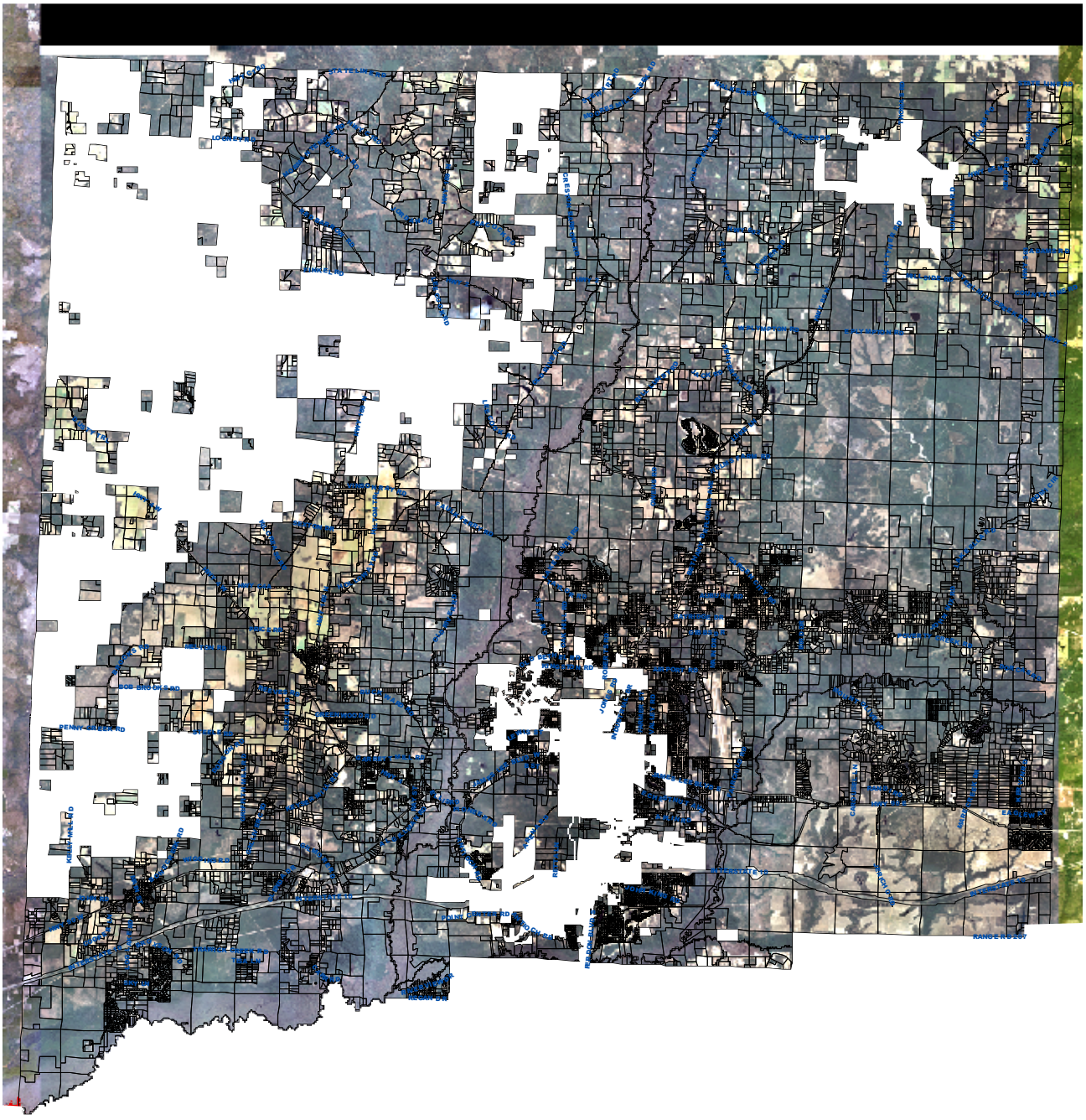
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North Okaloosa Surge Zones



Parcel Lines
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, 2010

MAP PROJECTION:
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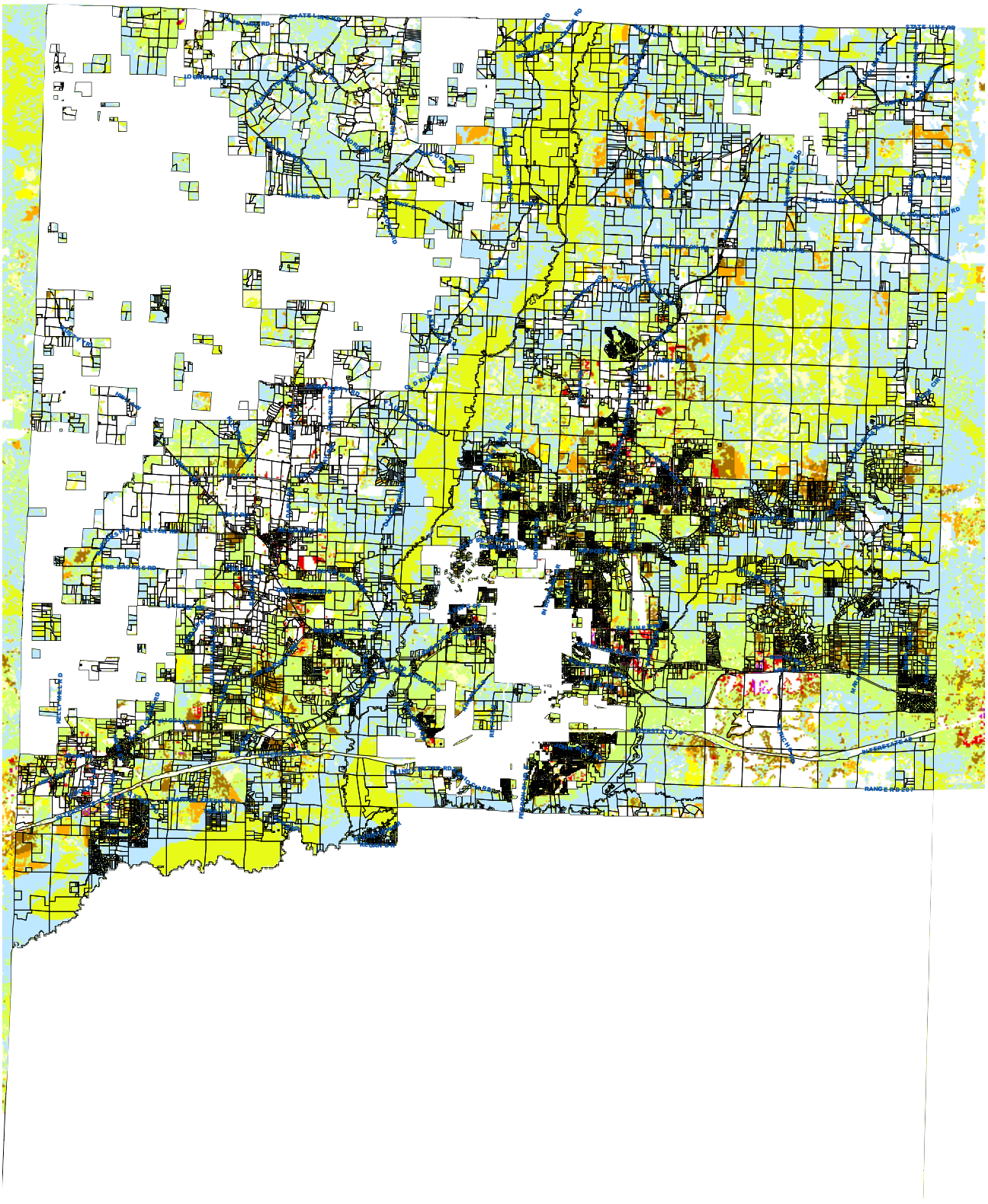
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North Okaloosa Wildfire Level of Concern



Parcel Lines

Level of Concern

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9

Source: Florida Division of Forestry, 2010

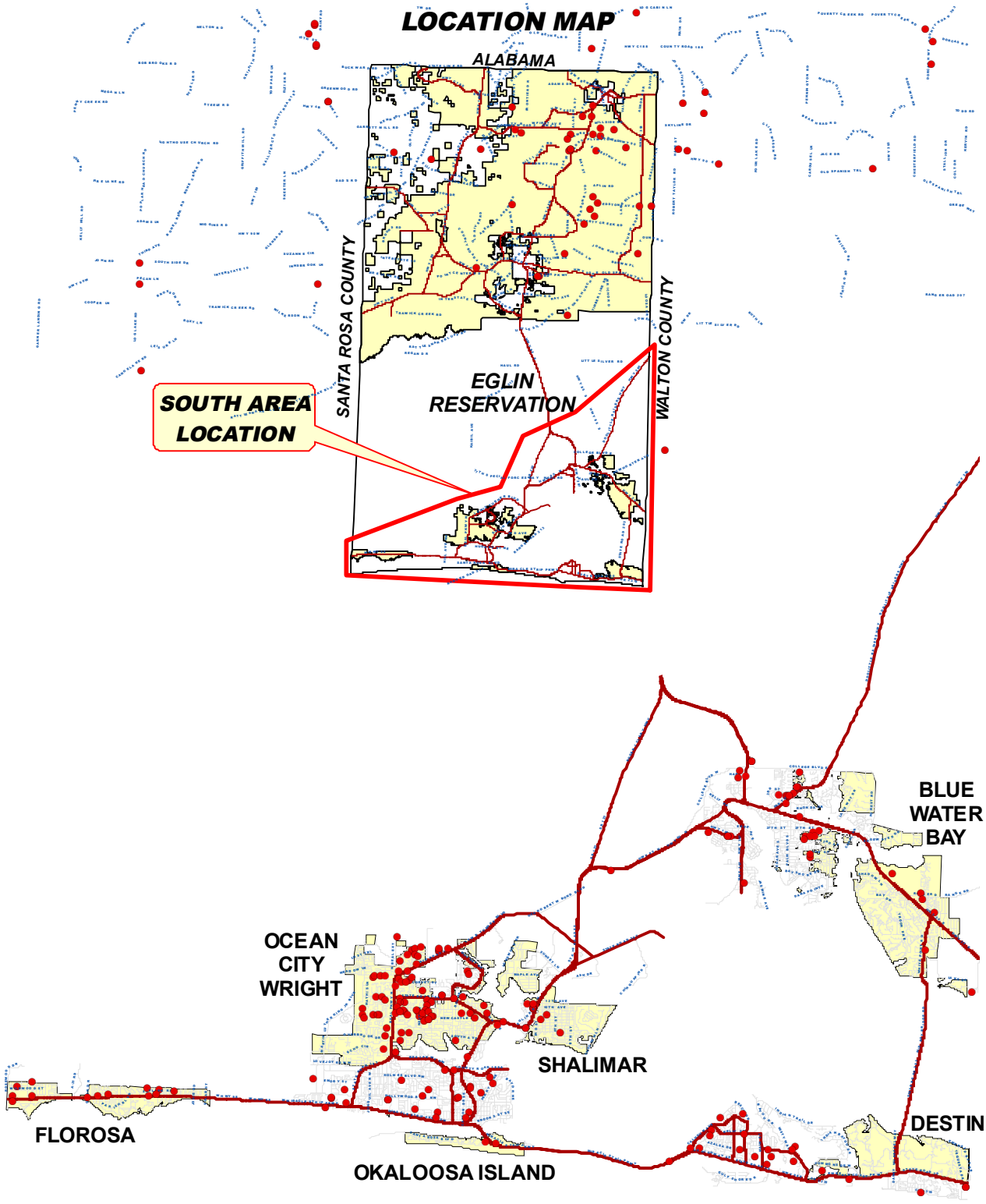
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South Okaloosa Critical Facilities

Critical Facilities

Unincorporated

Source: Okaloosa County Public Safety, 2010

MAP PROJECTION:
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Stateplane: Florida North (0903)
NAD 1983(90), NAVD 1988.

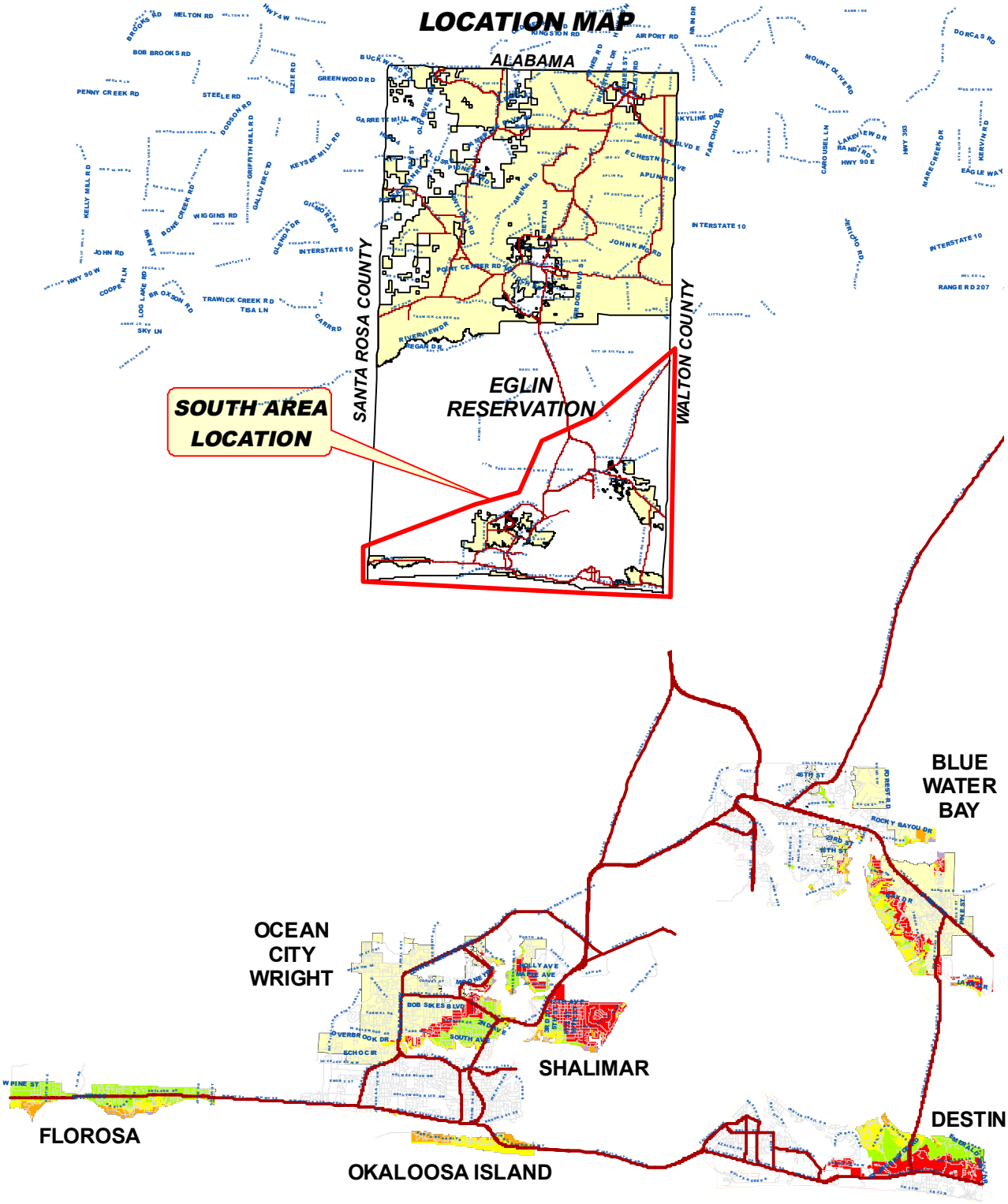
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NOTE: SEE INDIVIDUAL AREA MAPS FOR MORE DETAIL
PAGES 5.10-78 THRU 5.10-114



South Okaloosa 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, 2010

MAP PROJECTION:
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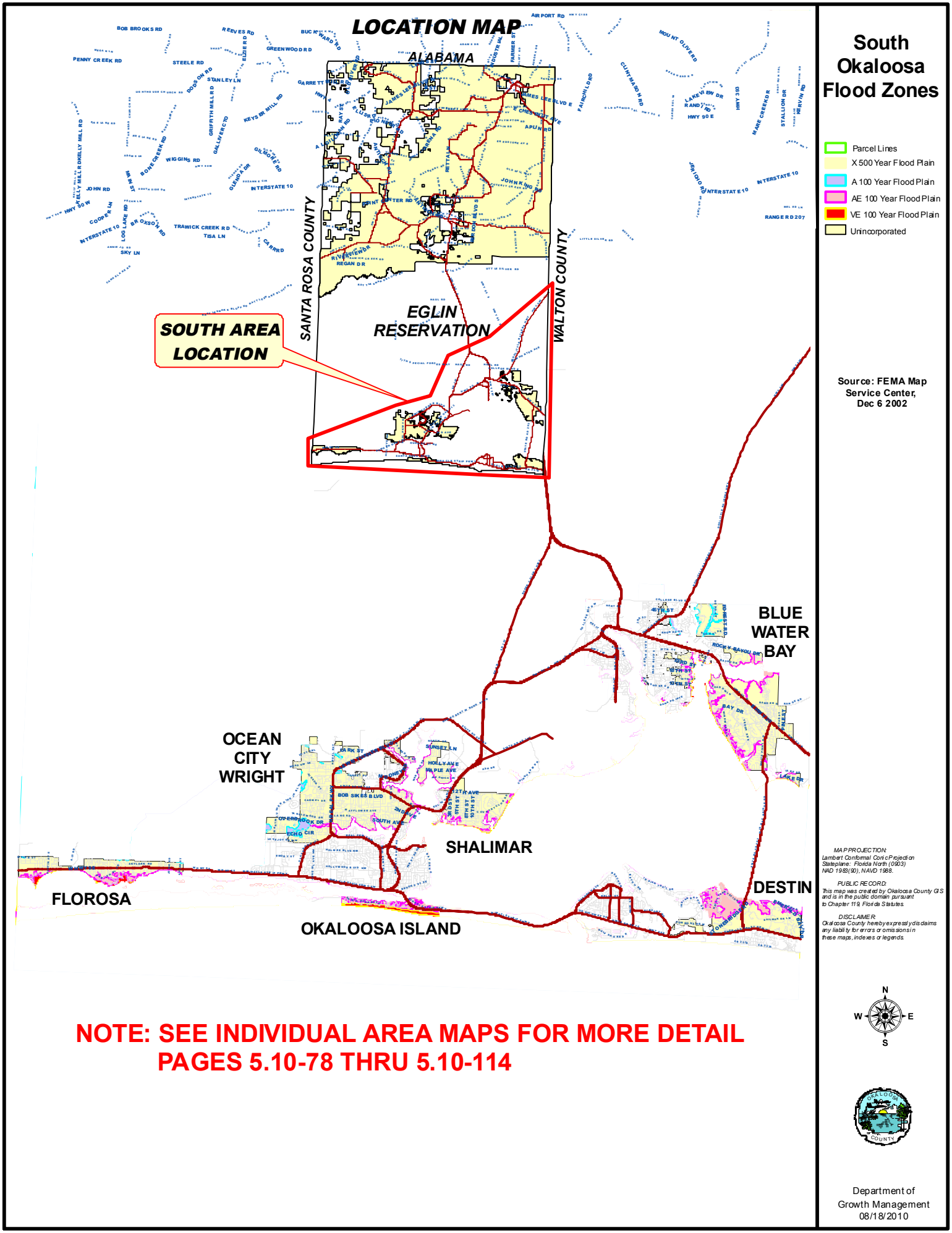
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South Okaloosa Flood Zones

- 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, Dec 6 2002

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

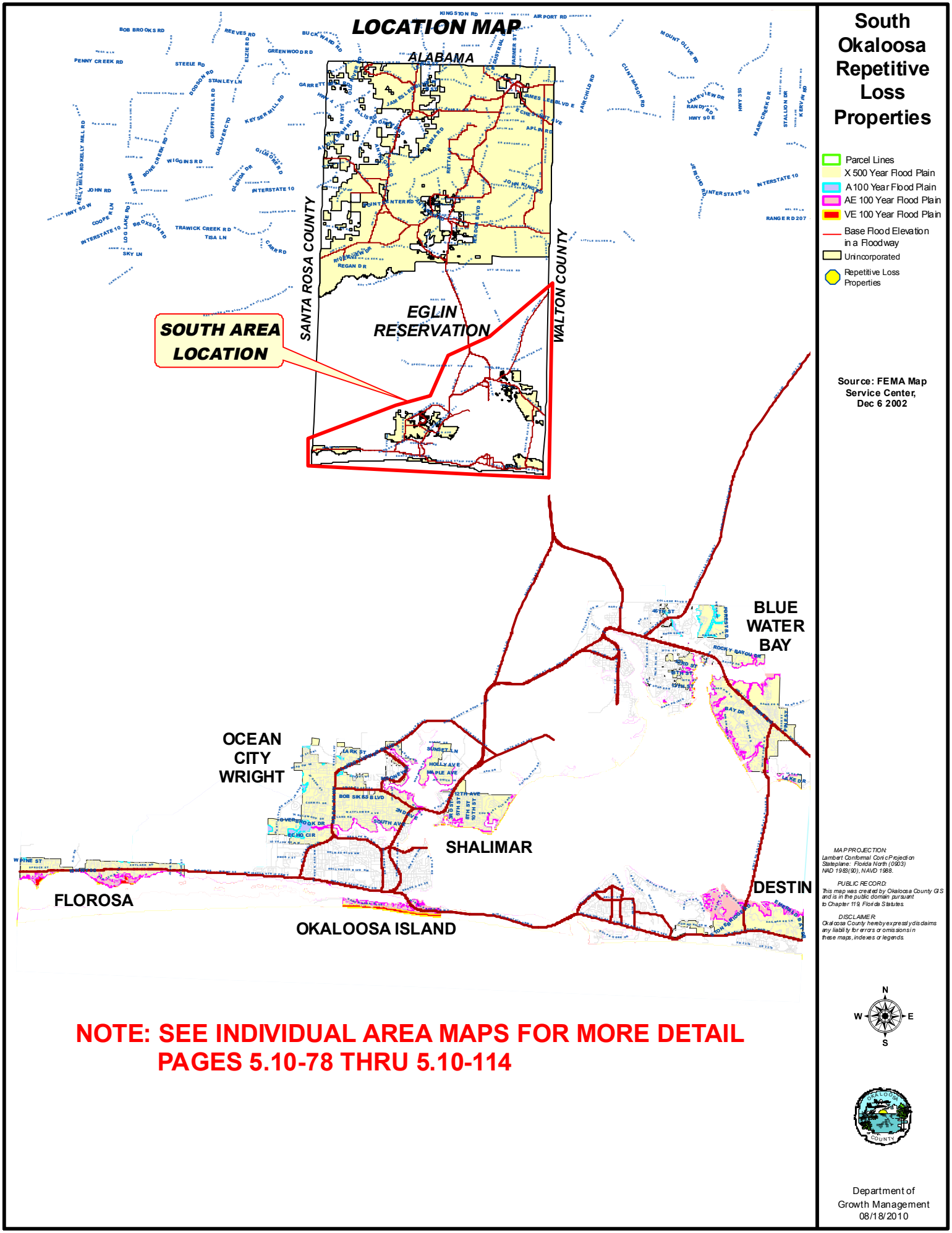
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South Okaloosa Repetitive Loss Properties

- 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:
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Stateplane: Florida North (0903)
NAD 1983(90), NAVD 1988.

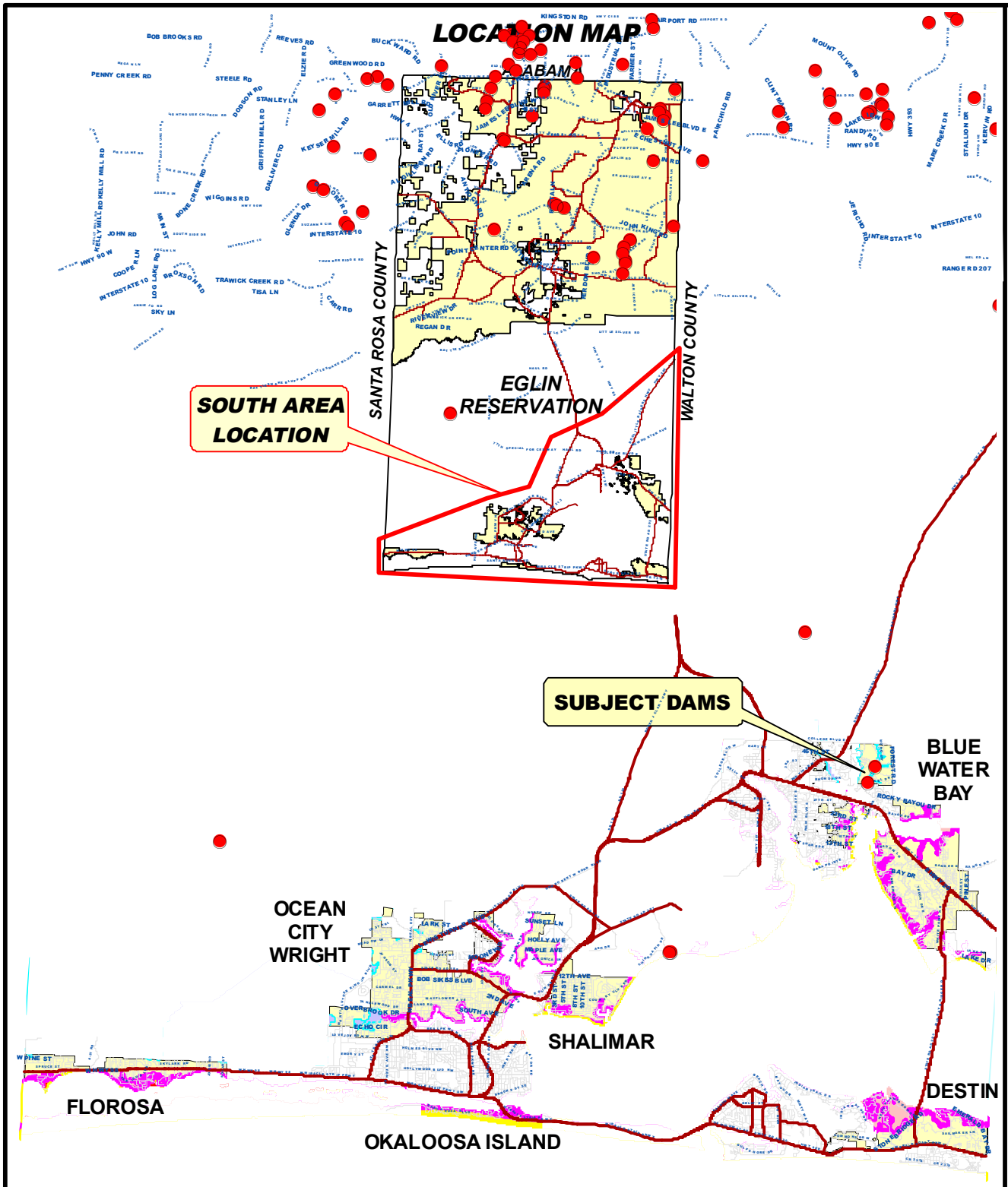
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South Okaloosa Flood Zones & Dam Sites

- 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
- Dams
- Unincorporated

Source: North West Florida Water Management District FEMA Map Service Center, Dec 6 2002

MAP PROJECTION:
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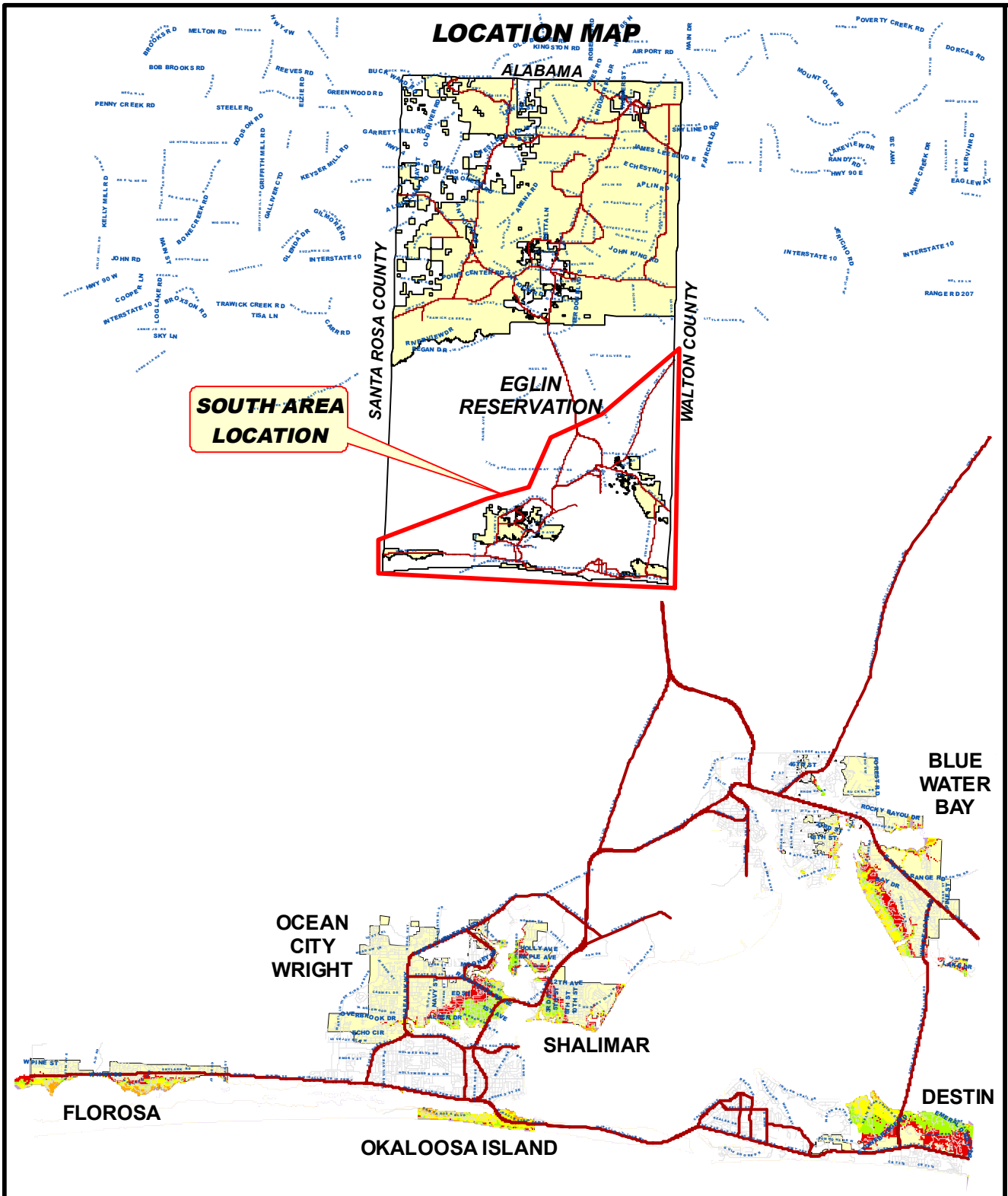
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South Okaloosa Surge Zones

- Category 1
- Category 2
- Category 3
- Category 4
- Category 5
- Unincorporated

Source: West Florida Regional Planning Council, 2010

MAP PROJECTION:
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Stateplane: Florida North (0903)
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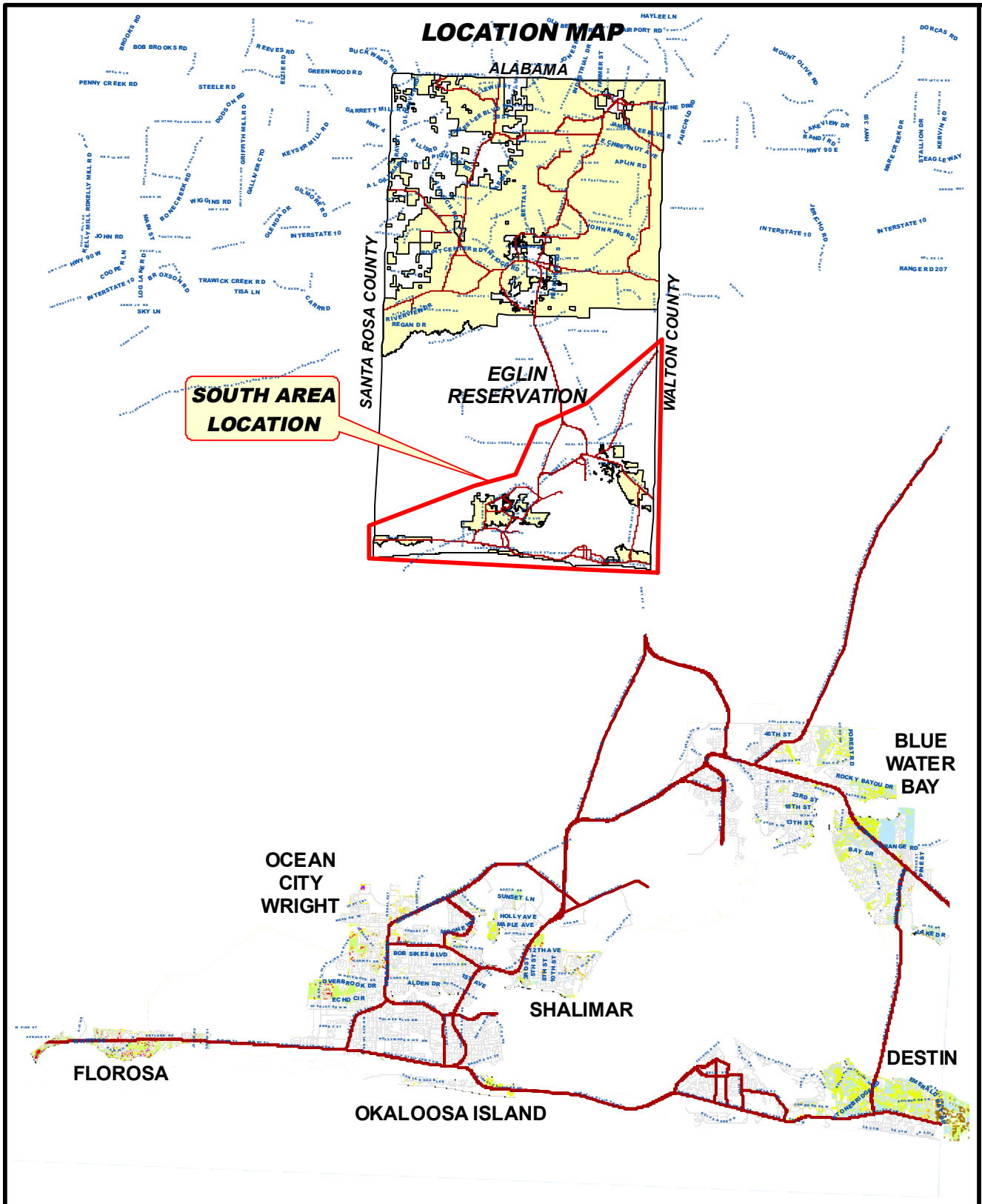
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Department of Growth Management
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NOTE: SEE INDIVIDUAL AREA MAPS FOR MORE DETAIL
PAGES 5.10-78 THRU 5.10-114

South Okaloosa Wildfire Level of Concern

Level of Concern

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- Unincorporated

Source: Florida Division of Forestry, 2010

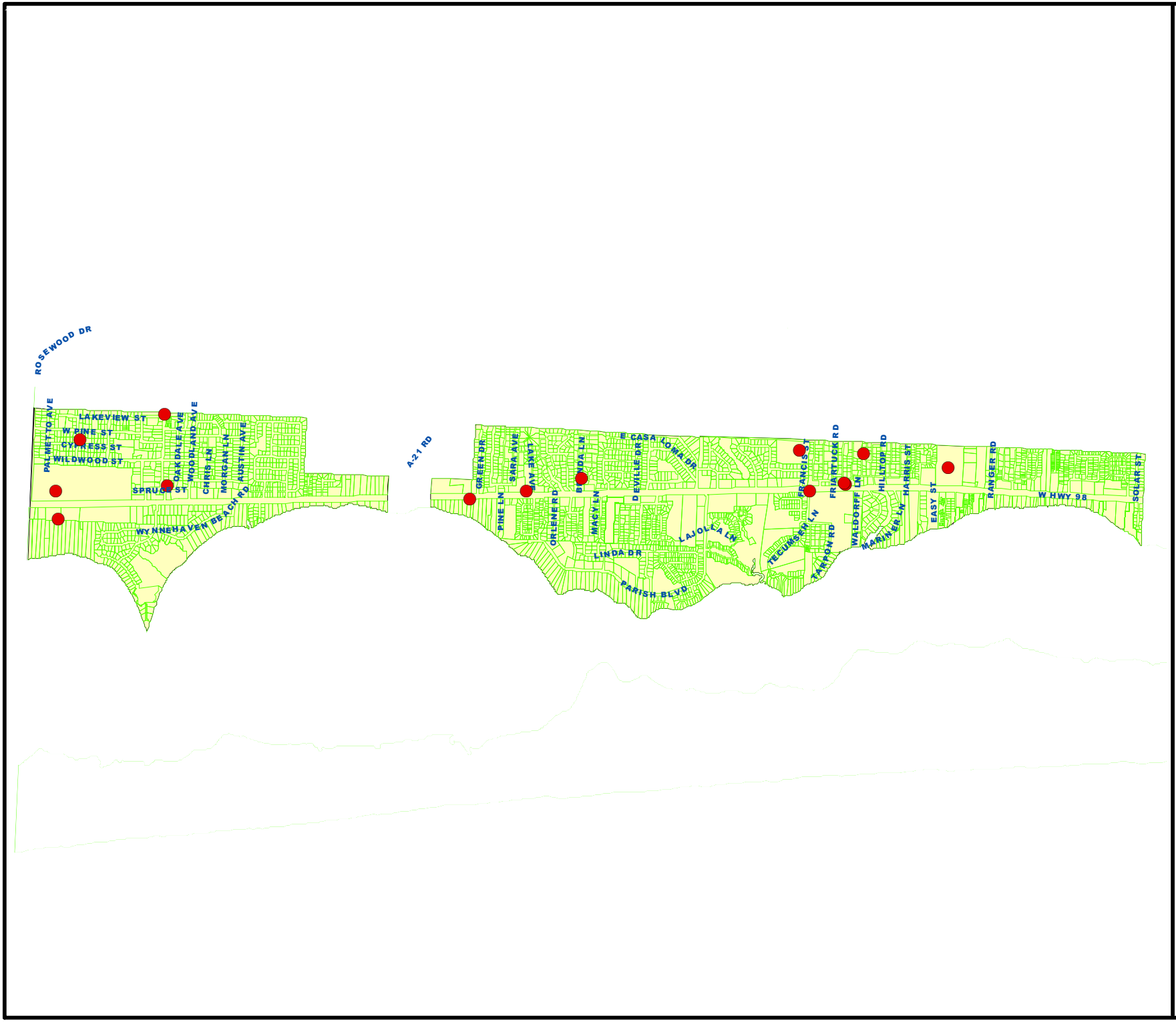
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Florosa Critical Facilities

