

Coffee County Multi-Jurisdictional Hazard Mitigation Plan

Volume I



Prepared By:

**COFFEE COUNTY
EMERGENCY MANAGEMENT AGENCY**

In Coordination with

ELBA, ENTERPRISE, KINSTON & NEW BROCKTON

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Coffee County Multi-Jurisdictional Hazard Mitigation Plan

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Hazard Mitigation Plan

I. Introduction

A. Plan Scope

This plan is a multi-jurisdictional plan for Coffee County, the Cities of Elba and Enterprise, the Towns of Kinston and New Brockton, the Elba, Enterprise and Coffee County Boards of Education and public and private non-profit utilities. The plan represents all incorporated municipalities in the county and all unincorporated areas of the county. The plan does not include nor represent the U.S. Army Aviation Center, Fort Rucker, which is partially located in Coffee County.

Coffee County, the City of Elba, the City of Enterprise, the Town of Kinston, and the Town of New Brockton are the continuing participating jurisdictions for the Coffee County Hazard Mitigation Plan revision 2010. The three Boards of Education are considered as separate jurisdictions. They all participated in the plan's development, though not all attended the meetings. Those that did not have any specific changes to review/submit did not attend the meetings; however, all reviewed the overall plan as well as their respective sections of the plan and they submitted comments either by email or verbally. Of these three Boards, the Enterprise and Coffee County Boards of Education are continuing participates and the Elba Board of Education is a new participate.

B. Background

1. Coffee County is located in the southeast corner of Alabama with U.S. Highway 84 transecting the county from east to west. The county is bounded on the north by Pike County, on the east by Dale County, on the west by Covington and Crenshaw County, and on the south by Geneva County, as depicted in Figure I-1 below.



Figure I-1 - Coffee County

2. The county, named for Gen. John Coffee, was created in 1841 out of the western portion of Dale County. Gen. John Coffee was born in Prince Edward County, Virginia and migrated to Tennessee. He served with Gen. Andrew Jackson at the Battle of New Orleans and in the Creek Indian War of 1813-14.

3. The county seat of Elba, with a population of a little more than 4,000, is the county's second largest city. The largest city is Enterprise with a population of a little more than 21,000. The only other two incorporated towns are Kinston and New Brockton.
4. Coffee County is not part of a large metropolitan area. Its 2000 population of 43,615 ranked 29th in the state. The largest industries in 1997 were services, 18.8 percent of earnings; nondurable goods manufacturing, 17.1 percent; and state and local government, 13.6 percent. Over a ten year period, the fastest growing was nondurable goods manufacturing, which increased at an annual rate of 7.1 percent.
5. The main waterway in Coffee County is the Pea River. However, there are also significant tributaries and subsidiary streams, such as Big Creek, Beaver Dam Creek and Whitewater Creek to name just a few.
6. Figure I-2, below, depicts the four major jurisdictions of Elba, Enterprise, Kinston and New Brockton, the major highways in the county, as well as the rivers, creeks and tributaries.

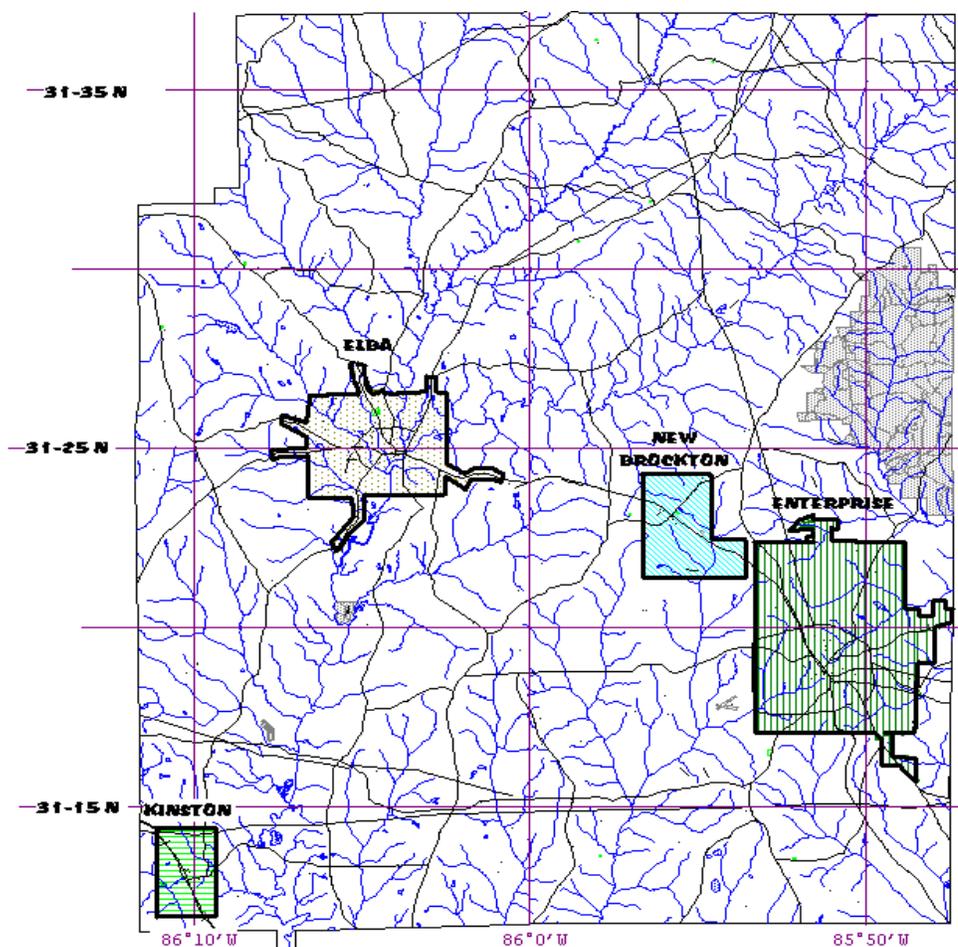


Figure I-2 - Major Jurisdictions, Highways, Rivers & Creeks

7. Maps included with the plan in Volume II depict the main roads, bridges and structures in the county. **Table I-1** provides a listing of the current maps. It is anticipated that future revisions and updates of the plan will include additions, deletions, and modifications to the maps as needed.

Table I-1 - Listing of Plan Maps			
Coffee County	Roads/Bridges/Structures	Nine Pages	Section 1
Enterprise	Streets/Structures	Five Pages	Section 2

C. Demographics

1. The 2000 census records the population as 43,615 with 19,837 housing units and a total area of approximately 680 square miles. Approximately 1.4 square miles of surface are covered by water.
2. The average population density per square mile is approximately 64 persons. The average housing density is roughly 29 units per square mile.
3. The City of Enterprise has experienced impressive growth in the last 5 years. According to the U. S. Census estimates, the population of Enterprise has risen 11.6% from 2005 to 2008. Since 2000, the population has grown 19.8%, making Enterprise the fastest growing city in the Wiregrass. New census data collected in 2010 is expected to show an even more rapid growth rate. Currently, the U. S. Census estimates the population at 25, 351. Other sources put the figure closer to 29,000.
4. Population and demographic data for the four principal municipalities and the county at large are listed in **Table I-2**. Refer to **Figure I-2** for geographic locations.

Table I-2 - Population and Demographic Data				
Jurisdiction	Population	Population Density	Housing Density	Area (sq. mi.)
Coffee County (Unincorporated)	16,585	27	12	621
Elba	4,185	272	122	15
Enterprise	20,993	691	314	30
Kinston	602	123	63	5
New Brockton	1,250	157	70	8
Coffee County (Aggregate)	43,615	64	29	679

D. Business and Industry

1. The county supports a variety of industrial, commercial and retail concerns in addition to the more traditional residential and farming communities. The county

- varies from urban areas, such as the communities listed above, to very rural settings and also serves as a bedroom community for Fort Rucker.
2. Business growth in the City of Enterprise has been strong, despite a weak national and global economy over the last 12-18 months. Chamber ribbon cutting and groundbreaking events totaled 52-55 annually from 2005 through 2007, with a significant jump to 67 in 2008. Numbers for the first 6 months of 2009 indicate a similar growth rate. Another indicator of business growth, chamber membership has risen about 13% in 2008. There are approximately 1,100 businesses in the city.
 3. The City of Enterprise has shown an incredible increase in economic strength. According to Policom Corporation which specializes in studying the dynamics of local economies, the Enterprise-Ozark Micropolitan area has the second strongest economy of the 13 micros in Alabama. Policom defines a micro as a statistical area that has at least one urbanized area (city) with a population of at least 10,000 but fewer than 50,000. There are 544 micropolitan areas in the U. S. Since 2005, this area has raised an astounding 140 places in the rankings, from 215th to 75th strongest in America. This is a rise of 186% in 5 years.
 4. From 2005-2008, annual sales tax revenues in Enterprise have actually grown about 1.8%. Lodging tax figures have risen 25% in the last 2 years alone, and are expected to skyrocket with the addition of 3-5 new hotels within the next 1-2 years. Bama Jam alone generated \$7 million dollars in its first year, 2008, and \$5.8 million in 2009. It is estimated the total economic impact of this one event to be \$28-\$30 million each year. Two Dixie Youth Regional and World Series events in 2009 and one in 2008 were hosted with an economic impact of \$562,000 for each event.
 5. Coffee County continues to have the 3rd lowest unemployment rate in Alabama. Since 2005, an estimated 1,700 new jobs have been created, including the opening of major new employers such as ASHA and U. S. Aero Services. Expansion of existing industries, including Alfab, Wayne Farms, AFS, and ASHA (major employers) will account for approximately 1,000 new jobs by the end of 2009.
 6. Some of the more significant business interests located in Coffee County include farming, forestry, light industry, manufacturing, service industry, poultry growers and related industry, and retail.
 7. The aforementioned industries are susceptible to the same natural hazards as the remainder of the county, e.g., tornadoes, hurricane winds and potential flooding, though none are currently located in a flood zone. However, the economic impact of losing any industry is directly related to the size/type of business and the duration/severity of the loss. **Table I-3** depicts the economic impact of most of the major businesses in the county.

8.

Table I-3 – Economic Impact				
Industry	Jurisdiction	Employees	Weekly Payroll	Annual Economic Impact
Coffee Baking Co.	County	53	\$20,000	\$9,000,000
Kelley Foods	Elba	148	\$103,000	\$15,000,000
Dorsey Trailers	Elba	283	\$140,000	\$11,000,000
Southland Foods	County	600	\$240,000	\$30,000,000
Utility Trailers	Enterprise	208	(no data at	time of printing)
Pilgrim's Pride*	County	900	\$850,000	\$42,000,000
Hyundai	Enterprise	175	\$74,000	\$5,000,000
Toledo Molding	Elba	120	\$56,000	\$3,500,000
Totals		2279	\$1,483,000	\$115,500,000

*figures include poultry growers

Hazard Mitigation Plan

II. Methodology

A. Plan Preparation Process

1. U.S. Census Data from 2000 was used to determine the population/population density, demographics, land area, and housing density. Maps from various sources were used to determine location of structures, streams and other data.
2. The Alabama Emergency Management paper *Alabama Hazard Risk and Vulnerabilities Analysis* was used for hazard analysis.
3. Many sources, including local newspapers, government records from the jurisdictions participating, and the Pea River Historical Society were accessed and combined as appropriate in revising the plan. Some anecdotal data was also gathered from local officials in formal meetings and many informal discussions with local residents as well.
4. The local data collected, combined with inputs from AEMA and FEMA, were utilized in the revision of the plan following the Local Mitigation Plan Review Worksheet.

B. Planning Committee and Responsibilities

1. With the exception of minor changes, the following information remains the same and is still valid since the original plan in 2005. CCEMA developed a strategy for updating each section of the plan under a very constricted schedule. This strategy was discussed by the CCMPC at its first meeting. CCEMA led the update of all sections of the plan. Subject matter experts on the CCMPC were solicited for specific information regarding hazards, risks, capabilities and strategies. CCMPC members were also asked to review mitigation strategies from the 2005 Plan for which they were responsible and asked to provide new actions that they may pursue in the future. Certain CCMPC members also provided interim reviews of draft sections as appropriate throughout the update process.
2. As part of the Plan update process, the committee reevaluated its hazards based on new and current information and modified its risk assessments based on newly available data. The initial list of hazards was revised to reflect an improved understanding of its risks. These hazards were then evaluated based on newly acquired data and risk assessments were performed on the most threatening hazards to incorporate current data. Jurisdictions were then ranked based on their vulnerability and risk.

3. Following notification of the award of a grant from Homeland Security for the revision of Coffee County’s Hazard Mitigation Plan, the initial mitigation planning project scope was reviewed and considered by the Coffee County Emergency Management Board. This board is a five-person board comprised of the chairperson of the Coffee County Commission and the mayors of the City of Elba, the City of Enterprise, the Town of Kinston and the Town of New Brockton, the four major municipalities in the county. The board was established by a joint Statement of Understanding issued by the five board members in 1990. This board provides oversight and guidance to the Coffee County Emergency Management Agency (EMA) and the agency director reports to the board. The board members are the same as in 1990 by position, County Commission Chairman and the mayors of Elba, Enterprise, Kinston, and New Brockton.

4. The board agreed a multi-jurisdictional plan would be the best approach for the county, instead of attempting to organize and complete five separate plans.

5. A planning committee, the **Coffee County Mitigation Planning Committee (CCMPC)**, was formed by the board to represent the four major municipalities and the county at large. Additional voluntary participation from other local agencies, local media, and the general public was also invited and encouraged. The CCMPC is composed of representatives from government, private non-profit, and private organizations and others who also make up the Local Emergency Planning Committee (LEPC) that develops and maintains the Emergency Operations Plan (EOP) for Coffee County. These planning committees work together to integrate all planning efforts including land use, natural and man-made disaster response plans, regional planning commission projects, disaster recovery projects, etc. The EOP references the Hazard Mitigation Plan as well as other plans related to all potential threats. This Hazard Mitigation Plan update has been integrated with all of the above organizations in the planning process through meetings, discussions, and references in the plans.

6. The board members, Mayors and Chairperson, County Commission, each appointed a representative for their respective jurisdictions. The Chairperson, County Commission nominated the Coffee County EMA Director to represent the county-at-large and to serve as CCMPC Chairperson. EMA Director John Tallas was appointed by the board to serve as both the county at large committee representative as well as chairperson of the CCMPC.

7. The Mayors of the four jurisdictions each appointed their respective representatives as depicted in **Table II-1**. These representatives are the Elba special Projects Officer, the Enterprise Airport Manager, the Kinston town clerk, and the New Brockton Mayor.

Table II-1 - Coffee County Mitigation Planning Committee		
Jurisdiction	Designated	Current

	Committee Member	Designee
Coffee County	EMA Director	John C. Tallas
Coffee County	EMA Deputy Director	Larry Walker
Elba	Special Projects	Herby McCall
Enterprise	City Engineering Dept.	Julius Noble
Kinston	Town Clerk	Paula Katauskas
New Brockton	Mayor	Lenwood Herron

8. The designated committee members from each participating jurisdiction will:
- a. Attend the AEMA sponsored Mitigation Planning Workshop. All current designated committee members have attended the workshop.
 - b. Participate in formal, periodic meetings to present, discuss, research, and review the necessary data required for plan revision.
 - c. Attend all scheduled meetings. If extenuating circumstances prevent the designated committee member from attending a meeting, the designated committee member should ensure a representative from the jurisdiction attends the meeting.
 - d. Communicate informally as frequently as required for project coordination.
 - e. Represent the interests of each jurisdiction's citizens, research existing reports, studies and plans, and prepare jurisdiction-specific information for incorporation into the multi-jurisdictional plan.
 - f. Develop a prioritized list of action plans/projects for their respective jurisdictions.