Parcel Lines

Critical Facilities

Unincorporated

Source: Okaloosa County Public Safety, 2010

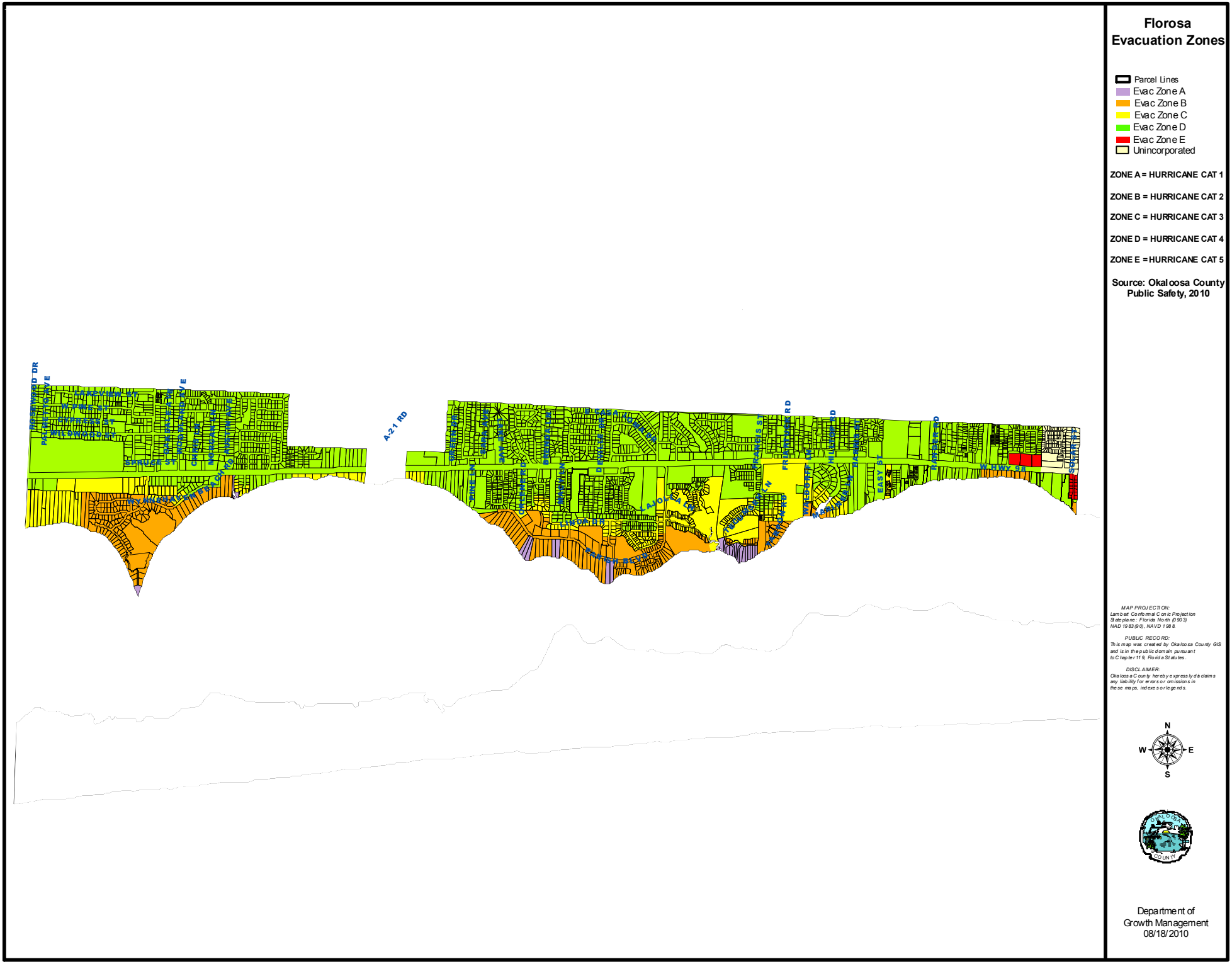
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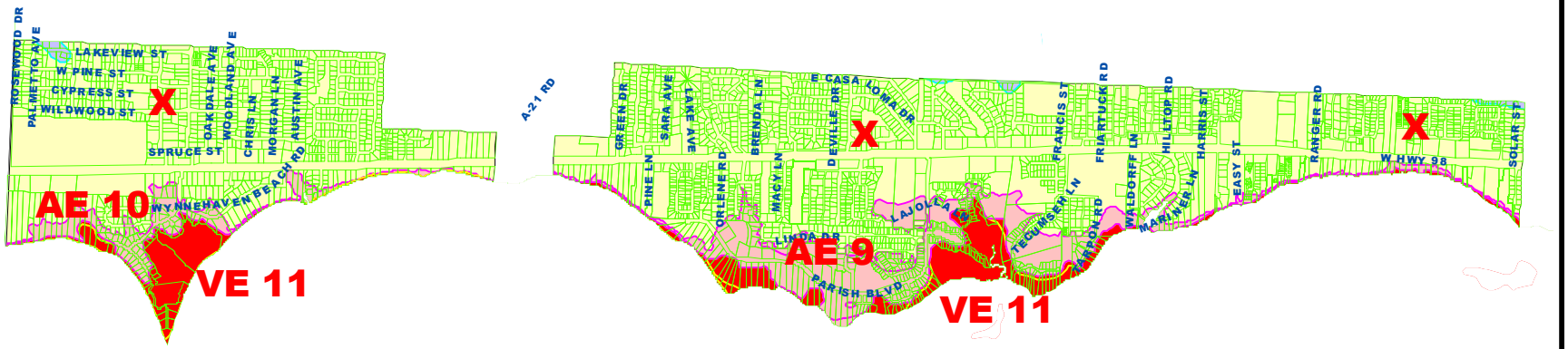
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Florosa
Evacuation Zones
Parcel Lines
Evac Zone A
Evac Zone B
Evac Zone C
Evac Zone D
Evac Zone E
Unincorporated
ZONE A = HURRICANE CAT 1
ZONE B = HURRICANE CAT 2
ZONE C = HURRICANE CAT 3
ZONE D = HURRICANE CAT 4
ZONE E = HURRICANE CAT 5
Source: Okaloosa County Public Safety, 2010
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, Dec 6 2002

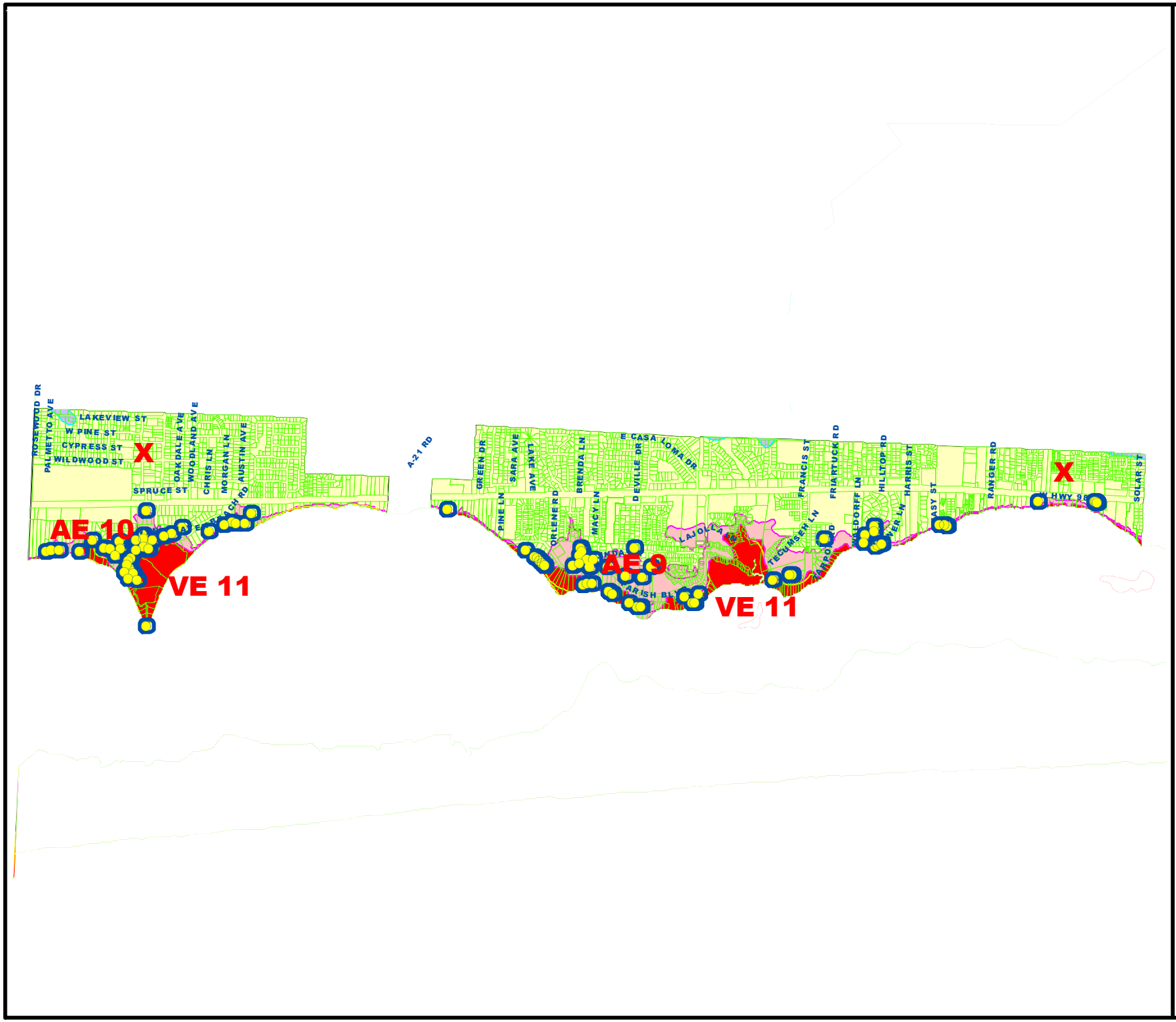
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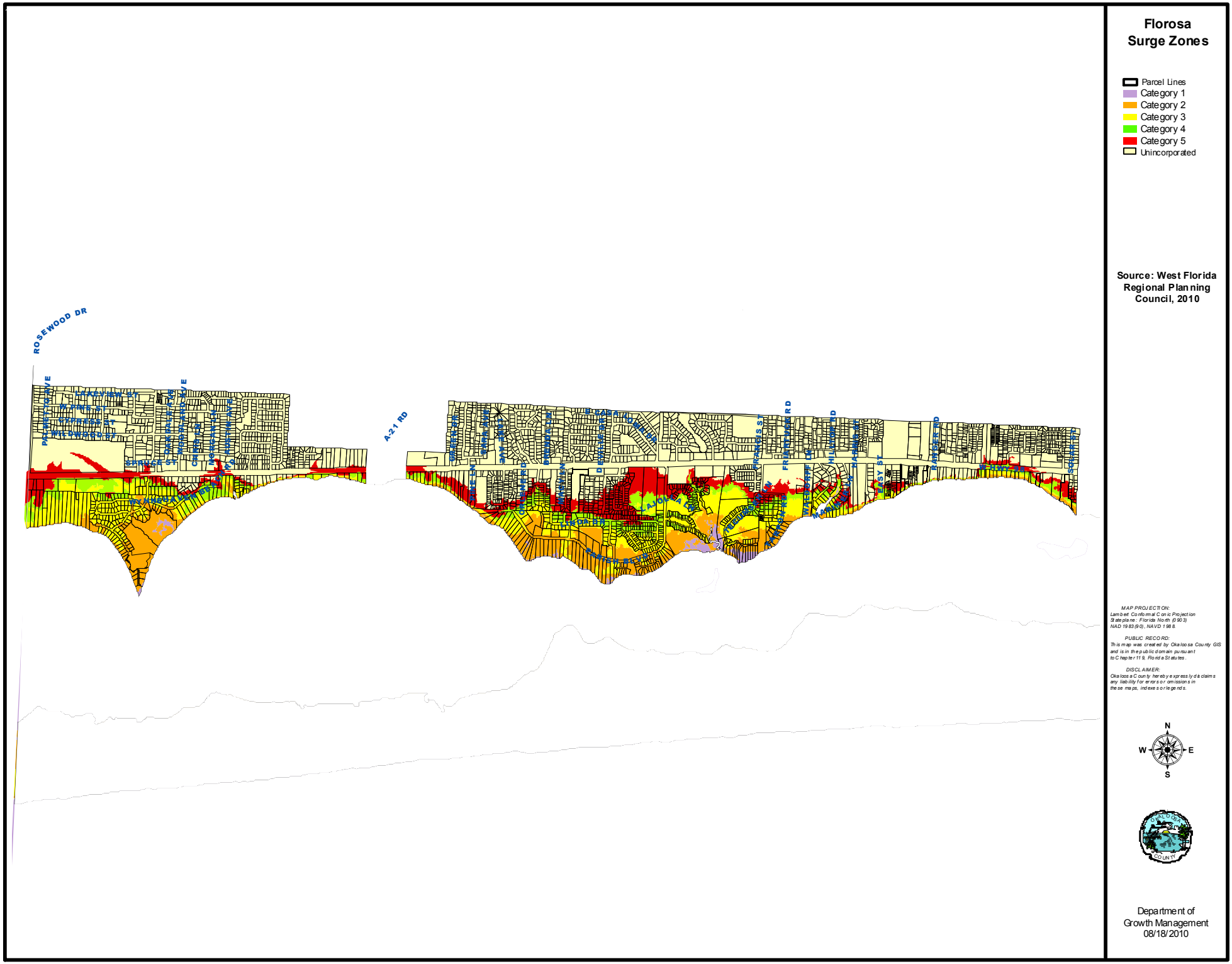
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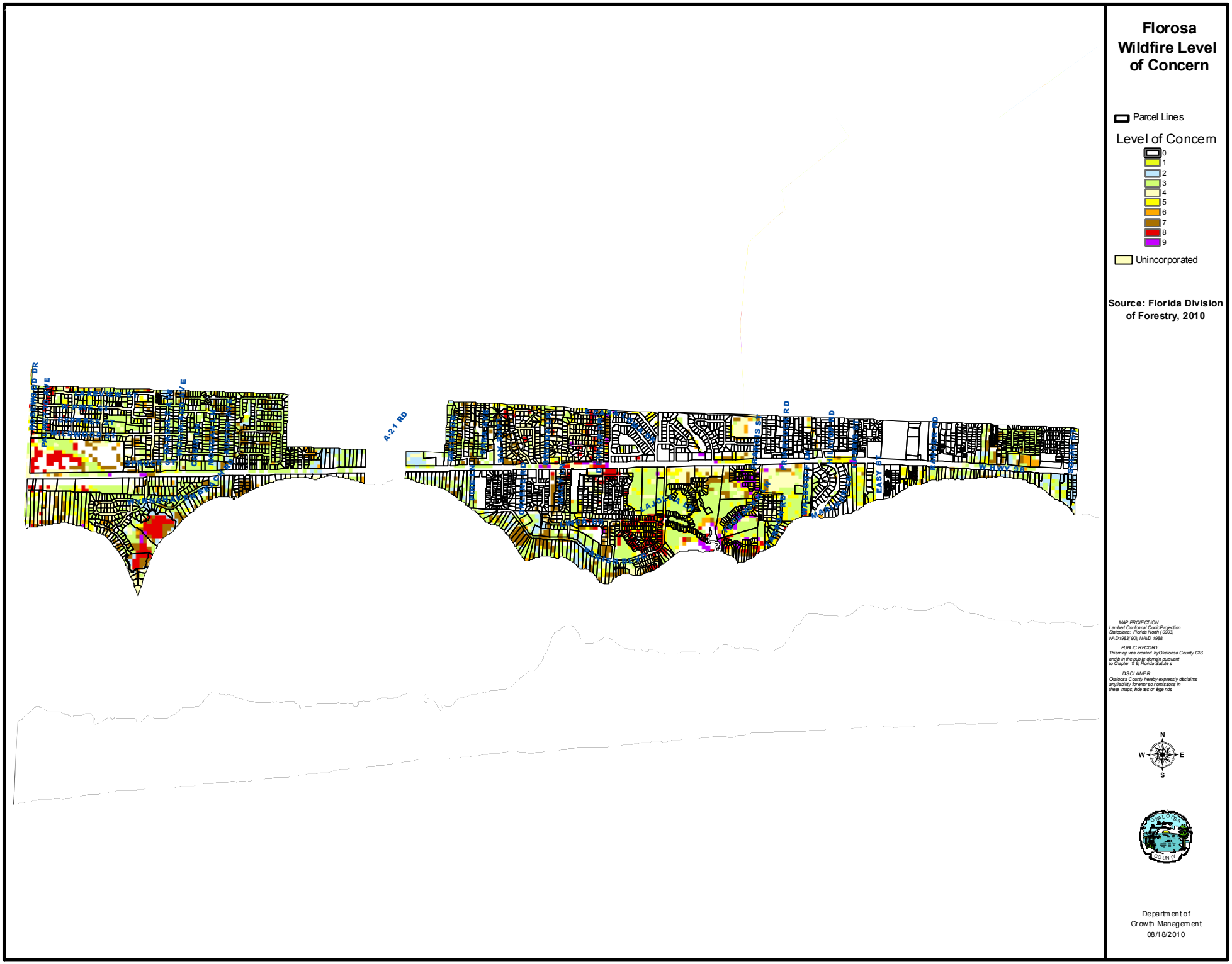
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Florosa Repetitive Loss Properties
Parcel Lines
X 500 Year Flood Plain
A 100 Year Flood Plain
AE 100 Year Flood Plain
VE 100 Year Flood Plain
Base Flood Elevation
in a Floodway
Unincorporated
Repetitive Loss Properties
Source: FEMA Map Service Center, Dec 6 2002
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
NAD 1983(90), NAVD 1988.
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Department of Growth Management
08/18/2010
AE 10
VE 11
AE 9
VE 11
X
X
LAKEVIEW ST
W PINE ST
CYPRESS ST
WILDWOOD ST
SPRUCE ST
PALMETTO AVE
OAKDALE AVE
WOODLAND AVE
CHRIS LN
MORGAN LN
AUSTIN AVE
A-21 RD
GREEN DR
PINE LN
SARA AVE
LANE AVE
ORLENER DR
BRENDA LN
MACY LN
E CASA LOMA DR
DEVILLE DR
FRANCIS ST
FRIARTUCK RD
HILLTOP RD
HARRIS ST
RANGER RD
SOLART ST
HWY 98


Florosa
Surge Zones
Parcel Lines
Category 1
Category 2
Category 3
Category 4
Category 5
Unincorporated
Source: West Florida Regional Planning Council, 2010
MAP PROJECTION:
Lambert Conformal Conic Projection
State plane: Florida North (0903)
NAD 1983(90), NAVD 1988.
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Department of
Growth Management
08/18/2010
ROSEWOOD DR
A-2-1 RD
PALMETTO AVE
SEMINOLE ST
CHEROKEE ST
CREEK ST
APACHE ST
MOHAWK ST
SIOUX ST
CHOCTAW ST
CHEROKEE TRL
CREEK TRL
APACHE TRL
MOHAWK TRL
SIOUX TRL
CHOCTAW TRL
PALMETTO AVE
SEMINOLE ST
CHEROKEE ST
CREEK ST
APACHE ST
MOHAWK ST
SIOUX ST
CHOCTAW ST
CHEROKEE TRL
CREEK TRL
APACHE TRL
MOHAWK TRL
SIOUX TRL
CHOCTAW TRL
DOGWOOD DR
CYPRESS LN
ELM ST
CHERRY ST
CONCHO RD
PINE ST
PALMETTO AVE
DOGWOOD DR
CYPRESS LN
ELM ST
CHERRY ST
CONCHO RD
PINE ST
PALMETTO AVE
FRANCIS ST
FRANCIS ST
FRANCIS ST


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, 2010
MAP PROJECTION
Lambert Conformal ConicProjection
Stateplane: Florida North (0903)
NAD 1983(90), NAVD 1988.
PUBLIC RECORD:
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Department of Growth Management
08/18/2010
A-2-1 RD
EAST ST
W HWY 98



Okaloosa Island Critical Facilities

Parcel Lines
Critical Facilities
Unincorporated

Source: Okaloosa County Public Safety, 2010

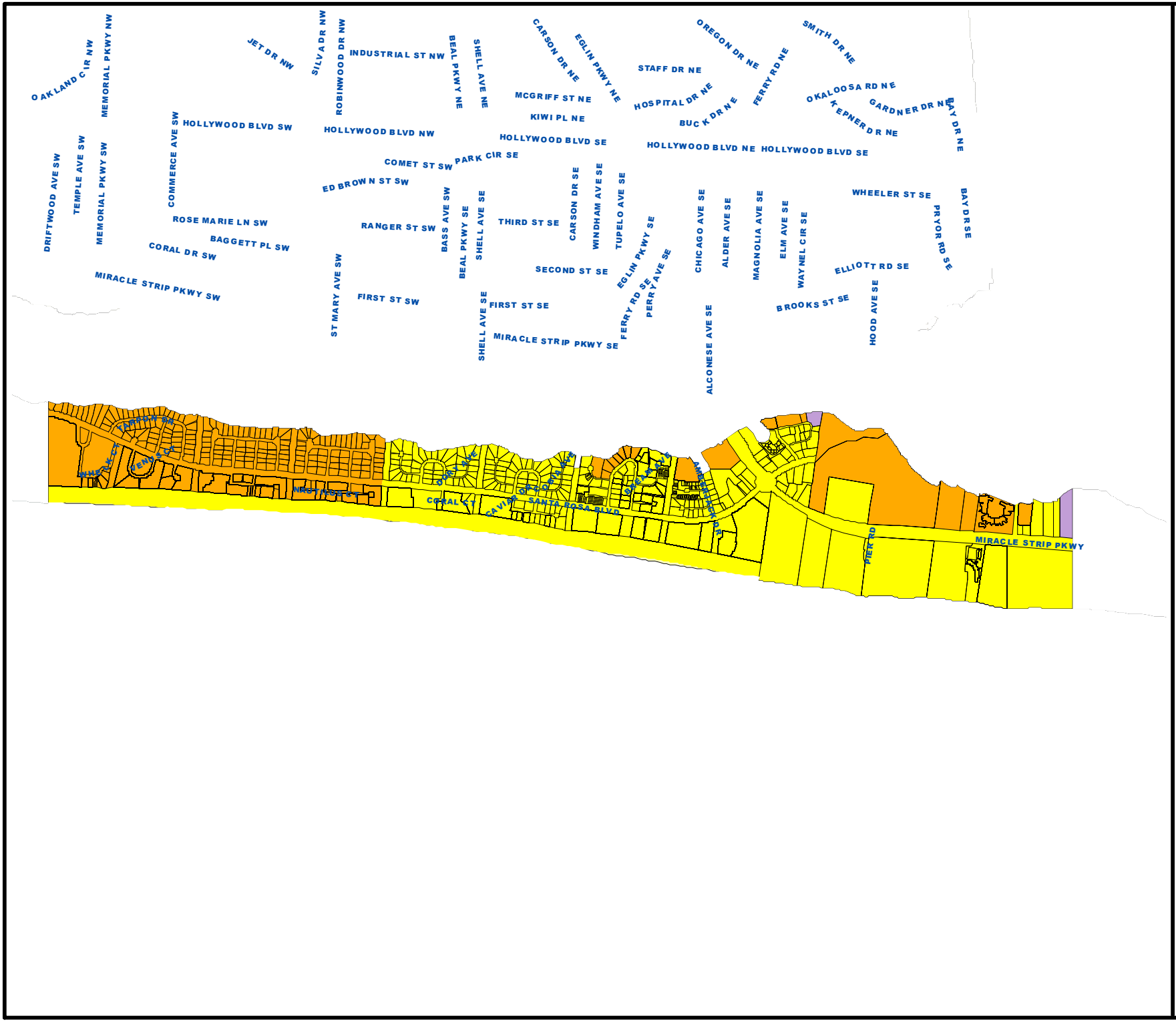
MAP PROJECTION:
Lambert Conformal Conic Projection
State plane: Florida North (0903)
NAD 1983(90), NAVD 1988.

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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, 2010

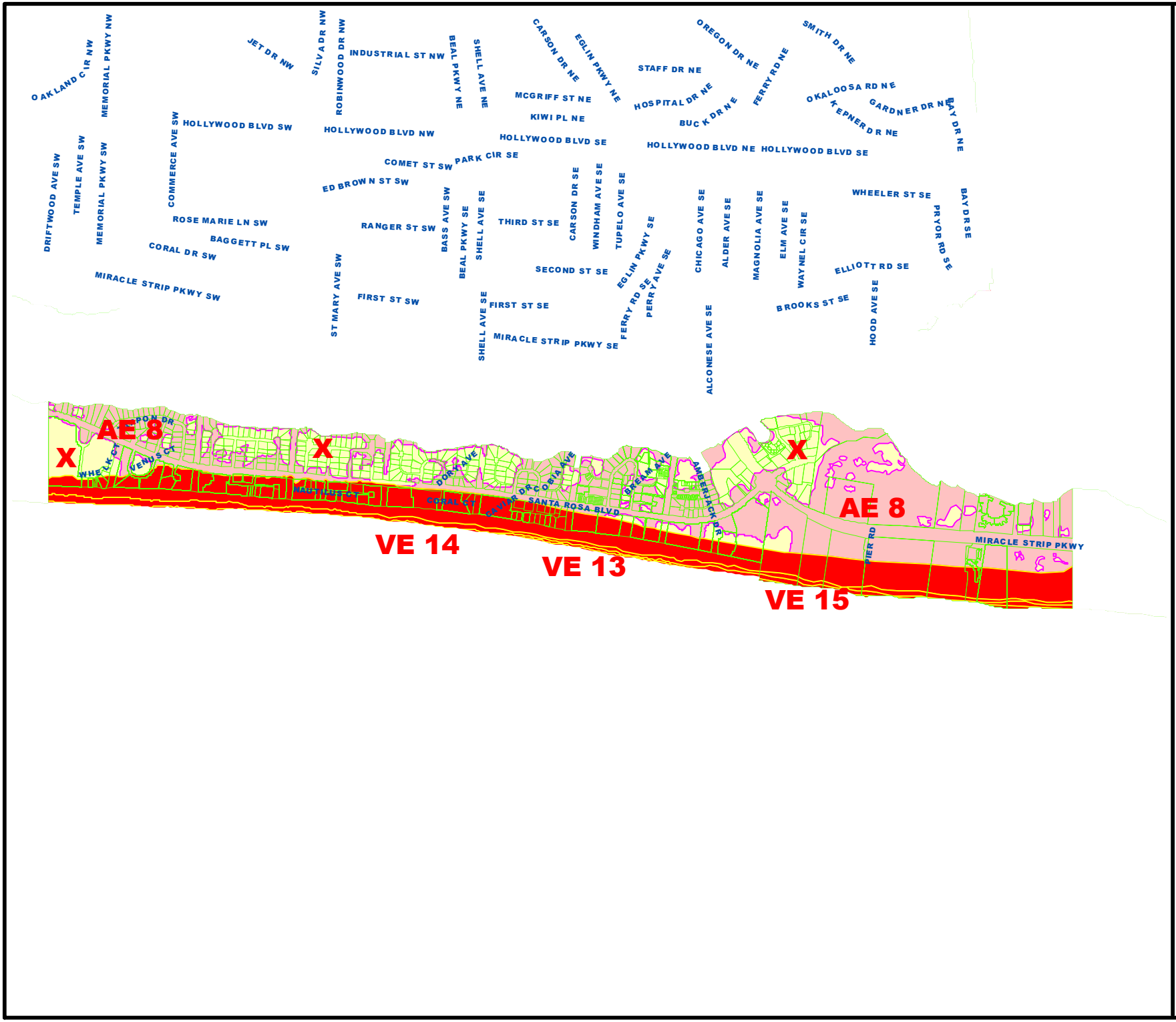
MAP PROJECTION:
Lambert Conformal Conic Projection
State plane: Florida North (0903)
NAD 1983(90), NAVD 1988.

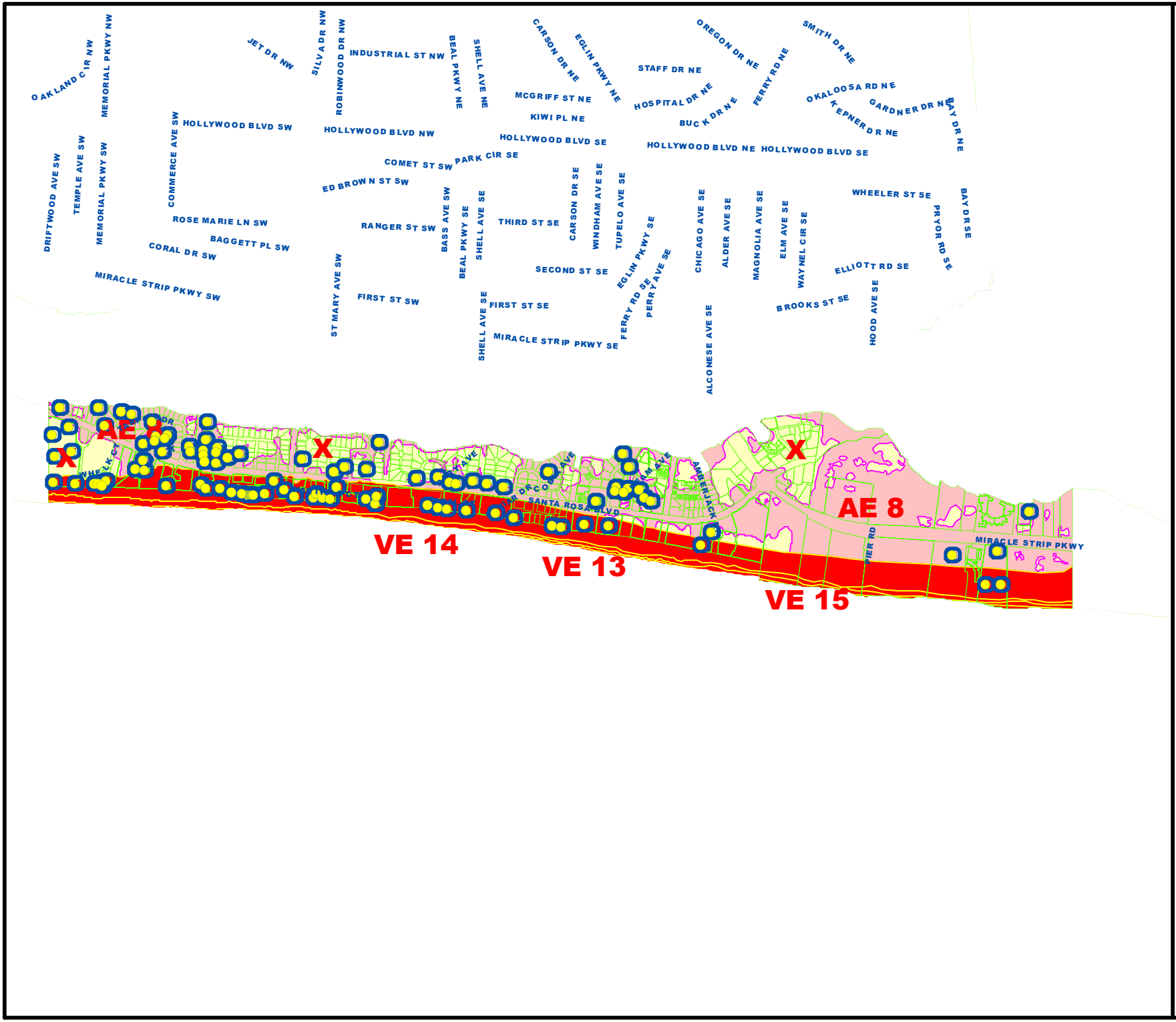
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Growth Management
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Okaloosa Island
Flood Zones
Parcel Lines
X 500 Year Flood Plain
A 100 Year Flood Plain
AE 100 Year Flood Plain
VE 100 Year Flood Plain
Unincorporated
Source: FEMA Map
Service Center,
Dec 6 2002
AE 8
X
X
X
AE 8
VE 14
VE 13
VE 15
OAKLAND CIR NW
MEMORIAL PKWY NW
JET DR NW
SILVA DR NW
ROBINWOOD DR NW
INDUSTRIAL ST NW
BEAL PKWY NE
SHELL AVE NE
CARSON DR NE
EGLIN PKWY NE
STAFF DR NE
OREGON DR NE
FERRY RD NE
SMITH DR NE
OKALOOSA RD NE
GARDNER DR NE
KEPNER DR NE
BAY DR NE
MCGRIFF ST NE
KIWI PL NE
HOSPITAL DR NE
BUCK DR NE
HOLLYWOOD BLVD SW
HOLLYWOOD BLVD NW
HOLLYWOOD BLVD SE
HOLLYWOOD BLVD NE
HOLLYWOOD BLVD SE
DRIFTWOOD AVE SW
TEMPLE AVE SW
MEMORIAL PKWY SW
COMMERCE AVE SW
COMET ST SW
PARK CIR SE
ED BROWN ST SW
ROSE MARIE LN SW
BAGGETT PL SW
CORAL DR SW
MIRACLE STRIP PKWY SW
RANGER ST SW
BASS AVE SW
BEAL PKWY SE
SHELL AVE SE
THIRD ST SE
CARSON DR SE
WINDHAM AVE SE
TUPELO AVE SE
EGLIN PKWY SE
FERRY RD SE
PERRY AVE SE
SECOND ST SE
FIRST ST SW
ST MARY AVE SW
FIRST ST SE
SHELL AVE SE
MIRACLE STRIP PKWY SE
CHICAGO AVE SE
ALDER AVE SE
MAGNOLIA AVE SE
ELM AVE SE
WAYNEL CIR SE
WHEELER ST SE
PRYOR RD SE
BAY DR SE
ELLIOTT RD SE
BROOKS ST SE
HOOD AVE SE
ALCONESE AVE SE
POW DR
WHELK CT
VENUS CT
DOR AVE
CORAL CT
CONQUISTADOR CT
SANTA ROSA BLVD
CONQUISTADOR AVE
BREAKAWAY
AMBERJACK DR
PIER RD
MIRACLE STRIP PKWY
MAP PROJECTION:
Lambert Conformal Conic Projection
State plane: Florida North (0903)
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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, Dec 6 2002

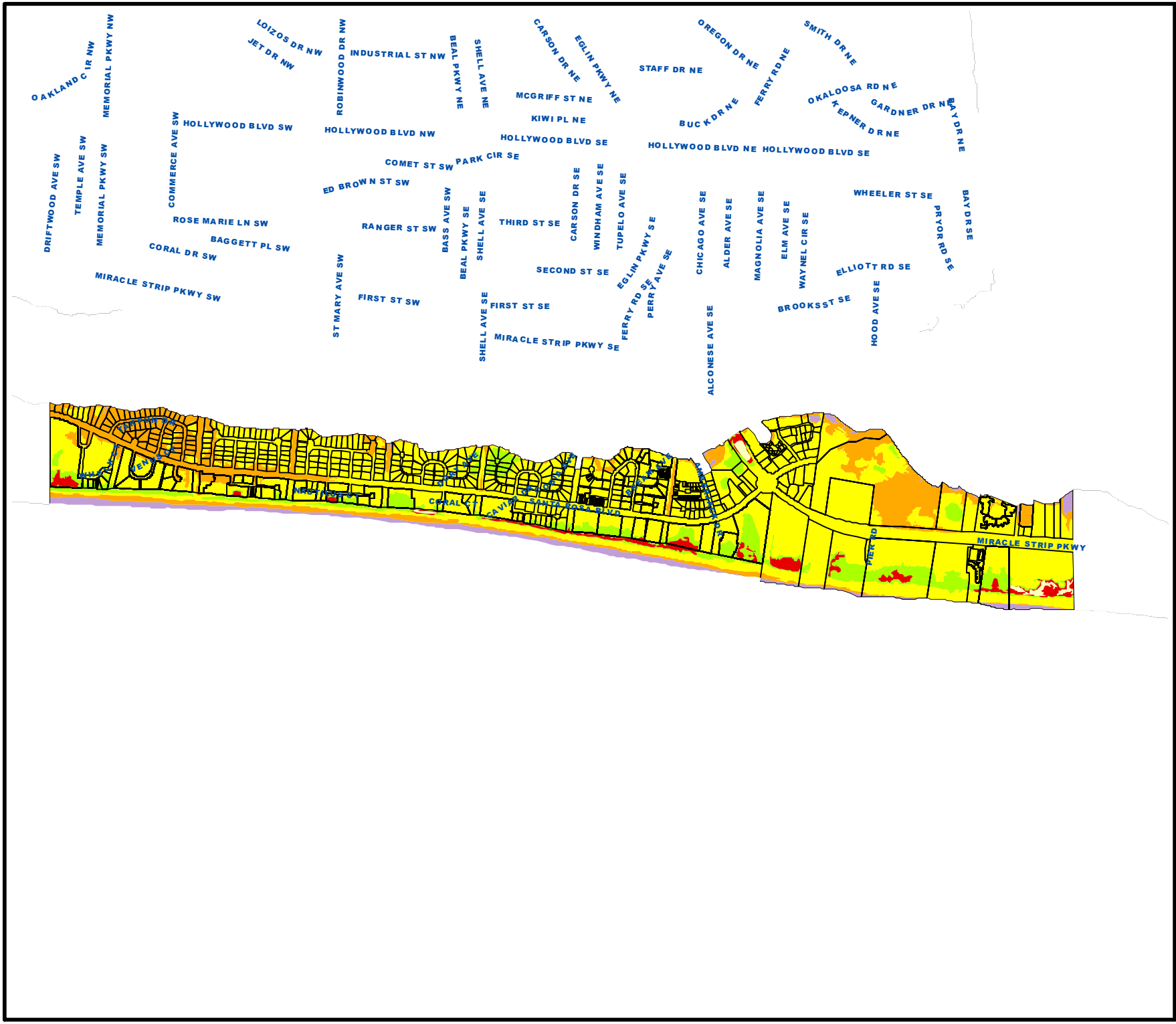
MAP PROJECTION:
Lambert Conformal Conic Projection
State plane: Florida North (0903)
NAD 1983(90), NAVD 1988.

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08/18/2010


Okaloosa Island
Surge Zones
Parcel Lines
Category 1
Category 2
Category 3
Category 4
Category 5
Unincorporated
Source: West Florida Regional Planning Council, 2010
MAP PROJECTION:
Lambert Conformal Conic Projection
State plane: Florida North (0903)
NAD 1983(90), NAVD 1988.
PUBLIC RECORD:
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N
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Department of
Growth Management
08/18/2010
OAKLAND CIR NW
MEMORIAL PKWY NW
LOIZOS DR NW
JET DR NW
ROBINWOOD DR NW
INDUSTRIAL ST NW
BEAL PKWY NE
SHELL AVE NE
CARSON DR NE
EGLIN PKWY NE
STAFF DR NE
OREGON DR NE
FERRY RD NE
SMITH DR NE
OKALOOSA RD NE
GARDNER DR NE
KEPNER DR NE
BAY DR NE
MCGRIFF ST NE
KIWI PL NE
BUCK DR NE
HOLLYWOOD BLVD NE
HOLLYWOOD BLVD SE
HOLLYWOOD BLVD SW
HOLLYWOOD BLVD NW
COMMERCE AVE SW
DRIFTWOOD AVE SW
TEMPLE AVE SW
MEMORIAL PKWY SW
COMET ST SW
PARK CIR SE
ED BROWN ST SW
ROSE MARIE LN SW
BAGGETT PL SW
CORAL DR SW
MIRACLE STRIP PKWY SW
RANGER ST SW
BASS AVE SW
BEAL PKWY SE
SHELL AVE SE
THIRD ST SE
CARSON DR SE
WINDHAM AVE SE
TUPELO AVE SE
EGLIN PKWY SE
FERRY RD SE
PERRY AVE SE
CHICAGO AVE SE
ALDER AVE SE
MAGNOLIA AVE SE
ELM AVE SE
WAYNEL CIR SE
WHEELER ST SE
PRYOR RD SE
BAY DR SE
ELLIOTT RD SE
BROOKS ST SE
HOOD AVE SE
SECOND ST SE
FIRST ST SW
FIRST ST SE
ST MARY AVE SW
SHELL AVE SE
MIRACLE STRIP PKWY SE
ALCONESE AVE SE
Gulf of Mexico
Santa Rosa Sound
CORAL DR
PIER RD
MIRACLE STRIP PKWY



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, 2010

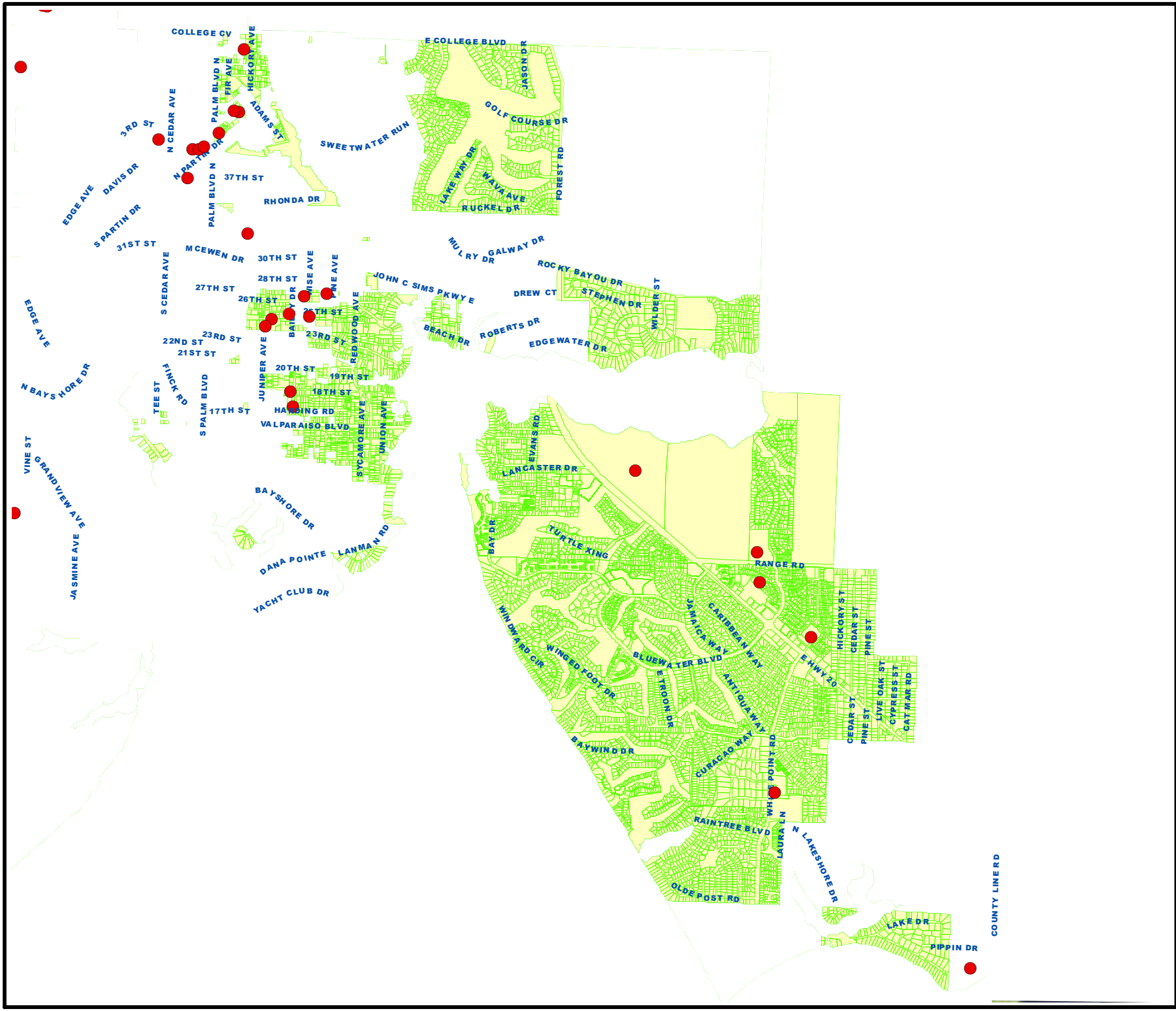
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State plane: Florida North (0903)
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Blue Water Bay Critical Facilities

Parcel Lines

Critical Facilities

Unincorporated

Source: Okaloosa County Public Safety, 2010

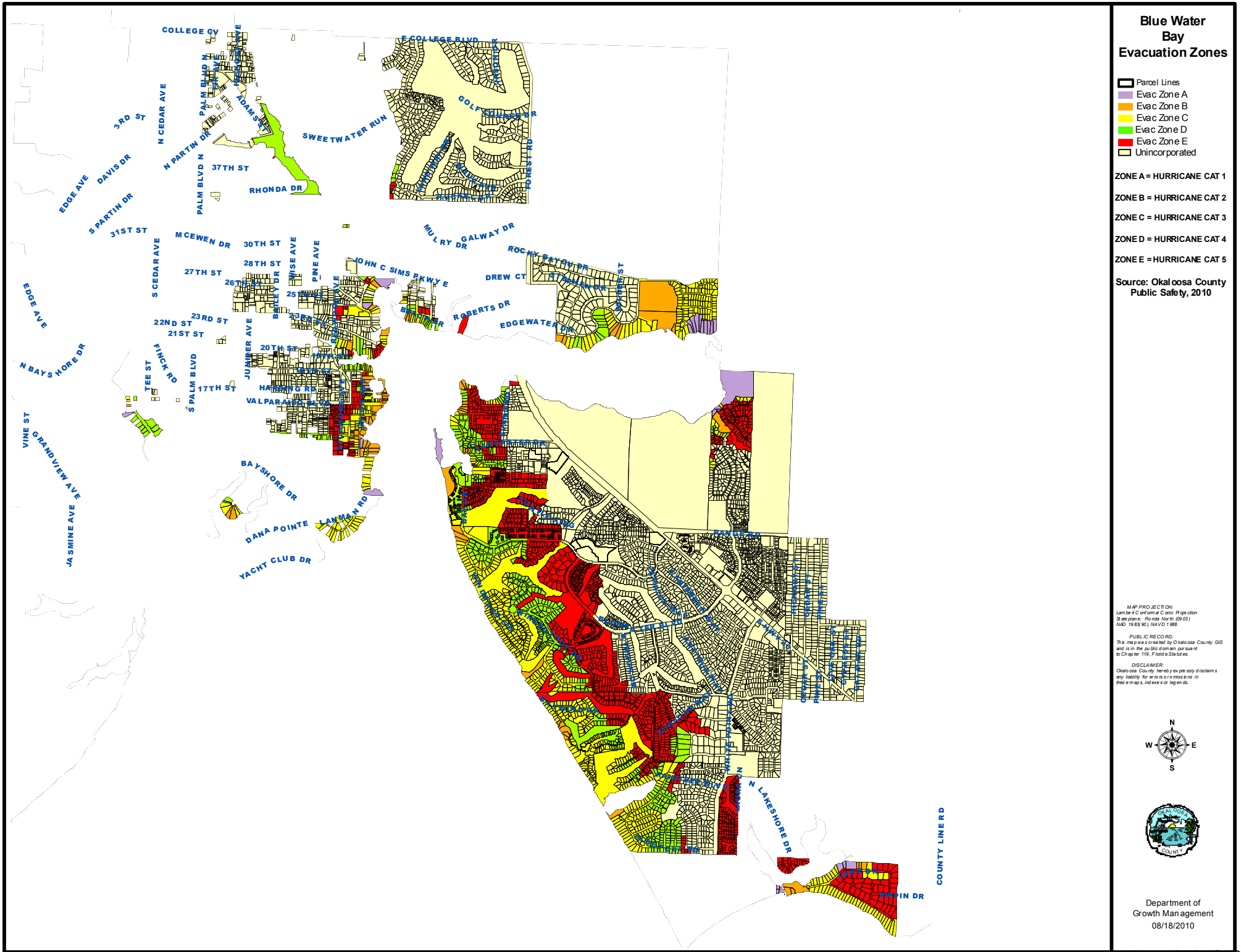
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Blue Water Bay Evacuation Zones

- 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, 2010

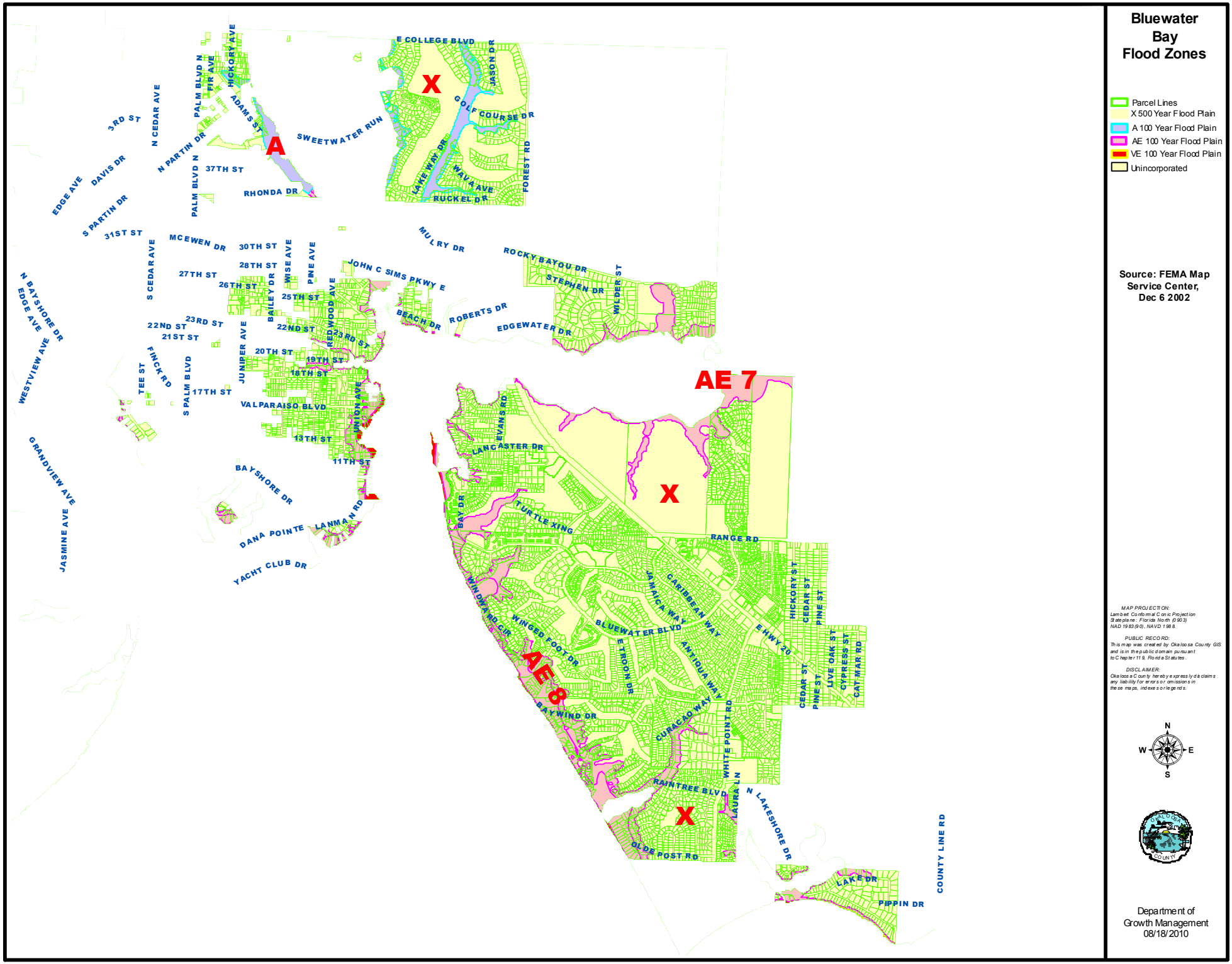
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
NAD 1983(90), NAVD 1988.

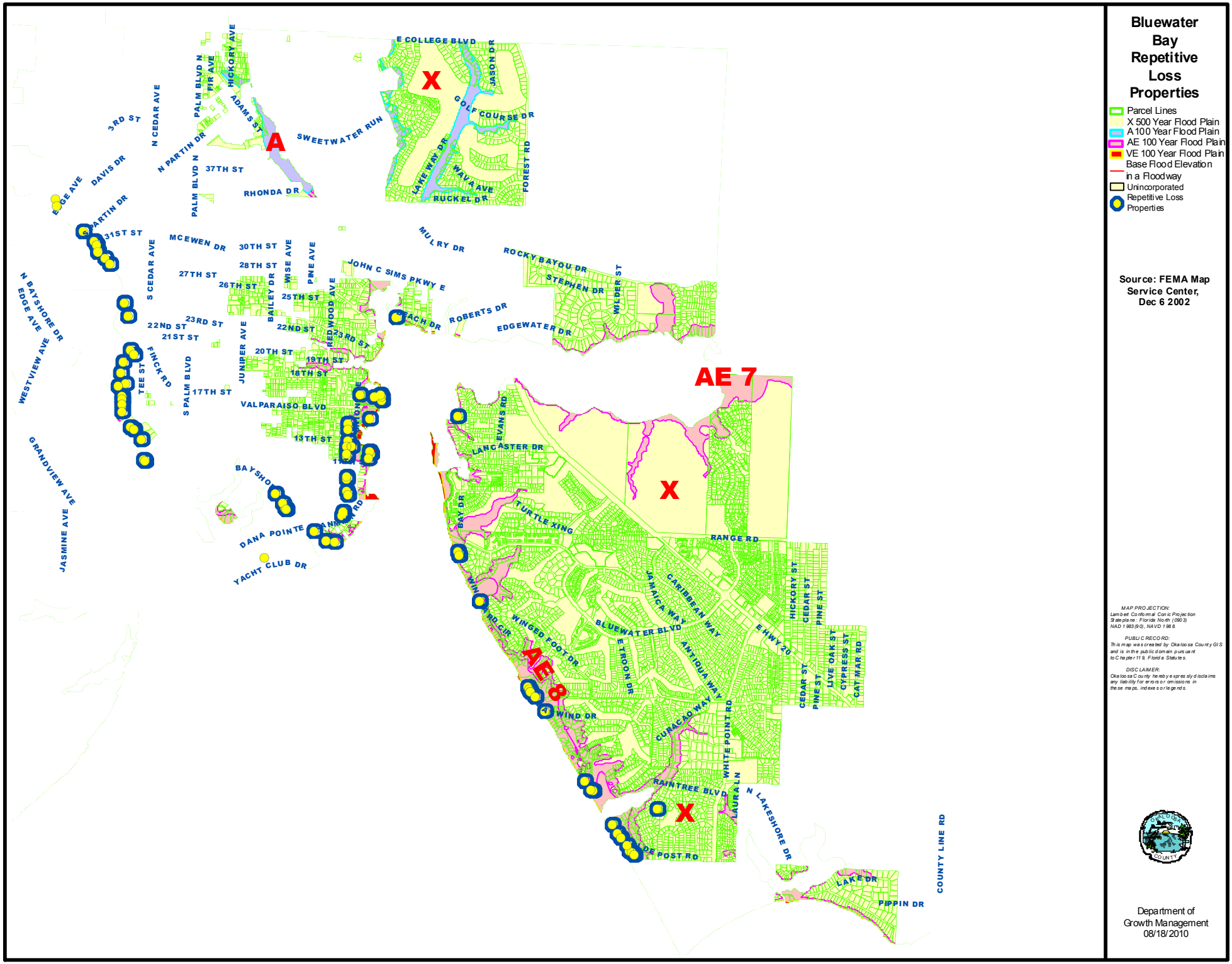
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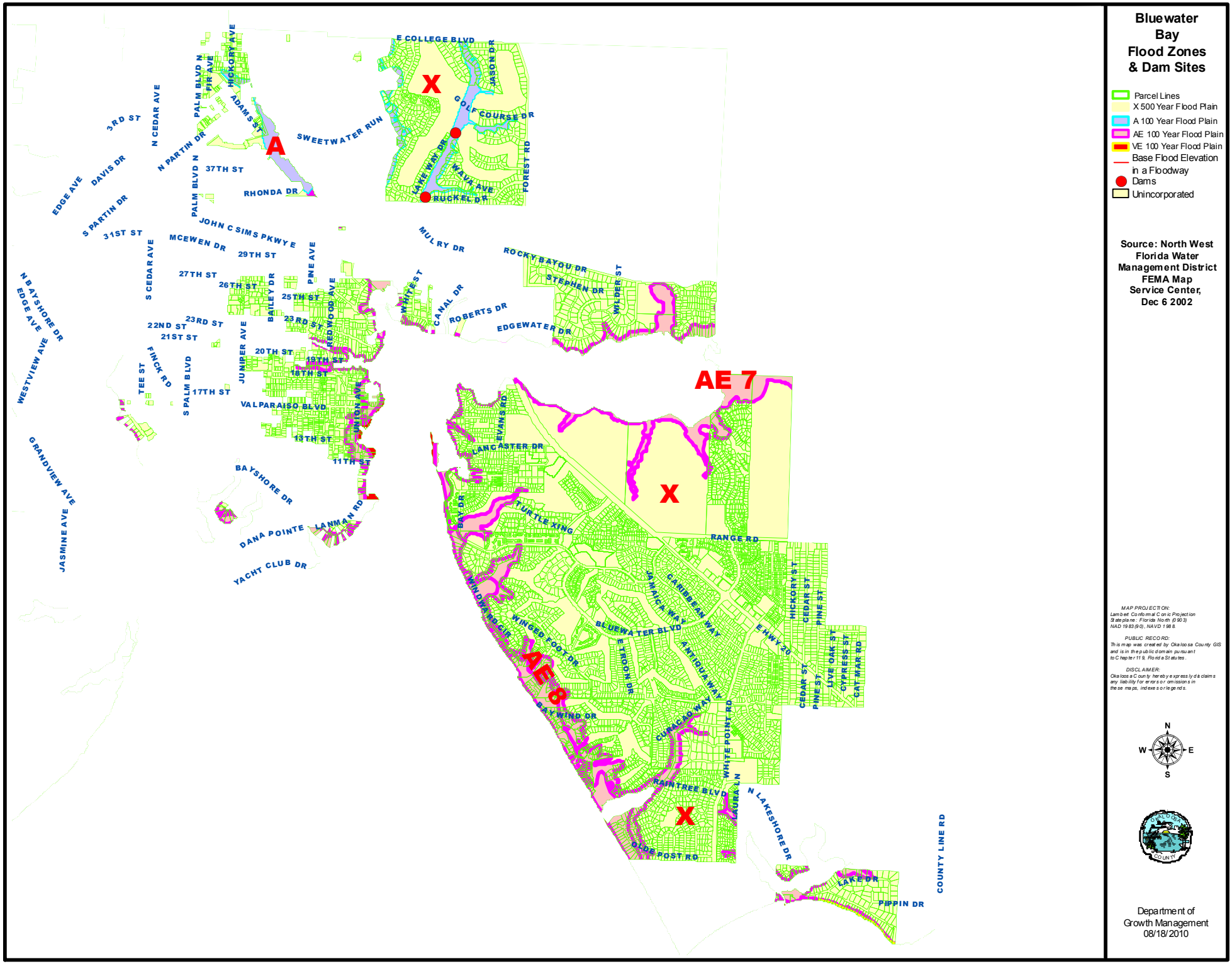
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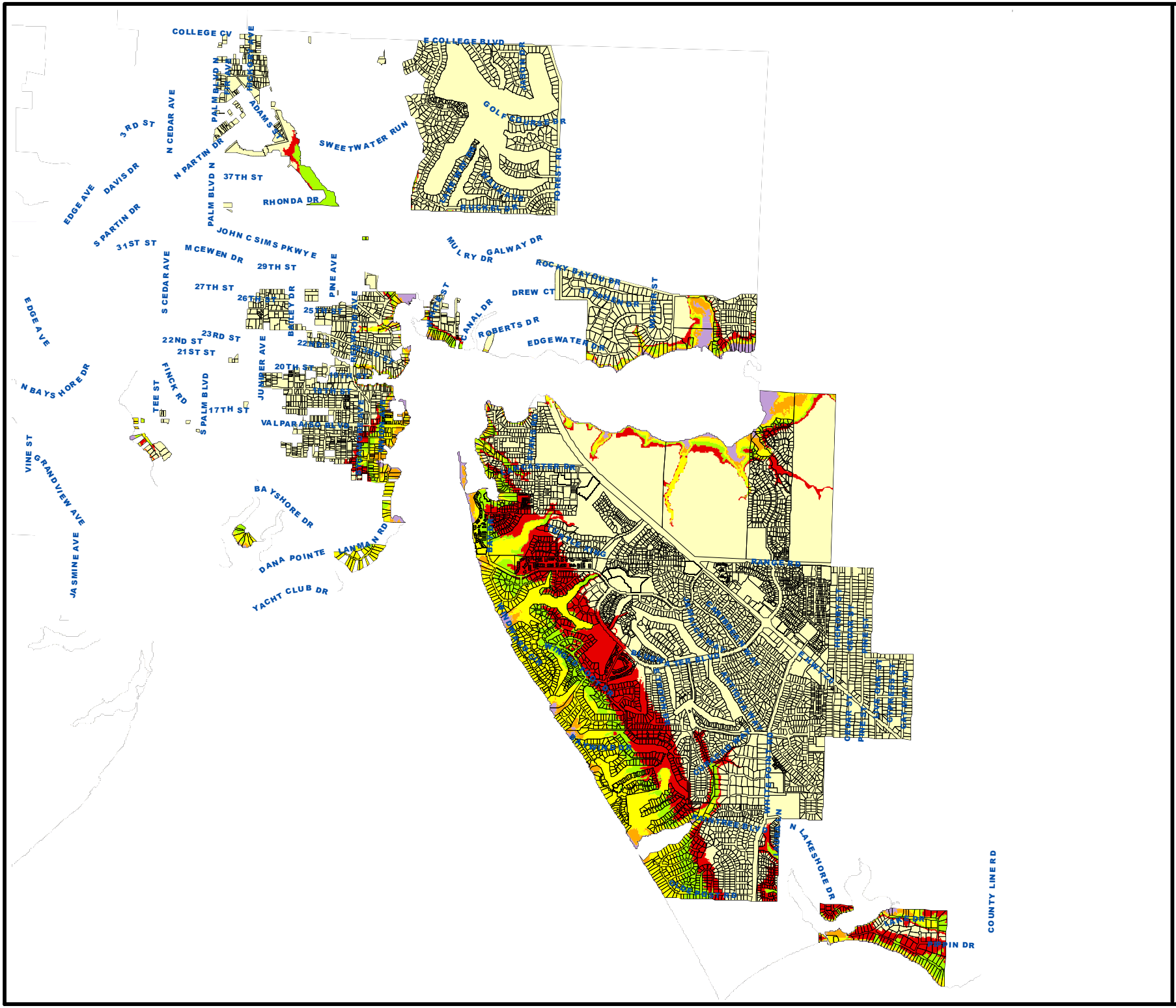
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Department of
Growth Management
08/18/2010


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, Dec 6 2002
MAP PROJECTION:
Lambert Conformal Conic Projection
State plane: Florida North (0903)
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Department of Growth Management
08/18/2010
X
A
AE 7
AE 8
E COLLEGE BLVD
GOLF COURSE DR
JASON DR
LAKEWAY DR
WAVA AVE
RUCKEL DR
FOREST RD
SWEETWATER RUN
ADAMS ST
HICKORY AVE
PALM BLVD N
FIR AVE
3RD ST
N CEDAR AVE
N PARTIN DR
DAVIS DR
EDGE AVE
RHONDA DR
37TH ST
S PARTIN DR
31ST ST
MCEWEN DR
30TH ST
28TH ST
27TH ST
26TH ST
25TH ST
S CEDAR AVE
WISE AVE
PINE AVE
BAILEY DR
REDWOOD AVE
MULRY DR
JOHN C SIMS PKWY E
ROCKY BAYOU DR
STEPHEN DR
WILDER ST
BEACH DR
ROBERTS DR
EDGEWATER DR
N BAYSHORE DR
EDGE AVE
WESTVIEW AVE
22ND ST
23RD ST
21ST ST
22ND ST
23RD ST
20TH ST
19TH ST
18TH ST
17TH ST
JUNIPER AVE
TEE ST
FINCK RD
S PALM BLVD
VALPARAISO BLVD
UNION AVE
13TH ST
11TH ST
EVANS RD
LANCASTER DR
BAYSHORE DR
GRANDVIEW AVE
JASMINE AVE
DANA POINTE
LANMAN RD
YACHT CLUB DR
BAY DR
TURTLE KING
RANGE RD
WINDWARD CIR
WINGED FOOT DR
JAMAICA WAY
CARIBBEAN WAY
BLUEWATER BLVD
ANTIGUA WAY
EMERALD DR
HWY 20
HICKORY ST
CEDAR ST
PINE ST
LIVE OAK ST
CYPRESS ST
CAT MAR RD
BAYWIND DR
CURACAO WAY
WHITE POINT RD
RAINTREE BLVD
LAUNA LN
N LAKESHORE DR
OLD DE POST RD
LAKE DR
PIPPIN DR
COUNTY LINE RD


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
State plane: Florida North (0903)
NAD 1983(90), NAVD 1988.
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Department of Growth Management
08/18/2010
X
A
AE 7
AE 8
E COLLEGE BLVD
GOLF COURSE DR
LAKEWAY DR
WAVA AVE
RUCKEL DR
FOREST RD
JASON DR
SWEETWATER RUN
ADAMS ST
HICKORY AVE
PALM BLVD N
FIR AVE
N CEDAR AVE
3RD ST
N PARTIN DR
PALM BLVD N
37TH ST
RHONDA DR
EDGE AVE
DAVIS DR
PARTIN DR
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MCEWEN DR
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S CEDAR AVE
WISE AVE
PINE AVE
BAILEY DR
REDWOOD AVE
JOHN C SIMS PKWY E
MULRY DR
ROCKY BAYOU DR
STEPHEN DR
WILDER ST
ROBERTS DR
EDGEWATER DR
ACH DR
N BAYSHORE DR
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17TH ST
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FINCK RD
VALPARAISO BLVD
13TH ST
GRANDVIEW AVE
JASMINE AVE
BAYSHO
DANA POINTE
YACHT CLUB DR
LANCASTER DR
EVANS RD
BAY DR
TURTLE XING
RANGE RD
WINDSOR CIR
WINGED FOOT DR
JAMAICA WAY
CARIBBEAN WAY
BLUEWATER BLVD
ANTIGUA WAY
ELMWOOD DR
HWY 20
HICKORY ST
CEDAR ST
PINE ST
LIVE OAK ST
CYPRESS ST
CAT MAR RD
WIND DR
CURACAO WAY
WHITE POINT RD
RAINTREE BLVD
LAUREL LN
N LAKESHORE DR
POST RD
LAKE DR
PIPPIN DR
COUNTY LINE RD


Bluewater Bay Flood Zones & Dam Sites
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
Dams
Unincorporated
Source: North West Florida Water Management District FEMA Map Service Center, Dec 6 2002
MAP PROJECTION:
Lambert Conformal Conic Projection
State plane : Florida North (0903)
NAD 1983(90), NAVD 1988.
PUBLIC RECORD:
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Department of Growth Management
08/18/2010
X
A
AE 7
AE 6
E COLLEGE BLVD
GOLF COURSE DR
JASON DR
FOREST RD
LAKEWAY DR
WAVA AVE
RUCKEL DR
SWEETWATER RUN
ADAMS ST
HICKORY AVE
FIR AVE
PALM BLVD N
N CEDAR AVE
3RD ST
N PARTIN DR
37TH ST
RHONDA DR
DAVIS DR
EDGE AVE
S PARTIN DR
31ST ST
JOHN C SIMS PKWY E
MCEWEN DR
29TH ST
27TH ST
26TH ST
25TH ST
23RD ST
22ND ST
21ST ST
20TH ST
19TH ST
18TH ST
17TH ST
S CEDAR AVE
PINE AVE
BAILEY DR
REDWOOD AVE
JUNIPER AVE
FINCK RD
TEE ST
S PALM BLVD
VALPARAISO BLVD
UNION AVE
13TH ST
11TH ST
N BAYSHORE DR
EDGE AVE
WESTVIEW AVE
GRANDVIEW AVE
JASMINE AVE
BAYSHORE DR
DANA POINTE
YACHT CLUB DR
LANMAN RD
MULRY DR
WHITE ST
CANAL DR
ROBERTS DR
ROCKY BAYOU DR
STEPHEN DR
WILDER ST
EDGEWATER DR
EVANS RD
LANCASTER DR
BAY DR
TURTLE XING
RANGE RD
JAMAICA WAY
CARIBBEAN WAY
BLUEWATER BLVD
WINGED FOOT DR
MOONRIDGE DR
ANTIGUA WAY
BAYWIND DR
CUNACAWAY
WHITE POINT RD
RAINTREE BLVD
LAURA LN
N LAKESHORE DR
OLDE POST RD
LAKE DR
PIPPIN DR
COUNTY LINE RD
HICKORY ST
CEDAR ST
PINE ST
E HWY 20
LIVE OAK ST
CYPRESS ST
CAT MAR RD



Blue Water Bay Surge Zones

- Parcel Lines
- Category 1
- Category 2
- Category 3
- Category 4
- Category 5
- Unincorporated

Source: West Florida Regional Planning Council, 2010

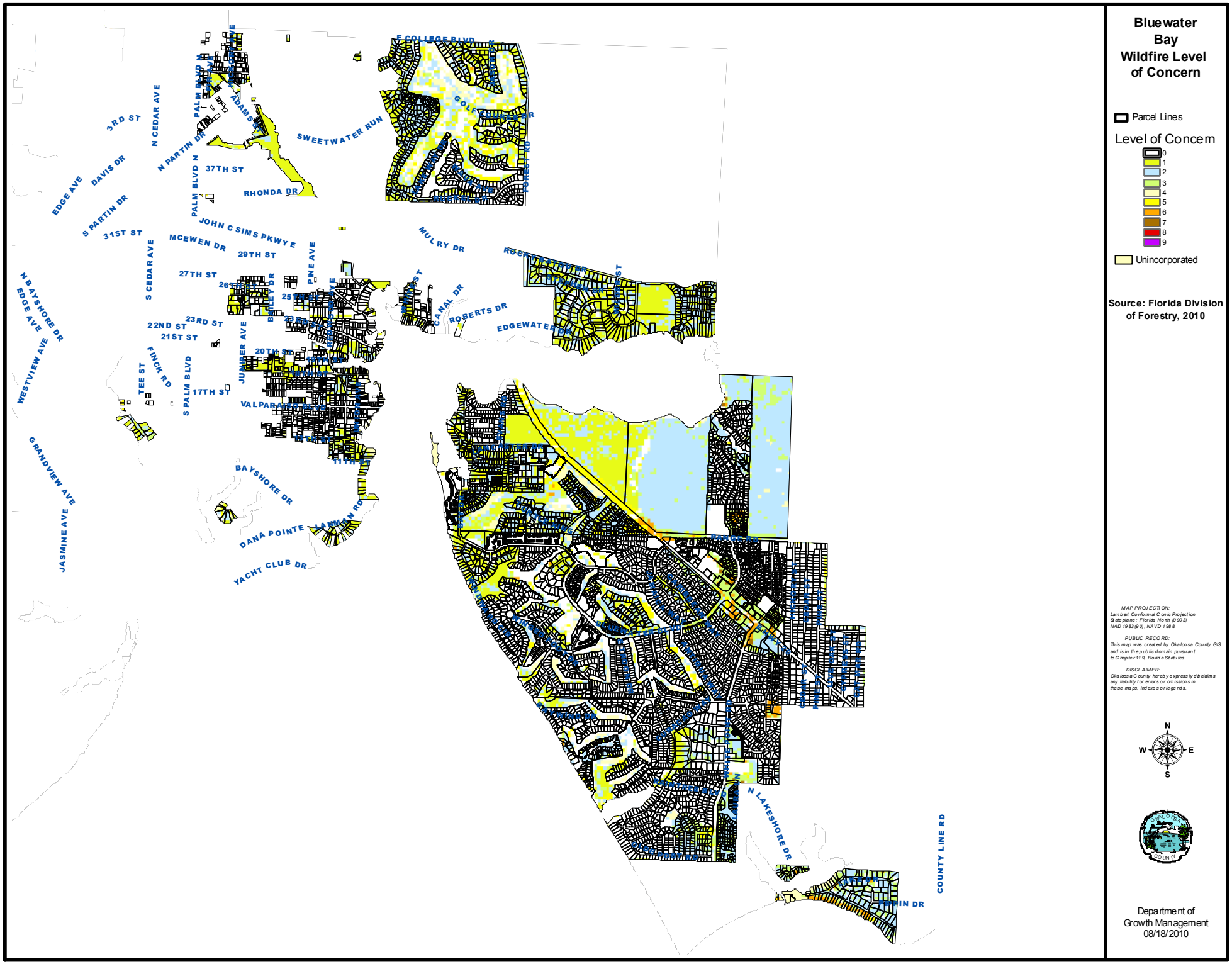
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
NAD 1983(90), NAVD 1988.

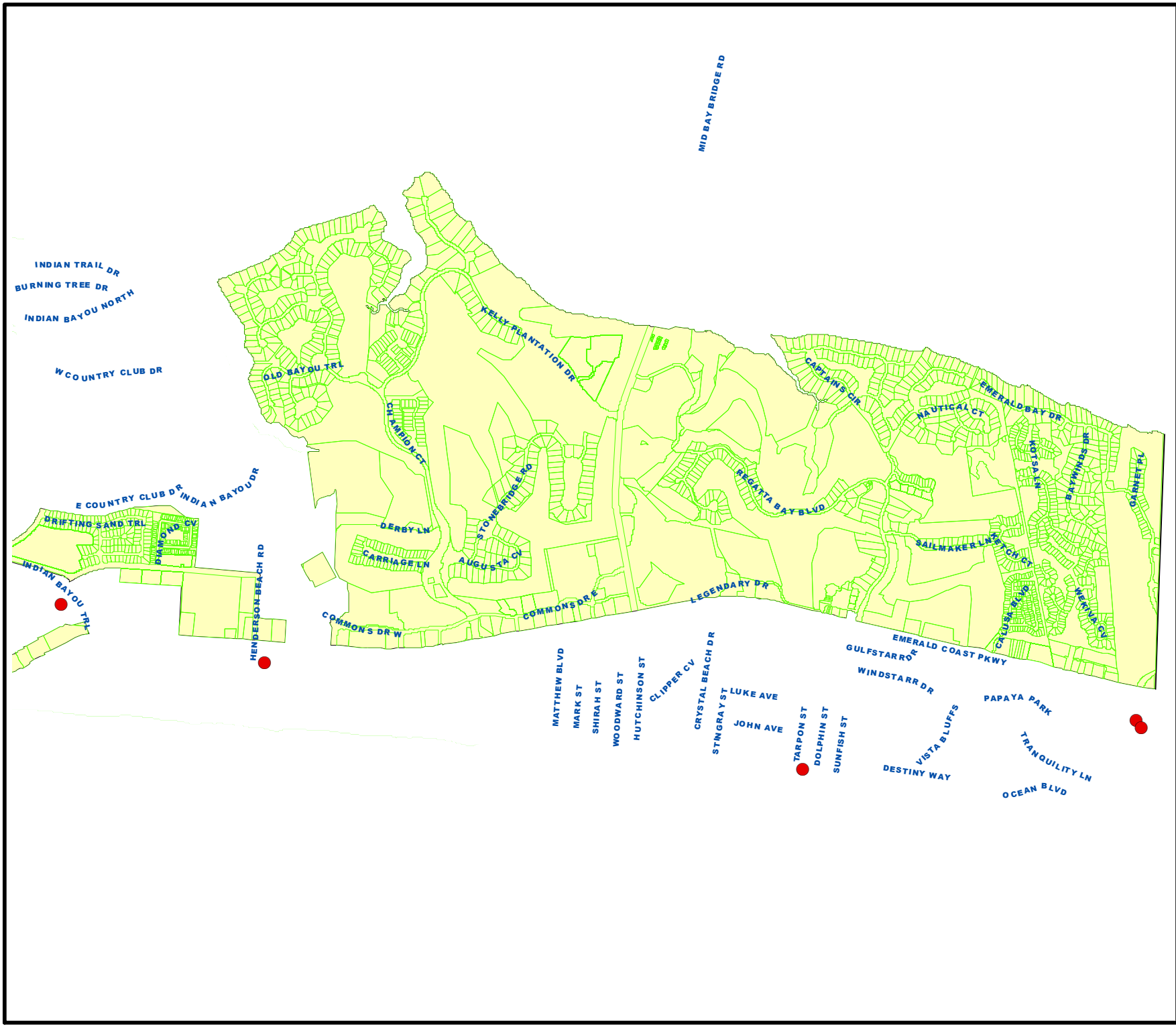
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Department of Growth Management
08/18/2010


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, 2010
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
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Department of Growth Management
08/18/2010
E COLLEGE BLVD
SWEETWATER RUN
RHONDA DR
37TH ST
31ST ST
MCEWEN DR
29TH ST
27TH ST
23RD ST
22ND ST
21ST ST
17TH ST
JOHN C SIMS PKWY E
MULRY DR
ROBERTS DR
EDGEWATER DR
BAYSHORE DR
DANA POINTE
YACHT CLUB DR
LAWSON RD
N LAKESHORE DR
COUNTY LINE RD
N CEDAR AVE
S CEDAR AVE
PINE AVE
JUNIPER AVE
S PALM BLVD
N PARTIN DR
S PARTIN DR
DAVIS DR
EDGE AVE
N BAYSHORE DR
WESTVIEW AVE
GRANDVIEW AVE
JASMINE AVE
FINCK RD
TEE ST
ADAMS ST
CANAL DR



Unincorporated Destin Critical Facilities

Parcel Lines

Critical Facilities

Unincorporated

Unincorporated Destin does not have any Critical Facilities

Source: Okaloosa County Public Safety, 2010

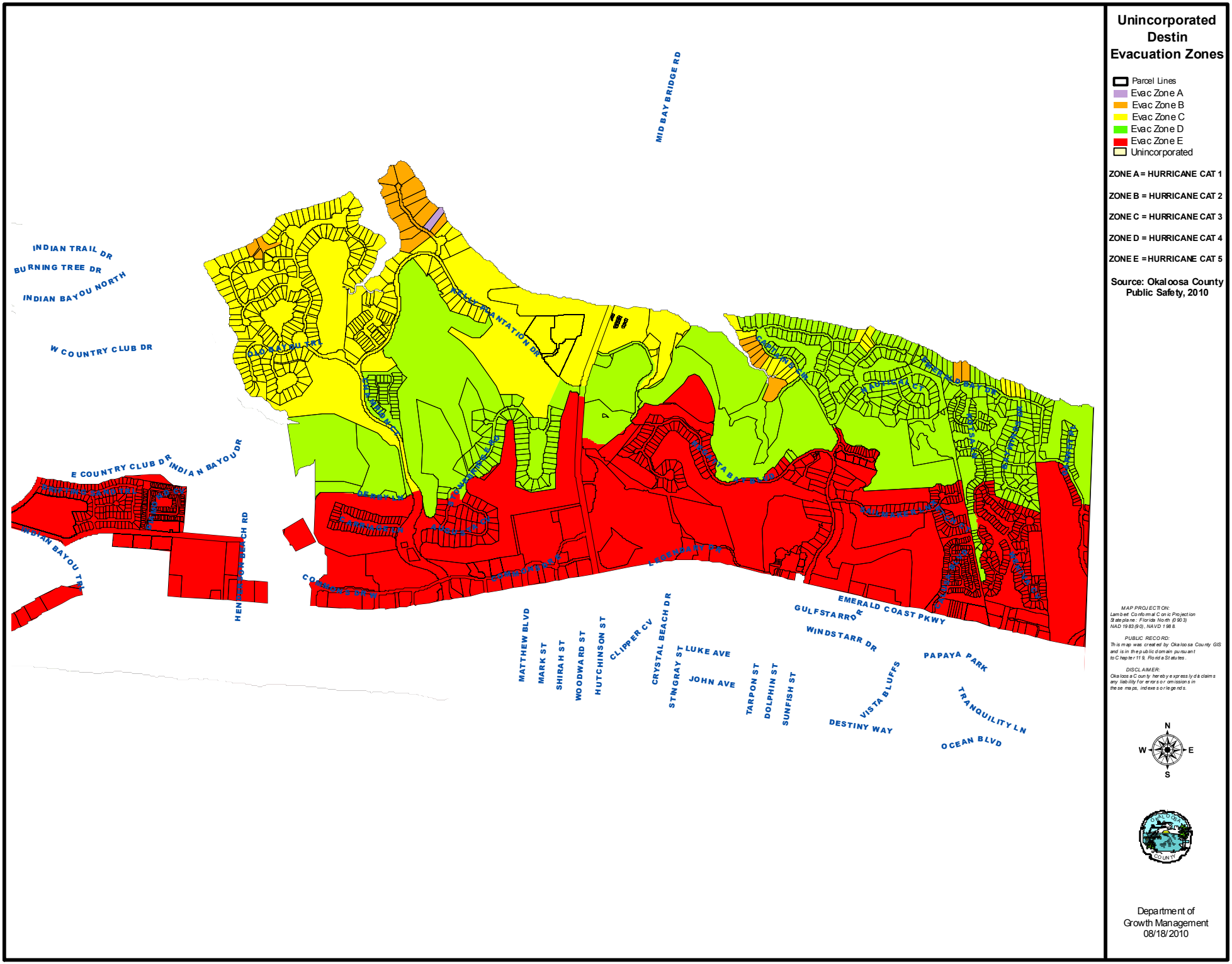
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
NAD 1983(90), NAVD 1988.