C. Public Involvement

1. A concerted effort was made to involve the citizens of Coffee County in the planning process. The county is fortunate to have three newspapers, *The Southeast Sun*, *The Elba Clipper*, and *The Enterprise Ledger*, located within the county and another major area newspaper, *The Dothan Eagle*, located nearby. The planning committee secured eleven separate articles in the four different newspapers announcing both the existence and purpose of the CCMPC, and encouraged the involvement of local residents in the planning process. Also, a local area television station, WTVY in Dothan, provided periodic coverage of the evolving planning process as well as local radio stations WVVL and WVTZ. Additionally, the county EMA Office maintains a web site for public information purposes and ensured that updates were placed on the

- site to both inform the public of the mitigation planning project and invite the public to participate in the meetings. The public is provided an opportunity to comment on and review the final plan prior to adoption at the final CCMPC Meeting. This meeting is dependent upon plan approval by the AEMA and FEMA. Media representatives also attended and provided coverage of the meeting with the Alabama Emergency Management Agency. See Appendix G for additional details.
- 2.** Three meetings were scheduled and conducted during the planning process. The process began with a meeting on July 15, 2009, followed by two public meetings on July 27, 2009, and August 28, 2009. All meetings were advertised in local media and sufficient time allotted to provide the public ample opportunities for questions, comments and discussion.
 - a.** In attendance at the July 15, 2009, CCMPC meeting were members of Coffee County EMA, Town Clerk of Kinston, Mayor of New Brockton, Special Projects of the City of Elba, Maintenance Supervisor of the Enterprise City Schools, Coffee County Engineers, Engineering Department of the City of Enterprise, Covington Electric Cooperative, and Lee Helms Associates. Written data and anecdotal data on hazards and vulnerabilities, along with mitigation efforts and plans, were gathered from Elba, Enterprise, Kinston, and New Brockton. Valuations of infrastructure were gathered from the Coffee County Tax Assessor's Office, municipalities and other entities such as water authorities.
 - b.** The second CCMPC meeting was held on July 27, 2009, with members of the Coffee County EMA, Engineering Department of the City of Enterprise, Covington Electric Cooperative, Coffee County Engineers, Town Clerk of Kinston, Special Projects of the City of Elba, Mayor of New Brockton, and Lee Helms Associates, L. L. C. Significant input was obtained from the meeting giving the program valuable guidance and direction. Media representatives included Linda Hodge, *Elba Clipper*, Jennifer Miller, *Enterprise Ledger*, and Melissa Braun, *Southeast Sun*.
 - c.** All this data and input along with directions from AEMA and FEMA were used to develop the plan following the Local Mitigation Plan Review Worksheet. All data and input were collated and sorted into the appropriate portions of the plan. The public participated in discussions at both meetings.
 - 3.** As was the case in 2005, many reports, studies and plans were reviewed during the revision of the plan, such as City Master Plans, Planning, Zoning and Subdivision Regulations, Floodplain Ordinances, Building Codes, and the Emergency Operations Plan.
 - 4.** The CCMPC conducted the final public hearing to review the draft plan on August 28, 2009. Attendees were briefed on the current status of the draft mitigation plan and afforded the opportunity to review the plan. No additional inputs or guidance

were received. See Appendix H for the plan crosswalk and Appendix J for record of plan revisions and changes.

D. Hazard Mitigation Concepts

1. Hazard mitigation concepts include identification of natural hazards, their probability of occurrence, their potential impact, both economically and the potential for loss of life, and the methods to eliminate or reduce their impact as well as methods to warn of and respond to natural hazard incidents. The concepts will apply to structures, their occupants, and the general public with critical facilities being a significant consideration of this program.
2. Some methods to establish mitigation strategies include identification of hazards, enhancing building and construction codes, making certain that municipal actions do not exacerbate hazards, ensuring availability of adequate warning systems and responding to disasters, including the recovery efforts afterwards. During the recovery phase, efforts are made to prevent recurrence through the application of lessons learned, updates to existing policies, regulations and mitigation plans. Mitigation efforts are essential in breaking the costly recurrent cycle of natural disasters.
3. Specific steps to reduce losses from natural hazards include:
 - a. Hazard identification and risk assessment
 - b. Revision of mitigation strategies
 - c. Use of tax incentives, building codes and land use regulations
 - d. Prevention of actions that increase vulnerability
 - e. Encouraging use of disaster insurance
 - f. Education/public awareness and participation in mitigation activities
 - g. Support from government agencies
 - h. Leadership by government officials
 - i. Revision and continuing review of this **Hazard Mitigation Plan**

Hazard Mitigation Plan

III. Risk Assessment

This section provides the basis for activities proposed in the strategy to reduce losses from identified hazards. Sufficient information is provided to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards. The hazard identification section of this revised plan is much the same as the original plan of 2005, as the information is still relevant and valid. Recent hazardous events have been added.

The Coffee County HMPC agreed that it is not practical or desirable to perform detailed countywide risk assessments on all natural hazards affecting the county. Many of the hazards have little probability of affecting the county and/or it is difficult to mitigate their effects. As a result, the county has reduced the list of hazards to those that have the most potential for damaging the county. The County used a rating system that gave each hazard a rating of low, medium or high. The county only provided a detailed risk assessment of the hazards with a greater than 50% probability of an event occurring on an annual basis.

During the 2010 Plan update process, it was determined that floods are associated with hurricanes both by rainfall and by storm surge; thunderstorm/high winds are associated with hurricanes, tornadoes, and windstorms; winter storms are associated with extreme cold events; and drought is associated with extreme heat events. It was also determined that landslides, sinkholes, and land subsidence have much in common. Therefore, these hazards have been combined. It was determined that hazardous materials and manmade hazards would not be considered a part of the plan. Coffee County is mostly affected by floods and high wind events resulting in a hazard profile in this plan. These events are:

- Floods (storm surge, riverine, flash floods, hurricane, etc.)
- High Winds (tornadoes, hurricanes, and thunderstorms/windstorms)
- Dam/Levee Failures (treated the same as floods)

Coffee County is least affected by the following events. As a result, no hazard profiles are included in this plan. These events are:

- Winter Storms/Snow and Ice/Extreme Cold Events
- Landslides/Sinkholes/Land Subsidence
- Earthquakes
- Drought/Extreme Heat Events
- Wildfires

A. Description of Natural Hazards

1. General Methodology and Organization

- a. For each hazard that this assessment addresses, a description of historical events is included along with a summary of risk and vulnerability. For hurricanes, flooding, and tornadoes, the most significant hazards threatening the county, a more detailed assessment is included based on historical and demographic data.
- b. A description of the vulnerability determination methodology for these three major hazards is included, but, in general, historical data was used to determine the probability that the hazard could impact Coffee County (listed as a score for each hazard). Demographic data from the 1990 and 2000 US census was used to determine the Social Vulnerability (Appendix C) to hazards. These values were then combined to determine general vulnerability for Coffee County to the major hazards.

2. Vulnerability Assessment Overview

- a. In this portion of the plan, information contained in the Alabama Emergency Management paper *Alabama Hazard Risk and Vulnerability Analysis* was used extensively. Other data used were prior events that impacted Coffee County. Data were derived from a variety of sources that included EMA records, other government records, anecdotal information and media accounts.
- b. In this assessment, risk is the probability that damage to life and property will occur due to impacts from a particular natural hazard. This can include an analysis of: the magnitude, or how big or strong the event may be, the duration, or how long the event will last, the frequency, or how often the event may occur, and the area affected, or where and how much area may be impacted by an event.
- c. In this assessment, vulnerability is the degree of exposure to a hazard - how susceptible an area is to a hazard and the losses likely to result from a disaster. This is usually described in terms of the number and characteristics of the people exposed to a hazard, and/or the value of the property exposed to the hazard. Since this is a countywide assessment, the vulnerability assessment focuses on demographic characteristics of the county. Analyses of property value exposure are most valuable when conducted at the local level.

3. General Hazard Identification, Extent, and Background Information

- a. This topic provides basic information about the hazard to explain its nature and distinguish it from other hazards. It also provides a basis for leaders to understand the subsequent vulnerability assessment and loss estimates. The information for this section is drawn mainly from CCEMA, AEMA and other

agencies. For the plan update, these sections were revised to give a general description of the hazard as it occurs in Coffee County, Alabama.

- b. The extent of the hazard provides the range of magnitude or severity that could be experienced by the county if such an event occurred. The hazard is classified using terms of major, minor, and minimum based on the probability of future damage estimates providing information on the range of magnitude or severity the county can anticipate from potential hazard events. A Major ranking requires continuous action and participations from the entire community and has a 100% or greater chance of an annual occurrence. A Minor ranking involves fewer people, effort, and area of the community and has a 50% - 99% chance of an annual occurrence. A Minimum ranking involves a small number of people and plans for a specific action and has a 49% or less chance of an annual occurrence.
- c. The descriptions include an overall summary of each hazard and its potential impacts on the communities involved. The plan describes vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas.

4. History of the Hazard

This section provides background information about previous occurrences. The focus is on disasters and other events that have occurred in the county. The information in this section is drawn mainly from the database of historical hazard events in the county. In addition to querying the NCDC database and other standard hazard information sources, the plan update includes information on historical hazards that was collected from the representatives on the HMPC. The plan update includes discussions of the hazard events that have taken place since the initial plan adoption. The frequency and intensity of hazards were evaluated by a review of historical data. The damage patterns, particularly those causing loss of life and injuries, were carefully evaluated. Historical data were gathered through various government records, EMA records, media records and through individual testimony.

5. Probability of the Hazard

This section discusses the probability (frequency) of the various hazards. The information in this section is drawn from a combination of sources, expertise, and the NCDC Storm Event Database for Alabama. Where possible, the probability is discussed in terms of a commonly accepted design event, i.e., the 100-year flood. For the plan update, the probability of each hazard was reviewed and revised in cases where better information was available.

The probability (%) that an identified hazard will occur on an annual basis was determined using the following formula:

Number of historical or reported events in a time period divided by the number of years the incidents occurred within = Probability of Future Annual Event Occurrences

Example: 13 Extreme Temperature events experienced divided by a 6 year period;
13 divided 6 = >100%

A similar formula was used to determine an estimate of the expected damages from each event:

Total amount of damages (in dollars) for each historical or reported event divided by the number of damage causing events within the time period = Estimate of expected future damages

Example: \$172,000 total reported hail damage from 1960-2003 with 21 of those being reported as damage causing; $\$172,000/21=\$8,190$

B. Flooding (Includes Hurricanes)

1. General Description of the Hazard

- a. Flooding is the accumulation of water within a water body (e.g., stream, river, lake, or reservoir) and the overflow of excess water onto adjacent floodplains. Floodplains are usually lowlands adjacent to water bodies that are subject to recurring floods.
- b. Floods are natural events that are considered hazards only when people and property are affected. Nationwide, hundreds of floods occur each year, making them one of the most common hazards in the U.S. (FEMA, 1997). There are a number of categories of floods in the U.S., including the following:
 - Riverine flooding, including overflow from a river channel, flash floods, alluvial fan floods, ice-jam floods and dam break floods
 - Local drainage or high groundwater levels
 - Fluctuating lake levels
 - Coastal flooding, including storm surges
 - Debris flows
 - Subsidence

- c. While there is no sharp distinction between riverine floods, flash floods, alluvial fan floods, ice jam floods, and dam-break floods, these types of floods are widely recognized and may be helpful in considering the range of flood risk and appropriate responses:
- The most common kind of flooding event is riverine flooding, also known as overbank flooding. Riverine floodplains range from narrow, confined channels in the steep valleys of mountainous and hilly regions, to wide, flat areas in plains and coastal regions. The amount of water in the floodplain is a function of the size and topography of the contributing watershed, the regional and local climate, and land use characteristics. In steep valleys, flooding is usually rapid and deep, but of short duration, while flooding in flat areas is typically slow, relatively shallow, and may last for long periods of time.
 - Flash floods involve a rapid rise in water level, high velocity, and large amounts of debris, which can lead to significant damage that includes the tearing out of trees, undermining of buildings and bridges, and scouring new channels. The intensity of flash flooding is a function of the intensity and duration of rainfall, steepness of the watershed, stream gradients, watershed vegetation, natural and artificial flood storage areas, and configuration of the streambed and floodplain. Dam failure and ice jams may also lead to flash flooding.
 - Alluvial fan floods occur in the deposits of rock and soil that have eroded from mountainsides and accumulated on valley floors in the pattern of a fan. Alluvial fan floods often cause greater damage than overbank flooding due to the high velocity of the flow, amount of debris, and broad area affected. Human activities may exacerbate flooding and erosion on alluvial fans via increased velocity along roadway acting as temporary drainage channels or changes to natural drainage channels from fill, grading, and structures.
 - Ice jam floods are primarily a function of the weather and are most likely to occur where the channel slope naturally decreases, culverts freeze solid, reservoir headwaters, natural channel constructions (e.g., bends and bridges), and along shallows.
 - Dam-break floods may occur due to structural failures (e.g., progressive erosion), overtopping or breach from flooding, or earthquakes.
- d. Local drainage floods may occur outside of recognized drainage channels or delineated floodplains for a variety of reasons, including concentrated local precipitation, a lack of infiltration, inadequate facilities for drainage and storm water conveyance, and/or increased surface runoff. Such events often occur in flat areas, particularly during winter and spring in areas with frozen ground, and also in urbanized areas with large impermeable surfaces. High groundwater

flooding is a seasonal occurrence in some areas, but may occur in other areas after prolonged periods of above-average precipitation.

2. Nature and Extent of the Hazard

- a.** Flooding of rivers and streams may occur during storms or sustained rainfall. The areas prone to flooding are indicated on Flood Insurance Rate Maps. During severe weather, these areas should be evacuated. There is normally sufficient warning to provide an orderly evacuation.
- b.** Mainstream flooding on Alabama Rivers occurs just about every year, most frequently between November and April with a peak from February through April. However, flooding can and does occur at other times, such as that experienced from Tropical Storm Alberto in July 1994.
- c.** The southern part of the state is drained by the Conecuh, Yellow, Choctawhatchee, and Chattahoochee Rivers. These rivers are fed by rainfall as surface runoff and by seepage of ground water into the channels.
- d.** Tropical Storm Alberto made landfall in the Destin, Florida, and Choctawhatchee Bay area on July 3, 1994. Lack of upper air movement caused the storm to stall over Alabama and Georgia until July 8, 1994. Since the storm did not move far from the Gulf or the Atlantic, it continued to bring moisture from both of these sources into the system.
- e.** The most serious and devastating flooding from Alberto occurred along the Choctawhatchee and Pea Rivers (in Coffee County), and ranks as the third worst flood in Alabama history. Only the “Great Flood of 1929,” and the more recent flood in March 1990, exceeded this flood within Coffee County. Additionally, the flooding from Alberto even exceeded the March 1990 flood on the lower Choctawhatchee.
- f.** Historically, floods typically occur during the springtime, specifically March. However, smaller events occur throughout the year particularly when associated with tropical storm systems.
- g.** The extent/range of magnitude or severity that could be experienced by Coffee County due to a flood event is minimum to minor.

3. Non-Hurricane Related Flood History

- a.** The City of Elba has perhaps been hit the hardest with several catastrophic floods. The most significant historical event was the March 24, 1929 flood. The Red Cross spent more than \$85,000 (1929 dollars) in this event with more than 1,000 families affected. Judge J. A. Carnley, Probate Judge, estimated damages in 1929 dollars at more than \$1,000,000 for local government and

more than \$5,000,000 for local business, residential and farm losses. There were an estimated \$600,000 (1929 dollars) in damages to bridges and roadways. Damages were so extensive that Governor Bibb Graves called out the National Guard who patrolled Elba until late April. Elba was the most significantly damaged municipality. This resulted in the levee being built around Elba, which was subsequently breached in the floods of 1990 and 1998 with additional disastrous results to Elba. The main streams involved in the 1929 flood included the Pea River, Whitewater Creek and Beaver Dam Creek. As evidenced by the floods of the 1990s, these same streams continue to present a significant hazard today. Damages from the 1998 flood were approximately \$2.5 million in property damage and approximately \$15 million in crop damages. The following table illustrates the difference in 1929 dollars converted into 2004 dollars as a function of the Consumer Price Index.