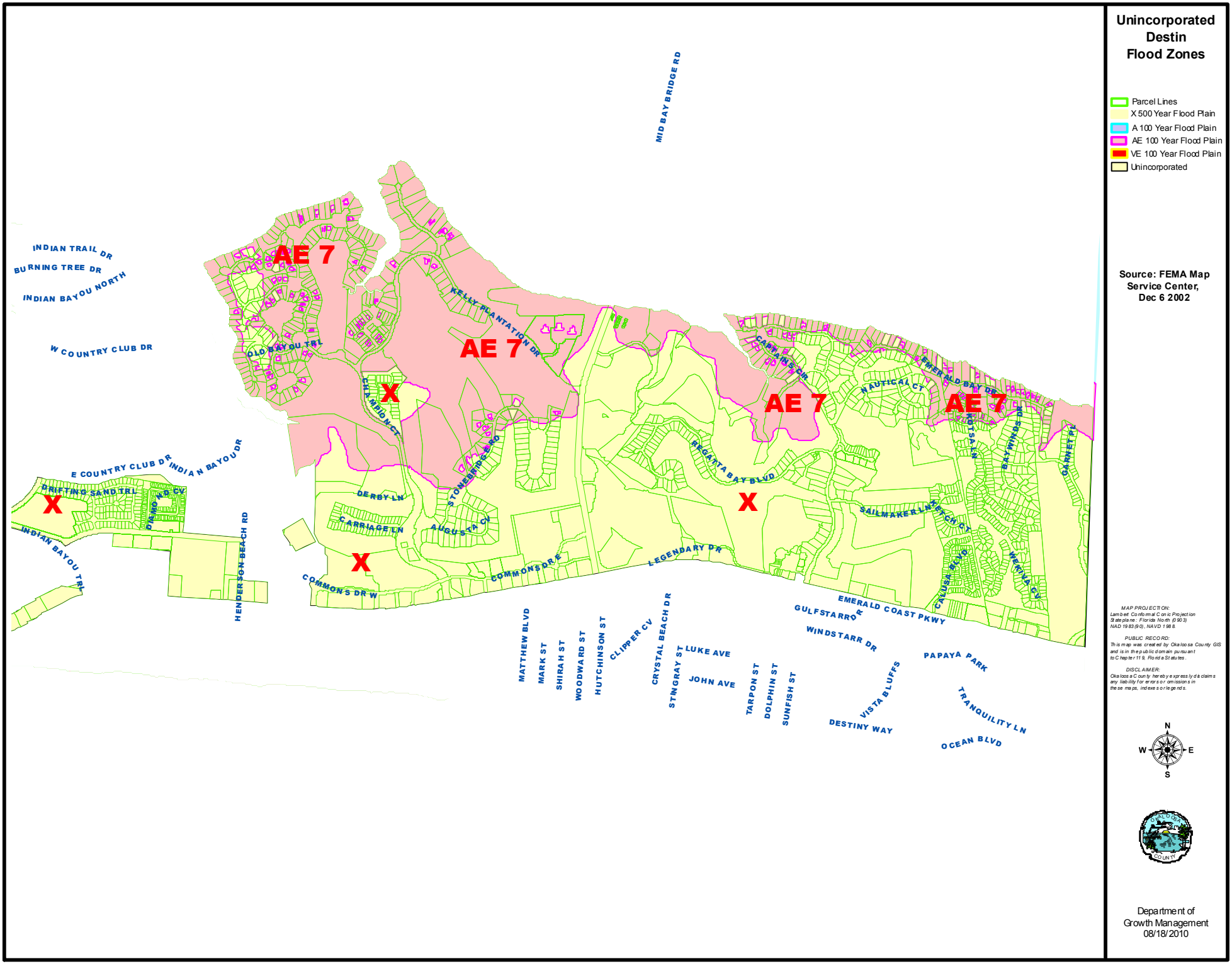
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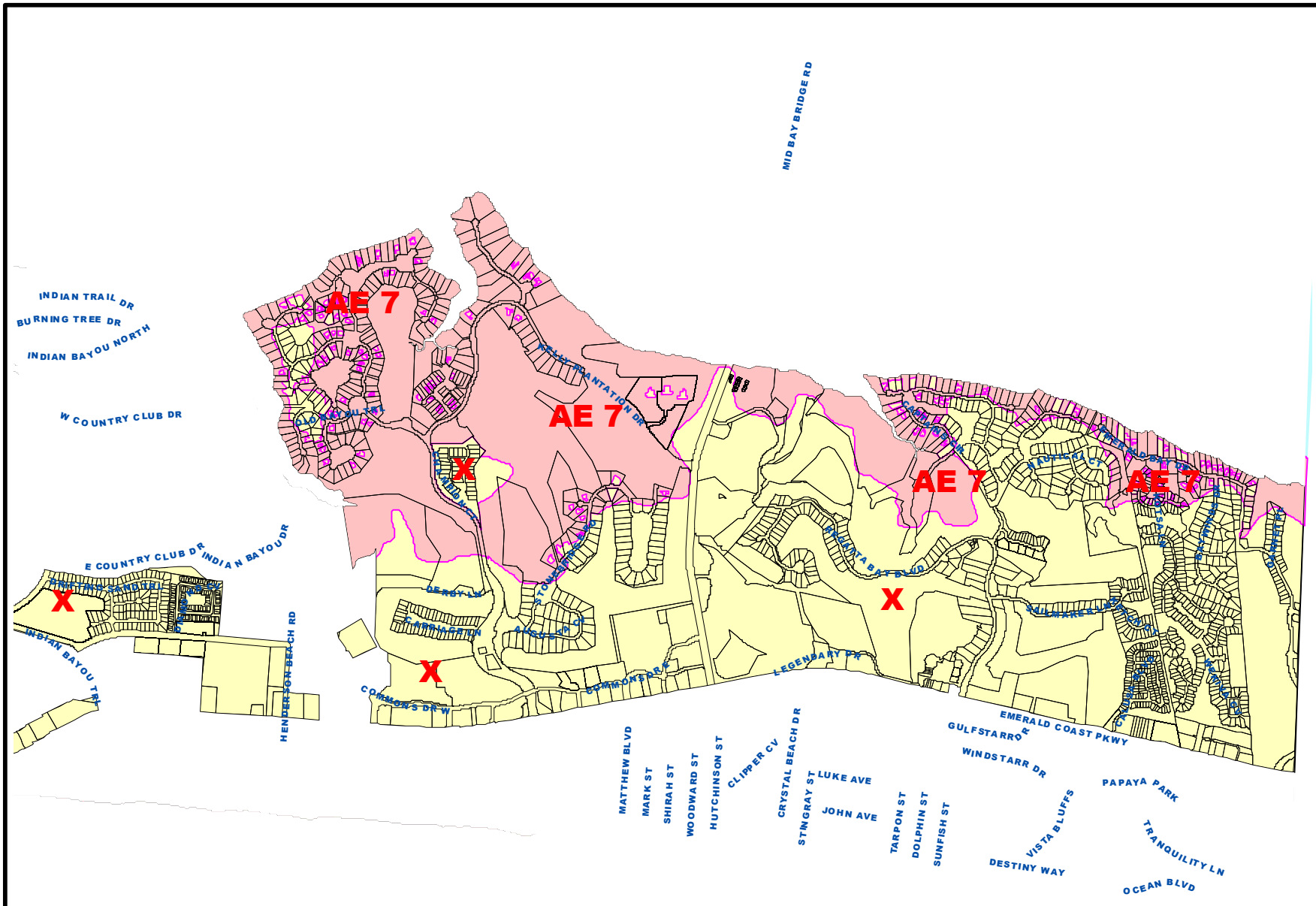
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Department of
Growth Management
08/18/2010


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, 2010
MAP PROJECTION:
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N
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Department of
Growth Management
08/18/2010
MID BAY BRIDGE RD
INDIAN TRAIL DR
BURNING TREE DR
INDIAN BAYOU NORTH
W COUNTRY CLUB DR
E COUNTRY CLUB DR
INDIAN BAYOU DR
INDIAN BAYOU TRL
HENDERSON BEACH RD
KELLY PLANTATION DR
OLD KELLY PLT
COMMONS DR
EMERALD COAST PKWY
GULFSTARR DR
WINDSTARR DR
PAPAYA PARK
TRANQUILITY LN
OCEAN BLVD
DESTINY WAY
VISTA BLUFFS
MATTHEW BLVD
MARK ST
SHIRAH ST
WOODWARD ST
HUTCHINSON ST
CLIPPER CV
CRYSTAL BEACH DR
STINGRAY ST
LUKE AVE
JOHN AVE
TARPON ST
DOLPHIN ST
SUNFISH ST


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,
Dec 6 2002
AE 7
AE 7
AE 7
AE 7
X
X
X
MID BAY BRIDGE RD
INDIAN TRAIL DR
BURNING TREE DR
INDIAN BAYOU NORTH
W COUNTRY CLUB DR
OLD BAYOU TRL
KELLY PLANTATION DR
CLAMDIGGER CT
E COUNTRY CLUB DR
INDIAN BAYOU DR
DRIFTING SAND TRL
DIAMOND D CV
INDIAN BAYOU TRL
HENDERSON BEACH RD
DERBY LN
CARRIAGE LN
AUGUSTA CT
STONEBRIDGE RD
COMMONS DR W
COMMONS DR E
LEGENDARY DR
REGATTA BAY BLVD
CARIANNE DR
EMERALD BAY DR
NAUTICAL CT
KOTSA LN
BAYFINDS DR
GARNET PL
SAILMAKER LN
TEAL CT
CALUSA ECHO CT
HENNA CT
EMERALD COAST PKWY
GULFSTARR DR
WINDSTARR DR
PAPAYA PARK
TRANQUILITY LN
OCEAN BLVD
VISTA BLUFFS
DESTINY WAY
MATTHEW BLVD
MARK ST
SHIRAH ST
WOODWARD ST
HUTCHINSON ST
CLIPPER CV
CRYSTAL BEACH DR
STINGRAY ST
LUKE AVE
JOHN AVE
TARPON ST
DOLPHIN ST
SUNFISH ST
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
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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, Dec 6 2002

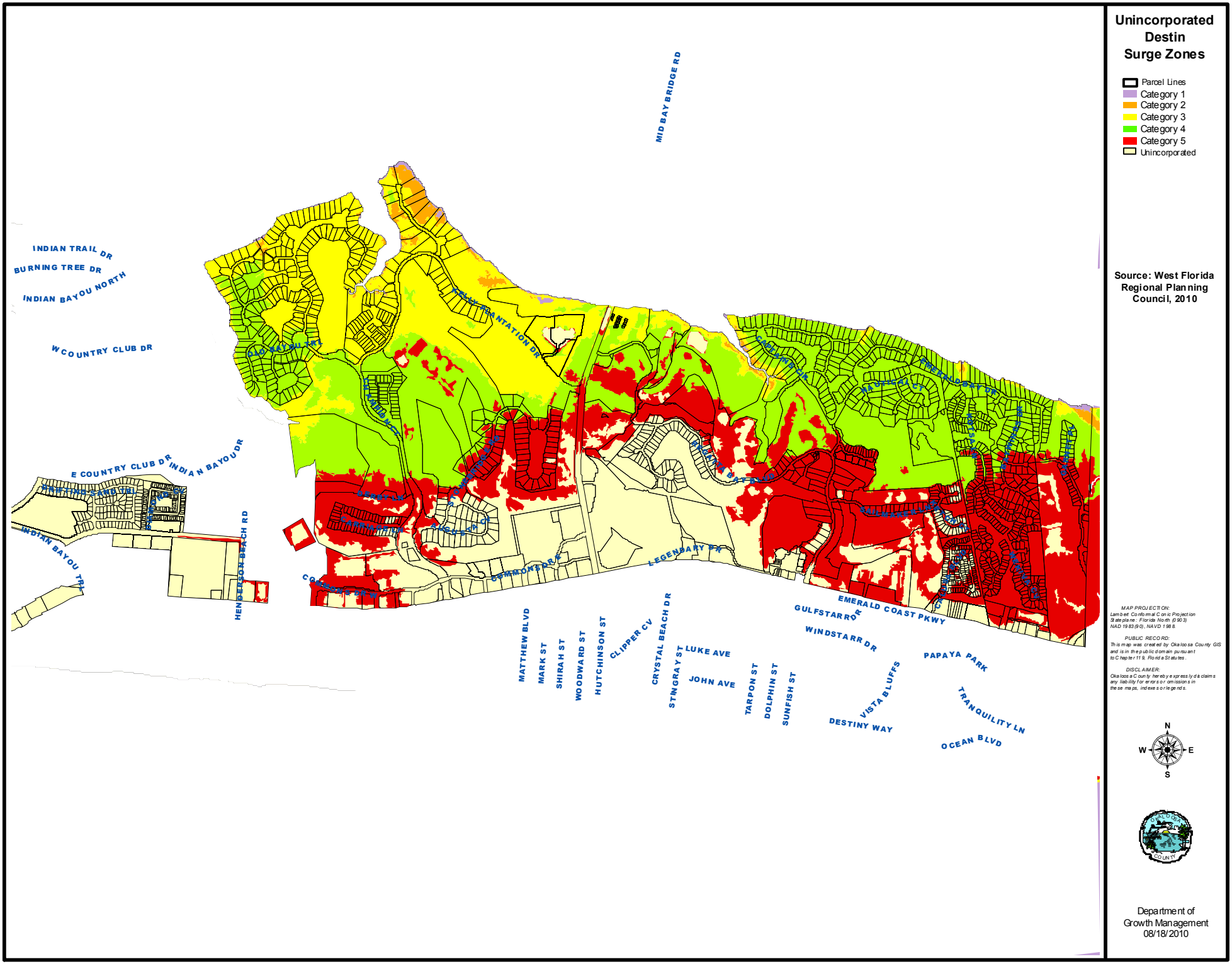
MAP PROJECTION:
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Stateplane: Florida North (0903)
NAD 1983(90), NAVD 1988.

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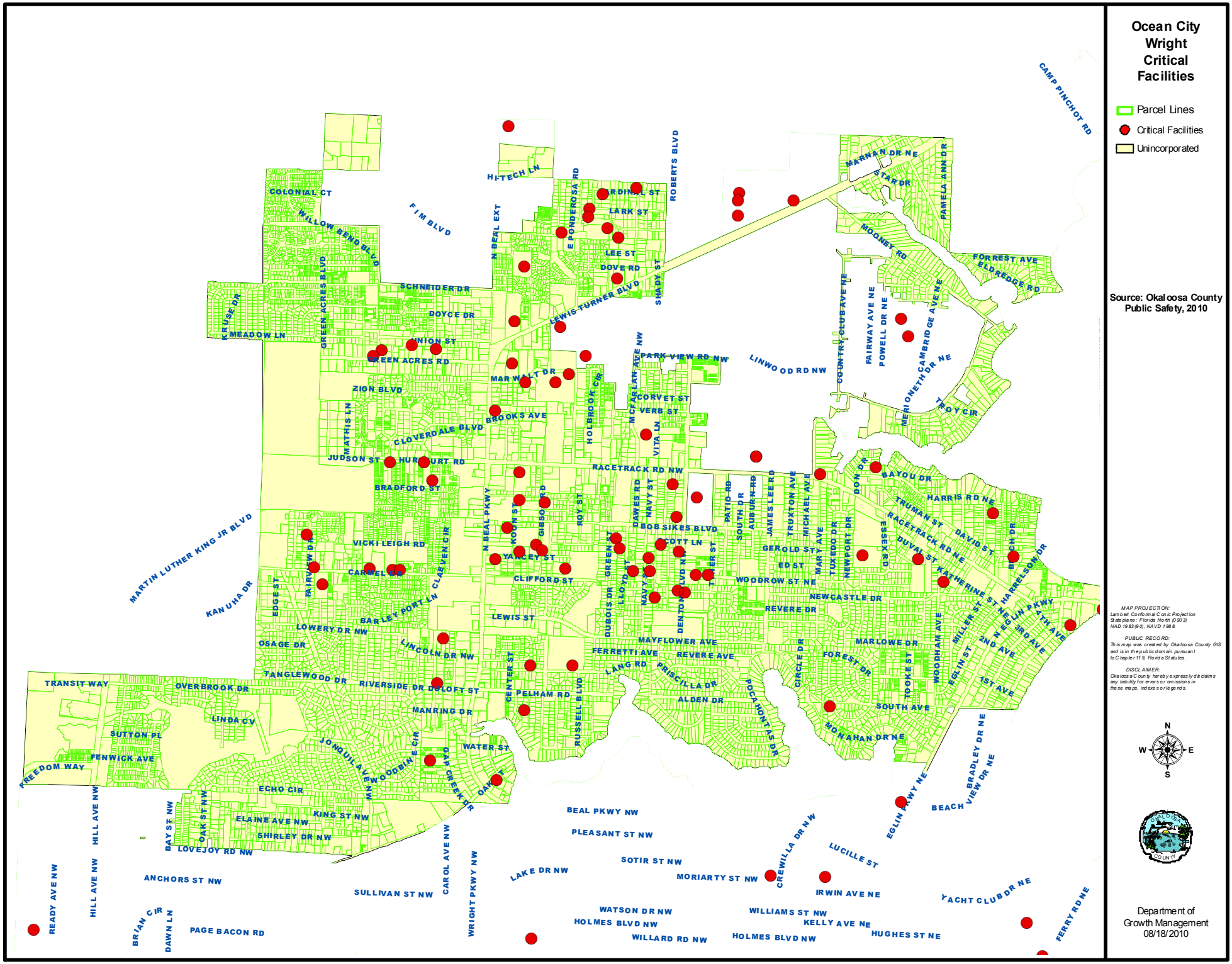
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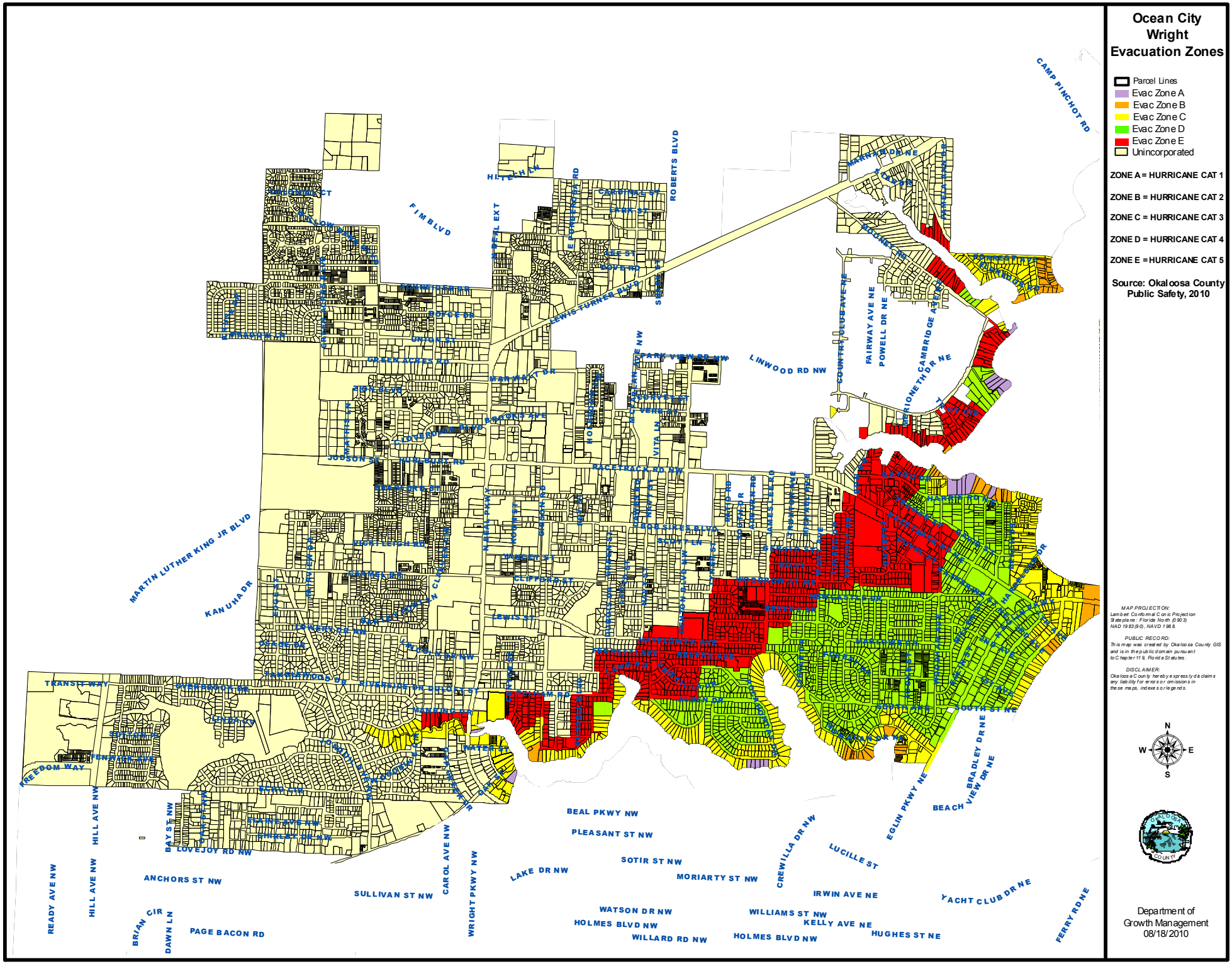
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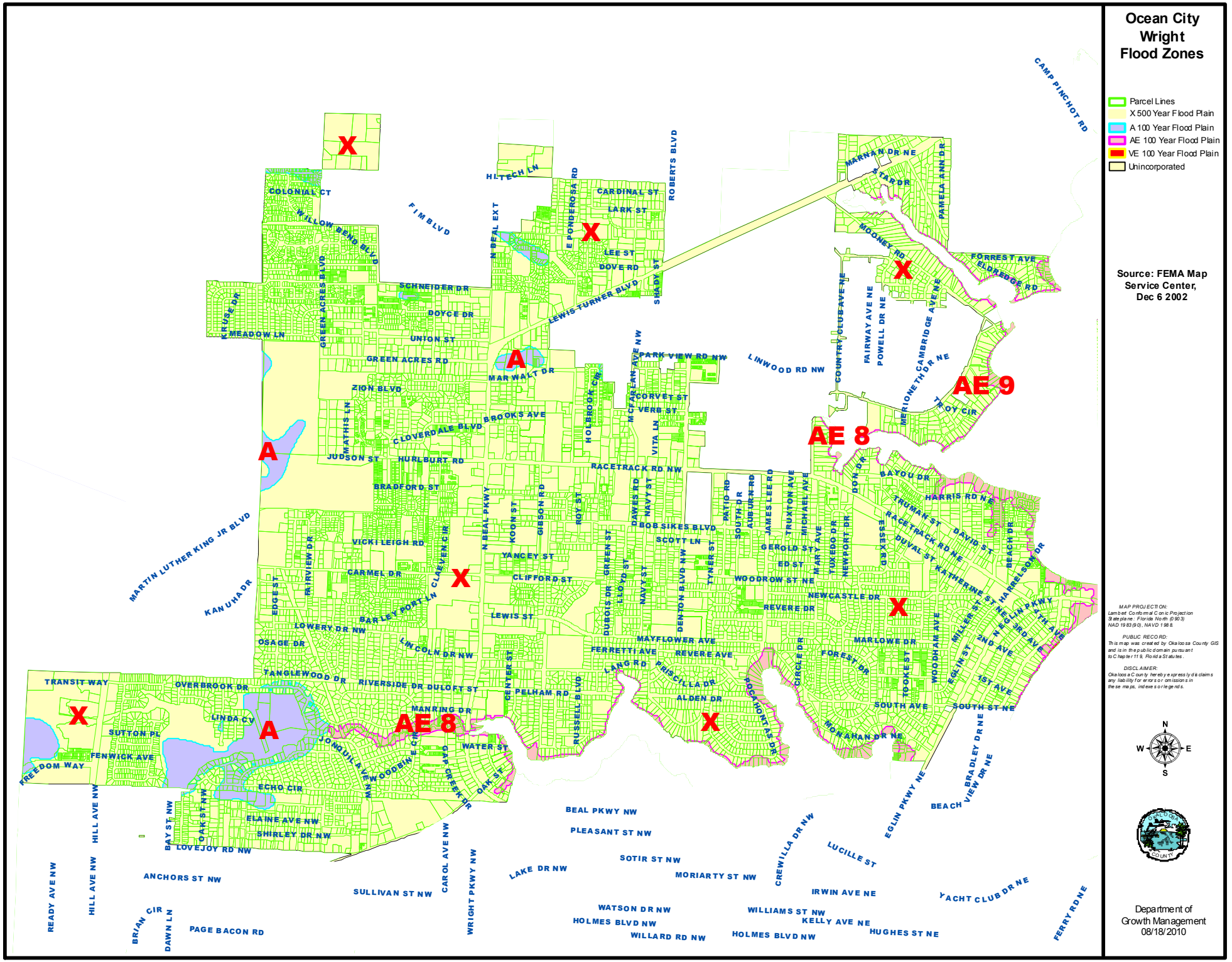
Department of Growth Management
08/18/2010

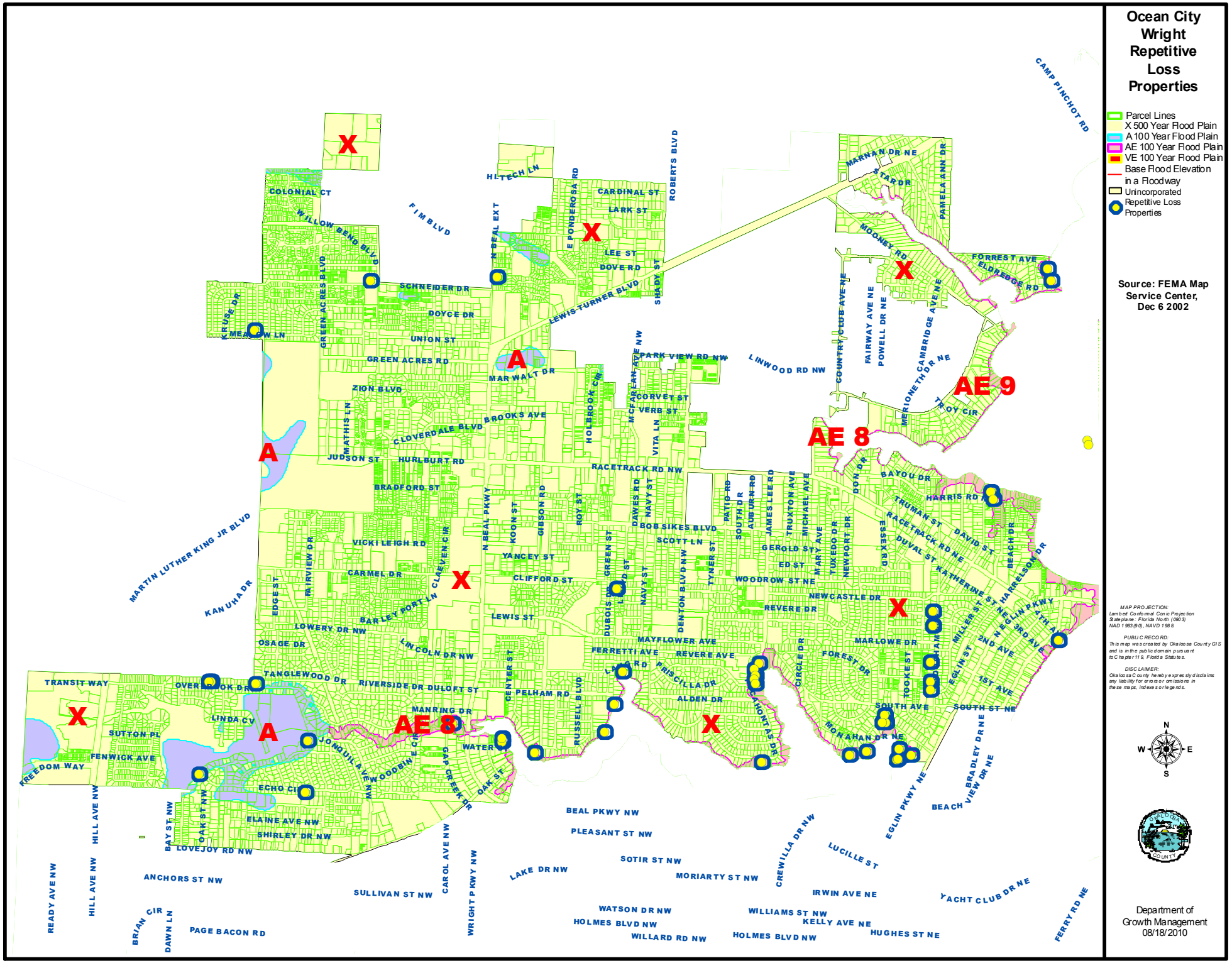

Unincorporated
Destin
Surge Zones
Parcel Lines
Category 1
Category 2
Category 3
Category 4
Category 5
Unincorporated
Source: West Florida Regional Planning Council, 2010
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
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Department of
Growth Management
08/18/2010
MID BAY BRIDGE RD
INDIAN TRAIL DR
BURNING TREE DR
INDIAN BAYOU NORTH
W COUNTRY CLUB DR
E COUNTRY CLUB DR
INDIAN BAYOU DR
INDIAN BAYOU TRL
HENDERSON BEACH RD
OLD HWY 98 EXT
TALLY PLANTATION DR
COUNTRY CLUB DR
EMERALD COAST DR
LEGENDARY DR
EMERALD COAST PKWY
GULFSTARR DR
WINDSTARR DR
PAPAYA PARK
TRANQUILITY LN
OCEAN BLVD
DESTINY WAY
VISTA BLUFFS
MATTHEW BLVD
MARK ST
SHIRAH ST
WOODWARD ST
HUTCHINSON ST
CLIPPER CV
CRYSTAL BEACH DR
STINGRAY ST
LUKE AVE
JOHN AVE
TARPON ST
DOLPHIN ST
SUNFISH ST

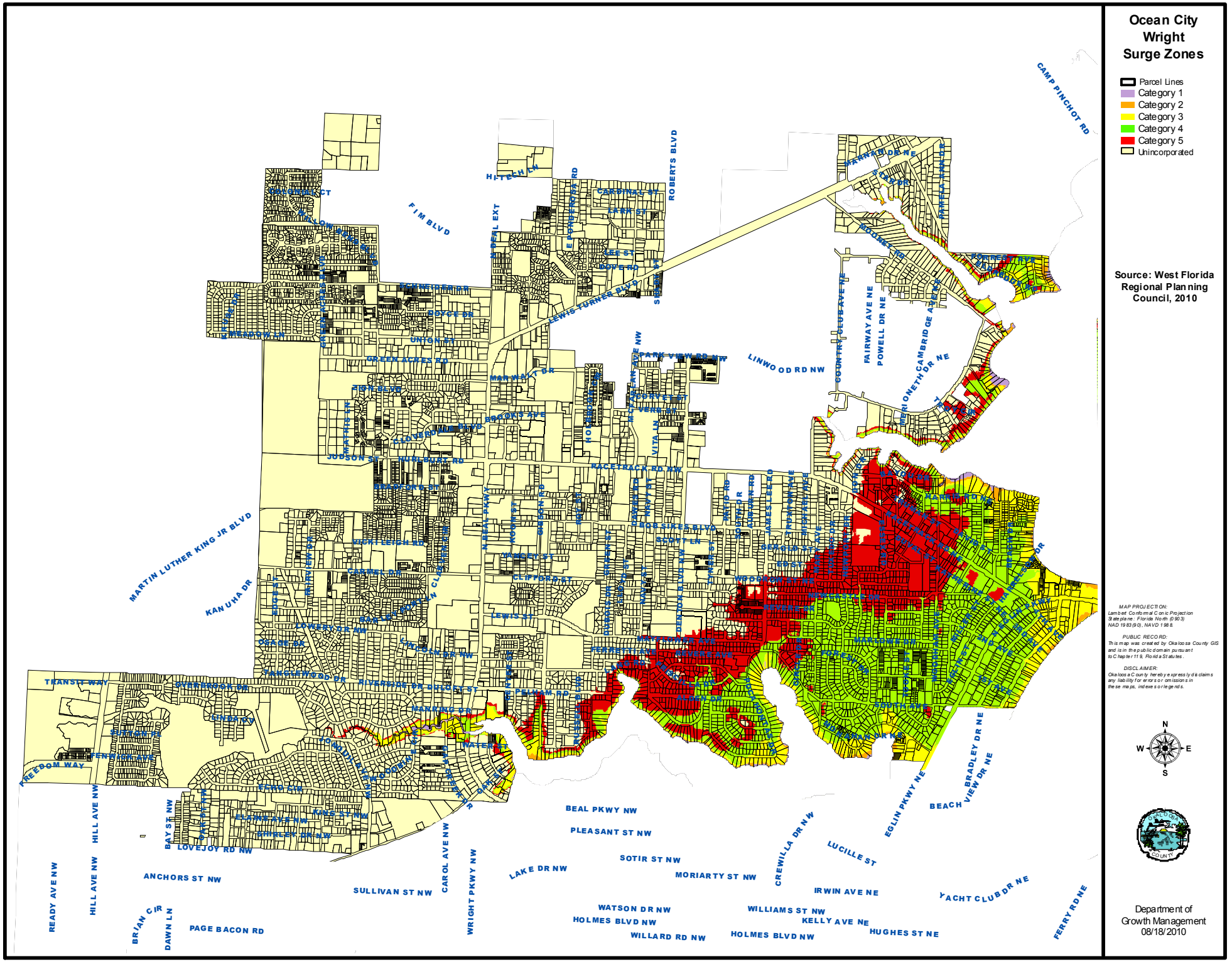

Unincorporated Destin Wildfire Level of Concern
Parcel Lines
Level of Concern
0
1
2
3
4
5
6
7
8
9
Unincorporated
Source: Florida Division of Forestry, 2010
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
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Department of Growth Management
08/18/2010
MID BAY BRIDGE RD
INDIAN TRAIL DR
BURNING TREE DR
INDIAN BAYOU NORTH
W COUNTRY CLUB DR
E COUNTRY CLUB DR
INDIAN BAYOU DR
INDIAN BAYOU TRL
HENDERSON BEACH RD
COMMODORE DR
LEGENDARY DR
EMERALD COAST PKWY
GULFSTAR RD
WINDSTAR DR
PAPAYA PARK
TRANQUILITY LN
OCEAN BLVD
DESTINY WAY
VISTA BLUFFS
MATTHEW BLVD
MARK ST
SHIRAH ST
WOODWARD ST
HUTCHINSON ST
CLIPPER CV
CRYSTAL BEACH DR
STINGRAY ST
LUKE AVE
JOHN AVE
TARPON ST
DOLPHIN ST
SUNFISH ST

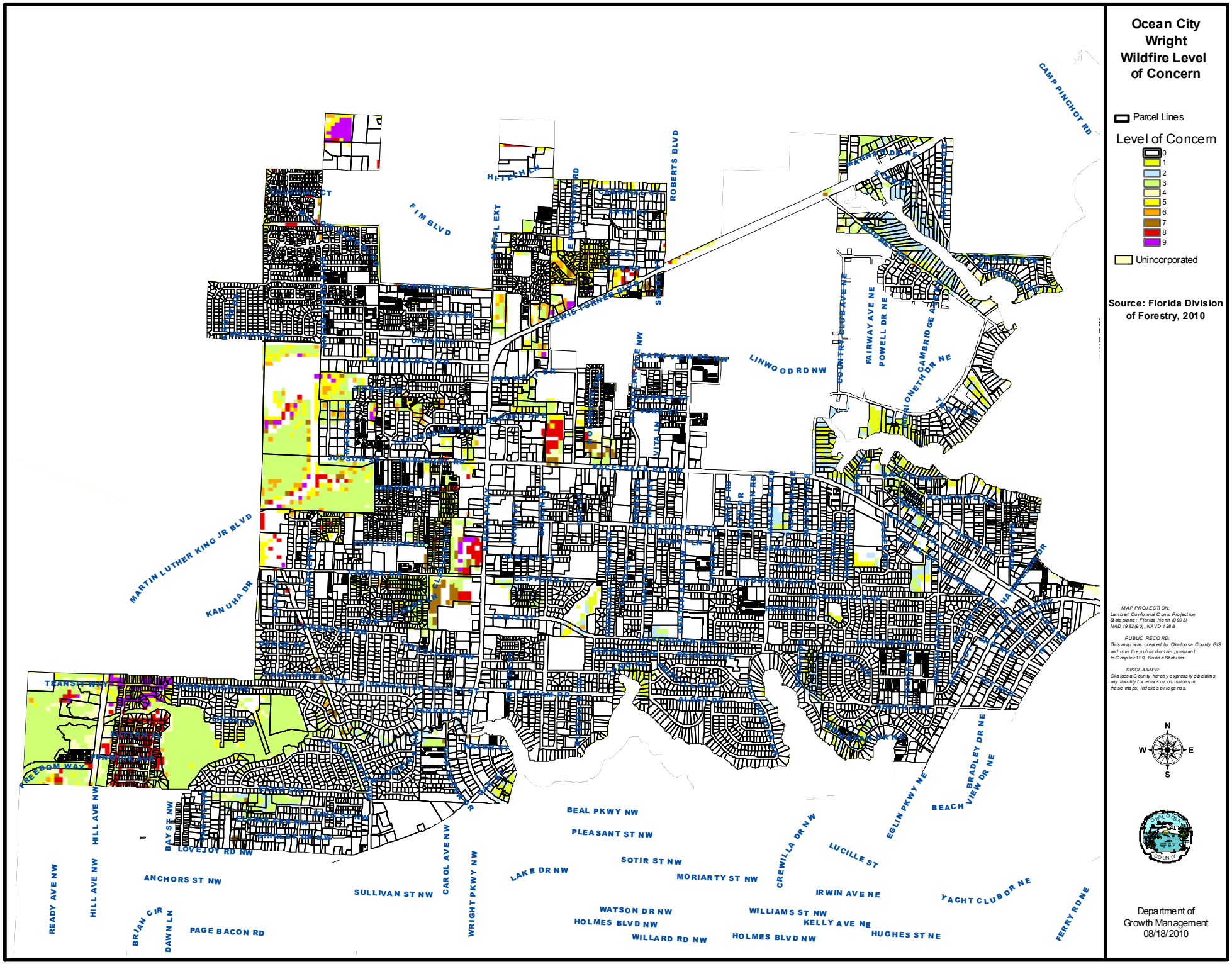

Ocean City
Wright
Critical
Facilities
Parcel Lines
Critical Facilities
Unincorporated
Source: Okaloosa County
Public Safety, 2010
MAP PROJECTION:
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N
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Department of
Growth Management
08/18/2010
CAMP PINCHOT RD
MARNAN DR NE
STAR DR
PAMELA ANN DR
MOONEY RD
FORREST AVE
ELDRIDGE RD
HI-TECH LN
COLONIAL CT
WILLOW BEND BLVD
FIM BLVD
N BEAL EXT
E PONDEROSA RD
ROBERTS BLVD
CARDINAL ST
LARK ST
LEE ST
DOVE RD
SHADY ST
LEWIS TURNER BLVD
SCHNEIDER DR
DOYCE DR
KRUSE DR
MEADOW LN
GREEN ACRES BLVD
UNION ST
GREEN ACRES RD
ZION BLVD
MATHIS LN
MARWALT DR
BROOKS AVE
CLOVERDALE BLVD
JUDSON ST
HURLBURT RD
BRADFORD ST
HOLBROOK CIR
PARK VIEW RD NW
LINWOOD RD NW
MCFARLAIN AVE NW
CORVET ST
VERB ST
VITA LN
RACETRACK RD NW
COUNTRY CLUB AVE NE
FAIRWAY AVE NE
POWELL DR NE
CAMBRIDGE AVE NE
MERIONETH DR NE
TROY CIR
BAYOU DR
HARRIS RD NE
TRUMAN ST
DAVID ST
RACETRACK RD NE
DUVAL ST
KATHERINE ST
HARRELSON DR
BOB SIKES BLVD
SCOTT LN
GEROLD ST
ED ST
WOODROW ST NE
NEWCASTLE DR
REVERE DR
MARLOWE DR
FOREST DR
SOUTH AVE
MONAHAN DR NE
MARTIN LUTHER KING JR BLVD
KANUHA DR
VICKI LEIGH RD
CARMEL CIR
CLIFFORD ST
YANCEY ST
LEWIS ST
LOWERY DR NW
BARLEY PORT LN
OSAGE DR
LINCOLN DR NW
TANGLEWOOD DR
RIVERSIDE DR
DULOET ST
OVERBROOK DR
TRANSIT WAY
MANRING DR
LINDA CV
SUTTON PL
FENWICK AVE
FREEDOM WAY
ECHO CIR
ELAINE AVE NW
KING ST NW
SHIRLEY DR NW
LOVEJOY RD NW
ANCHORS ST NW
SULLIVAN ST NW
PAGE BACON RD
READY AVE NW
HILL AVE NW
BAY ST NW
OAK ST NW
BRIAN CIR
DAWN LN
CAROL AVE NW
WRIGHT PKWY NW
LAKE DR NW
WATER ST
JOAQUILA AVE NW
ROBIN CIR NW
DAVIS CREEK DR
DAVIS CT
CENTER ST
PELHAM RD
RUSSELL BLVD
DUBOIS DR
GREEN AVE
LLOYD ST
NAVY ST
DAWES RD
BEAL PKWY
GIBSON RD
KOON ST
HOLY ST
PATIO RD
SOUTH DR
AUBURN RD
JAMES LEE RD
TRUXTON AVE
MICHAEL AVE
MARY AVE
TUXEDO DR
NEWPORT DR
ESSEX RD
BOB DR
BEACH DR
DENTON BLVD N
LANG RD
FERRETTI AVE
MAYFLOWER AVE
REVERE AVE
PRISCILLA DR
ALDEN DR
CAVALIER DR
CIRCLE DR
WOODHAM AVE
MILLER ST
EGLIN ST
TOOKE ST
EGLIN PKWY NE
1ST AVE
2ND AVE
3RD AVE
4TH AVE
BEAL PKWY NW
PLEASANT ST NW
SOTIR ST NW
MORIARTY ST NW
CREWILLA DR NW
LUCILLE ST
IRWIN AVE NE
YACHT CLUB DR NE
FERRY RD NE
EGLIN PKWY NE
BEACH
BRADLEY DR NE
VIEW DR NE
WATSON DR NW
HOLMES BLVD NW
WILLARD RD NW
WILLIAMS ST NW
KELLY AVE NE
HUGHES ST NE

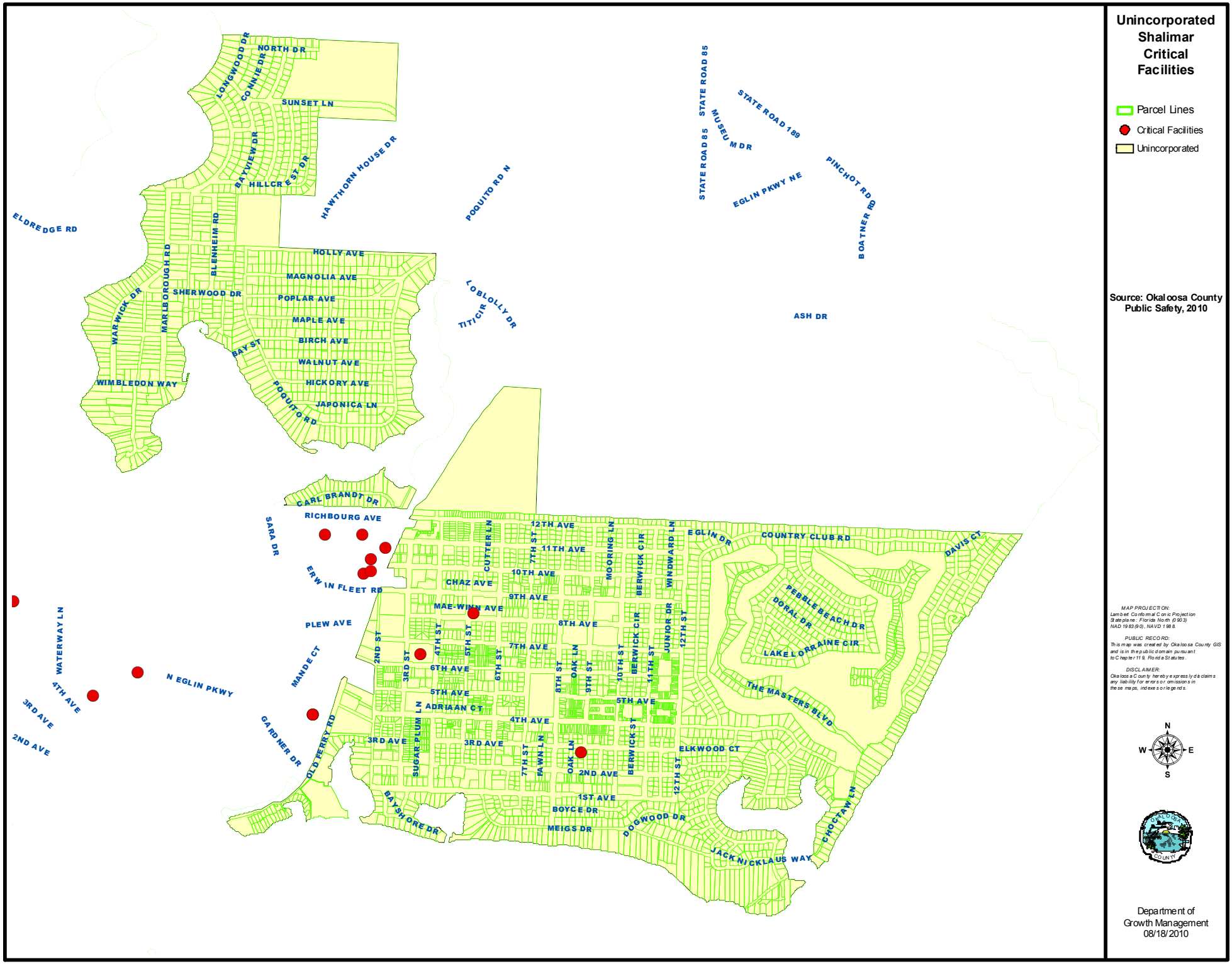

Ocean City
Wright
Evacuation Zones
Parcel Lines
Evac Zone A
Evac Zone B
Evac Zone C
Evac Zone D
Evac Zone E
Unincorporated
ZONE A = HURRICANE CAT 1
ZONE B = HURRICANE CAT 2
ZONE C = HURRICANE CAT 3
ZONE D = HURRICANE CAT 4
ZONE E = HURRICANE CAT 5
Source: Okaloosa County Public Safety, 2010
MAP PROJECTION:
Lambert Conformal Conic Projection
State plane : Florida North (0903)
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Department of
Growth Management
08/18/2010
MARTIN LUTHER KING JR BLVD
KANUHA DR
LEWIS TURNER BLVD
FIM BLVD
ROBERTS BLVD
LINWOOD RD NW
CAMP PINCHOT RD
RACETRACK RD NW
BEAL PKWY NW
PLEASANT ST NW
SOTIR ST NW
MORIARTY ST NW
LAKE DR NW
SULLIVAN ST NW
ANCHORS ST NW
LOVEJOY RD NW
PAGE BACON RD
WILLARD RD NW
HOLMES BLVD NW
WATSON DR NW
WILLIAMS ST NW
KELLY AVE NE
IRWIN AVE NE
YACHT CLUB DR NE
HUGHES ST NE
FERRY RD NE
BEACH VIEW DR NE
BRADLEY DR NE
EGLIN PKWY NE
LUCILLE ST
CREWILLA DR NW
WRIGHT PKWY NW
CAROL AVE NW
HILL AVE NW
READY AVE NW
BAY ST NW
FAIRWAY AVE NE
POWELL DR NE
COUNTRY CLUB AVE NE
CAMBRIDGE AVE NE
MARINA DR NE
HILTECH LN
FREEDOM WAY
TRANSIT WAY
WATER ST
SOUTH ST NE
BRIAN CIR
DAWN LN

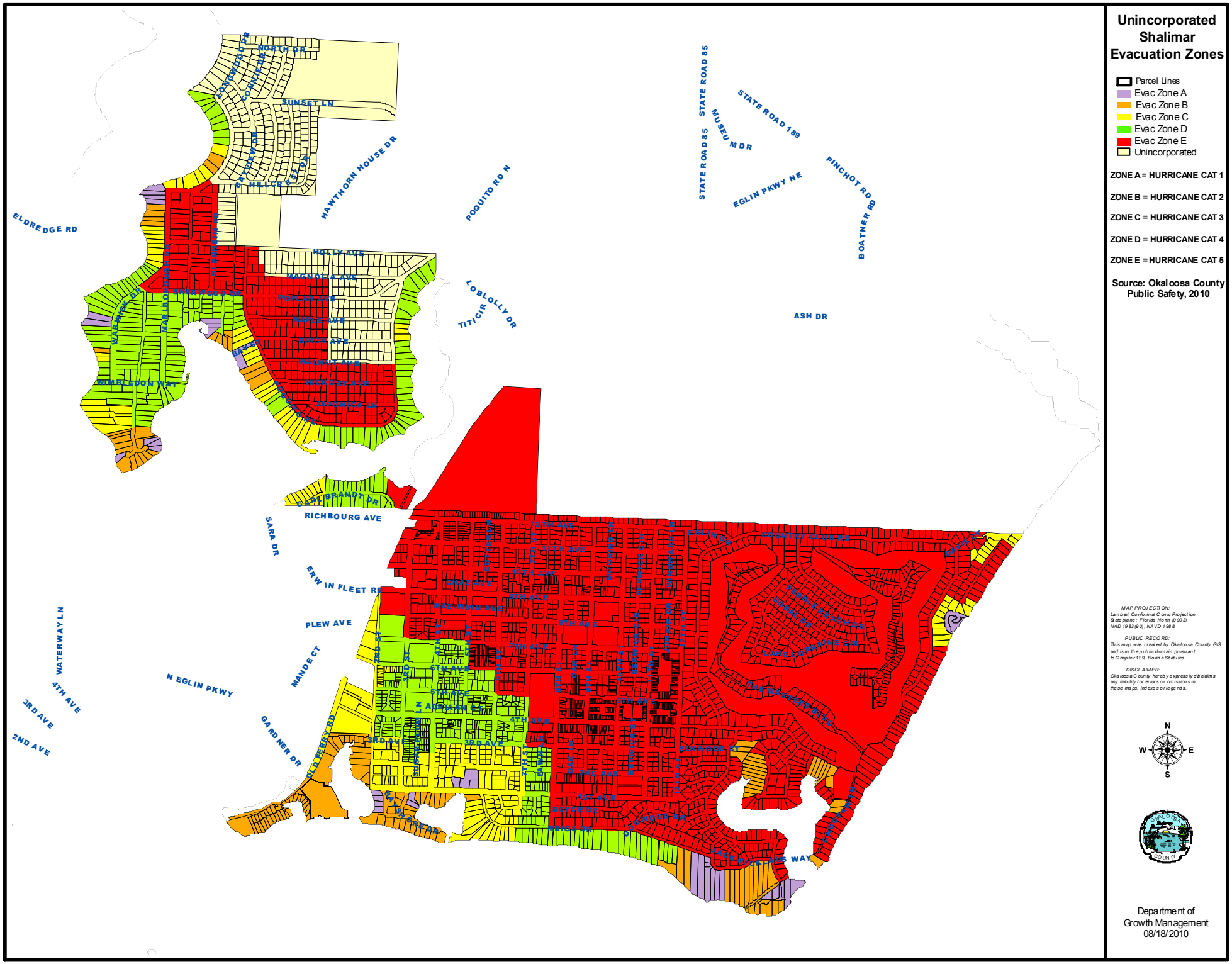

Ocean City
Wright
Flood Zones
Parcel Lines
X 500 Year Flood Plain
A 100 Year Flood Plain
AE 100 Year Flood Plain
VE 100 Year Flood Plain
Unincorporated
Source: FEMA Map Service Center, Dec 6 2002
MAP PROJECTION:
Lambert Conformal Conic Projection
State plane: Florida North (0903)
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Department of Growth Management
08/18/2010
X
A
AE 8
AE 9
CAMP PINCHOT RD
MARNAN DR NE
PAMELA ANN DR
MOONEY RD
FORREST AVE
ELDRIDGE RD
COUNTRY CLUB AVE NE
FAIRWAY AVE NE
POWELL DR NE
CAMBRIDGE AVE NE
MERIONETH DR NE
TROY CIR
LINWOOD RD NW
PARK VIEW RD NW
HI-TECH LN
COLONIAL CT
WILLOW OAK BLVD
FIM BLVD
N BEAL EXT
E PONDEROSA RD
CARDINAL ST
LARK ST
ROBERTS BLVD
LEE ST
DOVE RD
SHADY ST
LEWIS TURNER BLVD
SCHNEIDER DR
DOYCE DR
KRUSE DR
MEADOW LN
GREEN ACRES BLVD
UNION ST
GREEN ACRES RD
ZION BLVD
MATHIS LN
MAR WALT DR
HOLIDAY CIR
MCFERRAN AVE NW
CORVET ST
VERE ST
VITA LN
BROOKS AVE
CLOVERDALE BLVD
JUDSON ST
HURLBURT RD
RACETRACK RD NW
BRADFORD ST
MARTIN LUTHER KING JR BLVD
KANUHA DR
EDGE ST
FAIRVIEW DR
VICKI LEIGH RD
CARMEL DR
CLEVEN CIR
N BEAL PKWY
KOON ST
GIBSON RD
ROY ST
DAWES RD
NAVY ST
BOB SIKES BLVD
SCOTT LN
YANCEY ST
CLIFFORD ST
LEWIS ST
BARLEY PORT LN
LOWERY DR NW
OSAGE DR
LINCOLN DR NW
TANGLEWOOD DR
RIVERSIDE DR
DULOFT ST
PELHAM RD
MANRING DR
WATER ST
TRANSIT WAY
OVERBROOK DR
LINDA CV
SUTTON PL
FENWICK AVE
FREEDOM WAY
ECHO CIR
WOODBINE CIR
OAK ST
CREEK DR
JONQUIL AVE NW
ELAINE AVE NW
SHIRLEY DR NW
LOVEJOY RD NW
BAY ST NW
OAK ST NW
HILL AVE NW
READY AVE NW
ANCHORS ST NW
BRIAN CIR
DAWN LN
PAGE BACON RD
SULLIVAN ST NW
CAROL AVE NW
WRIGHT PKWY NW
LAKE DR NW
BEAL PKWY NW
PLEASANT ST NW
SOTIR ST NW
MORIARTY ST NW
WATSON DR NW
HOLMES BLVD NW
WILLARD RD NW
WILLIAMS ST NW
KELLY AVE NE
HOLMES BLVD NW
HUGHES ST NE
IRWIN AVE NE
YACHT CLUB DR NE
FERRY RD NE
CREWILLA DR NW
LUCILLE ST
EGLIN PKWY NE
BEACH VIEW DR NE
BRADLEY DR NE
MONAHAN DR NE
SOUTH AVE
SOUTH ST NE
1ST AVE
2ND AVE
3RD AVE
4TH AVE
EGLIN ST
MILLER ST
TOOKE ST
WOODHAM AVE
MARLOWE DR
FOREST DR
CIRCLE DR
POCAHONTAS DR
ALDEN DR
PRISCILLA DR
LANG RD
FERRETTI AVE
REVERE AVE
MAYFLOWER AVE
DUBOIS DR
LLOYD ST
GREEN ST
TYNER ST
DENTON BLVD NW
NEWCASTLE DR
REVERE DR
WOODROW ST NE
ED ST
GEROLD ST
DUVAL ST
KATHERINE ST
RACETRACK RD NE
TRUMAN ST
DAVID ST
HARRIS RD NE
BAYOU DR
BON DR
TRUXTON AVE
MICHAEL AVE
MARY AVE
TUXEDO DR
NEWPORT DR
ESSEX RD
JAMES LEE RD
PATIO RD
SOUTH DR
AUBURN RD
BEACH DR
HARRELSON DR
N EGLIN PKWY

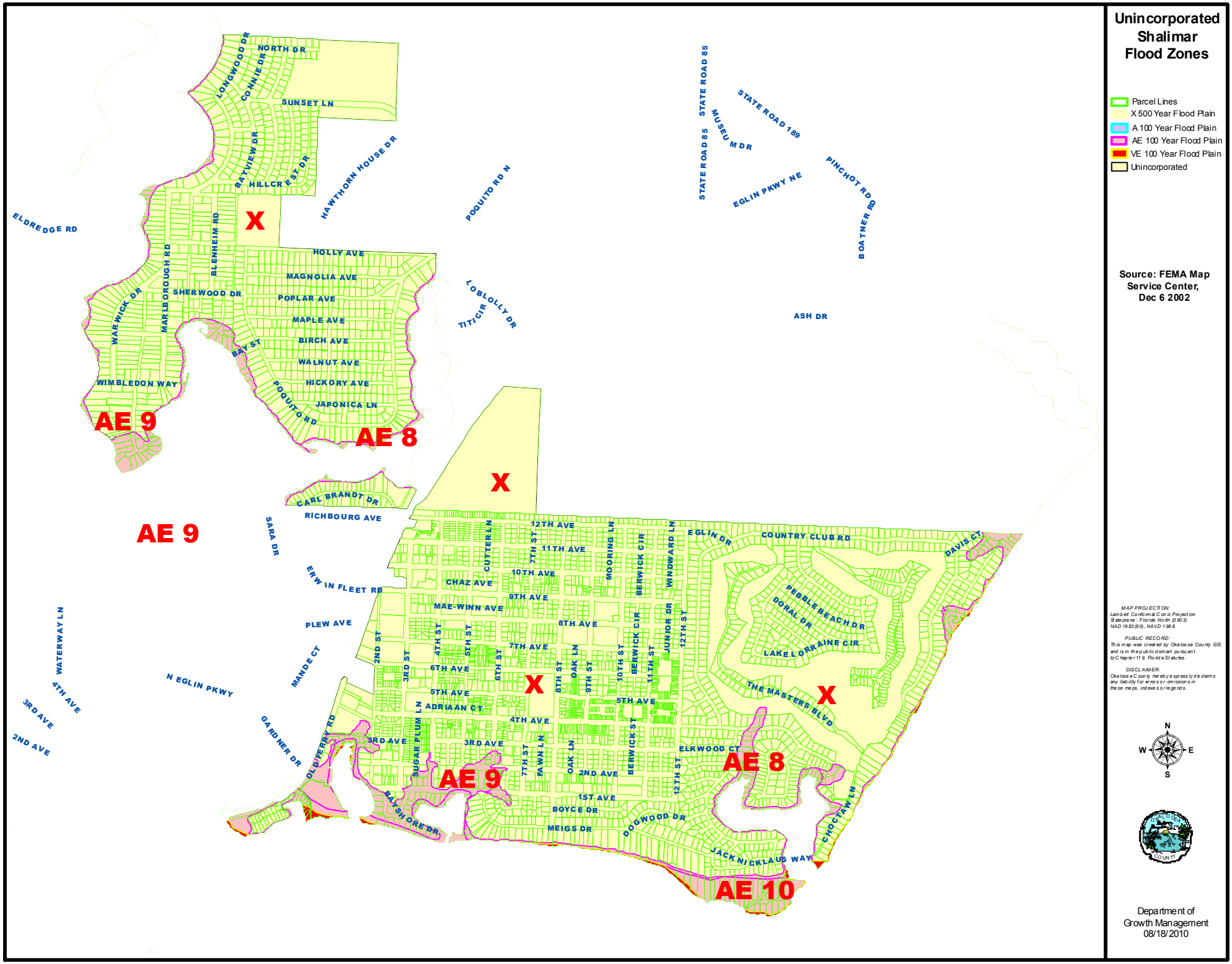

Ocean City Wright Repetitive Loss Properties
Parcel Lines
X 500 Year Flood Plain
A 100 Year Flood Plain
AE 100 Year Flood Plain
VE 100 Year Flood Plain
Base Flood Elevation in a Floodway
Unincorporated
Repetitive Loss Properties
Source: FEMA Map Service Center, Dec 6 2002
MAP PROJECTION:
Lambert Conformal Conic Projection
State plane: Florida North (0903)
NAD 1983(90), NAVD 1988.
PUBLIC RECORD:
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DISCLAIMER:
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Department of Growth Management
08/18/2010
X
A
AE 8
AE 9
CAMP PINCHOT RD
MARNAN DR NE
PAMELA ANN DR
MOONEY RD
FORREST AVE
ELDREDGE RD
COUNTRY CLUB AVE NE
FAIRWAY AVE NE
POWELL DR NE
CAMBRIDGE AVE NE
MERIONETH DR NE
TROY CIR
HI-TECH LN
COLONIAL CT
WILLOW OAK BLVD
FIM BLVD
N BEAL EXT
EPONDEROSA RD
CARDINAL ST
LARK ST
ROBERTS BLVD
LEE ST
DOVE RD
SHADY ST
LEWIS TURNER BLVD
SCHNEIDER DR
DOYCE DR
UNION ST
GREEN ACRES BLVD
GREEN ACRES RD
CRUISE DR
MEADOW LN
ZION BLVD
MATHIS LN
MAR WALT DR
HOLIDAY CIR
MCCLELLAN AVE NW
PARK VIEW RD NW
LINWOOD RD NW
CORVET ST
VERE ST
VITA LN
BROOKS AVE
CLOVERDALE BLVD
JUDSON ST
HURLBURT RD
RACETRACK RD NW
BRADFORD ST
DAWES RD
NAVY ST
PATIO RD
SOUTH DR
AUBURN RD
JAMES LEE RD
TRUXTON AVE
MICHAEL AVE
BON DR
BAYOU DR
HARRIS RD
TRUMAN ST
RACETRACK RD NE
DAVID ST
DUVAL ST
KATHERINE ST
ESSEX RD
BEACH DR
HARRELSON DR
MARTIN LUTHER KING JR BLVD
KANUHA DR
VICKI LEIGH RD
CARMEL DR
CLIFFORD ST
YANCEY ST
KOON ST
GIBSON RD
ROY ST
BOB SIKES BLVD
SCOTT LN
GEROLD ST
ED ST
WOODROW ST NE
NEWCASTLE DR
REVERE DR
MARLOWE DR
FOREST DR
MAYFLOWER AVE
FERRETTI AVE
REVERE AVE
PRISCILLA DR
ALDEN DR
CHRISTOPHER DR
DIECKLE DR
TOOKE ST
MILLER ST
EGLIN PKWY
2ND AVE
1ST AVE
SOUTH AVE
SOUTH ST NE
MONAHAN DR NE
BRADLEY DR NE
BEACH VIEW DR NE
EGLIN PKWY NE
LEWIS ST
LOWERY DR NW
BARLEY PORT LN
EDGE ST
FAIRVIEW DR
CLAUSEN CIR
N BEAL PKWY
DENTON BLVD NW
TYNER ST
DUBOIS ST
GREEN ST
NAVY ST
LINCOLN DR NW
OSAGE DR
TRANSIT WAY
OVERLOOK DR
TANGLEWOOD DR
RIVERSIDE DR
DULOFT ST
CENTER ST
PELHAM RD
RUSSELL BLVD
LYNN RD
MANRING DR
LINDA CV
SUTTON PL
FENWICK AVE
FREEDOM WAY
JOAQUILA AVE
WOODBINE CIR
WATER
OAK ST
CREEK DR
ECHO CIR
HILL AVE NW
BAY ST NW
OAK ST NW
ELAINE AVE NW
SHIRLEY DR NW
LOVEJOY RD NW
READY AVE NW
ANCHORS ST NW
BRIAN CIR
DAWN LN
PAGE BACON RD
SULLIVAN ST NW
CAROL AVE NW
WRIGHT PKWY NW
BEAL PKWY NW
PLEASANT ST NW
SOTIR ST NW
LAKE DR NW
MORIARTY ST NW
WATSON DR NW
HOLMES BLVD NW
WILLARD RD NW
CREWILLA DR NW
LUCILLE ST
IRWIN AVE NE
WILLIAMS ST NW
KELLY AVE NE
HOLMES BLVD NW
HUGHES ST NE
YACHT CLUB DR NE
FERRY RD NE
N
W
E
S

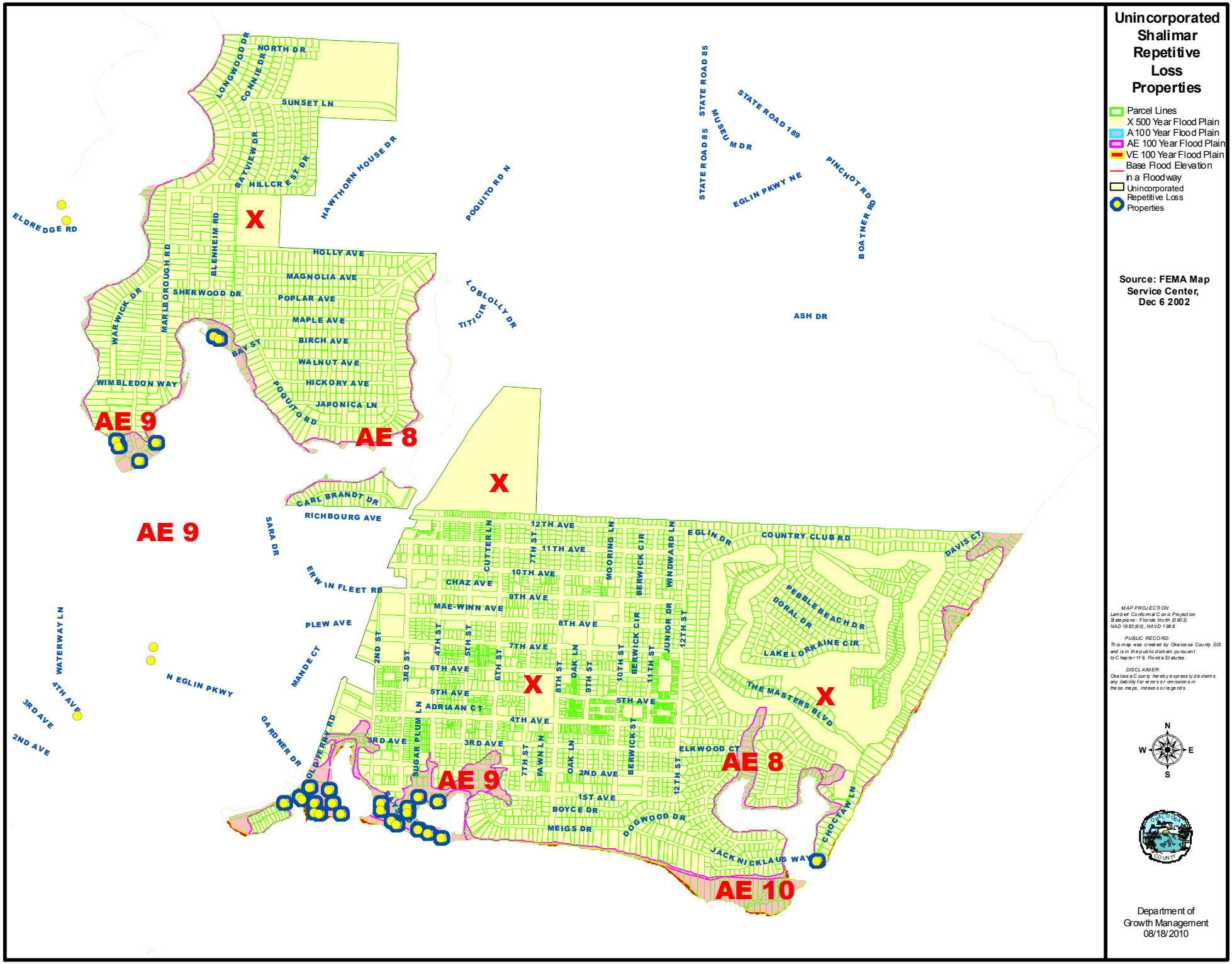

Ocean City
Wright
Surge Zones
Parcel Lines
Category 1
Category 2
Category 3
Category 4
Category 5
Unincorporated
Source: West Florida Regional Planning Council, 2010
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
NAD 1983(90), NAVD 1988.
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N
W
E
S
Department of
Growth Management
08/18/2010
MARTIN LUTHER KING JR BLVD
KANUHA DR
FIM BLVD
LEWIS TURNERS BLVD
ROBERTS BLVD
CAMP PINCHOT RD
LINWOOD RD NW
RACETRACK RD NW
BEAL PKWY NW
PLEASANT ST NW
SOTIR ST NW
MORIARTY ST NW
LAKE DR NW
SULLIVAN ST NW
WATSON DR NW
HOLMES BLVD NW
WILLARD RD NW
WILLIAMS ST NW
KELLY AVE NE
HUGHES ST NE
IRWIN AVE NE
YACHT CLUB DR NE
FERRY RD NE
BEACH VIEW DR NE
BRADLEY DR NE
EGLIN PKWY NE
CREWILLA DR NW
LUCILLE ST
WRIGHT PKWY NW
CAROL AVE NW
HILL AVE NW
READY AVE NW
BAY ST NW
LOVEJOY RD NW
ANCHORS ST NW
PAGE BACON RD
BRIAN CIR
DAWN LN
FREEDOM WAY
TRANSIT WAY
FAIRWAY AVE NE
POWELL DR NE
COUNTRY CLUB AVE NE
CAMBRIDGE TERR NE
MARINA DR NE
HITECH LN
BEAL EXT
LEE ST
PARK VIEW RD NW
VERONICA DR
VITA LN
JUDSON ST
MARY ALY DR
GREEN ACRES RD
UNION ST
BOYETT DR
ROBINSON RD
SCENIC HWY 98
OVERBROOK DR
CLIFFORD ST
LEWIS ST
WATER ST
TOOMEY RD
SOUTH FERDON BLVD
SOUTH PARK DR
SOUTH LEIGH RD
SOUTH CLAIRE DR
SOUTH CLAIRE BLVD
SOUTH CLAIRE CIR
SOUTH CLAIRE CT
SOUTH CLAIRE PL
SOUTH CLAIRE WAY
SOUTH CLAIRE LN
SOUTH CLAIRE TER
SOUTH CLAIRE PKWY
SOUTH CLAIRE DR
SOUTH CLAIRE BLVD
SOUTH CLAIRE CIR
SOUTH CLAIRE CT
SOUTH CLAIRE PL
SOUTH CLAIRE WAY
SOUTH CLAIRE LN
SOUTH CLAIRE TER
SOUTH CLAIRE PKWY

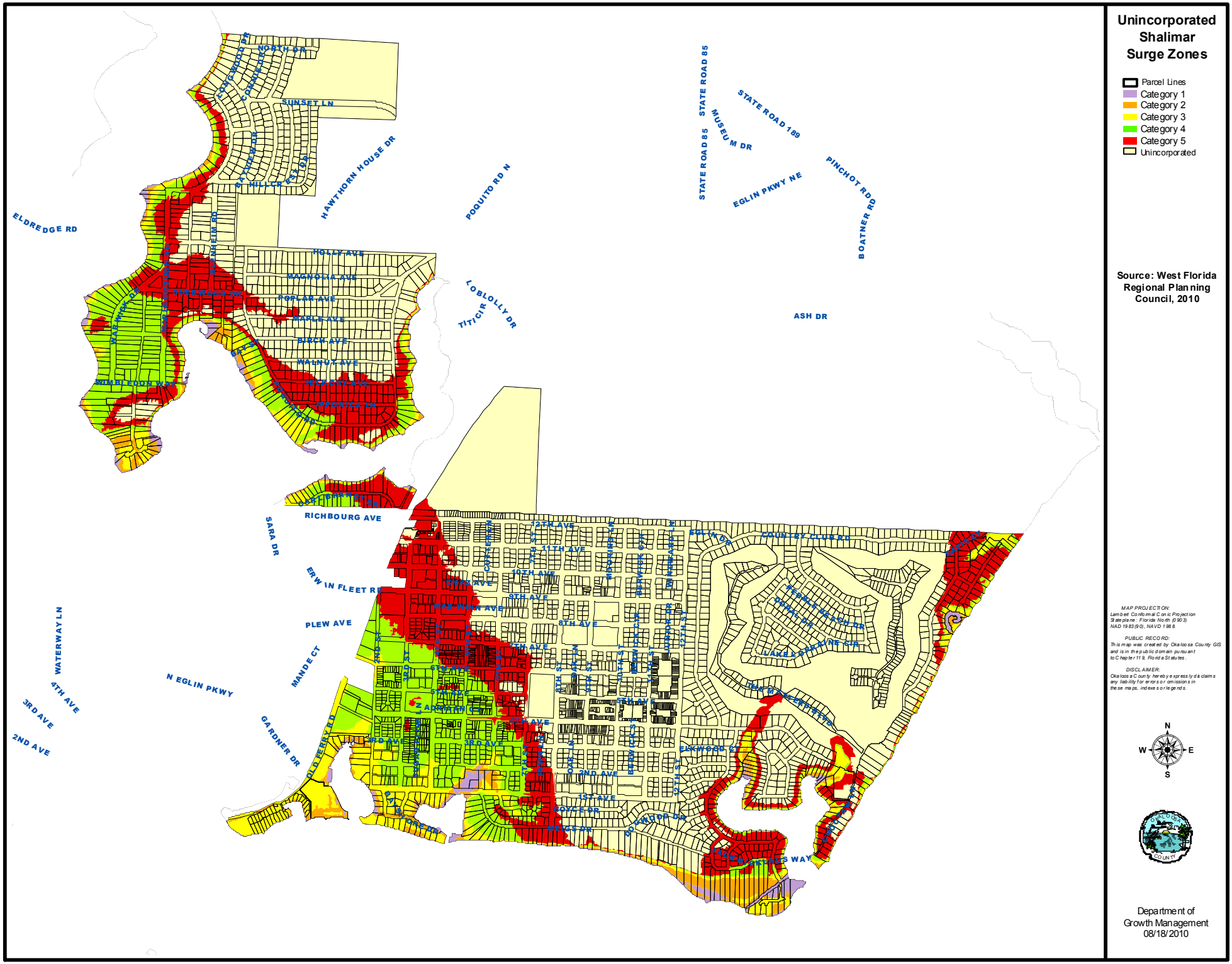

Ocean City Wright Wildfire Level of Concern
Parcel Lines
Level of Concern
0
1
2
3
4
5
6
7
8
9
Unincorporated
Source: Florida Division of Forestry, 2010
MAP PROJECTION:
Lambert Conformal Conic Projection
State plane: Florida North (0903)
NAD 1983(90), NAVD 1988.
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N
W
E
S
Department of Growth Management
08/18/2010
FIM BLVD
ROBERTS BLVD
LINWOOD RD NW
MARTIN LUTHER KING JR BLVD
KANUHA DR
BEAL PKWY NW
PLEASANT ST NW
SOTIR ST NW
MORIARTY ST NW
LAKE DR NW
SULLIVAN ST NW
ANCHORS ST NW
LOVEJOY RD NW
PAGE BACON RD
WILLARD RD NW
HOLMES BLVD NW
WATSON DR NW
WILLIAMS ST NW
KELLY AVE NE
IRWIN AVE NE
HUGHES ST NE
YACHT CLUB DR NE
BEACH VIEW DR NE
BRADLEY DR NE
EGLIN PKWY NE
CREWILLA DR NW
LUCILLE ST
WRIGHT PKWY NW
CAROL AVE NW
BAY ST NW
HILL AVE NW
READY AVE NW
BRIAN CIR
DAWN LN
FERRY RD NE
CAMP PINCHOT RD
FAIRWAY AVE NE
POWELL DR NE
CAMBRIDGE DR NE
COUNTRY CLUB AVE NE
VITA LN NW
PARK VIEW DR NW
FREEDOM WAY