Table III-1 - Consumer Price Index	
1929	2004
\$85,000	\$924,000
\$1,000,000	\$10,870,000
\$5,000,000	\$54,350,000
\$600,000	\$6,522,000

- b.** Floods ravaged Coffee County recently in 1990, 1994, 1998, 2001, 2005, and 2008. However, historic floods have occurred in 1929 and, more recently in 1975. The Elba levee, built after the 1929 flood, was breached in 1990 and again in 1998. These floods all occurred during the month of March. Also, in 1998, there were two fatalities of children following a motor vehicle being swept into the river by floodwaters in Elba.
- c.** Floods have caused two recent fatalities and remain Coffee County's worst natural hazard in terms of damage. These events are on a short cycle and present a tremendous potential for damage in areas near streams and other waterways.
- d.** Flooding occurs frequently with three significant floods during the 1990s. Damages from floods ranged from a few thousand dollars to more than \$100 million when the levy at Elba failed. Private property damages ranged widely from there. Data obtained from FEMA indicates that approximately \$500,000 was paid to county residents with flood insurance during the period January 1, 1978 to September 30, 2002.
- e.** Immediately following the February 1990 floods, thirty-three counties in southern Alabama, including Coffee County, were included in a March 21 disaster declaration, which resulted from a series of strong thunderstorms continuously forming and moving over the same area. With rain falling nearly parallel to the affected river basins, flooding was more severe than in

past flood events, where rain fell across the basins. The USGS reported a greater than 100-year flood event on the Choctawhatchee River at Blue Springs and Newton; on the Pea River, which bisects Coffee County, near Ariton; and on the Conecuh River at Brantley.

- f.** Perhaps the most severe hazard facing Coffee County is the potential for floods, as previously discussed. The flood of 1975 and three floods in the 1990s have inflicted severe damage to most communities in the county causing substantial financial losses. The 1990 flood was classified as a 500-year flood and both the 1994 and 1998 floods were classified as 100-year floods. Floods have the potential to cause loss of life but usually there is sufficient warning to prevent this. However, two fatalities were caused by the 1998 flood.
- g.** Unincorporated areas of the county received substantial flood damage in 1998 and received approximately \$89,000 in reimbursement from FEMA.
- h.** The floods of 1990, 1994 and 1998 caused extensive damage throughout Coffee County, especially in Elba. Elba with its levee system stands in the midst of the Pea River, Whitewater Creek, and Beaver Dam Creek flood zones which all pose an extreme hazard. The failure of the levee caused substantial damage to Elba in 1990 and 1998. The 1998 flood damage was estimated to be in excess of \$524,000 for local government and other damages in excess of \$1,490,308.
- i.** Enterprise received flood damage in 1990 primarily to road and bridge infrastructure at a cost of \$263,199. In 1994, Enterprise suffered flood damage again to roads and bridges resulting in losses of \$274,520. During 1995, Hurricane Opal produced structural damage, infrastructure damage and debris removal losses of \$679,435. Enterprise again sustained flood damage in 1998 with losses of \$177,653. During 1999, a hurricane produced flooding and debris removal costs of \$95,282.
- j.** Kinston also suffered flooding in 1990, 1994 and 1998 that caused damage in the City. The 1994 flood damages were estimated at \$24,516. The waterways that affect Kinston are Flat Creek and Cripple Creek.
- k.** New Brockton also suffered damages from all three floods in 1990, 1994 and 1998. Approximate cost to town-owned property was \$8,200 in 1990, \$18,000 in 1994 and \$21,000 in 1998.
- l.** The unincorporated areas of Coffee County were significantly impacted by flooding in March 2009. The damages were primarily to infrastructure, roads and bridges, and the damages approached a half million dollars. Coffee County was declared for Public Assistance on May 4, 2009.

4. Vulnerability Determination

- a. As stated above, three flooding disasters occurred in Alabama over a 12-month period, establishing flooding as a major risk in Alabama. Furthermore, Alabama receives more annual rainfall than any other state in the Union creating the potential for devastating floods. Alabama is divided into three distinct geographic regions - Highlands (North), Piedmont (Central) and Gulf Coastal (South), which includes Coffee County, - that have different flooding problems.
- b. The ten southern counties, including Coffee County, affected in the July 1994 disaster declaration lie predominantly in the Choctawhatchee, Pea, Conecuh, and Chattahoochee River watersheds. These rivers are fed by tributaries including the Little Choctawhatchee and Chipola Rivers, Whitewater, Flat, Cripple, Patrick, Newton, Cowarts, Limestone, Beaver Dam, Double Bridges, Wedowee, Frog Level, Murder, Uchee, Little Uchee, Hatchechubee, Otter, Shack, Hunter, Tomley, Cane, and Claybank Creeks. The area is subject to riverine flooding from these rivers and tributaries because of runoff or backwater from storm systems such as Alberto and Opal. Excessive rainfall and severe flooding caused erosion and damage to agricultural and forest lands, and at other locations with concentrated flows. In some instances, this damage threatened life and property. Large amounts of sediment and debris were deposited in floodplains throughout the affected watersheds.
- c. This assessment is based on the best available data that could be collected from public sources and through communication with government agencies. It is not meant to be a predictive model. It is designed to depict patterns of flooding in Coffee County, but by no means, should the model be used to forecast flooding. Flooding can occur in almost any county in the state at any time. This assessment is only designed to identify where flooding is most likely and provides sufficient data to establish the likelihood of flooding in Coffee County. Elba, with its history of flooding, is a likely location for further damages, even with the current improvements to the levy. However, all areas of Coffee County have been repeatedly damaged by floods, including small stream flooding in areas outside the main Pea River channel.
- d. Flood Vulnerability, **Table III-2**, is assessed using a formula that incorporates Flooding Disaster Declarations, Flash Flood Warnings, and Social Vulnerability, as described in **Appendix C**. The number of times the county was designated under a Flooding Disaster Declaration (between 1983 and April 2009) is listed under the second column. The number of Flash Flood Warnings issued by the National Weather Service for the county between 1986 and 2001 is listed in the third column. Those two values are used to determine the Flood Score for the county. Flood Score is used to determine the Flood Vulnerability for the County. The number of Flash Flood Warnings

per year is determined by dividing the total number of warnings by the number of years in which data is available (15). This value is added to the number of declarations listed in the second column. This value is listed under the column labeled Formula. The Flood Score is determined by dividing the value in the formula column by the value for the county with the highest total, in this case, Mobile County. The Social Vulnerability is then multiplied by the Flood Score to determine the Flood Vulnerability listed in the last column.

Table III-2 – Flood Vulnerability						
County	Flooding Disaster Declarations	Flash Flood Warnings	Formula	Flood Score	Social Vulnerability	Flood Vulnerability
Coffee	6	8	5.53	0.65	5.75	3.73

- e. Coffee County is rated **very high** on the Flood Vulnerability and Flood Risk Scale. The area has been repeatedly flooded, particularly by the Pea River and its subsidiary tributaries. Areas most susceptible to flooding are developments near streams, rivers, ponds, lakes or draining channels. Elba is particularly susceptible to floods as reflected by flooding in 1929, 1975, 1990, 1994 and 1998. The Flood Insurance Rate Maps (FIRM) reflects the areas that are particularly vulnerable to flooding. Coffee County has repeatedly been impacted by flooding and this hazard rates as **the major cause of damage** within the county from natural hazard events in terms of monetary damages to the areas affected.

Table III-3 - NFIP Participation							
CID	Community	County	Initial FHBM	Initial FIRM	Curr Eff Map Date	Reg-Emer Date	Tribal
010239	Coffee Co.	Coffee	01/17/75	12/05/90	12/05/90	12/05/90	No
015004	City of Elba	Coffee	10/11/72	10/06/72	05/07/76	10/06/72	No
010045	City of Enterprise	Coffee	07/26/74	07/02/80	07/02/80	07/02/80	No
010237	Town of Kinston	Coffee	01/10/75	12/30/77	12/30/77 (M)	12/30/77	No
010238	Town of New Brockton	Coffee	01/1/75	07/22/77	(NSFHA)	07/22/77	No

Source: FEMA Community Status Book Report; M = No Elevation Determined

5. Probability of Flooding

- a. Floods are described in terms of their extent (including the horizontal area affected and the vertical depth of floodwaters) and the related probability of occurrence. Flood studies use historical records to determine the probability of occurrence for different extents of flooding. The probability of occurrence is expressed in percentages as the chance of a flood of a specific extent occurring in any given year. It is also often referred to as the “100-year flood” since its probability of occurrence suggests it should only occur once every 100 years. This expression is, however, merely a simple and general way to express the statistical likelihood of a flood; actual recurrence periods are variable from place to place. Smaller floods occur more often than larger (deeper and more widespread) floods. Thus, a “10-year” flood has a greater likelihood of occurring than a “100-year” flood. **Table 5.2-3** shows a range of flood recurrence intervals and their probabilities of occurrence.
- b. Hurricanes and Tropical Storms can potentially bring widespread flood and wind damage to the entire county due to its proximity to the Gulf of Mexico.
- c. Coffee County experienced 6 flood events in a 10 year period resulting in a greater than 50% probability that a flood event will occur on an annual basis. The total amount of damages for the 6 flood events was \$107,525,000 with 4 flood events causing damage resulting in an estimated \$2,688,125 of expected annual damages from future events.

Table III-4 – Flood Probability Terms	
Flood Recurrence Intervals	Percent Chance of Occurrence Annually
10-Year	10.0%
50-Year	2.0%
100-Year	1.0%
500-Year	0.2%

Source: FEMA, August 2001

6. Hurricane/Tropical Storm Related Flood History

- a. The Hurricane of October 2, 1929 also affected Coffee County. The storm had landfall near Pensacola Florida with winds of more than 100 miles per hour. Coffee County experienced sustained winds of nearly 50 miles per hour with resultant wind damages to utilities, structures and trees. There was extensive rainfall but no substantial flooding. The most substantial damages were the loss of the Pea River and Whitewater Creek Bridges in Elba, both of which collapsed. Residents were forced to use boats as ferries for transport across these streams. Interestingly, an advertisement in the local newspaper reported these events as advertising for insurance for residents in the event of tornado damage.

- b.** On September 23, 1975, Hurricane Eloise, a Category 3 hurricane, struck Coffee County. An estimated 14.9 inches of rain fell in the area. Sustained winds of 125 mph with gusts to 156 mph were estimated. The damage was extensive throughout the County. There was substantial structural and utility damage along with numerous trees downed. The National Guard was called out to maintain order. Though no official estimates of damage for Coffee County could be found, total storm damage was estimated to be over 1 billion in 1990 dollars. This hurricane was characterized as the most severe to affect Coffee County in its collective memory.
- c.** On October 4, 1995, Coffee County received a presidential disaster declaration as a result of Hurricane Opal. Almost a Category 5 hurricane at one point, fortunately Opal had dropped to sustained winds of 115 mph, with gusts to 140 mph by the time it hit the Gulf Coast. There was extensive damage to power lines due to uprooted trees and three post-impact deaths were attributed to this storm. Thousands of residents were without power for three-seven days. Opal caused more than \$3 billion in damages overall and approximately \$30 million in damages just in Coffee County. Without adjustments for inflation, Opal could rank as high as third on the list of costliest twentieth-century U. S. hurricanes.
- d.** On September 2, 1998, Tropical Storm Earl moved northeast across Southwest and Central Georgia, rainfall amounts varied from two to four inches. Peak wind gusts of 40 mph were recorded in Enterprise, AL. Throughout Coffee County, there were numerous reports of minor damage caused by downed trees and power lines with scattered outages. Approximately \$120,000 in damages resulted from this event.
- e.** On August 6, 2001 Tropical Storm Barry moved ashore between Panama City and Destin, Florida during the early morning hours and then rapidly weakened to a tropical depression over Southwest Alabama by afternoon. Rain bands associated with Barry began moving northward across much of Southeast Alabama during the late evening hours of August 5, 2001. Maximum sustained winds of 25-30 mph with gusts to 40 mph were reported. Due to already saturated grounds, the strong winds felled numerous trees and many into power lines causing scattered outages in Coffee County. Several county roads were impassable due to downed trees, limbs, and debris. Only minor street flooding was reported in Enterprise and New Brockton, Alabama. Approximately \$250,000 in damages resulted from this event.
- f.** Hurricane Ivan weakened to a tropical storm as it moved north into Southwest Alabama on September 16, 2004. The maximum sustained and peak wind gust recorded was 44 and 54 knots, respectively, in Dothan, Alabama. Rainfall amounts were quite heavy, ranging from five to eight inches. Minor flooding was reported in Coffee County. Schools and many businesses were closed on September 16 and 17. There were numerous reports of roads closed by fallen trees and power lines. In Coffee County, many county roads were closed and several trees fell on houses and vehicles. Some businesses were damaged in Enterprise. Cotton farmers suffered significant yield losses, especially in Coffee County. Coffee County was declared a

federal disaster area. Approximately \$5,410,000 in damages resulted from this event.

- g.** Hurricane Dennis came ashore along the Alabama-Florida Panhandle coastline Sunday afternoon, July 9, 2005. Rainfall amounts ranged from two to four inches across extreme southeast Alabama. Most of the damage was a result of strong winds associated with Dennis' passing rain bands. The Coffee County EMA reported trees down on eight county roads, several downed trees on power lines causing scattered power outages, and debris on roads. Wind gusts blew a carport into a wall of a house on County Road 656. About 1,000 customers were without power. Approximately \$1.5 million in damages resulted from this event. In March 2007, a presidential disaster declaration was received as a result of a tornado. An EF4 tornado struck Enterprise on March 1, 2007, causing nine deaths, over 100 injuries and hundreds of millions in property damages. A tornado touched down just southwest of the Enterprise Municipal Airport. It caused minor damage to some houses. Four chicken houses were destroyed. The tornado then traveled northeast and quickly intensified as it moved into the Enterprise City Limits. It severely damaged the high school just north of the downtown area. Eight students were killed as walls collapsed on them while they took shelter in the interior hallways. Fifty more were injured. The football stadium was destroyed. Many vehicles surrounding the schools were overturned or tossed about. Several state roads were impassible due to debris and fallen utility poles and lines. The ninth fatality occurred where an elderly woman was standing behind a living room window of her home as the glass shattered. A nearby elementary school was heavily damaged with no deaths or injuries reported there. Damage near the high school and in northeast Enterprise reached low end EF-4. Damage assessments indicated 239 homes destroyed, 374 homes with major damage, 529 homes with minor damage, and 251 homes affected. Coffee County was declared a federal disaster area, with preliminary FEMA individual assistance figures totaling over \$1 million.
- h.** Tropical Storm Fay, which came ashore August 23, 2008 just Northeast of Apalachicola, Florida during the early morning of the 23rd, slowly weakened as it moved west-northwest across the Florida Panhandle during the day. Its rain bands generated very heavy rainfall and peak wind gusts over 40 mph throughout Southeast Alabama. Rainfall amounts from Fay during the 48-hour period ending at midnight on the 25th ranged from three to eight inches. There were scattered reports of downed trees and power lines throughout the county. Approximately \$30,000 in damages resulted from this event.

7. General Description of the Hazard

- a.** Coastal Alabama borders a part of the northern Gulf of Mexico that has a high incidence of hurricanes causing wind and water damage in Coffee County. Studies of hurricanes offer evidence that inland counties, including Coffee, can receive significant hurricane damage. Hurricanes often spawn tornadoes and cause flooding

from intense rain. In this respect, hurricanes pose a threat to the entire county, with a medium to high effect on Coffee County, AL.