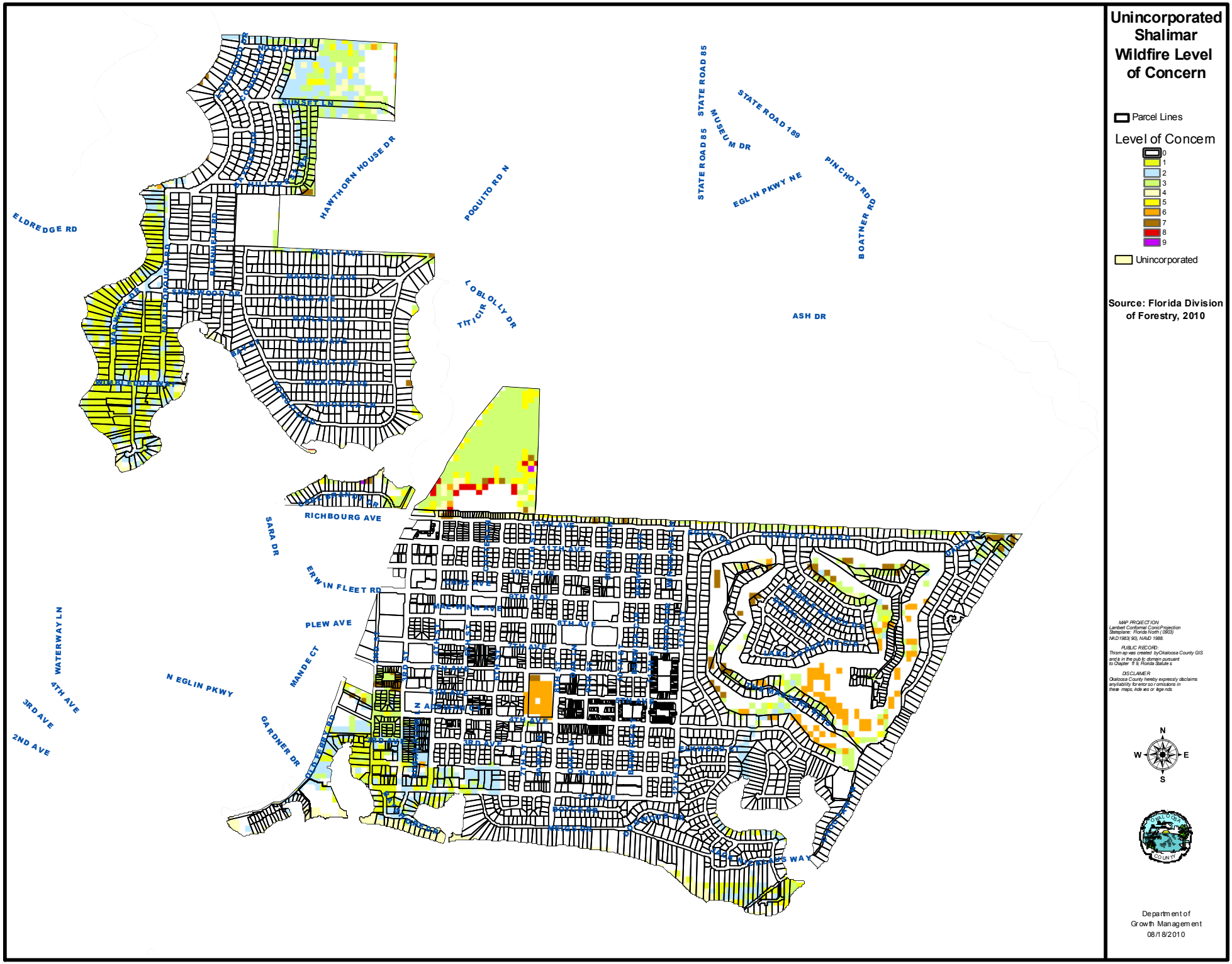

Unincorporated Shalimar Critical Facilities
Parcel Lines
Critical Facilities
Unincorporated
Source: Okaloosa County Public Safety, 2010
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
NAD 1983(90), NAVD 1988.
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N
W
E
S
Department of Growth Management
08/18/2010
NORTH DR
LONGWOOD DR
CONNIE DR
SUNSET LN
BAYVIEW DR
HILLCREST DR
HAWTHORN HOUSE DR
ELDREDGE RD
BLENHEIM RD
MARLBOROUGH RD
WARWICK DR
SHERWOOD DR
HOLLY AVE
MAGNOLIA AVE
POPLAR AVE
MAPLE AVE
BIRCH AVE
WALNUT AVE
HICKORY AVE
JAPONICA LN
WIMBLEDON WAY
BAY ST
POQUITO RD
POQUITO RD N
LOBLOLLY DR
TITI CIR
ASH DR
STATE ROAD 85
STATE ROAD 189
MUSEUM DR
EGLIN PKWY NE
PINCHOT RD
BOATNER RD
CARL BRANDT DR
RICHBOURG AVE
SARA DR
ERWIN FLEET RD
PLEW AVE
MANDE CT
N EGLIN PKWY
WATERWAY LN
4TH AVE
3RD AVE
2ND AVE
GARDNER DR
OLD FERRY RD
CUTTER LN
7TH ST
12TH AVE
11TH AVE
10TH AVE
9TH AVE
8TH AVE
7TH AVE
6TH AVE
5TH AVE
4TH AVE
3RD AVE
2ND AVE
1ST AVE
CHAZ AVE
MAE-WINN AVE
ADRIAAN CT
SUGAR PLUM LN
HAWAII LN
OAK LN
MOORING LN
BERWICK CIR
WINDWARD LN
JUNIPER DR
EGLIN DR
COUNTRY CLUB RD
DAVIS CT
PEBBLE BEACH DR
DORAL DR
LAKE LORRAINE CIR
THE MASTERS BLVD
ELKWOOD CT
BOYCE DR
MEIGS DR
BAY SHORE DR
DOGWOOD DR
CHOCTAW LN
JACK NICKLAUS WAY


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, 2010
MAP PROJECTION:
Lambert Conformal Conic Projection
State plane : Florida North (0903)
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N
W
E
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Department of
Growth Management
08/18/2010
ELDREDGE RD
HAWTHORN HOUSE DR
POQUITO RD N
STATE ROAD 85
STATE ROAD 189
MUSEUM DR
EGLIN PKWY NE
PINCHOT RD
BOATNER RD
SUNSET LN
HOLLY AVE
MAGNOLIA AVE
POPLAR AVE
OAK AVE
CEDAR AVE
PINE AVE
WIMBLEDON WAY
LOBLOLLY DR
TITICIR DR
ASH DR
RICHBOURG AVE
SARA DR
ERWIN FLEET RD
PLEW AVE
MANDE CT
N EGLIN PKWY
WATERWAY LN
4TH AVE
3RD AVE
2ND AVE
GARDNER DR
OLD FERRY RD
1ST AVE
2ND AVE
3RD AVE
PARKWOOD CT
PARKWOOD WAY


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, Dec 6 2002
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
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N
W
E
S
Department of Growth Management
08/18/2010
AE 9
AE 8
AE 10
X
NORTH DR
SUNSET LN
LONGWOOD DR
CONNIE DR
BAYVIEW DR
HILLCREST DR
HAWTHORN HOUSE DR
ELDREDGE RD
BLENHEIM RD
MARLBOROUGH RD
MARWICK DR
SHERWOOD DR
HOLLY AVE
MAGNOLIA AVE
POPLAR AVE
MAPLE AVE
BIRCH AVE
WALNUT AVE
HICKORY AVE
JAPONICA LN
WIMBLEDON WAY
BAY ST
POQUITO RD
POQUITO RD N
LOBLOLLY DR
TITI CIR
ASH DR
STATE ROAD 85
STATE ROAD 189
MUSEUM DR
EGLIN PKWY NE
PINCHOT RD
BOATNER RD
CARL BRANDT DR
RICHBOURG AVE
SARA DR
ERWIN FLEET RD
PLEW AVE
MANDE CT
N EGLIN PKWY
WATERWAY LN
4TH AVE
3RD AVE
2ND AVE
GARDNER DR
OLD FERRY RD
CUTTER LN
12TH AVE
11TH AVE
7TH ST
10TH AVE
CHAZ AVE
9TH AVE
MAE-WINN AVE
8TH AVE
7TH AVE
6TH AVE
5TH AVE
4TH AVE
3RD AVE
2ND AVE
1ST AVE
ADRIAAN CT
SUGAR PLUM LN
2ND ST
3RD ST
4TH ST
5TH ST
6TH ST
8TH ST
9TH ST
10TH ST
11TH ST
12TH ST
7TH ST
HAWAII LN
OAK LN
MOORING LN
BERWICK CIR
WINDWARD LN
JUNIOR DR
EGLIN DR
COUNTRY CLUB RD
DAVIS CT
PEBBLE BEACH DR
DORAL DR
LAKE LORRAINE CIR
THE MASTERS BLVD
ELKWOOD CT
BAL SHORE DR
BOYCE DR
MEIGS DR
DOGWOOD DR
JACK NICKLAUS WAY
CHOCTAW LN


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, Dec 6 2002
MAP PROJECTION:
Lambert Conformal Conic Projection
Stateplane: Florida North (0903)
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N
W
E
S
Department of Growth Management
08/18/2010
AE 9
AE 8
AE 9
AE 9
AE 8
AE 10
X
X
X
X
NORTH DR
LONGWOOD DR
CONNIE DR
SUNSET LN
BAYVIEW DR
HILLCREST DR
HAWTHORN HOUSE DR
ELDREDGE RD
BLENHEIM RD
MARLBOROUGH RD
MARWICK DR
SHERWOOD DR
HOLLY AVE
MAGNOLIA AVE
POPLAR AVE
MAPLE AVE
BIRCH AVE
WALNUT AVE
HICKORY AVE
JAPONICA LN
WIMBLEDON WAY
BAY ST
POQUITO RD
POQUITO RD N
LOBLOLLY DR
TITI CIR
ASH DR
STATE ROAD 85
STATE ROAD 85
MUSEUM DR
STATE ROAD 189
EGLIN PKWY NE
PINCHOT RD
BOATNER RD
CARL BRANDT DR
RICHBOURG AVE
SARA DR
ERWIN FLEET RD
PLEW AVE
MANDE CT
N EGLIN PKWY
WATERWAY LN
4TH AVE
3RD AVE
2ND AVE
GARDNER DR
OLD FERRY RD
SUGAR PLUM LN
ADRIAAN CT
CHAZ AVE
MAE-WINN AVE
CUTTER LN
MOORING LN
WINDWARD LN
BERWICK CIR
JUNIOR DR
OAK LN
HAWN LN
EGLIN DR
COUNTRY CLUB RD
DAVIS CT
PEBBLE BEACH DR
DORAL DR
LAKE LORRAINE CIR
THE MASTERS BLVD
ELKWOOD CT
CHOCTAW LN
JACK NICKLAUS WAY
BOYCE DR
MEIGS DR
DOGWOOD DR
12TH AVE
11TH AVE
10TH AVE
9TH AVE
8TH AVE
7TH AVE
6TH AVE
5TH AVE
4TH AVE
3RD AVE
2ND AVE
1ST AVE
2ND ST
3RD ST
4TH ST
5TH ST
6TH ST
7TH ST
8TH ST
9TH ST
10TH ST
11TH ST
12TH ST


Unincorporated
Shalimar
Surge Zones
Parcel Lines
Category 1
Category 2
Category 3
Category 4
Category 5
Unincorporated
Source: West Florida Regional Planning Council, 2010
MAP PROJECTION:
Lambert Conformal Conic Projection
State plane : Florida North (0903)
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N
W
E
S
Department of
Growth Management
08/18/2010
ELDREDGE RD
HAWTHORN HOUSE DR
POQUITO RD N
STATE ROAD 85
STATE ROAD 189
MUSEUM DR
EGLIN PKWY NE
PINCHOT RD
BOATNER RD
ASH DR
LOBLOLLY DR
TITICIR
SUNSET LN
HOLLY AVE
MAGNOLIA AVE
POPLAR AVE
MAPLE AVE
BIRCH AVE
WALNUT AVE
RICHBOURG AVE
SARA DR
ERWIN FLEET RD
PLEW AVE
MANDE CT
N EGLIN PKWY
GARDNER DR
OLD FERRY RD
WATERWAY LN
4TH AVE
3RD AVE
2ND AVE
1ST AVE
12TH AVE
11TH AVE
10TH AVE
9TH AVE
8TH AVE
7TH AVE
6TH AVE
5TH AVE
COURTESY CLUB DR
LAKE SHALIMAR DR
ELKWOOD CT
BOYCE DR
MEEKS DR
DUNCAN DR
MEEKS WAY


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, 2010
MAP PROJECTION
Lambert Conformal ConicProjection
Stateplane: Florida North (0903)
NAD1983(90), NAVD 1988.
PUBLIC RECORD:
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N
W
E
S
Department of Growth Management
08/18/2010
ELDREDGE RD
HAWTHORN HOUSE DR
POQUITO RD N
STATE ROAD 85
STATE ROAD 189
MUSEUM DR
EGLIN PKWY NE
PINCHOT RD
BOATNER RD
LOBLOLLY DR
TITICIR
ASH DR
RICHBOURG AVE
SARA DR
ERWIN FLEET RD
PLEW AVE
MANDECT
N EGLIN PKWY
WATERWAY LN
4TH AVE
3RD AVE
2ND AVE
GARDNER DR
ALLEN LOYD RD
MARY LOU DR
SUNSET LN
HOLLY AVE
MAGNOLIA AVE
PINE AVE
MAPLE AVE
ELM AVE
WALNUT AVE
BIRCH CIR
HICKORY DR
SHERWOOD DR
ROBERTS RD
CHESTNUT AVE
MAC-HINN AVE
5TH AVE
6TH AVE
7TH AVE
8TH AVE
9TH AVE
10TH AVE
11TH AVE
12TH AVE
13TH AVE
14TH AVE
15TH AVE
16TH AVE
17TH AVE
18TH AVE
19TH AVE
20TH AVE
21ST AVE
22ND AVE
23RD AVE
24TH AVE
25TH AVE
26TH AVE
27TH AVE
28TH AVE
29TH AVE
30TH AVE
31ST AVE
32ND AVE
33RD AVE
34TH AVE
35TH AVE
36TH AVE
37TH AVE
38TH AVE
39TH AVE
40TH AVE
41ST AVE
42ND AVE
43RD AVE
44TH AVE
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91ST AVE
92ND AVE
93RD AVE
94TH AVE
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100TH AVE
101ST AVE
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103RD AVE
104TH AVE
105TH AVE
106TH AVE
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120TH AVE
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123RD AVE
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128TH AVE
129TH AVE
130TH AVE
131ST AVE
132ND AVE
133RD AVE
134TH AVE
135TH AVE
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137TH AVE
138TH AVE
139TH AVE
140TH AVE
141ST AVE
142ND AVE
143RD AVE
144TH AVE
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147TH AVE
148TH AVE
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152ND AVE
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161ST AVE
162ND AVE
163RD AVE
164TH AVE
165TH AVE
166TH AVE
167TH AVE
168TH AVE
169TH AVE
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171ST AVE
172ND AVE
173RD AVE
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180TH AVE
181ST AVE
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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 Manager deems necessary, but as a minimum shall include representatives from the following departments and agencies:

Emergency Management Division
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 Manager 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.

Unincorporated Okaloosa County

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 following definitions will be used for reporting purposes.

a. Substantial Damage is when the cost of repair, replacement, or relocation of a structure exceeds 50-percent of its pre-disaster replacement value. A mobile home will be considered destroyed if flood waters reach floor level and the floor is soaked.

b. Major damage is when the cost of repair, replacement, or relocation of a structure is between 25 to 50 percent of its pre-disaster replacement value, e.g., a building or house shall be considered to have major damage if flood waters reach the level of electrical outlets.

c. Minor damage is when the cost of repair, replacement, or relocation of a structure is less than 25-percent of its pre-disaster replacement value.

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 Manager 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 Manager 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.

The County Manager 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 Manager 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 Community Affairs an amendment to the Capital Improvements Element of the Comprehensive Plan and revisions to the LMS project list to obtain a Statement of Consistency. 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 moratoriums for approved development orders, building permits, and review procedures in progress for the affected areas of the county. 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 moratoriums 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.

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.

Unincorporated Okaloosa County

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.

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.

Goal 3 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:***

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.

Unincorporated Okaloosa County

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.

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

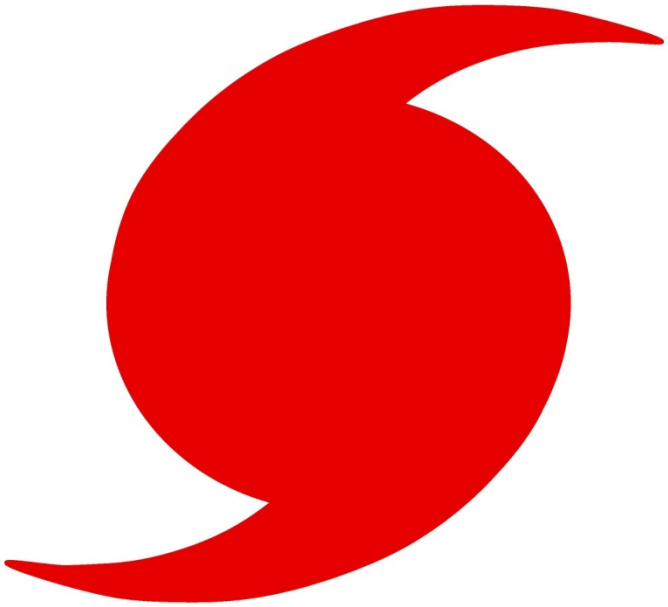
Eglin Air Force Base

Section 5.11.01 Risk Assessment and Vulnerabilities

Okaloosa County also has a significant portion of unincorporated land that is federally owned and a part of Eglin Air Force Base and Hurlburt Field. The land mass of Eglin Air Force Base comprises about 45% of Okaloosa County and extends 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. Eglin Air Force Base and its military population are susceptible to damage from tornadoes and waterspouts, land erosion, severe thunderstorms, lightning, hail, damaging winds, floods, winter storms, heat wave, droughts, wildfire, and beach erosion. Although Eglin Air Force Base is just as equally vulnerable to the impacts of these natural disasters as other parts of Okaloosa County, the County does not control mitigation activities in military areas and Eglin Air Force Base is therefore not included in this hazard mitigation plan. Eglin Air Force Base controls its own hazard mitigation strategies aside from this plan. The Okaloosa County Staff has been in contact with Ms. Marion Cook who is the Community Planner from Eglin Air Force Base and Mr. Glenn Lattanze, Community Planner for Hurlburt Field. Eglin Air Force Base and Hurlburt Field has stated their interest in offering data and sharing mitigation strategies with Okaloosa County Planning Staff but with the understanding that Eglin Air Force Base and its military population, operations, and personnel would not be analyzed under this hazard mitigation plan nor included as its own jurisdiction.

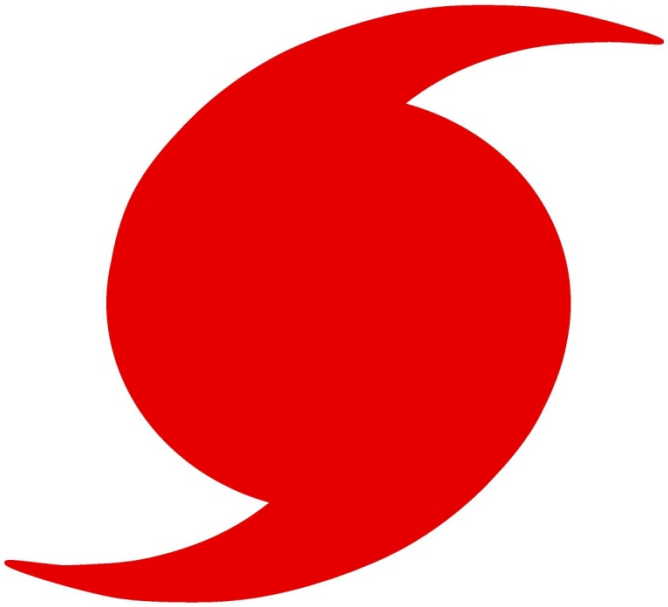
Appendix A

Member List



Appendix A

Member List



JURISDICTION	DEPARTMENT	MEMBER	STREET ADDRESS	CITY	STATE	ZIP CODE	E-MAIL ADDRESS
Okaloosa County	Growth Management - Director (**CHAIRMAN**)	Elliot Kampert	402 Brookmeade Drive	Crestview	FL	32539	ekampert@myokaloosa.com
Okaloosa County	Growth Management - Planning Coordinator (**VICE-CHAIRMA**	Sherry Reed	402 Brookmeade Drive	Crestview	FL	32539	sreed@myokaloosa.com
Okaloosa County	Growth Management - Grants Specialist	Abra McGill	600 Transit Way	Fort Walton Beach	FL	32547	amcgill@myokaloosa.com
	Growth Management - Planning Manager	Randall Woodruff	402 Brookmeade Drive	Crestview	FL	32539	rwoodruff@myokaloosa.com
	Growth Management - Planner		402 Brookmeade Drive	Crestview	FL	32539	
Okaloosa County	Public Works - Director	Jason Autrey	1759 S Ferdon Blvd	Crestview	FL	32536	jautrey@myokaloosa.com
	Public Works - Engineer	Scott Bitterman	1759 S Ferdon Blvd	Crestview	FL	32536	sbitterman@myokaloosa.com
Okaloosa County	Public Safety - Emergency Management Coordinator	Ken Wolfe	6 11th Ave Suite G-1	Shalimar	FL	32579	kwolfe@myokaloosa.com
	Water & Sewer - Engineering	John Kanak	1804 Lewis Turner Blvd.	Fort Walton Beach	FL	32547	jkanak@myokaloosa.com
Okaloosa County	Water & Sewer - Engineering Manager	Mark Wise	1804 Lewis Turner Blvd.	Fort Walton Beach	FL	32547	mwise@myokaloosa.com
City of Crestview	City of Crestview -Planning	Trae Duley	P.O. Drawer 1209	Crestview	FL	32536	traeduley@cityofcrestview.org
City of Destin	City of Destin- Public Services Director	Michael Burgess	4200 Indian Bayou Trail	Destin	FL	32541	mburgess@cityofdestin.com
City of Fort Walton Beach	City of Fort Walton Beach- Planning Supervisor	Tim Gibson	107 Miracle Strip Pkwy SW	Fort Walton Beach	FL	32548	tgibson@fwb.org
City of Fort Walton Beach	City of Fort Walton Beach- Growth Management Director	Chris Frasetti	107 Miracle Strip Pkwy SW	Fort Walton Beach	FL	32548	cfrasetti@fwb.org
City of Laurel Hill	Town of Laurel Hill- City Clerk	Anita Miller	P.O. Box 158	Laurel Hill	FL	32567	clhclerk@fairpoint.net
City of Mary Esther	City of Mary Esther- Code Enforcement	Bobby H	195 Christobal Rd. N	Mary Esther	FL	32569	code@cityofmaryesther.com
	City of Niceville- City Planner	Ammy Hanson	208 N. Partin Drive	Niceville	FL	32578	ahanson@niceville.org
City of Niceville	City of Niceville- Public Works	Robert Jenkins	208 N. Partin Drive	Niceville	FL	32578	rjenkins@niceville.org
City of Valparaiso	City of Valparaiso- City Administrator	Carl Scott	465 Valparaiso Pkwy.	Valparaiso	FL	32580	cityadministrator@valp.org
Town of Cinco Bayou	Town of Cinco Bayou- Town Manager/Clerk	Keith Williams	10 Yacht Club Dr.	Cinco Bayou	FL	32548	keith@cincobayou.com
Town of Shalimar	Town of Shalimar- Town Manager	Tom Burns	2 Cherokee Rd.	Shalimar	FL	32579	shalimartom@yahoo.com
Hurlburt Field	Hurlburt AFB Representative	Glen Lattanze			FL		glenn.lattanze@hurlburt.af.mil
Eglin Air Force Base	Eglin AFB Representative	Jeff Fanto			FL		jeffrey.fanto@eglin.af.mil
Northwest Florida State College	NWFLSC		100 College Blvd. E	Niceville	FL	32578	
Florida Division of Forestry	Senior Forester	Maria Wilson	7050 Hwy 189 N	Baker	FL	32531	wilsonm@doacs.state.fl.us
Citizen	Citizen	Morton Peterson					petersonmhjr@cox.net
	Okaloosa Gas	Tucker Tracy					TuckerTracy@okaloosagas.com
	Okaloosa Gas	Robbie Overly					RobbieOverly@okaloosagas.com
Okaloosa Gas	Oakloosa Gas	Lars Sullivan					LarsSullivan@okaloosagas.com
Red Cross	Red Cross	Kelly Jo Bailey					KellyJo.Bailey@redcross.org
	WFLRPC-	Traci Goodhart	4081 E. Olive Rd., Suite A	Pensacola	FL	32514	traci.goodhart@wfrpc.org
	NWFLWMD						
	Gulf Power Company	B H Johnson					bhjohnso@southernco.com
	Choctawhatchee Electric Co-op						
	Choctawhatchee Electric Co-op	Chris Eddy					ceddy@chelco.com
	Citizen	Jeremy Stewart					jeremystewart@crestviewhomes.com
	Fort Walton Beach Fire Dept	Dustin Stewart	5 Hollywood Blvd.,	Fort walton Beach	FL	32544	dstewart@fwb.org

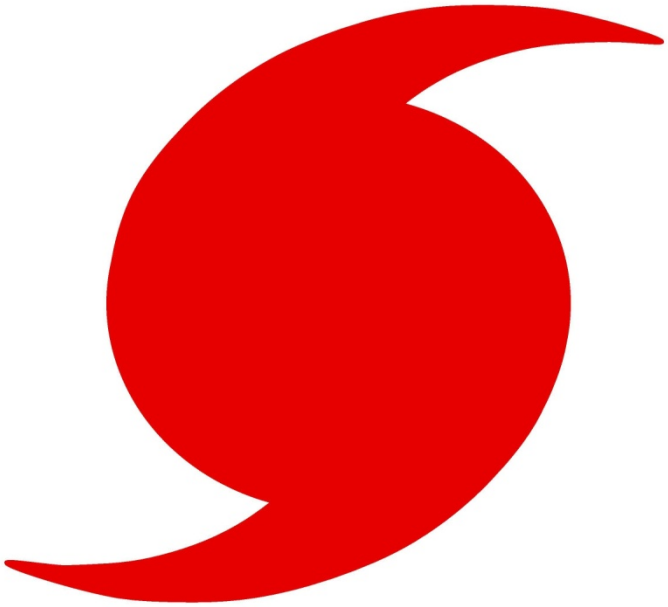
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City of Niceville	City of Niceville- Public Works	Robert Jenkins	208 N. Partin Drive	Niceville	FL	32578	rjenkins@niceville.org
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Town of Shalimar	Town of Shalimar- Town Manager	Tom Burns	2 Cherokee Rd.	Shalimar	FL	32579	shalimartom@yahoo.com
Hurlburt Field	Hurlburt AFB Representative	Glen Lattanze			FL		glenn.lattanze@hurlburt.af.mil
Eglin Air Force Base	Eglin AFB Representative	Jeff Fanto			FL		jeffrey.fanto@eglin.af.mil
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Florida Division of Forestry	Senior Forester	Maria Wilson	7050 Hwy 189 N	Baker	FL	32531	wilsonm@doacs.state.fl.us
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	Okaloosa Gas	Tucker Tracy					TuckerTracy@okaloosagas.com
	Okaloosa Gas	Robbie Overly					RobbieOverly@okaloosagas.com
Okaloosa Gas	Oakloosa Gas	Lars Sullivan					LarsSullivan@okaloosagas.com
Red Cross	Red Cross	Kelly Jo Bailey					KellyJo.Bailey@redcross.org
	WFLRPC-	Traci Goodhart	4081 E. Olive Rd., Suite A	Pensacola	FL	32514	traci.goodhart@wfrpc.org
	NWFLWMD						
	Gulf Power Company	B H Johnson					bhjohnso@southernco.com
	Choctawhatchee Electric Co-op						
	Choctawhatchee Electric Co-op	Chris Eddy					ceddy@chelco.com
	Citizen	Jeremy Stewart					jeremystewart@crestviewhomes.com
	Fort Walton Beach Fire Dept	Dustin Stewart	5 Hollywood Blvd.,	Fort walton Beach	FL	32544	dstewart@fwb.org

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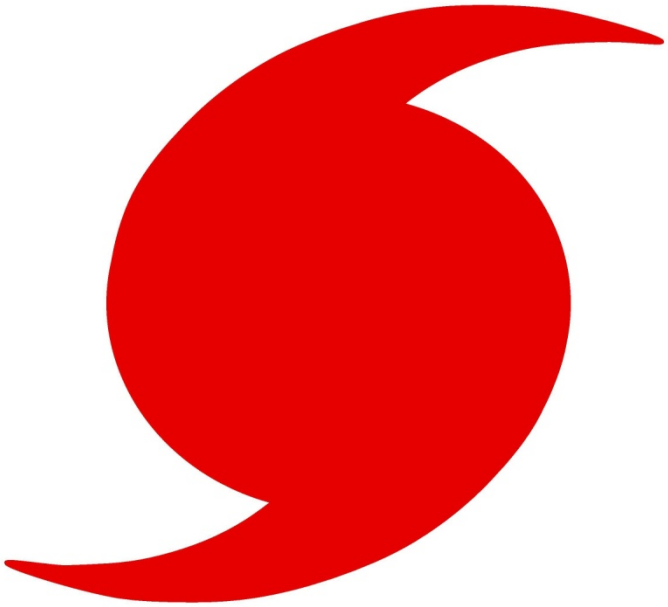
Appendix B

Project List



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					
1	Relocate SS and LS on Alconese	2010	The shoreline has retreated leaving the sewer line 5-10 feet into the water. The line needs to be relocated to prevent sewage contamination into the bay and sound. Also, the sewer lift station needs to be relocated out of the roadway and onto an easement nearby.	Storm Surge	yes	City of Fort Walton Beach		City of Fort Walton Beach	City of Fort Walton Water & Sewer	$108,000.00				X	No Funding	1 year	Existing	City of Fort Walton Beach	**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	Retrofit drainage improvements to reduce flooding potential.	Flood. Severe Storms	yes	Okaloosa County		Okaloosa County	Okaloosa County- Public Works	$25,000.00				X	No Funding	180 days	Existing	Okaloosa County	**Y**
3b	Local Alert Receivers	2010	Receivers for high population areas (Schools, nursing homes, etc.) to alert people to impending weater conditions	All hazards	yes	Okaloosa County		Okaloosa County	Okaloosa County - Public Safety	$15,000.00				X	No Funding	60 days	New	All Jurisdictions and tourist	**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**
3e	Emergency Generators	1999	An automatic transfer emergency generator is needed at Lift Station #1 to prevent sewage overflow into Santa Rosa Sound in case of power failure. An additional portable generator is needed to accommodate other Lift Stations within the City.	Hurricane and Tropical Storm; and Severe Storm	yes	City of Fort Walton Beach		City of Fort Walton Beach	City of Fort Walton Beach - Water & Sewer Dept.	$37,000.00				X	No Funding	3 months	Existing	City of Fort Walton Beach	**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**
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	Existing	Unincorporated Okaloosa	**Y**

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					
4b	Stormwater swales and retention for Sandalwood Drive	2014	Provide a stormwater management system for this multi-family 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	$384,750.00				X	No funding	1 year	Existing	City of Destin	**Y**
4c	Stormwater swales and retention for Joe's Bayou 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	$649,266.00				X	No Funding	1 year	Existing	City of Destin	**Y**
4d	Stormwater swales and retention for Kelly 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	$925,805.00				X	No Funding	1 year	Existing	City of Desin	**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**
5b	85-A Culvert Crossing	1999	Culvert is to small to accommodate stormwater	Hurricane and Tropical Storm; Flood; and Severe Storms	yes	City of Laurel Hill		City of Laurel Hill	City of Laurel Hill - Public Works Dept.	$30,000.00				X	No Funding	120 days	Existing	City of Laurel Hill	**Y**
6a	Replace culverts and swale system in Indian Bayou S/D	2014	replace deteriorated metal culvert pipes and re-establish the roadside swale system	Flood; Hurricane & Tropical Storm; and Severe Storms	yes	city of Destin		City of Destin	City of Destin - Public Works	$750,000.00				X	No Funding	1 year	Existing	City of Destin	**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**
6c	Stormwater swales for Calhoun Avenue	2014	establish the roadside swale system for this area	Flood; Hurricane & Tropical Storm; and Severe Storms	yes	City of Destin		City of Destin	City of Destin - Public Works	$300,000.00				X	No Funding	1 year	Existing	City of Destin	**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**
7b	Warning Siren	2010	For all emergency warnings	Hurricane & Tropical Storm; Flood; Severe Storms; Storm Surge; Heat Wave and Drought; and Wildfire	yes	Town of Shalimar		Town of Shalimar	Town of Shalimar	$30,000.00				X	No Funding	120 days	Existing	Town of Shalimar	**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**
8b	Beal Street Lift Station Relocation	2010	Lift Station is old and in the floodplain. New lift station needs to be in the same vicinity, at a higher elevation.	Hurricane & Tropical Storm; Flood; severe storms; and Storm Surge	yes	Okaloosa County		Okaloosa County	Okaloosa County - Water & Sewer Dept.	$600,000.00				X	No Funding	18 months	Existing	Unincorporated Okaloosa County within the Okaloosa County Water & Sewer Service Area	**Y**

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											NEW	COMPLETED	DELETED	DEFERRED					
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**
10b	South Avenue/Thornhill Road Area 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 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**
11a	Intersection Mast Arms	2010	All traffic signals that are not currently on mast arms rated at 140 mph need to be updated. There are six intersections for a total of 18 mast arms needed.	All hazards	Building Construction and Wind; Communications	City of Fort Walton Beach		City of Fort Walton Beach	City of Fort Walton Beach - Public Works Dept.	$896,000.00				X	No Funding	1 year	Existing	All Jurisdictions - mast arms are located on Hurricane evacuation routes	**Y**
11b	Elevated Potable Water Storage Tank-Kennedy Lakes Area	2010	The Kennedy Lakes area in NW Crestview is plagued by low water pressures, While the pressure is adequate to provide water to residences, it is dangerously low for fire protection. The storage tank is necessary to provide additional storage and head pressure to flight wildfires or multiple structure fires in this area.	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**
11d	standby generators at 8 power supply locations	2011	Installation of standby generators at each of 8 existing un-interuptable power supply locations.Ensures continuted operation of cable communication system for emergency broadcast capabilities	All hazards	yes	City of Valparaiso		City of Valparaiso	City of Valparaiso - Public Works Dept	$77,000.00				X	No Funding	6 months	Existing	City of Valparaiso	**Y**

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					
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**
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	install 250 KW generator for City Hall	All hazards	yes	City of Niceville		City of Niceville	City of Niceville - Public Works Dept.	$250,000.00				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**
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		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	No Funding	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**

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					
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**
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**
15a	Permanent Stabilization of Norriego Point	1999	Norriego Point is the tip of Holiday Isle and provides protection to Destin harbor. Project anticipates stabilizing or hardening the point for improved storm protection, minimizing harbor channel shoaling and to preserve habitat and recreational areas provided by the point	Beach Erosion; and Storm Surge	yes	City of Destin		City of Destin	City of Destin - Public Works Dept.	$10,200,000.00				**X**	No Funding	2 years	Existing	City of Destin and tourist	**Y**

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											NEW	COMPLETED	DELETED	DEFERRED					
15b	Upland retaining wall - Lions Park	2014	Install 120 linear feet of upland retaining wall along the remaining unprotected shore line at Lions park	Beach Erosion; and Storm Surge	yes	City of Niceville		City of Niceville	City of Niceville - Public Works Dept.	$12,000.00				X	No Funding	6 months	Existing	City of Niceville	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	
19a	Stormwater inprovements on Brande Court & Mande Court	2014	redesign and replace the existing stormwater darinage system for both streets	Hurricane & Tropical Storm; Flood; and Severe Storms	yes	Town of Shalimar		Town of Shalimar	Town of Shalimar	$30,000.00				X	No Funding	6 months	Existing	Town of Shalimar	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
/REMOVED PROJECTS																			

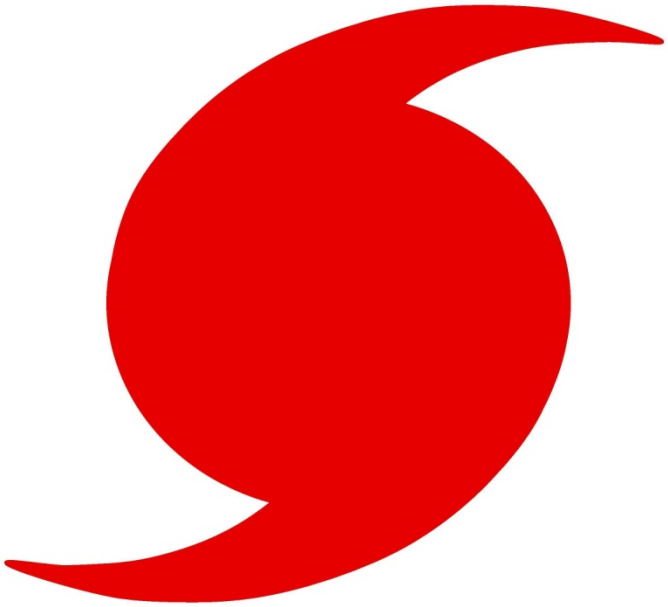
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											NEW	COMPLETED	DELETED	DEFERRED					

JURISDICTION	DEPARTMENT	MEMBER	STREET ADDRESS	CITY	STATE	ZIP CODE	E-MAIL ADDRESS
Okaloosa County	Growth Management - Director (**CHAIRMAN**)	Elliot Kampert	402 Brookmeade Drive	Crestview	FL	32539	ekampert@myokaloosa.com
Okaloosa County	Growth Management - Planning Coordinator (**VICE-CHAIRMA**	Sherry Reed	402 Brookmeade Drive	Crestview	FL	32539	sreed@myokaloosa.com
Okaloosa County	Growth Management - Grants Specialist	Abra McGill	600 Transit Way	Fort Walton Beach	FL	32547	amcgill@myokaloosa.com
	Growth Management - Planning Manager	Randall Woodruff	402 Brookmeade Drive	Crestview	FL	32539	rwoodruff@myokaloosa.com
	Growth Management - Planner		402 Brookmeade Drive	Crestview	FL	32539	
Okaloosa County	Public Works - Director	Jason Autrey	1759 S Ferdon Blvd	Crestview	FL	32536	jautrey@myokaloosa.com
	Public Works - Engineer	Scott Bitterman	1759 S Ferdon Blvd	Crestview	FL	32536	sbitterman@myokaloosa.com
Okaloosa County	Public Safety - Emergency Management Coordinator	Ken Wolfe	6 11th Ave Suite G-1	Shalimar	FL	32579	kwolfe@myokaloosa.com
	Water & Sewer - Engineering	John Kanak	1804 Lewis Turner Blvd.	Fort Walton Beach	FL	32547	jkanak@myokaloosa.com
Okaloosa County	Water & Sewer - Engineering Manager	Mark Wise	1804 Lewis Turner Blvd.	Fort Walton Beach	FL	32547	mwise@myokaloosa.com
City of Crestview	City of Crestview -Planning	Trae Duley	P.O. Drawer 1209	Crestview	FL	32536	traeduley@cityofcrestview.org
City of Destin	City of Destin- Public Services Director	Michael Burgess	4200 Indian Bayou Trail	Destin	FL	32541	mburgess@cityofdestin.com
City of Fort Walton Beach	City of Fort Walton Beach- Planning Supervisor	Tim Gibson	107 Miracle Strip Pkwy SW	Fort Walton Beach	FL	32548	tgibson@fwb.org
City of Fort Walton Beach	City of Fort Walton Beach- Growth Management Director	Chris Frasetti	107 Miracle Strip Pkwy SW	Fort Walton Beach	FL	32548	cfrasetti@fwb.org
City of Laurel Hill	Town of Laurel Hill- City Clerk	Anita Miller	P.O. Box 158	Laurel Hill	FL	32567	clhclerk@fairpoint.net
City of Mary Esther	City of Mary Esther- Code Enforcement	Bobby H	195 Christobal Rd. N	Mary Esther	FL	32569	code@cityofmaryesther.com
	City of Niceville- City Planner	Ammy Hanson	208 N. Partin Drive	Niceville	FL	32578	ahanson@niceville.org
City of Niceville	City of Niceville- Public Works	Robert Jenkins	208 N. Partin Drive	Niceville	FL	32578	rjenkins@niceville.org
City of Valparaiso	City of Valparaiso- City Administrator	Carl Scott	465 Valparaiso Pkwy.	Valparaiso	FL	32580	cityadministrator@valp.org
Town of Cinco Bayou	Town of Cinco Bayou- Town Manager/Clerk	Keith Williams	10 Yacht Club Dr.	Cinco Bayou	FL	32548	keith@cincobayou.com
Town of Shalimar	Town of Shalimar- Town Manager	Tom Burns	2 Cherokee Rd.	Shalimar	FL	32579	shalimartom@yahoo.com
Hurlburt Field	Hurlburt AFB Representative	Glen Lattanze			FL		glenn.lattanze@hurlburt.af.mil
Eglin Air Force Base	Eglin AFB Representative	Jeff Fanto			FL		jeffrey.fanto@eglin.af.mil
Northwest Florida State College	NWFLSC		100 College Blvd. E	Niceville	FL	32578	
Florida Division of Forestry	Senior Forester	Maria Wilson	7050 Hwy 189 N	Baker	FL	32531	wilsonm@doacs.state.fl.us
Citizen	Citizen	Morton Peterson					petersonmhjr@cox.net
	Okaloosa Gas	Tucker Tracy					TuckerTracy@okaloosagas.com
	Okaloosa Gas	Robbie Overly					RobbieOverly@okaloosagas.com
Okaloosa Gas	Oakloosa Gas	Lars Sullivan					LarsSullivan@okaloosagas.com
Red Cross	Red Cross	Kelly Jo Bailey					KellyJo.Bailey@redcross.org
	WFLRPC-	Traci Goodhart	4081 E. Olive Rd., Suite A	Pensacola	FL	32514	traci.goodhart@wfrpc.org
	NWFLWMD						
	Gulf Power Company	B H Johnson					bhjohnso@southernco.com
	Choctawhatchee Electric Co-op						
	Choctawhatchee Electric Co-op	Chris Eddy					ceddy@chelco.com
	Citizen	Jeremy Stewart					jeremystewart@crestviewhomes.com
	Fort Walton Beach Fire Dept	Dustin Stewart	5 Hollywood Blvd.,	Fort walton Beach	FL	32544	dstewart@fwb.org

PHONE NUMBER		
850-689-5080		
850-689-7917		
850-833-9173		
850-689-5080		
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850-689-5772		
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850-651-7150		
850-651-7171		
850-651-7171		
850-689-1618		
850-837-4242		
850-833-9604		
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850-729-4008		
850-729-5402		
850-833-3405	850-259-7072	
850-651-5723		
850-822-8054		
850-689-7838		
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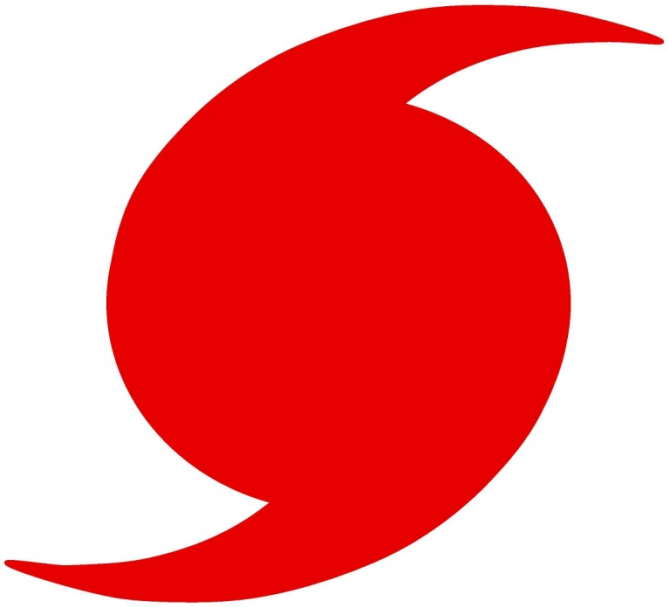
Appendix C

Agendas & Minutes



Appendix C

Agendas & Minutes



AGENDA
Okaloosa County
Local Mitigation Strategy Committee
February 11, 2021

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. Public review of possible edits to the 2021 LMS

V. UNFINISHED BUSINESS

A. None

IV. PUBLIC COMMENTS

VI. ADJOURN

NOTE: Final Review of Edits will be February 18, 2021 at 10:00 AM at 1250 North Eglin Pkwy., Shalimar, FL

AGENDA
Okaloosa County
Local Mitigation Strategy Committee
February 23, 2021

LOCATION:
1250 North Eglin Pkwy., Shalimar, FL

TIME: 1:00 PM

I. CALL MEETING TO ORDER

II. ROLL CALL/QUORUM

III. APPROVAL OF MINUTES

A. none

IV. NEW BUSINESS

A. Public review of possible edits to the 2021 LMS

V. UNFINISHED BUSINESS

A. None

IV. PUBLIC COMMENTS

VI. ADJOURN

NOTE: Final Review of Edits will be March 3, 2021 at 1:00 PM at 1250 North Eglin Pkwy., Shalimar, FL

AGENDA
Okaloosa County
Local Mitigation Strategy Committee
March 3, 2021

LOCATION:
1250 North Eglin Pkwy., Shalimar, FL

TIME: 1:00 PM

I. CALL MEETING TO ORDER

II. ROLL CALL/QUORUM

III. APPROVAL OF MINUTES

A. none

IV. NEW BUSINESS

A. Public review of possible edits to the 2021 LMS
B. Flood Risk

V. UNFINISHED BUSINESS

A. None

IV. PUBLIC COMMENTS

VI. ADJOURN

AGENDA
Okaloosa County
Local Mitigation Strategy Committee
February 11, 2021

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. Public review of possible edits to the 2021 LMS

V. UNFINISHED BUSINESS

A. None

IV. PUBLIC COMMENTS

VI. ADJOURN

NOTE: Final Review of Edits will be February 18, 2021 at 10:00 AM at 1250 North Eglin Pkwy., Shalimar, FL

AGENDA
Okaloosa County
Local Mitigation Strategy Committee
February 23, 2021

LOCATION:
1250 North Eglin Pkwy., Shalimar, FL

TIME: 1:00 PM

I. CALL MEETING TO ORDER

II. ROLL CALL/QUORUM

III. APPROVAL OF MINUTES

A. none

IV. NEW BUSINESS

A. Public review of possible edits to the 2021 LMS

V. UNFINISHED BUSINESS

A. None

IV. PUBLIC COMMENTS

VI. ADJOURN

NOTE: Final Review of Edits will be March 3, 2021 at 1:00 PM at 1250 North Eglin Pkwy., Shalimar, FL

AGENDA
Okaloosa County
Local Mitigation Strategy Committee
March 3, 2021

LOCATION:
1250 North Eglin Pkwy., Shalimar, FL

TIME: 1:00 PM

I. CALL MEETING TO ORDER

II. ROLL CALL/QUORUM

III. APPROVAL OF MINUTES

A. none

IV. NEW BUSINESS

A. Public review of possible edits to the 2021 LMS
B. Flood Risk

V. UNFINISHED BUSINESS

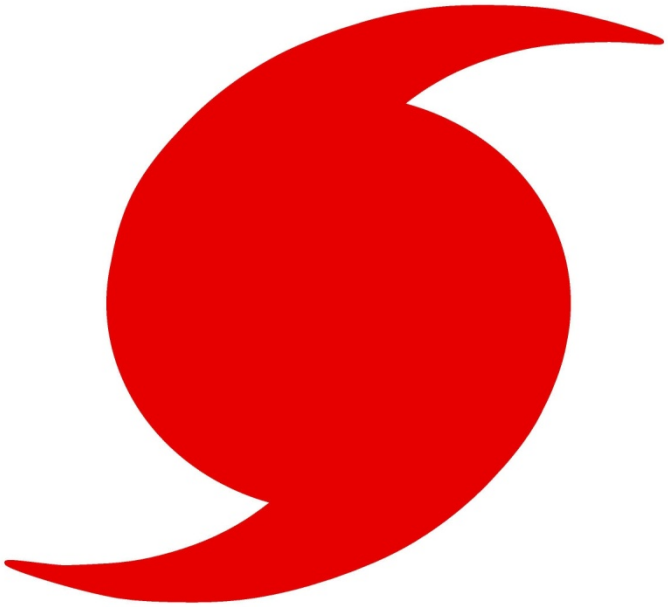
A. None

IV. PUBLIC COMMENTS

VI. ADJOURN

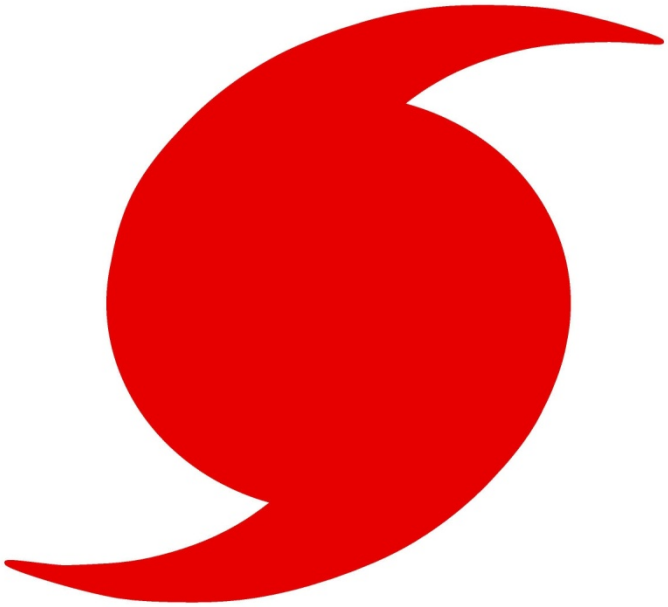
Appendix D

Crosswalk



Appendix D

Crosswalk



LOCAL MITIGATION PLAN REVIEW TOOL

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.
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Jurisdiction:	**Title of Plan:**	**Date of Plan:**
Okaloosa County	2021 Okaloosa County Local	3/1/2021

Local Point of Contact:	**Address:**
Sherry Cadenhead	402 Brookmeade Drive
Title:	Crestview, FL 32539
Planning Coordinator	0
Agency:	0
Okaloosa County Growth Management Department	0
Phone Number:	**E-Mail:**
850-689-5080	sreed@myokaloosa.com

State Reviewer:	**Title:**	**Date:**
0	0	1/0/1900
Date Received by FDEM	1/0/1900	
Plan Not Approved	1/0/1900	
Plan Approvable Pending Adoption	1/0/1900	
Plan Approved	1/0/1900	

FEMA Reviewer:	**Title:**	**Date:**
0	0	1/0/1900
Date Received in FEMA Region IV	1/0/1900	
Plan Not Approved	1/0/1900	
Plan Approvable Pending Adoption	1/0/1900	
Plan Approved	1/0/1900	

SECTION 1:
REGULATION CHECKLIST

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.

1. REGULATION CHECKLIST Regulation (44CFR 201.6 Local Mitigation Plans)	**Location in Plan (section and/or page number)**	**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 §201.6(c)(1))	ead sheet entitled LMS		
A2. Does the Plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process? (Requirement §201.6(b)(2))	Section 1.02.03		
A3. Does the Plan document how the public was involved in the planning process during the drafting stage? (Requirement §201.6(b)(1))	Section 2.01.06.02		
A4. Does the Plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement §201.6(b)(3))	Section 1.02.04		
A5. Is there discussion of how the community(ies) will continue public participation in the plan maintenance process? (Requirement §201.6(c)(4)(iii))	0		
A6. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a 5-year cycle)? (Requirement §201.6(c)(4)(i))	, ,		
ELEMENT A: REQUIRED REVISIONS			

1. REGULATION CHECKLIST Regulation (44CFR 201.6 Local Mitigation Plans)	Location in Plan (section and/or page number)	Met	Not Met
ELEMENT B. HAZARD IDENTIFICATION AND RISK ASSESSMENT			
B1. Does the Plan include a description of the type, location, and extent of all natural hazards that can affect each jurisdiction(s)? (Requirement §201.6(c)(2)(i))	Chapter 4, Section 4.02.15, Chapter 4, Section 4.01.01 -		
B2. Does the Plan include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction? (Requirement §201.6(c)(2)(i))	Chapter 4, Section 4.01.01 - 4.01.10, Chapter 4, Section 4.01.01 - 4.01.10 &		
B3. Is there a description of each identified hazard's impact on the community as well as an overall summary of the community's vulnerability for each jurisdiction? (Requirement §201.6(c)(2)(ii))	Chapter 4, Section 4.02.04 & Section 4.02.06 - 4.02.14, Chapter 4, Section		
B4. Does the Plan address NFIP insured structures within the jurisdiction that have been repetitively damaged by floods? (Requirement §201.6(c)(2)(ii))	Chapter 4, Section 4.02.05		
ELEMENT B: REQUIRED REVISIONS			

1. REGULATION CHECKLIST Regulation (44CFR 201.6 Local Mitigation Plans)	Location in Plan (section and/or page number)	Met	Not Met
ELEMENT C. MITIGATION STRATEGY			
C1. Does the plan document each jurisdiction's existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement §201.6(c)(3))	Sections 5.01.04; 5.02.04; 5.03.04; 5.04.04; 5.05.04; 5.06.04; 5.07.04;		
C2. Does the Plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement §201.6(c)(3)(ii))	Chapter 1, Section 1.02.04Section 4.01.04 & Sections		
C3. Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement §201.6(c)(3)(i))	Sections 5.01.04; 5.02.04; 5.03.04; 5.04.04; 5.05.04;		
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 §201.6(c)(3)(ii))	Chapter 3, Section 3.05 and Chapter 5, Sections 5.01.04; 5.02.04; 5.03.04; 5.04.04; 5.05.04;		
C5. Does the Plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented, and administered by each jurisdiction? (Requirement §201.6(c)(3)(iv)); (Requirement §201.6(c)(3)(iii))	Chpapter 3, Section 3.03; 3.04, Appendix E		
C6. Does the Plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement §201.6(c)(4)(ii))	, ,		
ELEMENT C: REQUIRED REVISIONS			

1. REGULATION CHECKLIST **Regulation** (44CFR 201.6 Local Mitigation Plans)	Location in Plan (section and/or page	Met	Not Met
ELEMENT D. PLAN REVIEW, EVALUATION, AND IMPLEMENTATION (applicable to plan updates only)			
D1. Was the plan revised to reflect changes in development? (Requirement §201.6(d)(3))	0		
D2. Was the plan revised to reflect progress in local mitigation efforts? (Requirement §201.6(d)(3))	0		
D3. Was the plan revised to reflect changes in priorities? (Requirement §201.6(d)(3))	0		
ELEMENT D: REQUIRED REVISIONS			

ELEMENT E. PLAN ADOPTION			
E1. Does the Plan include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval? (Requirement §201.6(c)(5))	0		
E2. For multi-jurisdictional plans, has each jurisdiction requesting approval of the plan documented formal plan adoption? (Requirement §201.6(c)(5))	0		
ELEMENT E: REQUIRED REVISIONS			
Required Revisions:			

ELEMENT F. ADDITIONAL STATE REQUIREMENTS			
F1.			
F2.			
ELEMENT F: REQUIRED REVISIONS			

SECTION 2:
PLAN ASSESSMENT

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 The Plan Assessment must not reiterate the required revisions from the Regulation Checklist or be regulatory in ***Resources for Implementing Your Approved Plan*** provides a place for FEMA to offer information, data sources

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

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 Update, Evaluation, and Implementation (Plan Updates Only)

Strengths:

Opportunities for Improvement:

B. Resources for Implementing Your Approved Plan

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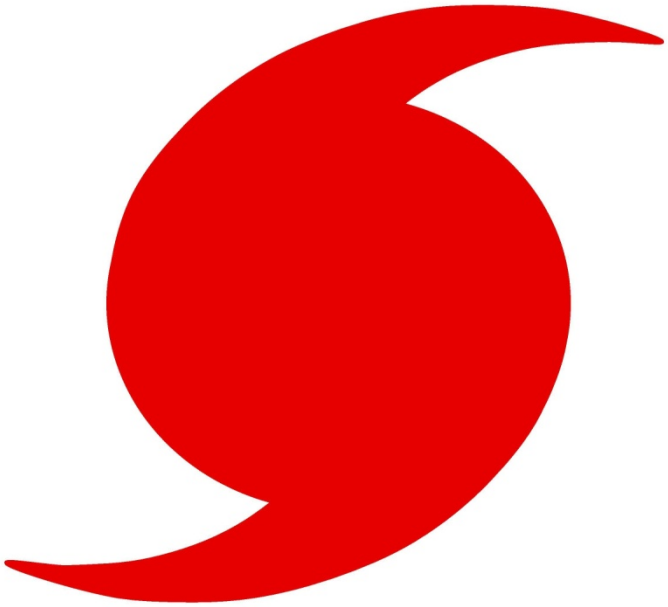
Strengths:

Opportunities for Improvement:

B. Resources for Implementing Your Approved Plan

Appendix E

Adoptions



RESOLUTION 2022-XX

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CRESTVIEW, FLORIDA, ADOPTING THE 2021 OKALOOSA COUNTY LOCAL MITIGATION STRATEGY; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, to ensure local communities prepare for natural disasters and as a prerequisite to receive certain disaster funds, the Robert T. Stafford Disaster Relief Act, as modified by the Disaster Mitigation Act of 2000, requires local governments develop a Local Mitigation Strategy (LMS); and

WHEREAS, Okaloosa County adopted its first LMS in 1999, which it readopted with revisions in 2006, substantially revised in 2011, and further updated in 2016; and

WHEREAS, City Council adopted the 2016 Okaloosa County LMS on October 10, 2016; and

WHEREAS, Okaloosa County has updated its LMS in 2021 and submitted it to the Florida Division of Emergency Management (FDEM), which approved the LMS on October 18, 2021; and

WHEREAS, the City of Crestview is required to formally adopt the Okaloosa County LMS prior to submittal to Federal Emergency Management Agency (FEMA) by the State of Florida; and

WHEREAS, upon review of the 2021 LMS for Okaloosa County, the City Council of the City of Crestview has formally repealed the 2016 Okaloosa County Local Mitigation Strategy; and

WHEREAS, upon review of the 2021 LMS for Okaloosa County, the City Council of the City of Crestview, Florida does formally adopt the updated Okaloosa County LMS to ensure the City of Crestview and its residents are able to receiver certain types of pre-disaster and post-disaster funds caused by natural disasters.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF CRESTVIEW, FLORIDA, AS FOLLOWS:

SECTION 1 – AUTHORITY. The authority for enactment of this ordinance is Chapter 166, Florida Statutes, the City Charter and Code of Ordinances.

SECTION 2 – ADOPTION OF 2021 LMS – The City Council hereby adopts the 2021 Okaloosa County Local Mitigation Strategy (LMS), which shall be considered the local mitigation strategy for all purposes pursuant to the Stafford act and all related rules and regulations. The LMS Plan shall serve as the City's long-term strategy for reducing disaster losses by addressing public participation, risk assessment, and identifying potential mitigation actions.

SECTION 8 – EFFECTIVE DATE. This resolution shall take effect immediately upon its adoption.

Passed and adopted by the City Council of Crestview, Florida on the ___ day of _____, 2022.

APPROVED:

_____
J.B. Whitten
Mayor

ATTEST:

_____
Maryanne Schrader
City Clerk

DRAFT

CITY OF CRESTVIEW

Item # 8.2.

Staff Report

CITY COUNCIL MEETING DATE: April 25, 2022
TYPE OF AGENDA ITEM: 1st reading no PDB

TO:	Mayor and City Council
CC:	City Manager, City Clerk, Staff and Attorney
FROM:	Barry Henderson, Development Services Director, Nicholas Schwendt, Gis
DATE:	4/21/2022
SUBJECT:	Ordinance 1865 - Repeal and Replace Chapter 10 – Animals

BACKGROUND:

The City of Crestview began providing Animal Control services around the turn of this current year. Staff has determined, since operating under the current code for approximately four months, that a number of amendments are required to provide the most effective and efficient animal control services to the citizens of Crestview.

DISCUSSION:

The City's animal code, as it exists now, had its last substantial amendment in 2002 via Ordinance 1061, with other ordinances being passed since then to provide for minor revisions. Since the City regained its animal control services functions early this year, staff has determined that the current code should be amended once again due to our no longer contracting through an animal control authority, as well as to further the mission of providing exceptional municipal services, of which animal services is now one.

Major changes include the addition of many pertinent definitions, the removal of unnecessary regulations, and the addition of new regulations that will allow for processes that improve the quality of life in the city limits through active, effective, and flexible means of enforcement. Staff reviewed the methods of other municipalities and jurisdictions, as well as their own codes and ordinances in the process of drafting the language before you now.

You can find the proposed language for Chapter 10 as an attachment to this agenda item.

GOALS & OBJECTIVES

This item is consistent with the goals in A New View Strategic Plan 2020 as follows;
Foundational- these are the areas of focus that make up the necessary foundation of a successful local government.
Organizational Capacity, Effectiveness & Efficiency- To efficiently & effectively provide the highest quality of public services

Quality of Life- these areas focus on the overall experience when provided by the city.
Safety- Ensure the continuous safety of citizens and visitors

Community Culture- Develop a specific identity for Crestview

FINANCIAL IMPACT

The adoption of Ordinance 1865 will have no direct impact on the city budget.

RECOMMENDED ACTION

Staff respectfully requests a motion to approve Ordinance 1865 on First Reading and move to Second Reading for final adoption.

Attachments

1. Attachment 1

ORDINANCE: 1865

AN ORDINANCE OF THE CITY OF CRESTVIEW, FLORIDA, REPEALING AND REPLACING THE CURRENT CHAPTER 10 – ANIMALS OF THE CITY OF CRESTVIEW CODE OF ORDINANCES; PROVIDING FOR AUTHORITY; PROVIDING FOR FILING OF THIS ORDINANCE WITH THE CLERK OF THE CIRCUIT COURT OF OKALOOSA COUNTY; PROVIDING FOR SEVERABILITY; PROVIDING FOR SCRIVENER'S ERRORS; PROVIDING FOR LIBERAL INTERPRETATION; PROVIDING FOR REPEAL OF CONFLICTING CODES AND ORDINANCES; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City is authorized and empowered to adopt and enforce ordinances, not inconsistent with state law that are necessary to protect the health, welfare and safety of its citizens and inhabitants; and

WHEREAS, the City Council ("Council") of the City serves as the elected governing body directly responsible for the promotion and projection of the public welfare, and safety of its citizens and inhabitants; and

WHEREAS, the City has recently regained authority and responsibility over animal control services within the city limits; and

WHEREAS, staff has reviewed various methods by which animal control services is handled in other municipalities and jurisdictions and have researched those other jurisdiction's ordinances, defenses and penalties in the process of crafting this ordinance.

BE IT ORDAINED BY THE CITY COUNCIL OF CRESTVIEW, FLORIDA AS FOLLOWS:

CHAPTER 10 – ANIMALS in its current form is hereby repealed and replaced with Chapter 10 – Animals as attached to this ordinance (Attachment 1).

SECTION 1 – AUTHORITY. The authority for enactment of this ordinance is Chapter 166.021, Florida Statutes, and Section 2 of the City Charter.

SECTION 2 – FILING. Upon passage, the City Clerk is directed to file a copy of this ordinance with the Clerk of Circuit Court of Okaloosa County and with the Florida Department of the State.

SECTION 3 – SEVERABILITY. If any word, phrase, sentence, paragraph or provision of this ordinance or the application thereof to any person or circumstance is held invalid or unconstitutional, such finding shall not affect the other provisions or applications of this ordinance which can be given effect without the invalid or unconstitutional provision or application, and to this end the provisions of this ordinance are declared severable.

SECTION 4 – SCRIVENER'S ERRORS. The correction of typographical errors which do not affect the intent of this Ordinance may be authorized by the City Manager or the City Manager's designee, without public hearing, by filing a corrected or re-codified copy with the City Clerk.

SECTION 5 – ORDINANCE TO BE LIBERALLY CONSTRUED. This Ordinance shall be liberally construed in order to effectively carry out the purposes hereof which are deemed not to adversely affect public health, safety, or welfare.

SECTION 6 – REPEAL OF CONFLICTING CODES, ORDINANCES, AND RESOLUTIONS. All Charter provisions, codes, ordinances and resolutions or parts of charter provisions, codes, ordinances and

resolutions or portions thereof of the City of Crestview, in conflict with the provisions of this Ordinance are hereby repealed to the extent of such conflict.

SECTION 7 – EFFECTIVE DATE. This ordinance shall take effect immediately upon its adoption.

Passed and adopted on second reading by the City Council of Crestview, Florida on the ___ day of _____, 2022.

ATTEST:

_____
Maryanne Schrader
City Clerk

Approved by me this _____ day of _____, 2022.

_____
J. B. Whitten
Mayor

Chapter 10 ANIMALS

Sec. 10-1. Definitions.

Abandon means to forsake entirely or neglect or refuse to provide or perform the legal obligations for care and support of an animal

Adequate food means food which is of sufficient quantity and nutritive value to maintain each companion animal in good health. Adequate food is accessible to each companion animal, is prepared so as to permit ease of consumption for the age, species, condition, size, and type of each companion animal, is provided in a clean and sanitary manner, is placed so as to minimize contamination by excrement and pests, and is provided at suitable intervals for the species, age, and condition of the companion animal, which is at least once daily except as prescribed by a veterinarian.

Adequate water means clean, fresh, potable water of a drinkable temperature. Adequate water is provided at all times in a suitable manner, in sufficient volume, and refreshed at suitable intervals to maintain normal hydration for the age, species, condition, size, and type of each companion animal, except as prescribed by a veterinarian, and is provided in a clean, durable receptacle, which is accessible to each companion animal and is placed so as to prevent contamination of the water by excrement and pests.

Adequate shelter means a shelter that is suitable for the species, age, condition, size, and type of each companion animal, and provides adequate space for each companion animal, is safe and protects each companion animal from injury, direct sunlight, other weather elements, adverse effects of heat or cold, physical suffering, and impairment of health. Adequate shelter is properly lighted, is properly cleaned, enables each companion animal to be clean and dry, except when detrimental to the species, and for dogs and cats provides a solid surface and resting platform, pad, floor mat, or similar device that is large enough for the dog or cat to lie on in a normal manner and can be maintained in a sanitary manner.

Adequate space means space that allows a companion animal to easily sit, stand, lie, turn about, and make other normal body movements in a comfortable, normal position for a companion animal. Adequate space is space that a companion animal can interact safely with other animals in the enclosure, unless otherwise specified by veterinarian care. Nothing in this subsection precludes veterinary care that temporarily restricts movement if it would endanger a companion animal.

Animal means any living non-human vertebrate.

Animal services means The City of Crestview office of animal services, the director, and any enforcement officers.

Animal services officer means any person duly employed or appointed by the city, who is authorized to investigate, on public or private property, and to enforce violations and issue citations as provided in this chapter. An animal services officer is not authorized to bear arms or make arrests.

Animal shelter means any public or private organization existing for the purpose of the prevention of cruelty to animals and/or for the sheltering of animals, is incorporated or chartered under the laws of the State of Florida or established by legislation.

Bite means a penetration of skin with teeth, and with blood appearing in the wound.

Cat means a domestic feline, felis catus.

City council means the elected governing board of Crestview, Florida.

Community cat means any unowned free-roaming cat living in an outdoor environment that may or may not be a part of a cat colony and may or may not be cared for by one or more caregivers who is/are known or unknown; a community cat may or may not be feral. Community cat caregiver means any person who provides volunteer care to a community cat, but who does not own, harbor, keep, or have custody, control, or charge of such cats; a community cat caregiver who returns a community cat in conjunction with trap-neuter-return is not deemed to have abandoned the cat.

Community cat caregiver means any person who provides volunteer care to a community cat, but who does not own, harbor, keep, or have custody, control, or charge of such cats; a community cat caregiver who returns a community cat in conjunction with trap-neuter-return is not deemed to have abandoned the cat

Community cat colony means a group of community cats that congregate, more or less, together as a unit and share a common food source.

Community cat management program means that community cats, friendly or feral, found outside and brought to a shelter or veterinary provider, are sterilized, ear-tipped, vaccinated against the threat of rabies, and returned to their outside home.

Companion animal means any animal that lives with and about the habitat of a human and that is dependent upon that human for its survival.

Cruelty means every act, omission, or neglect whereby pain or suffering is caused to an animal. This definition incorporates the definition in F.S. Ch. 828.

Dangerous dog means any dog that has been declared dangerous as a result of an investigation and determination from animal services as per F.S. Ch. 767.

Dog means a domestic canine, canis familiaris.

Domestic animal means a dog, cat, or ferret. Domestic animals are subject to the rabies vaccination and license mandate.

Ear-tipped means a mark identifying a community cat as being in a trap-neuter-return program, specifically, the removal of approximately 3/8 of an inch off the tip of the cat's ear in a straight line, the universal sign of a sterilized, unowned cat. An ear-tipped cat shall be distinguished from other cats by being sterilized and vaccinated against the threat of rabies at the time of sterilization; if these requirements are met, the ear-tipped cat is exempt from licensing, stray and at-large provisions of this chapter and may be exempt from other provisions directed toward owned animals.

Enclosure means any structure with at least three walls, a roof, and a floor in adequate condition as not to endanger the safety of the animal and as to provide the necessary protection of the animal from weather conditions. An enclosure must be properly located so that it does not allow for standing water to pool inside the enclosure following any weather event or other water intrusion. For pets not declared dangerous, a residence may be considered a proper enclosure; different rules as specified in this chapter apply to a "proper enclosure" for declared dangerous dogs.

Feral means a wild animal that exists in an untamed state or that has returned to an untamed state generally not socialized to human contact and is no longer considered domesticated.

Harbor means the act of caring for and keeping an animal, or the act of providing a premises or residence to which the animal returns for food, shelter, or care for a period of at least ten days, or at the point where the caregiver is providing the primary source of sustenance for the animal, whichever time is shorter. If the city

establishes a program for the maintenance of feral or community cats, those persons maintaining those cats will be regulated in accordance with such program.

Hobby breeder means any person who owns or breeds purebred dogs or pedigreed cats primarily for personal recreational use. Personal recreational use may include participation in recognized conformation shows, hunting, field or obedience trials, racing, specialized hunting, working or water trials, and may include improving the physical soundness, temperament, and conformation of a given breed to standard or for the purpose of guarding or protecting the owner's property.

Leash means a strap or cord that would not cause cruelty or neglect used to restrain, guide, and control an animal by attaching it to a collar, harness, or halter.

Livestock means horses, mules, cows, bovines, cattle, hogs, goats, sheep, swine, ducks, geese, turkeys, peafowl, doves, and domesticated poultry.

Microchip means an implantable permanent radio-frequency identification device (RFID).

Neglect means depriving an animal of sufficient food, sufficient water, shelter, or medical treatment, or allowing an animal to live in an environment when such deprivation or environment causes the animal's physical health to be significantly impaired or to be in danger of being significantly impaired.

Owner means any person, firm, corporation, or organization possessing, harboring, keeping, or having control or custody of an animal or, if the animal is owned by a person under the age of 18, that person's parent or guardian.

Physical control means:

(1) Immediate and continuous control of a dog by a person, using a leash; or
(2) Continuous control of a dog through the use of an enclosure, which prevents the escape of the dog. An electrical device for the purpose of confining an animal does not meet the definition of physical control.

Pet store means a pet shop, pet groomer, pet beauty parlor, or other retail establishment open to the public and engaging in the business of selling pet supplies and/or services and/or offering for sale and/or selling animals at retail. This definition includes mobile businesses and brick and mortar stores.

Proper enclosure of a dangerous dog means while on the owner's property, a dangerous dog is securely confined indoors or in a securely enclosed and locked pen or structure, suitable to prevent the entry of young children and designed to prevent the animal from escaping together with visible signage warning persons of the presence of A dangerous dog. Such pen or structure shall have secure sides and a secure top to prevent the dog from escaping over, under, or through the structure, and shall also provide protection from the elements.

Provoked or provocation means any action or activity, whether intentional or unintentional, which would be reasonably expected to cause a normal dog in similar circumstances to react in a manner similar to that shown by the evidence.

Public road means any streets, sidewalk, alley, highway, or other way open to travel by the public including rights-of-way, bridges, and tunnels.

Quarantine means the isolation of an animal in a properly ventilated enclosure that does not harm or endanger the animal, so that it may not contact another animal or unauthorized person.

Rabies means an acute, fatal, infectious disease of the central nervous system that is transmitted when introduced into bite wounds, open cuts in skin, or onto mucous membranes.

Residential area means any area in the city so designated by current zoning or area developed with residential structures within the commercial or industrial zoning district having residential use only.

Scratch means a penetration of skin from something other than teeth and blood being present in the wound.

Severe injury means any physical injury that results in a broken bone, multiple bites, or a disfiguring laceration requiring sutures or reconstructive surgery.

Stationary object means any object natural or manmade that is of sufficient weight or construction to inhibit the free movement of a dog when tethered, fastened, chained, or tied, including a runner system, running line, or other cable run system.

Sterilization means dogs and cats rendered permanently incapable of reproduction by surgical alteration, implantation of a device, or other physical means, or permanently incapable of reproduction because of physiological sterility, but only where the neutered or spayed condition has been certified by a veterinarian licensed in any state.

Stray means any non-feral domestic animal found off of its owner's property without the owner's consent and without the consent to be on the property where the animal is found; this provision shall not apply to community cats.

Sufficient food means access to proper food for the species of animal on a regular, ongoing basis in quantities sufficient to maintain a regular body weight as designated by objective measurement tools such as body condition score ("BCS") systems. As an example, regular body weight would be the "ideal" level (four or five) on the internationally recognized veterinary and animal welfare Purina Body Score System Chart. Animals under active, current veterinary care may deviate from the scale based upon the expertise of a licensed veterinarian.

Sufficient water means access to clean, potable water on a regular, ongoing basis in quantities to prevent the animal from exhibiting signs of dehydration.

Tether means a leash, cord, or chain that is anchored to a stationary object on one end.

Trap-neuter-return means trapping, or otherwise obtaining a community cat, and providing for the sterilization, vaccination against the threat of rabies, and ear-tipping of the cat, followed by return to its original location.

Unaltered animal means a dog or cat, which has not been neutered, spayed, or is otherwise not sterilized.

Unprovoked means that the victim who has been conducting himself or herself peacefully and lawfully has been bitten or chased in a menacing fashion or attacked by a dog.

Veterinarian means a person who is licensed to engage in the practice of veterinary medicine in Florida under the authority of F.S. Ch. 474.

Wild animal means any living member of the kingdom Animalia, including those born or raised in captivity, except the following:

(1) The species Homo sapiens (human beings).
(2) The species Canis familiaris (domestic dogs, including hybrids with wolves, coyotes, or jackals).
(3) The species Felis catus (domestic cats, excluding hybrids with ocelots or margays).
(4) The species Equus caballus (domestic horses).
(5) The species Equus asinus (asses/donkeys).
(6) The species Bos taurus (cattle).
(7) The subspecies Ovis ammon aries (sheep).

(8) The species Capra hircus (goats).
(9) The subspecies Sus scrofa domestica (swine).
(10) Domesticated races of the species Gallus gallus or Meleagris gallopavo (poultry).
(11) Domesticated races of the species Mesocricetus auratus (golden hamsters).
(12) Domesticated races of the subspecies Cavia aperea procellus (guinea pigs).
(13) Domesticated races of rats or mice (white or albino, trained, laboratory-reared).
(14) Domesticated races of the species Oryctolagus cuniculus (rabbits).
(15) All captive-bred members of the species of the families Psittacidae (parrots, parakeets), Anatidae (ducks), Fringillidae (finches), and Columbidae (doves and pigeons).
(16) All captive-bred members of the species Serinius canaria of the class Aves (canaries).
(17) Domesticated races of the species Carassius auratus (goldfish).
(18) Captive-bred members of the superorder Teleostei of the class Osteichthyes (common aquarium fish).

Sec. 10-2. City designated as bird sanctuary.

(a) The entire area embraced by the city is hereby designated as a bird sanctuary.

(b) Adequate signs shall be erected and maintained at entrance to the city, within the discretion of the council, signifying the designation of the area within the corporate limits of the city as a bird sanctuary.

Sec. 10-3. Animal Services.

Animal services is designated as the city agency responsible for the proper enforcement of this chapter and is assigned the administrative functions of carrying out the provisions of this chapter and other authorized duties. In carrying out the duties of this chapter, Animal services may employ equipment, including but not limited to control poles, nets, leashes of any construction, chemical capture devices, snake tongs, oleoresin capsicum aerosols, snake hooks, humane traps, collapsible batons, and metal carrying cages. Animal services shall maintain an animal shelter, or shelters for the purpose of having impounded therein animals, as required by the provisions of this chapter and other authorized duties.

Sec. 10-4. Animal services officer.

(a) An animal services officers shall have full and complete authority in the enforcement of this chapter and may pick up, catch, or procure any animal under any circumstance which is a violation of this chapter and cause the animal to be impounded in an animal shelter. An animal shall be subject to pick up and impounding if the animal is cruelly treated, roaming at large, stray, or an animal infected with rabies or believed to be so infected; infected with any other contagious or infectious disease, or believed to be so infected, or has been classified as a dangerous or vicious animal.

(b) Animal services officers may carry a device to chemically subdue and tranquilize an animal.

(c) The animal services officer shall be required to pick up and make humane disposition of any diseased or injured animal in the city. If an owner refuses entrance to the premises to an animal services officer attempting to enforce this chapter, such officer shall contact the police department and proceed on the owner's premises in the company of the officer with such legal authority as is necessary to lawfully enter the owner's premises for the purpose of enforcing this chapter. Animal services officers are hereby authorized to issue citations and notices to appear for violation of this chapter when based upon personal investigation and the officer has reasonable and probable grounds to believe that a violation has occurred.

Sec. 10-5. Fees.

(a) The fees to be charged in connection with the provisions of this chapter shall be established in the Comprehensive Fee Schedule. Adoption fees may be decreased or waived by the animal services Director, or

designee during special promotions, to promote efficient shelter operations, and/or to optimize animal lifesaving.

(b) No reclaim fees shall be assessed for community cats.

(c) No fees shall be assessed if an animal is improperly impounded.

(d) Animal services is authorized to establish rules and regulations relating to the care, custody, control, and disposal of animals, which, in the opinion of the animal services officer, will further guarantee and protect the health and safety of the citizens of the City.

Sec. 10-6. Citations.

(a) Citations must be prepared as prescribed by F.S. Ch. 828.

(b) An animal services officer may, but shall not be required to, issue a written warning prior to the issuance of a citation for a violation of this chapter. Failure to comply with the provisions of a written warning may result in issuance of a citation or impoundment of the animal, or both.

(c) Any animal services officer shall have the authority to issue citations to citizens whose pets are found to be in violation of this chapter.

(d) Any violations of the provisions of this chapter are hereby declared to be civil infractions for which there may be fines imposed by the county court a maximum fine not to exceed $500.00. Unless cited for a violation for which court appearance is mandatory, anyone cited with a violation of this chapter may pay a fine as contained within the Comprehensive Fee Schedule.

If a person fails to pay the civil fine within the time prescribed on the citation or fails to obtain a court date, or having obtained a court date, fails to appear in court to contest the citation, the person shall be deemed to have waived the right to contest the citation. In such cases, final judgment may be entered against the person in the maximum civil fine of $500.00 allowed, which shall be payable within 60 days from the date of execution of the final judgment. Alternatively, the court may issue an order to show cause, requiring the person to appear before the court to explain why action on the citation has not been taken. If any person who is issued such an order fails to appear in response to the court's directive, that person may be held in contempt of court in addition to having to pay the civil fine, court costs, and restitution, as applicable.

(1) First offense (the current offense is a first offense if there have been no other citations in the preceding 36 months);

(2) Second offense (the current offense is a second offense if there has been only one previous citation within the preceding 36 months);

(3) Third offense (the current offense is a third offense if there have been two previous citations within the preceding 36 months);

(4) Fourth and subsequent offenses (the current offense is a fourth or subsequent offense if there have been three or more previous citations within the preceding 36 months) requires mandatory court appearance. For citations involving a mandatory court appearance, the citation shall specify that the court appearance is mandatory. If a person so cited fails to appear within the time prescribed in the citation to obtain a court date or having a court date, fails to appear in court, a default judgment may be entered against the person in the maximum civil fine payable within 60 days from the date of execution of the final judgment.