- b.** Hurricanes provide a wide spectrum of issues and hazards. A hurricane affecting the target area is common event occurring once every three to five years. The intensity of the hurricane will vary making the impact of the storm difficult to predict. However, the hazards produced by hurricanes that affect an extensive area include flooding with the potential for tornadoes to affect smaller areas.
- c.** A significant hurricane can be expected to occur once every twenty years. Damages can easily run greater than \$1 million dollars at the local governmental level and perhaps 10 to 25 times this cost with private property and agricultural damages.
- d.** This catastrophic event will produce primarily property damage with, historically, few injuries. Substantial damage will occur to trees, roofs of structures, glass in structures, vehicles, roadways and above ground utilities. The entire County will usually be affected by a hurricane with wind damage and flooding.
- e.** There is usually enough warning to allow for evacuation or to seek local emergency shelters, prior to any local flooding or road congestion due to heavy evacuation traffic or debris in the roadways.
- f.** Coffee County is approximately 100 miles from the Gulf Coast. Coastal Alabama borders a part of the northern Gulf of Mexico that has a high incidence of hurricane destruction. High winds, wave action, and flooding cause destruction at Alabama's shoreline, while wind and water damage can extend far inland. Alabama has identified 17 counties (within 100 miles of the coast) as the primary "Hurricane Risk Areas," and Coffee County is one of the 17.
- g.** Studies of Hurricanes Hugo, Eloise, Andrew, Alberto and Opal provide clear and indisputable evidence that inland counties can receive significant damage from a land falling hurricane. Hurricanes often spawn tornadoes or cause flooding from extensive rains. Experience has shown the flooding due to large amounts of rainfall produces the most potential for injury and property destruction. This flooding will likely be the primary threat to Coffee County along with high winds and, to a lesser extent, tornadoes.
- h.** Since 1900, Alabama has been affected by 10 hurricanes. Hurricane Opal affected Coffee County in 1995, as did Hurricane Alberto in 1994 and Eloise in 1975. All three caused extensive wind-related and flood damages.
- i.** The entire southern third of the state is susceptible to the effects of the hurricanes. While the federal guidelines for the Hurricane Preparedness Program suggest a 100-mile impacted area, Hurricane Opal proved that the entire state may be at risk from

- j. The projected hazards for Coffee County include flooding due to large amounts of rainfall, followed by sustained high winds causing damage to trees, structures and power lines, and the lesser threat of weak tornadoes spawned by the hurricane.
- k. Tropical Cyclones of the Atlantic Basin 1886-1996 were used to calculate vulnerability to hurricanes for the State of Alabama. The paths of all storms (Tropical Depression to Category 4 Hurricane) were plotted through the State, and intersections with county boundaries were recorded. For the 111 years on record, Baldwin county had the most storms with 20 (a frequency of 0.18 per year). To calculate the hurricane score, or hurricane risk, the county with the highest storm frequency (Baldwin) was assigned a score of 1. All other counties were ranked accordingly by dividing their storm frequency by the storm frequency for Baldwin County. This resulted in a hurricane score (used as a proxy for risk) for each county. This value was then multiplied by the county's score for social vulnerability to determine the hurricane vulnerability score.

Table III-5 - Hurricane Vulnerability						
County	Hurricane Disaster Declarations	Years	Hazard Frequency	Hurricane Score	Social Vulnerability	Hurricane Vulnerability
Coffee	6	111	0.09	0.5	5.75	2.88

- l. Coffee County is rated **high** on the Hurricane Risk and Vulnerability Scale. It has been impacted with severe damage in 1975 with Hurricane Eloise, 1994 with Hurricane Alberto, in 1995 with Hurricane Opal, in 2004 with Hurricane Ivan and 2005 with Hurricane Dennis. The entire County is susceptible to hurricanes including their effects such as flooding, wind, and tornadoes. Severe flooding will typically be limited to areas indicated in the FIRM. In terms of widespread damage affecting the entire county, hurricanes are the most likely source.

C. Dam/Levee Failures

1. General Description of the Hazard

- a. A dam is barriers constructed across a watercourse in order to store, control, or divert water. Dams are usually constructed of earth, rock, concrete, or mine tailings. The water impounded behind a dam is referred to as the reservoir and is measured in acre-feet, with one acre-foot being the volume of water that covers one acre of land to a depth of one foot. Due to topography, even a small dam may have a reservoir containing many acre-feet of water. A dam failure is the collapse, breach, or other failure of a dam that causes downstream flooding. Dam failures may result from natural events, human-caused events, or a combination thereof. Due to the lack of advance warning, failures resulting from

natural events, such as hurricanes, earthquakes, or landslides, may be particularly severe. Prolonged rainfall that produces flooding is the most common cause of dam failure (FEMA, 1997).

- b.** Dam failures usually occur when the spillway capacity is inadequate and water overtops the dam or when internal erosion through the dam foundation occurs (also known as piping). If internal erosion or overtopping cause a full structural breach, a high-velocity, debris-laden wall of water is released and rushes downstream, damaging or destroying whatever is in its path.
- c.** Dam failures may result from one or more the following:
 - Prolonged periods of rainfall and flooding (the cause of most failures)
 - Inadequate spillway capacity which causes excess overtopping flows
 - Internal erosion erosions due to embankment or foundation leakage or piping
 - Improper maintenance
 - Improper design
 - Negligent operation
 - Failure of upstream dams
 - Landslides into reservoirs
 - High winds
 - Earthquakes
- d.** Dam safety, especially involving small dams that are privately owned and poorly maintained, has been an ongoing hazard mitigation issue in the State of Alabama for the past decade. No state law exists to regulate any existing private dams or the construction of new private dams that do not require federal licenses or inspections. To date, there have been four attempts to pass legislation which would require inspection of dams on bodies of water over 50 acre-feet or dams higher than 25 feet. Approximately 1,700 privately owned dams, including dozens in Coffee County, would fit into the category proposed by the law. See Appendix E for a listing of dams.
- e.** Dam failure may be a factor in the inundation of certain small, fairly well contained areas of the county, but is not considered a high risk to significant numbers of the population or structures in the county. However, the levee around Elba has twice been breached and caused extensive damages to the city.

2. Vulnerability Assessment

There are currently no known significant dams that present a property or life risk hazard in Coffee County. This is a result of surveys undertaken by the Coffee County EMA, Coffee County Engineer's Office and the City of Enterprise Engineer's Office. See Appendix E for a current listing of dams. No vulnerability rating has been assigned to this category due to the lack of quantifiable data. This issue is addressed later in this plan.

3. Location and Extents

- a. According to the HAZUS 2007 database, there are 23 identified dams in Coffee County. One major dam, Lake Charles Dam, has been categorized as having a high hazard classification (according to the National Oceanographic and Atmospheric Administration). This classification is assigned to a dam depending upon the urban development directly downstream of the dam and whether or not failure would result in serious economic loss. The classification is not an indication of the quality of the dams' construction. However there is five dams, the Lunsford Pond Dam, Gateway Lake Dam, Enterprise County Club Lake Dam, Roeton Mill Pond Dam, and the Elba County Club Lake Dam that are classified as significant risks.
- b. The extent/range of magnitude or severity that could be experienced by Coffee County due to a dam failure event is equal to that of a flood event which is minimum to minor.

4. Probability of Future Occurrences

- a. The risks associated with dam-levee failures are the same as those risks associated with flooding.
- b. Coffee County experienced 6 flood events in a 10 year period resulting in a greater than 50% probability that a flood event will occur on an annual basis. The total amount of damages for the 6 flood events was \$107,525,000 with 4 flood events causing damage resulting in an estimated \$2,688,125 of expected annual damages from future events.

5. Dam Failure History

There were reports of 160 dam breakages in the state during the July 1994 floods; however, because there is no state law or regulation concerning dam safety that requires reporting of breaks or other problems, numerous breaks go unreported. Local officials are required to submit information on dam breakage if made known to them.

D. Thunderstorm/High Winds (Windstorms, Tornadoes, and Hurricanes) Related High Wind History

1. Thunderstorms/High Winds

- a. On April 19, 1973, Elba experienced a severe windstorm that may have been a tornado. There were 14 injuries with four persons admitted to the local hospital. Damage was characterized by the media as extensive. There are no official damage estimates available.

- b.** From 1960 to 2009, 102 thunderstorm and high wind events occurred in Coffee County. On May 13, 2009, damages from a thunderstorm and high wind event resulted in seven residential houses sustained slight to major wind damage, four barns and other neighboring sheds suffered minor to major damage including roof losses, three chicken houses received moderate wind damage, and numerous trees and power lines down with some on roadways. Approximately \$750,000 in damages resulted from this event.
- c.** On July 15, 2004, damages from a thunderstorm and high wind event resulted in widespread downed trees and power lines. An estimated 3000 customers were without power. In Kinston, a racetrack's metal awning and roof were destroyed. A Kinston residence lost a pump house roof, shingles and TV antenna. In rural Coffee County, a barn at the intersection of State Highway 189 and County Road 467 was damaged. A residence on State Highway 134 sustained roof damage, broken windows, a destroyed barn, and downed trees. A nearby residence was damaged by a fallen tree. Approximately \$250,000 in damages resulted from this event.
- d.** On February 17, 2008, damages from a thunderstorm and high wind event resulted in four chicken houses and a residence being destroyed on County Road 107. Approximately \$300,000 in damages resulted from this event.
- e.** On July 5, 2009, damages from a thunderstorm and high wind event resulted in numerous downed trees and power lines, caused sporadic power outages, and damaged several structures. A barn was damaged on State Highway 134, a few trees were across power lines on County Road 474, a bank building sustained roof damage in Kinston, and several reports of barn and roof damage on State Highway 189 between Perry Store Community and Kinston. Approximately \$250,000 in damages resulted from this event.
- f.** The extent/range of magnitude or severity that could be experienced by Coffee County due to a thunderstorm/high wind event is minor to major.
- g.** Coffee County experienced 102 thunderstorm/high wind events in a 49 year period resulting in a greater than 100% probability that a thunderstorm/high wind event will occur on an annual basis. The total amount of damages for the 102 thunderstorm/high wind events was \$2,563,000 with 50 thunderstorm/high wind events causing damage resulting in an estimated \$51,260 of expected annual damages from future events.
- h.** Thunderstorm winds have occurred at least 102 times over the past 50 years according to the National Climatic Data Center, causing damages as high as \$750,000 for a single occurrence. Figures III-1 depicts average thunderstorm days.

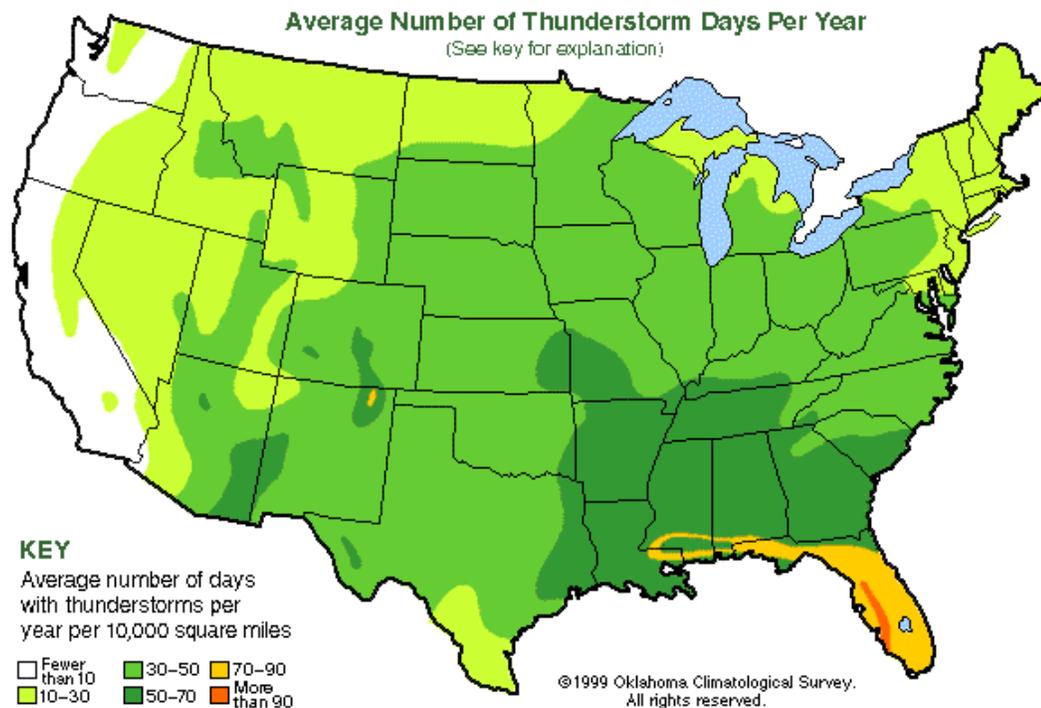


Figure III-1 – Average Thunderstorm Days per Year

E. Tornado Related High Wind History

1. General Description of the Hazard

- a. **A tornado is a rapidly rotating funnel** (or vortex) of air that extends toward the ground from a cumulonimbus cloud. Most tornadoes do not touch the ground, but when the lower tip of a tornado touches the earth, it can cause extensive damage. Tornadoes often form in convective cells such as thunderstorms or at the front of hurricanes.
- b. Many hazards are multi-faceted such that one particular hazard may produce a variety of negative results. An example is a tornado may produce direct damage to structures but also may render roadways impassable due to debris. Flash flooding and loss of power also routinely accompany tornadoes such that these issues may have to be addressed also. The most common occurrence of severe weather, mostly due to high winds, is loss of power with resultant loss of communications and traffic-related problems. Many critical structures may become uninhabitable due to a loss of power or loss of emergency generator power.
- c. As of February 1, 2007, the Fujita Tornado Scale has since been revised and is now called the Enhanced Fujita (EF) Tornado Scale, as shown below, and is a revision of the Fujita Scale to reflect better examinations of tornado damage surveys, so as to align wind speeds more closely with associated storm damage.

The new scale takes into account quality of construction and standardizes different kinds of structures. The only differences between the Fujita Scale and the Enhanced Fujita Scale is adjusted wind speeds, measurements of which weren't used in previous ratings, and refined damage descriptors; to standardize ratings and to make it easier to rate tornadoes which strike few structures.

Table III-6 - Enhanced Fujita Tornado Scale

Category	Wind Speed	Description of Damage
EF0	65-85 mph	Light damage. Peels surface off some roofs; some damage to gutters or siding; branches broken off trees; shallow-rooted trees pushed over.
EF1	86-110 mph	Moderate damage. Roofs severely stripped; mobile homes overturned or badly damaged; loss of exterior doors; windows and other glass broken.
EF2	111-135 mph	Considerable damage. Roofs torn off well-constructed houses; foundations of frame homes shifted; mobile homes completely destroyed; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground.
EF3	136-165 mph	Severe damage. Entire stories of well-constructed houses destroyed; severe damage to large buildings such as shopping malls; trains overturned; trees debarked; heavy cars lifted off the ground and thrown; structures with weak foundations blown away some distance.
EF4	166-200 mph	Devastating damage. Well-constructed houses and whole frame houses completely leveled; cars thrown and small missiles generated.
EF5	>200 mph	Incredible damage. Strong frame houses leveled off foundations and swept away; automobile-sized missiles fly through the air in excess of 100 m (109 yd); high-rise buildings have significant structural deformation; incredible phenomena will occur. So far only one EF5 tornado has been recorded since the Enhanced Fujita Scale was introduced on February 1, 2007.