(5) Anyone cited with a violation of this chapter who pays the required fines and then goes three years with no offenses shall return to the status of having no prior offenses for the purposes of this chapter.

(e) An additional fine, set in the Comprehensive Fee Schedule, is required for any violation involving a dog or cat in heat if not under the owner’s control.

(f) An administrative fee, as set in the Comprehensive Fee Schedule, shall be assessed, and collected upon each civil penalty imposed for violation of an ordinance relating to animal control, cruelty, or neglect.

(g) Any animal services officer shall have the authority to cite the owner or any person having custody of an animal for a violation of this chapter when and only when:

(1) The officer has received from an adult witness a sworn affidavit attesting to the animal having committed a violation pursuant to this chapter; or

(2) The officer has witnessed the commission of a violation under this chapter.

Sec. 10-7. Vaccination of animals required.

The animal services officer shall impound any dog or cat not vaccinated as required by general law. An animal impounded under this section shall be vaccinated by a licensed veterinarian prior to redemption provided the owner pays any impounding fee and charges established pursuant to this chapter.

Sec. 10-8. Barnyard animals.

(a) Generally. No person shall keep or permit to run at large in the city any animals of the equine or swine class and includes goats, sheep, mules, horses, hogs or cattle and domesticated poultry, except for the species gallus domesticus ("chicken"), as per the regulations of subsection (b).

(b) Chickens. The following regulations will govern the keeping of chickens and are designed to prevent conditions that are unsanitary, unsafe or a nuisance. No person shall keep chickens unless the following regulations are followed:

(1) Roosters are not permitted within city limits.

(2) Location: Keeping of chickens is permissible as an accessory use on lots one quarter acre or larger with an existing land use of single family residential, regardless of current zoning or future land use designation.

(3) Quantity: No more than four (4) chickens for the first quarter acre and three (3) additional chickens per each additional quarter acre are allowed on each respective property with an existing land use of single family residential.

(4) Setbacks:

i. Coops or cages housing chickens shall be placed according to the setback requirements for accessory buildings as per Chapter 7 of the Land Development Code.

ii. Coops or cages housing chickens shall be kept at least twenty-five (25) feet from the door or window of any other dwelling or occupied structure other than the owner's dwelling.

iii. Coops or cages housing chickens shall be located behind the principal structure.

(5) Sanitation:

i. The coop or cage must be kept in sanitary condition and free from offensive odors. The coop or cage must be cleaned on a regular basis to prevent the accumulation of waste.

ii. Odors shall not be perceptible at any lot line.

iii. Noise shall not be perceptible at any lot line to the extent that it results in a public nuisance or is in violation of the municipal noise ordinance.

iv. Keeping of chickens shall not attract rodents or other pests.

Sec. 10-9. - Humane treatment for companion animals.

(a) An owner shall treat a companion animal in a humane manner and shall provide humane care for an animal. Humane care includes but is not limited to providing adequate food, adequate water, adequate shelter, adequate space, and adequate veterinary care to maintain health and to prevent or cure diseases.

(1) Veterinary care may include humane euthanasia if a companion animal is beyond the abilities of veterinary medicine to treat or cure and the animal is suffering.

(b) Except as provided herein and in section 10-27(b) no person shall restrain a dog by means of tethering, fastening, chaining, or tying to a doghouse, tree, fence, or any other stationary object.

(c) Notwithstanding subsection (b), a person may tether a dog when it is in visual range of the owner, and the owner is located outside with the tethered animal.
(d) In all cases where tethering is permissible, the following conditions must be met:
    (1) The dog must be attached to the tether by a buckle-type collar or a body harness. A dog shall not be tethered by means of a choke-type, pinch-type, prong-type, or improperly fitting collar;
    (2) The tether has the following properties: it is at least five times the length of the tethered animal's body, as measured from the tip of the nose to the base of the tail; it terminates at both ends with a swivel; it does not weigh more than one-eighth of the tethered animal's weight; and it is free of tangles;
    (3) The dog is tethered in such a manner as to prevent injury, strangulation, or entanglement;
    (4) If there are multiple dogs, each one must be tethered separately. The tethering of each dog must be in accordance with the requirements of this Code;
    (5) The dog is not outside during a period of extreme weather, including without limitation extreme heat or near-freezing temperatures, thunderstorms, tornadoes, tropical storms, or hurricanes;
    (6) The dog has continuous access to water, adequate shelter, and dry ground;
    (7) The dog is at least six months of age. Puppies shall not be tethered; and
    (8) The dog is not sick or injured.
(e) An owner shall use a collar or harness which is appropriate for the age and size of a companion animal.
(f) A person shall not crop the ears of any dog, unless the person employs a veterinarian to perform the cropping. If a person possesses a dog with an ear or ears cut off or cropped, and with the unhealed wound, then that possession is prima facie evidence of a violation of this section, unless the cropping was performed by a veterinarian.
(g) A person shall not castrate a companion animal unless that person employs a veterinarian to perform the castration.
(h) A person shall not for any reason willfully abandon any dog or cat. A dog or cat locked unattended in a vacant house, trailer, or other similar structure or stored unattended in a boarding facility in excess of twenty-four hours shall be considered abandoned.

Sec. 10-10. – Confinement of domestic animals in heat (estrus).

(a) An owner shall securely confine a domestic animal in heat (estrus) indoors or in an enclosed and locked structure which prevents the entry of a male domestic animal and prevents the female in heat from escaping. Confinement solely by a leash, tether, or other similar restraint, or within a fence, open kennel, open cage or run, is not presumed to be compliant with this section.
(b) If a female domestic animal is to be released for an acceptable reason from the secured enclosure, then the owner of the female domestic animal in heat must have physical control over the domestic animal at a distance of six feet or less and be able to physically restrain the animal from coming into contact with a male domestic animal. Acceptable reasons for release from confinement are limited to excretion and veterinary visits.
(c) A person intentionally breeding a female domestic animal in a controlled environment, with the consent of the owner of the male domestic animal, is exempt from this section during breeding.
(d) For purposes of this section, the definition of domestic animal excludes ferret.

Sec. 10-11. - Physical control of dogs.

(a) An owner shall maintain physical control of a dog at all times when the dog is off the owner's property, unless the property owner or designee or lessee consents to the removal of the physical control and the dog is under adult supervision. Off the owner's property means on any public or private property including but not limited to streets, sidewalks, schools, parks, or private property of others. For property owned or controlled by a government entity, it is presumed that consent is not given unless posted.
(b) Dogs which are exempt from this section include:

(1) A police dog, fire dog, or SAR dog, as defined in F.S. § 843.19, when the dog is operating in its official capacity, as defined in said section; or
(2) A dog that is a trained and is a certified animal service dog used to assist persons with disabilities when it is performing those services; or
(3) A dog involved in organized training or exhibiting including obedience trials, conformation shows, field trials, hunting trials, and herding trials; or
(4) A dog involved in any legal hunt in an authorized area, when the owner possesses a valid hunting license.

Sec. 10-12. – Public Nuisances.

(a) Removal of dog excreta.
(1) The owner of a dog shall immediately remove any excreta deposited by the dog on any property other than the owner's, including but not limited to public property, streets, sidewalks, schools, parks, and private property. The owner of a dog shall carry adequate waste removal devices or disposal bags while the dog is off the owner's property, unless the waste removal devices are provided.
(2) The owner of a dog shall remove any excreta deposited by the dog on their own property when the accumulation of feces causes an odor to be perceptible at or past any lot line of the owner's property.
(b) Noise.
(1) No dog or cat shall be permitted to bark, bay, cry, whine, howl or make any other noise continuously and/or incessantly in an excessive, habitual or untimely fashion for such a duration that it annoys or disturbs a reasonable person of normal sensitivities residing in or occupying premises in close proximity to the premises on which the animal is located.
(2) It shall not be considered a violation of this section if, at the time the dog or cat is making any noise, a person is trespassing or threatening to trespass upon private property where the dog or cat is situated or for any other legitimate cause which teased or provoked the dog or cat.
(3) In the case of multiple animals at one location, it shall not be necessary to single out which specific dog or cat committed a noise nuisance. It shall be sufficient to demonstrate that the noise emanated from the premises.

Sec. 10-13. - Procedure to classify a dog as dangerous.

(a) Animal services shall investigate reported incidents involving any dog that may be dangerous. Animal services shall, if possible, interview the owner and witnesses, and attempt to obtain a sworn affidavit from any person, including any enforcement officer, desiring to have the dog classified as dangerous.
(b) After the investigation, animal services shall make an initial determination as to whether there is sufficient cause to classify a dog as dangerous as defined in F.S. Ch. 767. If animal services does find sufficient cause, animal services shall provide to the owner of the dog written notification of the sufficient cause finding. Such notification shall be provided by certified or registered mail, certified hand delivery, or in accordance with F.S. Ch. 48.
(c) If animal services find sufficient cause to classify a dog as dangerous, the owner may request a hearing to contest the classification, as provided in F.S. 767.12, to be heard per section 10-14 of this code. Notification pertaining to these hearings shall be provided by certified or registered mail, certified hand delivery, or in accordance with F.S. Ch. 48.
(d) Animal services shall not declare a dog dangerous if the threat, injury, or damage was sustained by a person who, at the time, was unlawfully on the property or, while lawfully on the property, was tormenting, abusing, or assaulting the dog, its owner, or a family member. Animal services shall not declare a dog dangerous if the dog was protecting or defending a human being from an unjustified attack or assault and the protected or defended human being was within the immediate vicinity of the dog.

(e) Animal services shall impound any dog that is the subject of an investigation under this section until the conclusion of the investigation, unless the animal services officer makes a written determination that the dog(s) can be safely confined by its owner, based upon an evaluation of the following criteria:
   (1) The physical layout of the area where the dog will be confined;
   (2) The plan for proper confinement of the dog;
   (3) The individual characteristics and behavior of the dog; and
   (4) Any other relevant factors.

   If the dog is impounded pending the outcome of the investigation, a notice shall be provided to the owner stating the basis for confinement at animal services and stating that the owner may board the dog at a licensed kennel or veterinarian at the owner's expense. If the dog is not required to be impounded by animal services, the owner of the dog must agree in writing to the following:

   (1) The subject dog(s) must be humanely and safely confined in a securely fenced or enclosed area approved by animal services pending the outcome of the investigation and any hearings related to the classification;
   (2) The owner of the dog will provide animal services with the address where the dog will be kept; and
   (3) The owner of the dog(s) may not relocate or transfer ownership of the dog pending the outcome of the investigation or hearings related to the classification without approval by animal services. Animal services shall impound the subject dog(s) if the owner refuses to agree to the above shelter-in-place requirements in writing. The owner may utilize the hearing provisions of this chapter to challenge any restrictions imposed under this section.

(b) Animal services shall perform a prompt and thorough dangerous dog investigation. If animal services maintains custody of the dog during the investigation, then only medical fees shall accrue.

Sec. 10-14. – Dangerous Dog Hearing Procedure.

(a) On or before the following dates, an owner may file a written request for hearing with animal services to contest the classification. The City Manager shall designate an individual or any code enforcement mechanism pursuant to Article III, Division 5 of the City Code to act as a Hearing Officer to hold a hearing on or before:
   (1) The seventh calendar day after the date of service of written notification of an initial determination of a sufficient cause finding under section 10-13 of this Code; or

(b) No less than five calendar days and no more than 21 calendar days after the date of receipt of the written request, animal services shall provide for the requested hearing.

(c) Hearing procedures.
   (1) Each party shall have the following rights:
      i. To be represented by counsel;
      ii. To compel the attendance of witnesses;
      iii. To examine witnesses;
      iv. To introduce exhibits;
      v. To examine opposing witnesses on any relevant matter, even though the matter was not covered under direct examination;
      vi. To impeach any witness regardless of which party first called the witness to testify.
   (2) Any interested party or person may make application and, upon good cause shown, may be allowed within the discretion of the Hearing Officer to intervene or appear in a proceeding pending before the Hearing Officer.

(d) Subpoenas.
   (1) The Hearing Officer has the power to issue subpoenas to compel the attendance of witnesses at a hearing upon the written request of any party or upon the Hearing Officer's own motion.
   (2) A subpoena may be served by any person authorized by law to serve process. Service shall be made as provided by law.

(3) Any person subject to a subpoena may, before compliance and on timely petition, request the Hearing Officer having jurisdiction of the dispute to invalidate the subpoena.
(4) A party may seek enforcement of a subpoena issued under the authority of this chapter by filing a petition for enforcement in the county court. Failure to comply with an order of the court shall result in a finding of contempt of court. However, no person shall be in contempt while a subpoena is being challenged under subsection (d)(3).
(5) If a party willfully fails to testify when duly subpoenaed, the Hearing Officer may:
i. Order that the matters regarding which the questions were asked, or any other designated facts shall be taken to be established for the purposes of the action in accordance with the claim of the party obtaining the order;
ii. Render a judgment by default against the disobedient party.
(6) Witness fees shall be paid as provided by law.

(e) Evidence.
(1) All hearings shall be conducted, insofar as practicable, in accordance with the Florida Evidence Code. However, the general nature of the hearing shall be conducted in an informal manner.
(2) In any hearing before the Hearing Officer, irrelevant, immaterial, or unduly repetitious evidence shall be excluded. All other evidence of a type commonly relied upon by reasonably prudent persons in the conduct of their affairs shall be admissible, whether such evidence would be admissible in a trial in the courts of Florida. Any part of the evidence may be received in written form, and all testimony of parties and witnesses shall be made under oath. Hearsay evidence may be used for the purpose of supplementing or explaining other evidence, but it shall not be sufficient in itself to support a finding unless it would be admissible over objection in civil actions.
(3) Documentary evidence may be received in the form of a copy or excerpt if the original is not readily available. Upon request, parties shall be given an opportunity to compare the copy with the original.
(4) A party shall be permitted to conduct cross-examination when testimony is taken, or documents are made a part of the record.
(5) The rules of privilege shall be effective to the same extent that they are now or hereafter may be recognized in civil actions.
(6) The City shall ensure that an audio and documentary record of the hearing is preserved, which record shall be public and open to inspection and transcription or copying by any person.

(f) Written determinations of the Hearing Officer.
(1) After due public hearing, the Hearing Officer shall issue a determination based upon the preponderance of the evidence. The animal services officer shall bear the burden of establishing the dangerousness of the dog, or that a violent dog attack occurred; and the owner shall bear the burden of establishing any legal defenses.
(2) All determinations of the Hearing Officer shall be in writing, signed and dated by the Hearing Officer, shall contain findings of fact and conclusions of law, and shall be served upon the owner by certified or registered mail, certified hand delivery, or service in conformance with Chapter 48, Florida Statutes. If the Hearing Officer upholds the initial determination of dangerousness, the owner shall comply with the provisions of Section 10-15 within fourteen (14) calendar days of the Hearing Officer's determination; or in the event of any appeal of said determination to a court of competent jurisdiction, within fourteen (14) calendar days of a decision adverse to the owner.
(3) On or before the tenth business day after the date of service of a final decision, the owner may appeal to the proper court the decision regarding any dangerous dog. The appeal shall be a review of the record, not de novo.

(g) Payment of Hearing Officer. The cost of the Hearing Officer shall be paid by the losing party and shall be a fee set in the Comprehensive Fee Schedule.

Sec. 10-15. - Requirements for dogs declared dangerous.

(a) On or before the fourteenth calendar day after the date of notification of the classification of a dog as dangerous or a classification is upheld on appeal as provided in section 10-14 of this Code, the owner of the dog shall obtain a certificate of registration and a dangerous dog tag or collar from animal services subject to the fee set in the Comprehensive Fee Schedule. The owner shall renew the certificate annually. Animal services is authorized to issue such certificates of registration and renewals only to persons who have attained at least 18 years of age and who present to animal services sufficient evidence of:
   (1) A current certificate of rabies vaccination and license for the dog;
   (2) A proper enclosure for a dangerous dog;
   (3) Warning signs that are clearly visible from all entry points and inform both children and adults of the presence of a dangerous dog on the property;
   (4) Permanent identification of the dog by microchip;
   (5) Surgical sterilization of the dog, unless a veterinarian certifies in writing that sterilizing the animal would be injurious to the animal's health. If the health condition of the animal is of a temporary nature, then the owner shall employ a veterinarian to sterilize the animal immediately after the health condition has been corrected;
   (6) Two color photos of the dog in two different poses showing the color and size of the animal;
   (7) Fee simple ownership of the property upon which the dangerous dog and enclosure are located or, alternatively, permission to locate the dangerous dog and enclosure on the property from the fee simple owner of the property; and

(b) The owner shall secure the dangerous dog collar or tag around the dog's neck so that it is clearly visible at all times.

(c) The owner shall immediately notify animal services when a dog that has been classified as dangerous:
   (1) Becomes loose or unconfined;
   (2) Attacks a human being or another companion animal; or
   (3) Dies.

(d) The owner shall immediately notify animal services if the owner moves to another address with the dangerous dog. If the dog owner is a tenant or otherwise differs from the property owner, animal services will notify the property owner of the presence of the dangerous dog via certified mail.

(e) If the owner moves to a different jurisdiction, then the owner shall also notify the enforcement officer of the new jurisdiction that the dog has been classified as dangerous.

(f) The owner shall immediately notify animal services if the owner is going to sell or give away the dangerous dog. Prior to a dangerous dog being sold or given away, the owner shall provide the name, address, and telephone number of the new owner to animal services. The new owner shall comply with all of the requirements of this chapter that relate to dangerous dogs, even if the animal is moved from the jurisdiction of this chapter to another local government jurisdiction within the state.

(g) The owner shall immediately notify animal services if the owner believes that the dangerous dog has been stolen and shall file a police report.

(h) The owner of a dangerous dog shall not permit the dog to be outside of the proper enclosure for a dangerous dog, unless the dog is muzzled and restrained by a leash and under physical control of a competent person. The owner shall use a muzzle that is made in a manner that will not cause injury to the dog or interfere with its vision or respiration but prevents the dog from biting any person or animal. The owner may exercise the dog on the owner's property in a securely fenced or enclosed area that does not have a top, without a muzzle or leash on the dog, if the dog remains within the owner's sight and only members of his immediate household and persons 18 years of age or older are allowed in the enclosure when the dog is present. While transporting the dangerous dog, the owner shall restrain the dog safely and securely within a vehicle.

(i) An owner of a dangerous dog shall not use the dog for hunting purposes.

(j) The provisions of this chapter relating to dangerous dogs ~~do~~ does not apply to dogs used by law enforcement officials for law enforcement work.
(k) The owner of a dangerous dog shall not permit the dog to be left unattended with a minor child.
(l) If the requirements of subsection (a) of this section are not satisfied after fourteen days from the date of notification of the classification of the dog as dangerous, and if there are no pending appeals, the dangerous dog will become the property of animal services and disposition will be in accordance with applicable policies.
(m) Animal services may seek an injunction from a court of competent jurisdiction to enforce the requirements of this section. Each failure to comply with a dangerous dog requirement or responsibility of a dangerous dog owner contained in this chapter shall constitute a noncriminal infraction, punishable by any means available at law or in equity.

Sec. 10-16. - Consequences to dog's owner after a dog attack.

The consequences to a dog's owner after a dog attack shall be the same as per F.S. Ch. 767.

Sec. 10-17. - Procedures after possible rabies exposure.

(a) When an animal has allegedly bitten or scratched a person or is suspected or believed to be infected with rabies, the owner shall relinquish control of the animal to animal services upon request, or shall quarantine the animal at home or with a veterinarian, as directed by animal services.
(b) In certain cases, home quarantine of a domestic animal, which has bitten or scratched a person, may be permitted at the discretion of animal services, if determined safe and appropriate, and the following criteria and conditions are met:
    (1) The animal involved is a domestic animal that has a current rabies vaccination from a veterinarian;
    (2) Animal is a dog that attacked a person, the owner had the dog under physical control when the attack occurred or, if the dog attack occurred on the owner's property, or animal services determined that the attack was provoked;
    (3) The owner of the domestic animal has a facility to contain within a cage, fenced yard, or house the domestic animal during the quarantine period, which facility has been deemed appropriate by animal services;
    (4) The owner agrees that at the end of the quarantine period, the owner allows a representative or designee of the county health department to visually check an animal quarantined at home; and
    (5) Any other conditions or safeguards as animal services may deem necessary and appropriate.
(c) At any time during the home quarantine period, if a domestic animal is reported or observed to not be confined or a dog is reported to not be under physical control, the home quarantine privilege is revoked immediately and the owner, at the owner's expense, shall confine the domestic animal either with a veterinarian or at a city animal shelter for the duration of the quarantine period.
(d) The investigating animal services officer shall decide whether to allow home quarantine of a domestic animal. In the event of any dispute regarding the appropriateness of home quarantine, the director <u>or designee</u> has final decision-making authority in the matter.
(e) If the animal is quarantined at an animal services shelter, an additional quarantine fee shall apply, per the amount set in the Comprehensive Fee Schedule.
(f) If a police dog, as defined in F.S. § 843.319, has attacked a person while acting under the direction of a law enforcement agency in an official capacity, such as aiding in the detection of criminal activity, enforcement of laws, or apprehension of offenders, the director may exempt the dog from the quarantine and impoundment provisions of this chapter, upon proof of a current vaccination and licensing for the dog.

Sec. 10-18. - Rabies vaccination for domestic animals.

All provisions of F.S. § 828.30 shall apply regarding the vaccination of domesticated animals.

Sec. 10-21. - Prohibition on owning a primary vector of rabies.

A person shall not own, harbor, keep, display, exhibit, sell, or intentionally breed any animals that are a primary vector of rabies, including but not limited to a raccoon, fox, coyote, or skunk, unless permitted by the Florida Fish and Wildlife Conservation Commission.

Sec. 10-20. - Community cat management.

(a) The City recognizes the need for innovation in addressing the issues presented by the permanent presence and uncontrolled reproduction of community cats living outdoors, independent of human intervention.

(b) Community cat management, in which the community cat is sterilized, ear-tipped, vaccinated against the threat of rabies, and returned to the original location, is the preferred response to a community cat. If these requirements are met, the community cat is exempted from stray, at-large, abandonment, and other possible provisions of this ordinance that apply to owned animals.

(c) Return-to-field of impounded community cats.
   (1) Community cats entering animal services shall be examined for health and temperament to evaluate their ability to survive in an outdoor environment with or without assistance from a community cat caregiver.
   (2) Community cats determined to be thriving in their environment may be sterilized, ear-tipped, vaccinated against the threat of rabies, and returned to the original location.
   (3) An ear-tipped cat received by animal services shall be returned to the location where trapped unless veterinary care is required. A trapped ear-tipped cat shall be released on site unless veterinary care is required.
   (4) Healthy community cats that have been impounded by animal services may be immediately returned-to-field, released to a community cat caregiver, or, if considered sufficiently socialized, adopted. Notwithstanding the foregoing, whenever an impounded community cat is visibly injured or diseased, appears to be suffering, and upon the advice of a veterinarian, such community cat cannot be expeditiously treated and returned to an outdoor living environment, or transferred to a rescue group, then animal services may humanely euthanize the community cat.

(d) Trap-neuter-return of free-roaming community cats. The city recognizes there are community cats that may not enter the shelter, may or may not be under the care of a known community cat caregiver, and may or may not live in a recognized community cat colony. Community cat trap-neuter-return programs to curtail breeding of community cats may be implemented by animal services, veterinary providers, or animal welfare organizations.

(e) Management of community cat colonies. The City recognizes there are community cat caregivers and acknowledges that community cats living in colonies may be tolerated living outdoors, provided such cats are cared for in accordance with the following requirements.
   (1) Managed community cat colonies must be maintained on private property of the community cat caregiver or with the permission of the property owner or property manager (including public property).
   (2) In instances in which the community cat colony or its members create a documented concern regarding public health or safety, animal services shall work with residents, animal welfare organizations, and community cat caregivers to mitigate concerns via community cat management, education, or relocation of cats, as appropriate.
   (3) If a person is providing care for a community cat colony, he or she is required to provide certain necessities on a regular/ongoing basis, including, but not limited to, proper nutrition and medical care as needed.
      i. Food, if supplied, shall be provided in the proper quantity and frequency for the number of cats being managed. Food must be maintained in proper feeding containers.
      ii. Water, if supplied, shall be clean, potable, and free from debris.
      iii. Shelter, if provided, shall be unobtrusive, safe, and of the proper size for the community cats.
      iv. Community cats shall be fed in an area where they do not interfere with sensitive wildlife.

v. Community cat caregivers shall make a good faith effort to trap all pre-existing and newly arriving cats to have them sterilized, ear-tipped, vaccinated against the threat of rabies, and returned to the original location.

Sec. 10-21. - Keeping a stray domestic animal.

A person shall not harbor, feed, or keep any stray domestic animal, other than a community cat, unless animal services is notified on or before the 24th hour after the person came into possession of such animal. Upon receiving notice, an enforcement officer may impound the animal and place it in the animal shelter. A person shall surrender any stray domestic animal to an enforcement officer upon the officer's demand.

Sec. 10-22. - Confinement, hold periods, and reclaim of dogs and cats.

(a) Dogs or cats impounded pursuant to this chapter and not claimed by their owners shall be held by animal services prior to disposition, as provided herein:
   (1) The hold period before disposition shall be five shelter business days after the date of impoundment for any animal with an identification tag, microchip, or other owner identification.
   (2) The hold period before disposition shall be five shelter business days for animals impounded because the owner is unable to care for the animal due to injury, illness, incarceration, or other involuntary absence; and animals received from a law enforcement agency where there is a known owner.
   (3) There shall be no hold period for kittens and puppies less than five months of age and for adult cats lacking an identification tag, microchip, or other owner identification. These animals shall immediately become the property of animal services upon impoundment and shall be made immediately available for live outcome.
   (4) Dogs and cats that have been abandoned while in the custody of a licensed veterinarian or kennel and that have been turned over to animal services after the ten-day notice period required by section 705.19, Florida Statutes, shall not be subject to any confinement period.
   (5) If an owner does not reclaim the animal within the specified time, then animal services may provide for the animal to be adopted, transferred to an animal welfare organization, entered into a community cat return-to-field program, or make disposition pursuant to law at any time, but shall not euthanize the animal for a minimum of five shelter business days after the date of impoundment unless covered by section 10-24.
   (6) Animals that have been voluntarily surrendered by their owners to animal services shall not be subject to any confinement period.
   (7) In order to promote public health and to protect the health of every animal at the animal shelter, animal services is authorized to provide preventive healthcare and disease screening to every animal that is impounded, including during the hold period. Preventive health care and disease screening includes, but is not limited to, physical examination, vaccination against common infectious diseases, treatment for common internal and external parasites, heartworm testing for dogs, and retrovirus testing for cats. Healthy community cats directed towards return-to-field shall be exempted from retrovirus testing.
   (8) At the expiration of the appropriate hold period, the animal shall become the property of animal services and shall be processed in accordance with applicable policies, including mandatory sterilization.

(b) If animal services allows an owner to reclaim an injured animal or one suspected of carrying an infectious or contagious disease, the owner shall provide immediate veterinary care.

(c) In addition to any other requirements set forth herein, an owner seeking to reclaim a companion animal must present valid picture identification and acceptable proof of ownership, must pay all applicable fees, and must ensure that the animal has a valid license. Acceptable proof of ownership includes but is not limited to, license receipt, veterinary records, affidavits from neighbors, photographs, or other reliable, verifiable documentary evidence. Fees include but are not limited to reclaim fees, vaccination and licensing fees, boarding fees, and veterinary charges.

(d) Community cat caregivers shall be permitted to reclaim impounded, previously sterilized, and ear-tipped, community cats without proof of ownership and are exempted from reclaim fees.
(e) If a companion animal is impounded because of inhumane treatment or held during dangerous dog proceedings, the owner shall be responsible for fees accrued.
(f) Animal services shall scan any impounded animal for a microchip with a device capable of detecting all available microchip frequencies (global scanner) on the day of impoundment and take appropriate measures to contact any individual or organization connected to the animal's microchip account.

Sec. 10-23. - Release of an animal.

(a) All animals in the custody of animal services shall be disposed of via adoption, transfer to an animal welfare organization, community cat return-to-field, owner reclamation, or euthanasia.
(b) Adoption of an animal.
    (1) Animal services shall not permit a person to adopt a companion animal from the shelter if animal services determines that adoption would not be in the best interest of the animal or the public.
    (2) Any dog or cat adopted from animal services shall be sterilized, vaccinated, and microchipped by animal services prior to release to the new owner. If the sterilization of the animal cannot be done at the time of adoption because of health reasons, then the person shall leave a deposit guaranteeing sterilization, as required by F.S. § 823.15.
    (3) To be eligible for the return of the required adoption deposit for any dog or cat, the adopter shall present to animal services written documentation confirming sterilization of the animal from the veterinarian who performed the sterilization within 30 calendar days of the adoption occurring.
    (4) If an adopter fails to comply with this section within the time specified, then the adopter shall forfeit the deposit and animal services may issue a citation. Pursuant to F.S. § 823.15(2), an adopter who fails to comply with the provisions of this section, shall be liable for legal fees and court costs to enforce the provisions of this section.
(c) Transfer of an animal. In the event that an animal is transferred to an animal welfare organization prior to sterilization, the organization must enter into a written agreement with animal services, pursuant to section 823.15, Florida Statutes, as amended, ensuring that the animal will be sterilized within 30 days or prior to sexual maturity. The animal welfare organization shall vaccinate the animal against the threat of rabies if the animal is four months of age or older prior to another owner readopting the animal or prior to returning a community cat to the field. Organizations shall provide to animal services, at a minimum, the following information:
    (1) The name, location address, and phone number of the adopter or the organization providing community cat management services;
    (2) The date of sterilization and name and address of veterinarian; and
    (3) The date of rabies vaccination and name and address of veterinarian.
(d) Animal services may suspend transfers to an animal welfare organization for failing to comply with the reporting requirements.

Sec. 10-24. - Humane euthanasia.

(a) Animal services shall attempt to contact the owner of any animal impounded with an identification tag, microchip, or other traceable identification before humane euthanasia of the animal.
(b) A companion animal not claimed and not adopted from animal services within the relevant holding period established in section 10-22(a) may be disposed of in a humane manner.
(c) In the event any unidentifiable animal is found in a state of pain and suffering or becomes so during confinement, animal services may euthanize the animal in a humane manner regardless of the relevant holding period established in section 10-22(a).

Sec. 10-25. - Disposal of an animal carcass by owners.

(a) Upon the death of an animal, the owner of the animal shall dispose of the carcass either by burying the carcass at a sufficient depth, of at least two feet, below the surface of the land in order to prevent predators from exhuming the carcass, or by recognized alternative methods of disposal such as cremation or rendering. An owner shall not dispose of any animal carcass by dumping such carcass on any public or private property or in any waterway.
(b) A person who, upon demand, does not surrender to animal services the carcass of any dead animal exposed to rabies shall be guilty of a misdemeanor of the second degree. Each violation constitutes a separate offense.

Sec. 10-26. - Duties of person who injures an animal.

Any person who injures an animal shall immediately notify the owner of the animal if the owner is known. If the owner is not known, a person who injures an animal shall immediately notify animal services, the City of Crestview Police Department, or a law enforcement agency that has jurisdiction over the location where the animal was injured.

Sec. 10-27. - Companion animals in motor vehicle.

(a) A motor vehicle operator shall not place or confine a companion animal or allow it to be placed, confined, or remain in an unattended motor vehicle for such a period of time as may reasonably be expected to endanger the health or well-being of the animal, due to considerations such as insufficient ventilation, heat, or lack of water.
(b) A motor vehicle operator, operating on a public right-of-way, shall not transport or keep a companion animal in or on any motor vehicle, unless the companion animal is in the passenger compartment of the vehicle, or protected by a container, cage, or other appropriate tethering device that will prevent the animal from falling from, being thrown from, or jumping from the motor vehicle.
(c) Any enforcement officer who finds a companion animal in a motor vehicle under conditions violating section 10-27(a) shall make a reasonable attempt to notify the operator of the vehicle. In the event the operator of the vehicle cannot be located after a reasonable attempt, the enforcement officer may contact law enforcement and request assistance. If the animal is removed from the vehicle, then the enforcement officer shall leave a written notice bearing the name of the officer, the department's name and telephone number, and the address where the owner may claim the animal. Animal services shall make reasonable efforts to contact the owner of the animal and give notice that the animal is in its custody. Within the relevant holding period established in section 10-22(a), the owner may reclaim the animal upon payment of the reasonable maintenance charges, which may include veterinary fees, reclaim fees, boarding fees, licensing fees, and vaccination fees.

Sec. 10-28. - Animal exploitation.

(a) A person shall not promote, operate, run, participate in, conduct, or allow any exploitative live animal contests, performances, or exhibitions, or other similar activity in which animals are encouraged, forced, or trained to perform in an exploitative, cruel, or harmful manner.
(b) A person or organization whether for profit, nonprofit, charity, or any other purpose, shall not offer an animal as a prize in response to participation in a contest, drawing of chance, merchandising premiums, promotional giveaways, or any other similar event.

Sec. 10-29. - Sale or donation of impounded animals for purpose of scientific research.

All animals in the custody of animal services shall be disposed of via adoption, transfer to an animal welfare organization, community cat return-to-field, owner reclamation, or euthanasia. Animal services shall not release, sell, or give any live animal to any institution, private firm, or individual for the sole purpose of medical or scientific research.

Sec. 10-30. - Authority of animal services to assist with certain animals.

Animal services is authorized, by permit from the Florida Fish and Wildlife Conservation Commission, to humanely trap, transport, relocate, release, or euthanize indigenous or non-indigenous, nongame wildlife. Animal services may also release indigenous wildlife to rehabilitators as permitted by the Florida Fish and Wildlife Conservation Commission. Animal services is authorized to assist a law enforcement agency in any situation involving livestock, upon request of such agency. Animal services may provide assistance to any citizen and law enforcement agency regarding any incidents involving any animal.

Sec. 10-31. - Trapping an animal.

(a) Any person trapping community cats for trap-neuter-return or nuisance wildlife shall:
    (1) Use a humane trap;
    (2) Provide the trapped animal with protection from the direct rays of the sun and direct effects of any wind, rain, irrigation and sprinkler system;
    (3) Provide fresh bait in the trap each time the trap is set;
    (4) Provide fresh water for any animal held for more than 18 hours;
    (5) Make every reasonable attempt to locate the offspring of any trapped lactating mother; and
    (6) Not leave a trap unattended for more than eight hours.
    (7) Immediately release any healthy ear-tipped cat.
(b) Animal services will not relocate non-rabies vector species nuisance wildlife or rabies vector species nuisance wildlife without documented human exposure. Please contact a commercial wildlife removal expert.

Sec. 10-32. Poisoning animals prohibited.

Any person who shall poison, or aid, abet or assist in the poisoning, or putting out or placing of poison at any point or place outside of buildings where animals may secure such poison shall be in violation of this chapter.

Sec. 10-33. Animals killed or injured by motor vehicles.

The driver of an automobile, which strikes and accidentally kills or injures an animal roaming at large in violation of this chapter, shall not be subject to liability to the owner of such animal.

Sec. 10-34. Animals trained to assist persons with disabilities, allowed in public places.

It shall be a violation of this chapter for any person owning, operating, or maintaining any public place of business or conveyance into which the general public is invited for any business purpose to exclude therefrom any animal which has been trained to assist persons with disabilities, provided that such animal is in the company of the person it is assisting.

Sec. 10-35. Obstruction of enforcement

(a) A person shall not refuse to surrender an animal upon lawful demand to an animal services officer.

(b) A person shall not interfere with an animal services officer who is lawfully performing authorized duties.

(c) A person shall not hold, hide, or conceal any animal which an animal services officer is investigating or deems to be in violation of this chapter.

(d) A person shall not take or attempt to take any animal from the director or an animal services officer or from any vehicle that is used by the enforcement officer to transport animals.

(e) Without proper authority, a person shall not take or attempt to take any animal from the animal services' shelter, an animal services animal carrier, or a trap.

(f) A person shall not willfully refuse to sign and accept a citation issued by an enforcement officer. If a person violates this subsection, the person shall be guilty of a misdemeanor of the second degree, punishable as provided in F.S. § 775.082 or 775.083 or 775.084.

(g) A person shall not willfully make any false statement in an affidavit or sworn testimony taken as part of an investigation of a violation of this chapter.

CITY OF CRESTVIEW

Item # 10.1.

Staff Report

CITY COUNCIL MEETING DATE: April 25, 2022
TYPE OF AGENDA ITEM: Action Item

TO:	Mayor and City Council
CC:	City Manager, City Clerk, Staff and Attorney
FROM:	Maryanne Schrader, City Clerk
DATE:	4/21/2022
SUBJECT:	Appointment of Mayor Pro-Tempore

BACKGROUND:

In April, the City Council shall select from among its members, a Mayor Pro-tempore. The Mayor Pro-tempore shall serve in the absence or disability of the Mayor, preside over the meetings of the City Council and perform all the duties and exercise all authorities of the Mayor. The Mayor Pro-tempore's term of service shall be for one year. The Mayor Pro-tempore shall retain all voting privileges of an elected member of the City Council.

DISCUSSION:

Appointment of one of the Council members to serve as Mayor Pro Tempore for one year.

GOALS & OBJECTIVES

This item is consistent with the goals in A New View Strategic Plan 2020 as follows;
Foundational- these are the areas of focus that make up the necessary foundation of a successful local government.
Financial Sustainability- Achieve long term financial sustainability

Organizational Capacity, Effectiveness & Efficiency- To efficiently & effectively provide the highest quality of public services

Infrastructure- Satisfy current and future infrastructure needs

Communication- To engage, inform and educate public and staff

Quality of Life- these areas focus on the overall experience when provided by the city.
Community Character- Promote desirable growth with a hometown atmosphere

Safety- Ensure the continuous safety of citizens and visitors

Mobility- Provide safe, efficient and accessible means for mobility

Opportunity- Promote an environment that encourages economic and educational opportunity

Play- Expand recreational and entertainment activities within the City

Community Culture- Develop a specific identity for Crestview

FINANCIAL IMPACT

n/a

RECOMMENDED ACTION

Appointment of the Mayor Pro-tem to serve for one year.

Attachments

None

CITY OF CRESTVIEW

Item # 12.1.

Staff Report

CITY COUNCIL MEETING DATE: April 25, 2022
TYPE OF AGENDA ITEM: Presentation

TO:	Mayor and City Council
CC:	City Manager, City Clerk, Staff and Attorney
FROM:	Tim Bolduc, City Manager
DATE:	4/21/2022
SUBJECT:	City Manager Updates

BACKGROUND:

DISCUSSION:

The City Manager will provide an update on the following items:
Blackwater Golf Club/ Toptracer driving range status update
Animal Control division update.
Wastewater treatment plant upgrades.
TDC plan feedback.
Budget process update.

GOALS & OBJECTIVES

This item is consistent with the goals in A New View Strategic Plan 2020 as follows;
Foundational- these are the areas of focus that make up the necessary foundation of a successful local government.
Financial Sustainability- Achieve long term financial sustainability

Organizational Capacity, Effectiveness & Efficiency- To efficiently & effectively provide the highest quality of public services

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Mobility- Provide safe, efficient and accessible means for mobility

Opportunity- Promote an environment that encourages economic and educational opportunity

Play- Expand recreational and entertainment activities within the City

Community Culture- Develop a specific identity for Crestview

FINANCIAL IMPACT

NA

RECOMMENDED ACTION

No recommendation needed.

Attachments

None