Source: NOAA, NWS, Storm Prediction Center, 2007

- d. The strength of a typical tornado in Coffee County is EF0 to EF2 on the Enhanced Fujita scale. These storms usually affect only a small area with the typical tornado having a path less than one mile long and less than two hundred

- e. According to the U. S. Wind Zone map below, Coffee County is located in Zone III. This map shows the frequency and strength of extreme windstorms across the U. S. The map is based on 40 years of tornado history and more than 100 years of hurricane history. Zone III has experienced both frequent and strong tornadoes, with wind speeds reaching 200 mph. This makes the county a High-Risk area for structural damage due to severe thunderstorm, tornado or hurricane-related winds.
- f. Coffee County lies within a Wind Zone Three and Hurricane Susceptible area for Design Wind Speeds (three-second gust) consistent with ASCE 7-95. Figure III-2 depicts wind.

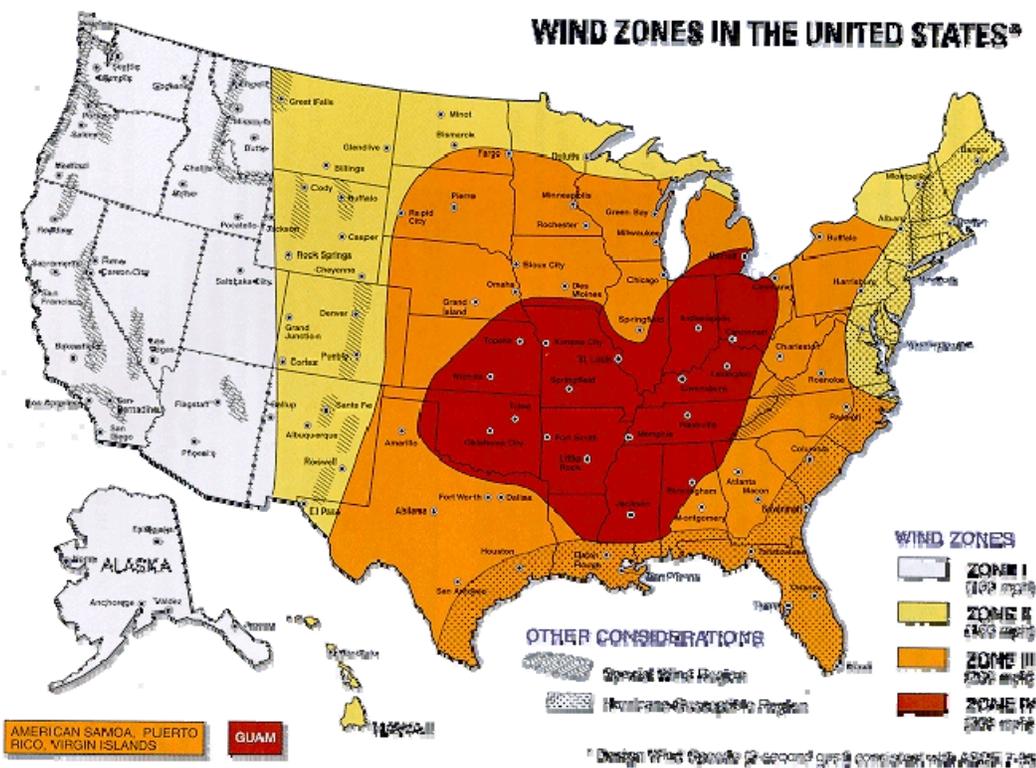


Figure III-2 – Wind Zones in the U.S.

2. Tornado Related High Wind History and Extent

- a.** A search of media and government records revealed rather sparse data regarding severe weather or other natural hazard events until 1973. Historical data concerning events involving tornadoes prior to 1950 is limited but some accounts were derived from a variety of sources including the National Climatic Data Center, National Weather Service and media accounts. Records indicate that tornadoes caused damage and injuries in 1931 when a tornado near Elba destroyed several structures killing a child with falling debris. In 1925 another tornado destroyed a structure near Elba and also in 1925 several structures were destroyed near Enterprise. During 1924, in northern Coffee County near Pike County, several structures were destroyed. In 1922 more than 40 structures were destroyed in Enterprise and there was one fatality. A tornado in 1919 affected northern Coffee County with six injuries and numerous structures destroyed. A tornado in northern Coffee County destroyed several structures in 1908.
- b.** On March 5, 1984, an EF2 tornado affected Coffee County. The most serious damage was near Enterprise. There were several injuries and a number of structures destroyed. There are no official damage estimates.
- c.** On September 29, 1998, an F1 tornado touched down on CR 725 near Enterprise. One residence suffered roof damage. Camp Wiregrass sustained moderate to severe damage with several buildings crumpled, trees and power lines down, and scattered debris. Numerous customers in Enterprise were without electric service. A semi was blown over at Con Agra. An F1 tornado descended near CR 732 in New Brockton damaging several chicken houses, roads, ditches, and drainage systems.
- d.** In October 2008, an EF1 tornado damaged hundreds of homes and businesses and caused approximately \$2 million in damages to the Civic Center. A tornado touched down just south of the Enterprise Civic Center. It moved to the east-northeast and lifted just east of Boll Weevil Circle near the Wal-Mart. It caused extensive damage to the civic center, with several windows blown out and much of its roof removed. The winds damaged several vehicles outside the Enterprise Senior Center. A building attached to the old Bama Cotton Mill collapsed. More than a hundred homes and businesses were also damaged. Fortunately, no injuries or deaths were reported. The tornado was rated an EF-1 with winds estimated from 100 to 105 mph.

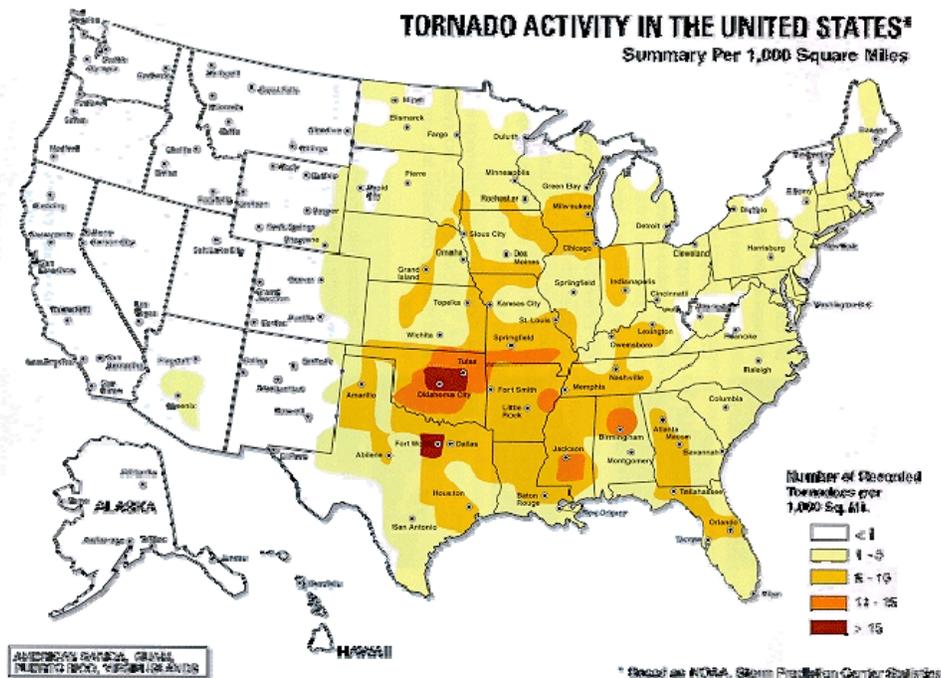


Figure I-1 The number of tornadoes recorded per 1,000 square miles

Figure III-3 – Tornado Incidence Map

- e. In terms of probability, frequency of occurrence and potential for injury the tornado ranks as the highest probable natural disaster in Coffee County. The National Climatic Data Center (NCDC) database, Appendix B, shows that Coffee County can expect damage from a tornado approximately every two years.
- f. The probability for injury is always present with injuries produced in 23% of the storms. Tornadoes may affect only a small portion of the county with paths usually less than a mile long and less than one hundred yards wide but almost all infrastructures are susceptible to damage from these events.
- g. The typical tornado in Coffee County will be an EF1 causing roughly \$342,000 in damages followed by an EF2 causing \$860,000 in damages and two injuries. Thirty-six injuries had occurred in a 52-year period in Coffee County prior to 2007. However, an EF4 tornado struck Enterprise on March 1, 2007, causing nine deaths, over 100 injuries and hundreds of millions in property damages.
- h. Although Southeast Alabama can have tornadic weather anytime, there are two discernable seasons. The primary season is the springtime (March – May, 55%) with a secondary season in the fall (October, 14%) and 31% spread over the remaining months. Figure III-3 illustrates tornado activity.
- i. The NOAA Tornado Database, Appendix A, includes some additional details, such as locations.

- j. Alabama ranks fourth in the nation in the number of killer tornadoes and fifth in the number of fatalities. Ten tornadoes struck the State in 1991, causing deaths and extensive property damage. Tornadoes in Alabama, especially the more intense ones, sometimes move very fast, usually in a northeasterly direction. Forward speeds of more than 60 mph have been observed. An unusually strong EF4 tornado struck Enterprise on March 1, 2007, killing nine and causing hundreds of millions in damages.
- k. Records show that hundreds of tornadoes touched down in Alabama from 1916 to 1990 killing over 900 people. Significantly, in all of the declared major disasters between April 1974 and February 1990, tornadoes were cited as responsible or partially responsible for the damages in six of the events.
- l. The National Climatic Data Center's database was accessed and severe weather data was downloaded. The following information was gleaned regarding tornadoes from 1950 through April 1, 2009.

Table III-7 – Coffee County Tornado Data				
Category	Occurrences	Injuries/ Fatalities	Damage	Average Damage
EF0	9	3/0	\$418,000	\$46,444
EF1	12	2/2	\$9,110,000	\$746,364
EF2	7	18/0	\$6,025,000	\$860,714
EF3	4	15/0	\$5,275,000	\$1,318,750
EF4	1	50/9	\$250,000,000	\$250,000,000
Totals	32	>138/11	\$268,828,000	\$8,400,875

(Note: This table provides a summary of tornadoes for the county. The complete NCDC Storm Events spreadsheet is attached as Appendix B and provides additional data on tropical storms, thunder storm winds, funnel clouds and hail storms.)

- m. This data suggests that Coffee County will experience a tornado every 2 years. The probability is that the tornado will be an EF1 tornado and will cause approximately \$746,364 in damage. The occurrence of EF2 tornadoes is common in Coffee County, as are injuries. The probability of injuries associated with the tornadoes is 36% of the time when a tornado strikes there will be an injury. As expected, EF2, EF3, and EF4 tornadoes produced the most injuries/fatalities and damage.
- n. Historical data on tornado damage is limited but some accounts derived from a variety of sources indicate that tornadoes caused damage and injuries in 1931 when a tornado near Elba destroyed several structures and killed a child with falling debris. In 1925 another tornado destroyed a structure near Elba and also in 1925 several structures were destroyed near Enterprise. During 1924 in north Coffee County near Pike County several structures were destroyed. In 1922 in Enterprise

more than 40 structures were destroyed and there was one fatality. A tornado in 1919 affected northern Coffee County with six injuries and numerous structures destroyed. In 1908 a tornado in northern Coffee County destroyed several structures. Also, an EF4 tornado struck Enterprise on March 1, 2007, causing nine deaths, over 100 injuries and hundreds of millions in property damages.

- o. The entire county is vulnerable to tornadoes as well as the hail, lightning and heavy wind-driven rains that often accompany them. Every jurisdiction in the county has an equal chance of being struck by a tornado. The most likely time for tornadoes is during the spring months from March through April and into May, with a secondary peak of tornadic activity in November. However, tornadoes have occurred in every month of the year. While every jurisdiction in the county may have an equal chance of being struck by a tornado, some jurisdictions have experienced many tornadoes and others have been struck by very few. The jurisdictions with the highest populations had the highest number of tornadoes reported, suggesting that more may be occurring in rural areas, but either are not sighted or are not reported.
- p. An assessment of tornado risk and vulnerability was conducted utilizing data collected from the National Climatic Data Center for 1950 – 2000 on the number of tornadoes that have touched down in each county in Alabama. The highest was 56 (frequency = 1.12 per year for Baldwin County and the lowest was 3 (frequency = .06 per year) for Bullock County. The frequency score was used to generate a Tornado Score. The counties were ranked on a scale with 1 being the highest. Baldwin County was given a 1. All other counties were scored and ranked accordingly by dividing each tornado frequency by 1.12, or the frequency for Baldwin County.

Table III-8 – Tornado Vulnerability						
County	Tornado Disaster Declarations	Years	Frequency	Tornado Score	Social Vulnerability	Tornado Vulnerability
Coffee	32	50	0.44	0.39	5.75	2.26

- q. The tornado presents the most frequent hazard and most likely source of property damage and injury in Coffee County from natural phenomena. The county is rated **high** on the tornado risk scale and is rated **very high** on the Tornado Vulnerability Scale.
- r. Although the entire county is at risk for tornadoes, these effects are usually limited in scale due to the normally small size of tornadoes. However, an EF4 tornado struck Enterprise on March 1, 2007, causing nine deaths, over 100 injuries and hundreds of millions in property damages. The wide spread use of mobile homes throughout the county also makes the county particularly susceptible to any type of windstorms.

- s. Although floods typically cause higher per event losses in terms of monetary damages, tornadoes are the dominant historical cause of injury and death in Coffee County.
- t. Tornadoes associated with hurricanes are usually weak EF0 to EF1 on the Enhanced Fujita scale. Some sustained winds from the hurricane in straight-line forces may be sufficient to cause structural damage. Damage to power lines due to trees falling on them can be extensive. Mitigation for damage to power lines is to have commercial power companies cut trees back from power lines. Debris in roadways such as trees and structural components will be significant. The ability to clear roadways for emergency response and evacuation is critical.
- u. The extent/range of magnitude or severity that could be experienced by Coffee County due to a tornado event is minor to major.
- v. Coffee County experienced 32 tornado events in a 54 year period resulting in a greater than 50% probability that a tornado event will occur on an annual basis. According to the NCDC, the total amount of damages for the 32 tornado events was \$268,942,000 with 29 tornado events causing damage resulting in an estimated \$9,273,862 of expected annual damages from future events.

3. Hurricane Related High Wind History and Extent

- a. **On October 4, 1995**, Coffee County received a presidential disaster declaration as a result of Hurricane Opal. Almost a Category 5 hurricane at one point, fortunately Opal had dropped to sustained winds of 115 mph, with gusts to 140 mph by the time it hit the Gulf Coast. There was extensive damage to power lines due to uprooted trees and three post-impact deaths were attributed to this storm. Thousands of residents were without power for three-seven days. Opal caused more than \$3 billion in damages overall and approximately \$30 million in damages just in Coffee County. Without adjustments for inflation, Opal could rank as high as third on the list of costliest twentieth-century U. S. hurricanes.
- b. On September 2, 1998, Tropical Storm Earl moved northeast across Southwest and Central Georgia, rainfall amounts varied from two to four inches. Peak wind gusts of 40 mph were recorded in Enterprise, AL. Throughout Coffee County, there were numerous reports of minor damage caused by downed trees and power lines with scattered outages. Approximately \$120,000 in damages resulted from this event.
- c. On August 6, 2001 Tropical Storm Barry moved ashore between Panama City and Destin, Florida during the early morning hours and then rapidly weakened to a tropical depression over Southwest Alabama by afternoon. Rain bands associated with Barry began moving northward across much of Southeast Alabama during the late evening hours of August 5, 2001. Maximum sustained winds of 25-30 mph with gusts to 40 mph were reported. Due to already saturated grounds, the strong winds felled numerous trees and many into power lines causing scattered outages in

Coffee County. Several county roads were impassable due to downed trees, limbs, and debris. Only minor street flooding was reported in Enterprise and New Brockton, Alabama. Approximately \$250,000 in damages resulted from this event.

- d. Hurricane Ivan weakened to a tropical storm as it moved north into Southwest Alabama on September 16, 2004. The maximum sustained and peak wind gust recorded was 44 and 54 knots, respectively, in Dothan, Alabama. Rainfall amounts were quite heavy, ranging from five to eight inches. Minor flooding was reported in Coffee County. Schools and many businesses were closed on September 16 and 17. There were numerous reports of roads closed by fallen trees and power lines. In Coffee County, many county roads were closed and several trees fell on houses and vehicles. Some businesses were damaged in Enterprise. Cotton farmers suffered significant yield losses, especially in Coffee County. Coffee County was declared a federal disaster area. Approximately \$5,410,000 in damages resulted from this event.
- e. Hurricane Dennis came ashore along the Alabama-Florida Panhandle coastline Sunday afternoon, July 9, 2005. Rainfall amounts ranged from two to four inches across extreme southeast Alabama. Most of the damage was a result of strong winds associated with Dennis' passing rain bands. The Coffee County EMA reported trees down on eight county roads, several downed trees on power lines causing scattered power outages, and debris on roads. Wind gusts blew a carport into a wall of a house on County Road 656. About 1,000 customers were without power. Approximately \$1.5 million in damages resulted from this event. In March 2007, a presidential disaster declaration was received as a result of a tornado. An EF4 tornado struck Enterprise on March 1, 2007, causing nine deaths, over 100 injuries and hundreds of millions in property damages. A tornado touched down just southwest of the Enterprise Municipal Airport. It caused minor damage to some houses. Four chicken houses were destroyed. The tornado then traveled northeast and quickly intensified as it moved into the Enterprise City Limits. It severely damaged the high school just north of the downtown area. Eight students were killed as walls collapsed on them while they took shelter in the interior hallways. Fifty more were injured. The football stadium was destroyed. Many vehicles surrounding the schools were overturned or tossed about. Several state roads were impassible due to debris and fallen utility poles and lines. The ninth fatality occurred where an elderly woman was standing behind a living room window of her home as the glass shattered. A nearby elementary school was heavily damaged with no deaths or injuries reported there. Damage near the high school and in northeast Enterprise reached low end EF-4. Damage assessments indicated 239 homes destroyed, 374 homes with major damage, 529 homes with minor damage, and 251 homes affected. Coffee County was declared a federal disaster area, with preliminary FEMA individual assistance figures totaling over \$1 million.
- f. Tropical Storm Fay, which came ashore August 23, 2008 just Northeast of Apalachicola, Florida during the early morning of the 23rd, slowly weakened as it moved west-northwest across the Florida Panhandle during the day. Its rain bands

generated very heavy rainfall and peak wind gusts over 40 mph throughout Southeast Alabama. Rainfall amounts from Fay during the 48-hour period ending at midnight on the 25th ranged from three to eight inches. There were scattered reports of downed trees and power lines throughout the county. Approximately \$30,000 in damages resulted from this event.

- g.** Essentially the inland extent of winds as well as wind strength increases with the strength of the hurricane at landfall and the actual forward motion of the storm.
- h.** Coffee County has identified hurricane/tropical storm winds as hazards to which they are vulnerable.
- i.** The extent/range of magnitude or severity that could be experienced by Coffee County due to a high wind event from a hurricane/tropical storm is minor to major.
- j.** Coffee County experienced 6 hurricane/tropical storm events in a 13 year period resulting in a greater than 50% probability that a hurricane/tropical storm event will occur on an annual basis. The total amount of damages for the 6 hurricane/tropical storm events was \$5,410,000 with 6 hurricane/tropical storm events causing damage resulting in an estimated \$901,667 of expected annual damages from future events.

F. Winter Storms/Snow and Ice Events/Extreme Cold Events

1. General Description of the Hazard

- a.** Winter storms vary in size and strength and include heavy snowstorms, blizzards, freezing rain, sleet, ice storms and blowing and drifting snow conditions. Extremely cold temperatures accompanied by strong winds can result in wind chills that cause bodily injury such as frostbite and death. Severe winter and ice storms can cause unusually heavy rain or snowfall, high winds, extreme cold, and ice storms.
- b.** The most common problem is making use of roadways difficult and, if severe, can make travel somewhat hazardous. Secondly, power failures due to line breaks and falling trees and tree limbs will also be a problem followed by debris blocking roadways.

2. Nature and Extent of the Hazard

- a.** Winter storms and ice storms may affect a large area. These events may make roads impassable and disrupt power. A snowfall of two inches or more is considered heavy snow for Alabama. The loss of communications is a common occurrence. The related emergencies include hypothermia and cold-related emergencies. Fires due to improvised heating apparatuses are common, as is carbon monoxide poisoning. There usually is sufficient warning for the public

to take protective steps. The facilitation of emergency heating and food is critical. A 72-hour emergency kit is crucial in this emergency. Emergency heating centers will be essential and rescue of stranded motorists may be a priority. These events are typically short lived in this region. Damage to above ground facilities and utilities may be significant. Damage to crops such as timber can be devastating. Emergency power and heating are essential for shelters and other critical facilities. The ability to remove debris such as trees with chain saws and heavy equipment is essential. The ability to apply sand or salt to maintain roads in a passable state is important to allow emergency vehicles and evacuation of affected areas. This type of emergency may affect a large segment of the population and strain shelter resources.

- b. The extent/range of magnitude or severity that could be experienced by Coffee County due to an extreme cold event/winter storm/snow and ice event is minimum to minor. Therefore, the county's risk of such events is minimal.
- c. The effects of an ice storm or severe winter weather can be felt throughout the entire county. However, in southern Alabama, this is neither a severe nor a frequent threat, materializing on the order of every ten to twenty years. Therefore, they are not a consideration within this plan and will not be profiled.

3. Winter Storm/Snow and Ice/Extreme Cold Event History

- a. In February 1973, Coffee County experienced a severe snow and ice storm that left many areas without power and roads impassable. Local weather observers reported this was the most severe winter weather in fifty years. The most significant storm of a similar nature was in 1942, after which Enterprise reported it was the most snowfall seen since 1886. However, there is no data on losses. A severe ice storm hit the state in 1993, but the effects in Coffee County were mostly limited to a few slick roads and some power outages due to falling tree limbs.
- b. Historically, Alabama usually experiences ice storms and winter weather on the order of every ten to twenty years. Coffee County experienced heavy snow in 1973 and an ice storm in 1993, neither of which caused any significant damages.
- c. According to the NCDC, Coffee County experienced 0 winter storm events in a 0 year period resulting in a 0% probability that a winter storm event will occur on an annual basis. The total amount of damages for the 0 winter storm events was \$0 with 0 winter storm event causing damage resulting in an estimated \$0 of expected annual damages from future events.
- d. According to the NCDC, Coffee County experienced 0 extreme cold events in a 59 year period resulting in a 0% probability that an extreme cold event will occur on an annual basis. The total amount of damages for the 0 extreme cold

events was \$0 with 0 extreme cold events causing damage resulting in an estimated \$0 of expected annual damages from future events.

G. Landslides/Land Subsidence/Sinkholes

- a. Landslides/land subsidence/sinkholes are not a common event and usually involve a small area. Landslides are not a significant factor in Coffee County as there are few if any soils that are susceptible to this type failure and a lack of hills or steep slopes. The worst-case scenario is typically minor roadway blockage or access to a few non-critical structures. Therefore, they are not a consideration within this plan and will not be profiled.
- b. Coffee County is heavily cultivated and is vulnerable to erosion because the area is mostly composed of deep sandy soils. Large, caving gullies can develop where surface flows are concentrated on slopes, but landslides are not a significant hazard. The county's risk of landslides/land subsidence/sinkholes is minimal.

H. Earthquakes

1. General Description of the Hazard

- a. Typical natural hazards usually involve weather-related events and earthquakes. Weather-related phenomena can produce both direct and indirect damage to structures and infrastructure. Earthquakes produce similar damage patterns both directly and indirectly.
- b. An earthquake is the oscillatory and sometimes violent movement of the earth's surface that follows the release of energy somewhere within the earth's crust. The energy can be generated by a volcanic eruption, a sudden dislocation or movement of segments of the crust along faults, by manmade explosions, and even by the great weight of water impounded behind dams. Usually, the most destructive earthquakes are caused by movements of the crust along a fault.

2. Nature and Extent of the Hazard

- a. Often, little or no warning precedes earthquakes and their damage to vital structures depending upon magnitude can be extensive. The primary damage is usually to the structural integrity of buildings. However, disruption of power, water, natural gas, telephone and other communications may also be extensive.
- b. Just northwest of Alabama lies the New Madrid seismic zone, the most active earthquake area in the central United States. A large area in the northeastern quarter of the state is affected by the Charleston fault line. The potential exists, along this fault line, for widespread damage and disruption, particularly where utilities and public works are concerned.

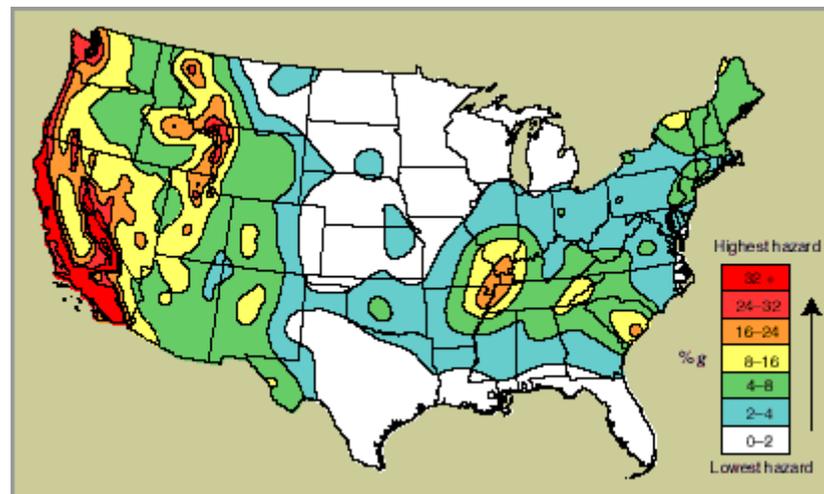


Figure III-4 – USGS Seismic Hazard Map

- c. The probability of damaging earthquakes varies from site to site, but Coffee County ranks in the least probable hazard zone, as depicted in Figure III-4, and has never experienced a known earthquake in recorded history. The risk is evaluated as very remote and with minimal damage predicted. Therefore, no mitigation actions will be considered for earthquakes. Earthquake events are not a consideration within this plan and will not be profiled.
- d. The extent/range of magnitude or severity that could be experienced by Coffee County due to an earthquake event is minimum to minor based on the lack of historical records and detailed geologic studies.

3. Probability of Earthquakes

- a. Coffee County does not have any significant earthquake threat. Data from the National Geological Survey indicate that a substantial earthquake in Coffee County is both improbable and is unlikely to cause any more than minor damage.
- b. The probability of future occurrences cannot be predicted due to a lack of historical records and detailed geologic studies. Additional assessment for vulnerability is impossible without data to be used to determine an increased risk.

I. Drought/Extreme Heat Events

- a. Drought and extreme heat-related emergencies normally entail sustained hot weather. The facilitation of cooling centers and the ability to deliver water for potable purposes and for firefighting is critical. Loss of commercial power may be a factor as brown outs and power overloads can become common. The facilitation of transport for hundreds of elderly and ill to cooling centers is important. The economic loss due to crop failures can be mitigated to some extent by crop insurance. However, with annual agricultural revenues of approximately \$160 million, insurance will not come close to repairing or replacing the losses to the county and its residents.
- b. The extent/range of magnitude or severity that could be experienced by Coffee County due to drought/extreme heat events is minimum to minor based on the lack of historical records and detailed geologic studies. Coffee County's risk of a drought/extreme heat event is also minimal.
- c. Coffee County experienced 0 drought/extreme heat events and no damages from such events during 1950-2009; therefore, these events are not a consideration within this plan and will not be profiled.

J. Wildfires

- a. Wildfires, as depicted in Figure III-5, are not a significant threat as the county is heavily cultivated. Coffee County's risk of wildfires is very minimal. The combination of cultivated fields, rivers and creeks, and over 1,000 roadways serves as both natural and manmade fire breaks. There has not been a significant wildfire in this county in the collective memory of its citizens nor any reported in the media; therefore, these events are not a consideration within this plan and will not be profiled.

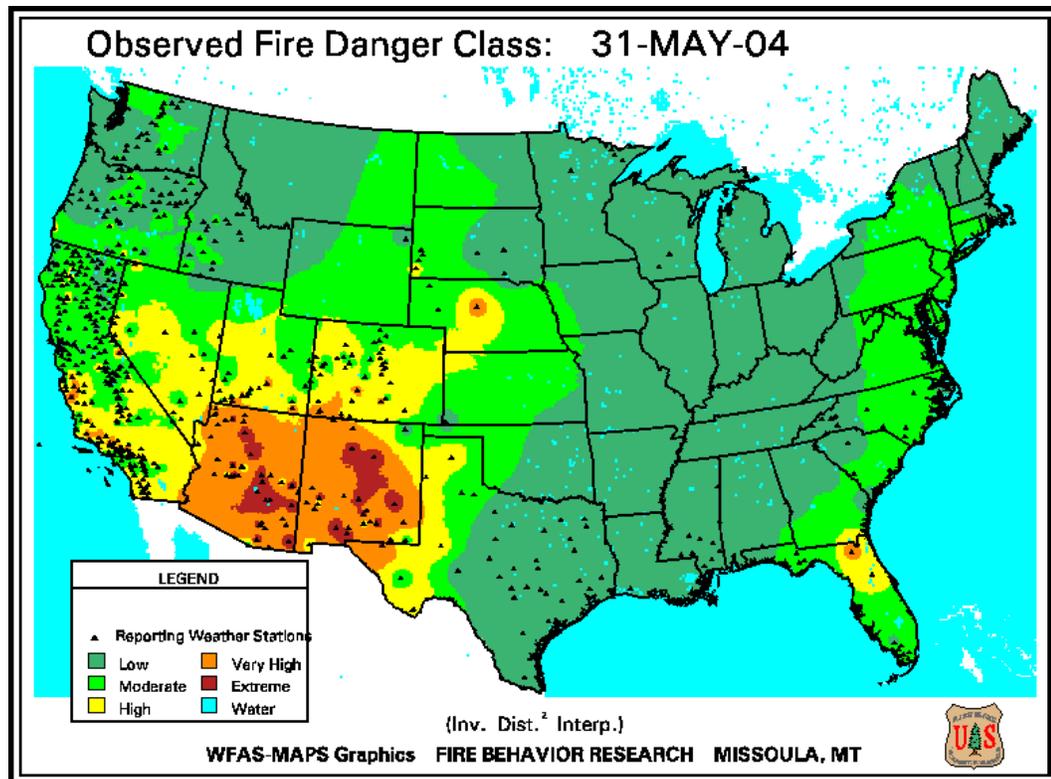


Figure III-5 – Fire Danger Ratings

- b. The extent/range of magnitude or severity that could be experienced by Coffee County due to a wildfire event is minimum to minor based on the lack of historical records and detailed geologic studies.

K. Critical Facilities

- a. Critical facilities are defined as those facilities that are vital to the community at large or may be crucial to the delivery of vital services such as utilities and public safety. Critical facilities may also house or serve an at-risk population such as schools, hospitals and nursing homes. Critical facilities are also those facilities that would likely result in catastrophic financial loss if severely damaged or destroyed such as major industrial buildings, court houses and other government facilities. Critical facilities may vary from a transmission line that provides vital electricity to the community, to a hospital that provides medical care, or to the local public safety facilities and those that serve a community as shelters for evacuees.
- b. A concerted effort was made, using information from the public, EMA, local government officials and industry, to identify these facilities. Such facilities are considered vital to transportation, education, communication, health care, utilities, such as electric, water and sewage systems, food services, and the

delivery of public safety. Structures that are occupied by at risk populations such as schools are also included.

- c. Other critical facility locations are those that store Extremely Hazardous Substances (EHS). Damage or compromise to these sites could be catastrophic should the EHS be released.
- d. This listing will be reviewed periodically and continually updated to reflect any changes in each of the jurisdictions and the county at large. More extensive identification and more detailed valuation of the identified critical facilities will be undertaken as this plan evolves.
- e. In addition to the Critical Facilities listed in this sub-section, also see **Appendix D** for a listing of Current EHS Storage Sites, Buildings & Infrastructure. Updates to the Critical Facilities and Appendix D will be accomplished in future revisions to the plan.
- f. All facilities and storage sites are subject to potential damages from all natural hazards, though none are located in any currently identified flood zones.
- g. Replacement/rebuilding costs were based on engineering estimates and/or current insurance replacement amounts, and will be reviewed and revised in subsequent updates/revisions to the plan.

1. Coffee County Critical Facilities

- a. County Courthouse in Elba
 - Replacement cost is estimated to be \$2.6 million
- b. County Courthouse Annex in Enterprise
 - Replacement cost estimated at \$4.8 million
- c. County Office Complex – includes Farm Center, Agriculture Dept/Extension Agent, EMA Office, E-911 Office, Solid Waste Office, VA Office, Voter Registration Office, County Commission Office, Mapping & Appraisal Office, County Maintenance Shop and Storage Barns, County Jail, County Engineer Office and the Highway Department and Storage Buildings.
 - Replacement cost estimated at \$41.2 million
- d. Coffee County Schools – includes Zion Chapel School, Kinston School, & New Brockton High School and Elementary School
 - Replacement cost estimated at \$51.5 million

2. Elba Critical Facilities

- a. Elba General Hospital and Nursing Home

- Replacement cost is estimated to be \$15.5 million
- b.** City School System – includes elementary, middle and high school
 - Replacement cost is estimated to be \$29 million
- c.** National Guard Armory
 - Replacement cost is estimated to be \$1.34 million
- d.** City Hall
 - Replacement cost is estimated to be \$772,500
- e.** Recreation Building (emergency shelter)
 - Replacement cost is estimated to be \$1.34 million
- f.** Police Department
 - Replacement cost is estimated to be \$515,000
- g.** Senior Citizen Center
 - Replacement cost is estimated to be \$515,000
- h.** Emergency Medical Service
 - Replacement cost is estimated to be \$360,500
- i.** Fire Department
 - Replacement cost is estimated to be \$463,500
- j.** Water Works
 - The City has 5 water wells and 4 storage tanks. Replacement costs for a well and tank is \$1,339,000.
- k.** Waste Water
 - The City operates 2 sewage lagoons. Replacement cost is \$515,000
- l.** Airport
 - Replacement costs are \$463,000
- m.** Street, Water and Electric office and warehouse complex
 - Replacement costs is \$566,500

3. Enterprise Critical Facilities

- a. City Hall
 - This facility houses the police department, fire station #1, Mayor's office and other vital administrative offices.
 - Replacement cost \$5,150,000.
- b. Water Works
 - The City has 15 water wells and 10 storage tanks.
 - The average replacement cost for a well is \$721,000 and for a tank is \$1.6 million.
- c. Waste Water Treatment
 - The City operates one treatment plant and 2 natural lagoons.
 - Replacement cost of the plant could exceed \$3,090,000 while a lagoon is estimated to be \$515,000.
- d. Public Works
 - This facility is the headquarters for the sanitation department
 - Appraisal value of \$412,000
- e. Civic Center
 - Appraisal value of \$5.2 million
- f. Airport
 - Appraisal value of \$900,000
- g. Recreation Center Complex (Evacuation Refuge)
 - Appraisal value of \$3.2 million
- h. Enterprise City School System – includes Enterprise High School, three junior high schools (Enterprise Jr. High, Dauphin Jr. High, & Coppinville Jr. High), six elementary schools (Hillcrest, College St., Rucker Blvd., Harrand Creek, Holly Hill, & Pinedale), an Early Education Center (Boll Weevil Cr. South), a Special Projects Center (Carroll St.), the Service Center (Hwy 84 East) and the Central Office (near Hillcrest Elem).
 - Replacement cost estimated at \$240 million

4. Kinston Critical Facilities

- a. Town Hall
 - Assessed value is \$86,520.
 - Replacement cost for building will be approximately \$70 per square foot.

- b.** Fire and Rescue Department
 - Assessed value is \$42,848.
 - Replacement cost is \$50 per square foot.
- c.** Water Shop
 - Assessed valued at \$61,800.
- d.** Water Well
 - Replacement cost could be as much as \$257,500
- e.** Six inch water main coming into Kinston from Opp
 - Replacement cost of 6 inch PVC line is approximately \$10 per linear foot.
- f.** Six inch water main coming into Kinston from Covington County
 - Combined assessed value of both **5)** and **6)** above is \$2,670,323.
 - Replacement cost of 6 inch PVC waterline is approximately \$10 per linear foot.
- g.** Two 100,000 gallon water storage tanks
 - Replacement cost for each tank is approximately \$257,500.
- h.** Covington Electric distribution lines
 - Replacement cost ranges from \$20,600 per mile for a single phase small wire line, to \$72,100 per mile for a three phase big wire line.

5. New Brockton Critical Facilities

- a.** Volunteer Fire Department, 419 South Ainsley Street
 - This facility is valued at \$113,300.
 - Replacement cost of the building is estimated to be at least \$133,900.
 - Replacement cost of equipment is estimated to be at least \$515,000.
- b.** Police Dept., 202 South John Street
 - This facility is valued at \$100,940.
 - Replacement cost is estimated to be at least \$180,250.
- c.** U.S. Highway 84 bridges - located on the western and eastern city limits
 - Replacement cost is estimated to be at least \$2.6 million dollars each.
- d.** South Lagoon and 7 lift sites
 - Replacement cost estimated at \$1.133 million
- e.** Town Hall, 706 E. McKinnon St.
 - Replacement cost estimated at \$2.2 million

- f. Senior Citizens' Center
 - Replacement cost estimated at \$1.6 million

6. Covington Electric Cooperative, Inc.

- Headquarters Facilities - Appraisal value of \$2,053,900
- Electrical Facilities - Appraisal value of \$35,758,745

7. Jack Water System

- Well and storage tank – Appraisal value of \$618,000

L. Loss Estimates

Based mainly upon empirical data and assuming like disasters, this sub-section provides an estimate of potential dollar losses to vulnerable structures identified in sub-section **III. B. 2.**

1. Abbreviated Historical Loss Data

There are insufficient resources to firmly establish the costs of damages beyond those quoted in this sub-section, which provide general damages for each community derived from media accounts, governmental records and estimates from various other entities.

a. Coffee County

Some areas of the county received damages from the March 2007 tornado that devastated large areas of the City of Enterprise. Most of the unincorporated areas of the county received substantial damages from Hurricane Ivan in 2004. Unincorporated areas of the county received substantial flood damage in 1998 and received approximately \$1.5 million in reimbursement from FEMA and another \$200,000 from the state. This does not include the damages incurred by private property owners, which is estimated to be 10 to 25 times this amount. There were also damages from the 1998, 1994, 1990 and 1975 floods and the great flood of 1929.

b. Elba

The City of Elba and surrounding areas have been damaged by floods in 1990, 1994 and 1998. The city incurred more than \$1,000,000 in damages in 1994. The city sustained substantial damages during the 1998 flood and received approximately \$637,000 from FEMA and another \$82,000 from the state. Private claims are estimated to be 10 to 25 times this amount. The flooding Elba received was substantial due to the failure of the levee. The Army Corps repair project for the levee was approximately \$9 million.

The National Climatic Data Center reported \$107.5 million in total property damages from the 1998 Flood with an additional \$15 million in crop damages. This represents catastrophic losses for Coffee County.

The city received approximately \$952,419 in assistance from FEMA during the 1990-91 timeframe for flood damages. FEMA buy out of flood hazard properties in 1990 was one method used to mitigate potential flood damage in Elba. Some 23 properties were purchased for \$1,500,000. Following the 1998 flood, six properties were purchased for \$420,000.

c. Enterprise

The March 1, 2007 tornado devastated large areas of the city including the total destruction of Enterprise High School, Hillcrest Elementary School and more than 250 homes. Damage estimates are currently well over \$250 million. The October 2008 tornado also caused approximately \$2 million in damages and totally destroyed the previous civic center building, which housed the Senior Center, American Red Cross Offices and the Coffee County VOAD Office. Hurricane Ivan also caused substantial damage in 2004, but actual costs were not available at the time of this revision. The City of Enterprise received flood damage in 1990 primarily to road and bridge infrastructure at a cost of \$263,119. In 1994, Enterprise suffered flood damage again primarily to road and bridge infrastructure resulting in losses of \$274,520. In 1995, Hurricane Opal produced structural damage, infrastructure damage and debris removal losses of \$679,435. Enterprise once again sustained flood damage in 1998 and received \$220,000 from FEMA and another \$30,000 from the state. A 1999 hurricane produced flooding and debris removal costs of \$95,282.

d. Kinston

The City of Kinston received damage during the 1990, 1994 and 1998 floods. Estimated costs of damage to public infrastructure, primarily roadways, in 1990 were \$8,393. During 1994 flood damages were estimated at \$24,516 and during 1998 estimated at \$20,480. The town received flood damage compensation payments from FEMA of approximately \$3,000 and \$400 from the state.

e. New Brockton

New Brockton has recorded three tornadoes in 1986, 1987 and 2001. Several residential and commercial properties were damaged within the central part of the town in 1986 and 1987. In 1986, minor damages of approximately \$15,000 were incurred by town owned property and approximately \$3,500 in 1987. In 2001, no damage was done to town property. The cost to residential and commercial property is unknown in all three cases.

Three floods caused damages in New Brockton in 1990, 1994 and 1998. The 1990 flood was classified as a 500-year flood and both the 1994 and 1998 floods were classified as 100-year floods. All three caused extensive water damage to almost all of the residential and commercial property owners within the town. Town facilities including, sewage treatment plant, drainage system and streets were severely damaged from flooding and runoff of the water. Approximate cost to town-owned property was \$8,200 in 1990 and \$18,000 in 1994. In 1998 the town received flood damage compensation payment of approximately \$23,000 from FEMA and another \$3,000 from the state. The cost to residential and commercial property is unknown in all three cases.

In October 1995, Hurricane Opal had sustained winds exceeding 90 mph recorded for this area causing damage to roofs and structural damage to residential and commercial property. The town received the same type of damage to the town hall and the senior citizen building. The approximate cost to town-owned property was \$18,000. The cost to residential and commercial property is unknown.

2. Repetitive Loss Data

The repetitive losses for the county at large were approximately \$64,000 for three residences. The losses in Enterprise for five residences were approximately \$152,000. Elba had a total of 41 residences for a total of approximately \$2,253,000. See Appendix F for detailed listing of repetitive losses.

3. Property Valuation Summary by Jurisdiction

These data were derived from local municipal government and tax valuation from the Coffee County Tax Assessor's Office. These data are the latest available from these sources.

Table III-9 - Property Valuation Summary			
Jurisdiction	Type	Value	Zoning/ Flood Ordinances
County	Commercial	\$21,725,378	No/Yes
County	Residential	\$328,950,709	No/Yes
County	Utility	\$17,178	No/Yes
Elba	Commercial	\$13,865,860	Yes/Yes
Elba	Residential	\$97,191,624	Yes/Yes
Elba	Electric System	\$1,957,000	Yes/Yes
Elba	Waste Water System	\$4,120,000	Yes/Yes
Elba	Water System	\$3,527,750	Yes/Yes
Elba	Other Utilities	\$4,380,590	Yes/Yes
Elba	Bridges	\$1,339,000	Yes/Yes
Enterprise	Commercial	\$70,083,424	Yes/Yes
Enterprise	Residential	\$57,145,739	Yes/Yes
Enterprise	Utility Infrastructure	\$7,889,841	Yes/Yes
Kinston	Commercial	\$1,491,749	Yes/Yes
Kinston	Residential	\$1,207,778	Yes/Yes
Kinston	Water System	\$1,016,357	Yes/Yes
New Brockton	Commercial	\$822,970	Yes/Yes
New Brockton	Residential	\$22,181,359	Yes/Yes
New Brockton	Water System	\$2,317,500	Yes/Yes
New Brockton	Waste Water System	\$2,575,000	Yes/Yes

It is important to note that actual values may be somewhat higher than those values assigned for tax purposes. Also, these values do not include tax exempt structures such as government buildings, schools and churches.

M. Land Uses and Development Trends

This sub-section provides a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions. There are no plans for future development in hazard prone areas.

a. Coffee County

The county is experiencing moderate growth. This represents a moderate enhancement of risk for natural hazard events

Table III-10 - Coffee County Growth Trends	
County	% Population Increase 2000-2008
Coffee	9.1

b. Elba

The City of Elba currently has two areas that are experiencing rapid residential growth. These are the Highland and Forest Lake Drive areas, both of which are on the north side of town and well clear of any currently identified flood zones.

Also, in the industrial category, Toledo Tool & Die has constructed a new 93,000 square feet facility in Elba near Carl Folsom Municipal Airport and also well clear of any identified flood hazard.

c. Enterprise

The City of Enterprise is experiencing rapid growth. This growth is evident with the development of residential property and an average of 15 new home starts each month. The City is taking action now to review and consider revisions to its zoning and land use regulations.

Also, in the industrial category, Hyundai has built a new 200,000 square feet facility in Enterprise's Industrial Park North, which is well clear of any currently identified flood zones.

N. Jurisdictional Uniqueness/Variance

The City of Elba is unique within Coffee County because it is located behind a levee system. As noted earlier, the failure of the levee caused significant city-wide flooding in 1990 and 1998. The city leadership has worked closely with the state, FEMA and the Army Corps of Engineers, resulting in a \$9 million project that is now complete. Additionally, the city has requested that the Army Corps of Engineers undertake a snagging and clearing operation for those nearby waterways with the potential to adversely impact Elba. The Army National Guard has completed similar, smaller projects in the past.

Hazard Mitigation Plan

IV. Mitigation Strategy

This section provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools. A mitigation strategy is essential and includes the cited goals, identification and analysis of mitigation measures and implementation of mitigation measures as specified in 44 CFR 201.6. Some mitigation efforts are historical or ongoing and are discussed in this section. This section contains or addresses the following items:

- Upgrade and implementation of building codes and zoning restrictions
- Implementation of improved land use practices
- Identification of and retrofit, relocation or removal of at-risk structures
- Limitation of the adverse effects of natural hazards

A. Mitigation Goals

This sub-section provides a description of mitigation goals to reduce or avoid long-term vulnerabilities to identified hazards. In 2005, the Coffee County HMPC developed six goals for hazard mitigation.

- Prevention of loss of life and reduction in number and severity of injuries
- Reduction in severity and amount of property damages
- Identification and acquisition of funding for cost-effective mitigation efforts
- Implementation of a comprehensive hazard mitigation plan
- Implementation of hazard mitigation efforts prior to a natural hazard incident
- Incorporation of lessons learned during and after any incident recovery phase

The HMPC reviewed the county hazard mitigation goals developed as part of the 2005 Plan in light of recent disasters that have impacted the county and determined that these goals remained relatively unchanged, but for the 2010 Plan the wording has been revised to better communicate their intent.

- Establish a comprehensive hazard mitigation system.
- Reduce risk from natural hazards.
- Reduce vulnerability of new and future development.
- Reduce vulnerability to natural hazards.
- Foster public support and acceptance of hazard mitigation.

B. Mitigation Actions/Projects

The process employed during the 2010 update of the County Hazard Mitigation Plan's mitigation actions was similar to that employed in 2005. First, the committee determined that each agency represented on the committee (and the various other organizations that were included in, and informed of, committee activities) should be allowed to provide input on goals, objectives, etc. at both the countywide level as well as from the standpoint of the organizations they represent. The various organizations provided feedback as to whether the goals from the 2005 Plan were relevant in 2010. Further, comments were solicited from the committee as to the potential need for additional goals to address any changing conditions. Secondly, the committee provided input on the status of the actions identified in the 2005 plan. Additionally, the agencies were requested to provide additional actions that they would like to see included in the 2010 update. The results of this input were compiled and included in the plan revision, currently under review by the committee. Thirdly, the CCEMA compiled existing information from the local level and reviewed them to identify goals, objectives, strategies, etc. The identification of mitigation actions has been shaped by the events that occurred over the past five years. Because of these events, the prioritization of actions has been re-evaluated. The updated prioritization of these mitigation actions are below.

The Coffee County HMPC reviewed all mitigation measures, adjusted the priority based upon actions that were previously identified, and reevaluated the grant funding programs. The committee assessed the availability of grant funds and the state/federal governments' prioritization of these potential grants as well as the projected costs of the project in order to establish the priorities for Coffee County's planning strategy.

- A High ranking requires continuous action and participations from the entire community.
- A Medium ranking involves fewer people, effort, and area of the community.
- A Low ranking involves a small number of people and plans for a specific action.

This sub-section identifies and analyzes a range of mitigation actions and projects under consideration to reduce the effects of natural hazard events for the county at large as well as each of the jurisdictions within the county. For those projects listed in the 2005 Plan that have not been completed/deleted, the Coffee County HMPC chose to keep them in the 2010 Plan Revision for future consideration. In parenthesis following each mitigation action/project is the status of the action/project, i.e., continuing; completed; or new referenced 2010-2015. The hazard address key is as follows:

- T = Tornado
- H = Hurricane
- SS = Severe Storm

1. County School Systems

a. Coffee County School System

- All existing schools and any future new school construction should include sufficient “shelter spaces/safe rooms” to provide adequate protection and safety for all students and staff.

Table IV-1						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Structural Projects	1, 3, 4	T, SS, H	Continuing	High	Local Government/BOE	HMGP/ADECA

b. Elba City Schools

- a.** All existing schools and any future new school construction should include sufficient “shelter space/safe rooms” to provide adequate protection and safety for all students and staff.

Table IV-2						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Structural Projects	1, 3, 4	T, SS, H	Continuing	High	Local Government/BOE	HMGP/ADECA

c. Enterprise City Schools

- 1) The Enterprise High School, destroyed by the March 1, 2007, tornado, is being constructed to include sufficient “shelter spaces/safe rooms” to provide adequate protection and safety for all students and staff. Enterprise High School current/pending architectural plans require specific structural reinforcement of certain hallways/corridors/rooms to provide sufficient “shelter spaces/safe rooms” for the safety of students and staff.

Table IV-3						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Structural Projects	3	T, SS, H	Continuing	High	Local Government/ BOE	HMGP/ ADECA

- 2) Also destroyed in the tornado, Hillcrest Elementary has been replaced with adequate protection and safety for its students and staff. (Completed)
- 3) All existing schools and any future new school construction should also include sufficient “shelter spaces/safe rooms” to provide adequate protection and safety for all students and staff. In all existing school facilities and any future new school construction retro-fit select windows and doors with lockable metal shutters and add hurricane clips to the rafters, where applicable, or perform other structural reinforcement for other types of roof structures, as needed, to provide sufficient “ shelter spaces/safe rooms” for the safety of students and staff.

Table IV-4						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Structural Projects	1, 3, 4	T, SS, H	Continuing	High	Local Government/ BOE	HMGP/ ADECA

- 4) Install back-up generators to provide limited back-up electrical service for communication when needed for the safety of students and staff.

Table IV-5						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Emergency Services Protection	1, 3, 4	All	2010-2015	High	Local Government/ BOE	HMGP/ ADECA

2. Coffee County

- a. Planned projects include specific actions for flood mitigation through the replacement and elevation of a bridge culvert, which strands 19 families during heavy rains, and the relocation of two structures. (Completed)

- b. A large portion of rural Coffee County is currently not served by an outdoor warning siren system. The lack of this system places rural residents, including those at sporting events, in danger from severe weather or other phenomena. The county plans to improve the current outdoor warning siren system by installing additional sirens in populated areas and/or areas where there are substantial outdoor activities.

Table IV-6						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Emergency Services Protection	1, 4	All	Continuing	High	EMA	HMGP/ADECA

- c. An overhead imagery project is being considered to assist in identifying structures in the floodplain as well as determining their elevation in relation to the floodplain and surrounding terrain. (Completed)
- d. The Coffee County Commission has adopted several resolutions that mandate compliance with building standards for infrastructure such as roads, for flood damage prevention and new subdivision standards. These standards require compliance for many types of structures and prohibit or limit construction in vulnerable areas. These resolutions present the maximum effort allowable under current Alabama law and are an excellent example of steps taken to mitigate infrastructure damage by the Coffee County Commission. These documents are available for review in the county commission office complex in New Brockton, Alabama. One important facet of the standards implemented by Coffee County is the Alabama Department of Transportation County Road Design Policy of 2002. This standard addresses many construction issues that impact the ability of roads and bridges to withstand floods.

Table IV-7						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Prevention	1, 3, 4	Floods	Continuing	Medium	County Engineer	HMGP/Road/Bridge

- e. Continue to participate in NFIP. The local Flood Damage Prevention resolution was updated in 2009. The County has successfully completed two Community Assistance Visits this decade with the latest occurring in FY2009. These successes reinforce the County’s commitment to and participation in the NFIP.

Table IV-8						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Prevention	1, 4	Floods	2010-2015	High	NFIP Coordinator/ Local Government Administration	HMGP

- f. Provide critical facilities with back-up emergency generators. This includes for the Coffee County Shop, the Coffee County Engineer’s Office, and the Coffee County Regional Landfill Scalehouse.

Table IV-9						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Emergency Services Protection	1, 4	All	2010-2015	High	Public Works Department	HMGP

- g. Another project related to flooding in Coffee County is the relocation of two structures out of the ten-year floodplain. The request is to allow the two homeowners to relocate their residences out of this floodplain and thus eliminate the potential for future damage. The area involved received flood damage in 1990, 1994 and 1998 due to thunderstorm rain and a tropical system. This area is in Western Coffee County. The county administrator and engineer will be responsible for coordination of any county required actions for this project.

Table IV-10						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Natural Resources Protection	3	Floods	Continuing	Medium	County Administrator and Engineer	HMGP

3. Elba

- a. The city needs emergency generators for many locations including city hall, the city shop, pumps and shelters. Additional flood pumps are also needed as well as the elevation and “flood proofing” of certain key lift stations.

Table IV-11						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Natural Resources Protection and Emergency Services Protection	1, 3, 4	All	Continuing	High	City Administration	HMGP

- b. An additional project is the buyout of twelve structures and relocation of one structure in the ten-year floodplain. This area has been damaged by floods in 1990, 1994 and 1998. Elba received some \$952,419 in assistance from FEMA during the 1990 – 1991 timeframe for flood damages. FEMA buy out of flood hazard properties in 1990 was one method used to mitigate potential flood damage in Elba. The city incurred more than \$1,000,000 in damages in 1994 and \$1,500,000 in damages in 1998. The National Climatic Data Center reported \$107.5 million in total property damages from the 1998 Elba Flood with an additional \$15 million in crop damages. This represents catastrophic losses for Coffee County. Some 23 properties were purchased for \$1,500,000. Again, in 1998 following another flood, six properties were purchased in Elba for \$420,000. (Completed)
- c. The city is also proposing a study of Beaver Dam and Moore’s Creek Basin to identify future mitigation projects to eliminate flooding in these areas.

Table IV-12						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Prevention	2	Floods	Continuing	Low	City Engineer	LEPC/ HMGP

- d. Additionally, the city has a “Snagging and Clearing” project request on file with the Army Corps of Engineers. This project, if approved, will greatly improve flow capacity of the waterways in and around Elba, thereby reducing out-of-bank conditions.

Table IV-13						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Prevention	1, 4	All	Continuing	Medium	City Engineer	Army Corps of Engineers

- e. Additionally, the city is in the formative planning stages to determine requirements and estimate remodeling needed to convert an existing structure into a self-sufficient emergency operations center. The structure to be remodeled is the current utility operations center, located at 475 Highway 203. The structure is located above the floodplain and is a substantial structure with emergency power. This will facilitate emergency operations should another flood occur or should other factors make occupation of other portions of the city not possible.

Table IV-14						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Structural Projects	1, 4	Floods	Continuing	Medium	Local Government	Local/ Federal

- f. The city has developed ordinances to assist in flood mitigation and restrict development in floodplain areas through zoning. These ordinances provide language that mirrors the national model for flood damage prevention. These ordinances are comprehensive and affect all existing and new structures. Further, there are zoning ordinances in effect that govern the development of any structures within Elba that afford an additional layer of protection for new structures and development. These efforts are consistent with a strong municipal body using its authority to mitigate a potential hazard facing the community. (Completed)
- g. The city has made a strong commitment to long-term flood hazard reduction by obtaining funding for upgrade of the current levee system protecting the city as well as the enactment of both the flood damage prevention ordinances and the zoning ordinances. (Completed)
- h. Continue to participate in NFIP. The local Flood Damage Prevention resolution was updated in 2009.

Table IV-15						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Prevention	1, 4, 5	All	2010-2015	High	NFIP Coordinator	HMGP

- i. Purchase debris removal equipment which would expedite debris removal, clearing of roads and restoration of power.

Table IV-16						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Emergency Services Protection	1, 4	All	2010-2015	Medium	Local Government	Local/ State DOT

- j. Purchase additional flood pumps to be installed in the west end of the city to prevent future flooding in that area.

Table IV-17						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Prevention and Property Protection	1, 2, 4	Floods	2010-2015	Medium	Local Government	CDBG

- k. Elevate and “flood proof” lift stations 1, 3, 8, and 10.

Table IV-18						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Prevention	1, 2, 4, 5	Floods	2010-2015	Medium	Local Government	HMPG

- l. A clearing project for two existing ditches located in the area of Whitman Street and Pinedale Drive. This would greatly improve flow capacity in and around that area.

Table IV-19						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Prevention and Property Protection	1, 2, 4	Floods	2010-2015	Low	City Engineer	Local

- m. An erosion prevention and soil stabilization project at the Elba City School complex to help eliminate future flood damage to both facilities and streets.

Table IV-20						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Prevention and Property Protection	1, 2, 4	Floods	2010-2015	Low	City/County Engineer/Soil Conservation Agency	HMPG

4. Enterprise

- a) Planned projects include updating the City Master Plan, including Planning, Zoning, Subdivision Regulations, and Building Codes. The city’s comprehensive plan needs to include any relation between proposed land-use and floodplain, storm water management, drainage problems and other hazardous areas. The city zoning ordinance needs to provide special zoning provisions for hazardous areas. This is particularly true of areas prone to flooding. The city needs to adopt the most current edition of the International Building Codes to provide the most stringent regulations for wind, flood, ice, erosion, expansive soil and other hazards. These actions will require the services of a professional planner. It is estimated that the cost could approach \$50,000.

Table IV-21						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Prevention and Property Protection	1, 3, 4	Floods	2010-2015	Medium	Local Government	ADECA

- b) The floodplain ordinance has been revised to ensure it meets current State and FEMA requirements. (Completed)
- c) Evaluate and make necessary improvements to buildings and structures that may be in danger of damage from natural hazards, particularly flooding. (Continuing)

Table IV-22						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Property Protection	1, 4, 5	All	Continuing	Low	NFIP Coordinator	HMGP

- d) Identification of critical facilities, such as government buildings, health care centers, schools and infrastructure, is ongoing. Certain of these facilities may need to have their own emergency response plans for any hazards they may be exposed to. Generate or revise emergency response plans accordingly, and procure emergency generators as needed. Determine the potential impact of the loss of the facility in terms of economic loss and impact on the community.

Table IV-23						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Prevention and Emergency Services Protection	1, 4	All	Continuing	Medium	City Engineer	HMGP

- e) Provide critical facilities with emergency generators to support critical systems/activities until normal power is restored.

Table IV-24						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Emergency Services Protection	1, 4	All	Continuing	High	Local Government	HMGP/ADECA

- f) Provide early warning of impending hazards to areas of the city not already covered through expansion of the existing siren system.

Table IV-25						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Emergency Services Protection	1, 4	All	Continuing	High	City Engineer	HMGP/ADECA

- g) Update the city’s written emergency operations plan to meet the County, State and Federal requirements. (Completed)
- h) Develop and implement a program to inspect and clean the storm drainage system.

Table IV-26						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Prevention	1, 4	All	Continuing	Low	City Engineer	HMGP/Road/Bridge

- i) Identify and implement a program for widening, straightening, removing, and/or replacing bridge and culvert restrictions.

Table IV-27						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Prevention and Structural Projects	1, 3, 4	All	Continuing	Low	City Engineer	HMGP/Road/Bridge

- j) Upgrade the City’s mapping services by developing a GIS and GPS system of mapping with the capability of inserting FIRM data.

Table IV-28						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Prevention	1, 4	All	Continuing	Medium	E-911	ADECA

- k) Enterprise has already adopted development regulations that address a variety of structures and infrastructure. The regulations include a Subdivision Regulation adopted in 1994, Zoning Ordinances adopted in 1990, a Flood Damage Prevention Ordinance first adopted in 1988 and the adoption of the Standard Building Codes of 1997 adopted in 1999. These regulations and ordinances all mirror the national models. By these actions, Enterprise has taken an aggressive stance in mitigating damage from natural hazards and assuring standard building codes for structures that will be resistant to most expected weather hazards. These efforts are consistent with a strong municipal body using its authority to mitigate potential hazards facing the community. Enterprise has taken positive actions in committing to long-term flood and weather hazard reduction. (Completed)

- l) Install a safety shelter at the airport to include a generator for back-up emergency services.

Table IV-29						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Emergency Services Protection and Structural Projects	1, 3, 4	All	2010-2015	High	Local Government	HMGP/ADECA

- m) Continue to participate in the NFIP. The local Flood Damage Prevention resolution was updated in 2009.

Table IV-30						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Prevention	1, 4, 5	Floods	2010-2015	High	NFIP Coordinator	HMGP

5. Kinston

- a. Future mitigation plans for the Town of Kinston include plans to address the drainage problems of the downtown area. During fast moving storms, with one to two inches of rainfall in a short time frame, Main Street becomes inundated with four to six inches of water which poses an extreme hazard to motorists. During heavy storms (such as Hurricane Opal), with long periods of heavy rain, the downtown drainage system (off Main Street and Gilmer Street) is unable to accommodate the volume of water dumped into it due to

the inadequate size of the drainage system. This in turn starts a chain reaction which causes water to back up. In the past, water has backed up to the sidewalk on Main Street and has crossed over Gilmer Street and almost gone into a house on the adjoining property. According to an engineering cost estimate, it will only cost approximately \$77,000 to remediate the downtown drainage problems, which will prevent the potential loss of hundreds of thousands of dollars in damages to Kinston's infrastructure and private property.

Table IV-31						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Structural Projects	1, 3, 4	Floods	Continuing	Medium	City Engineer	HMGP/ Road/ Bridge

- b. Renovate the Town Hall, which is used as both an emergency storm shelter and emergency response center. (Completed)
- c. The Town of Kinston has several trailer courts within its town limits. In the past, residents of the trailer courts have sought shelter from storms in the Town Hall Building. In addition to the town government offices, the Town Hall also houses the emergency response center for the Police Department and Fire and Rescue Departments. The Town Hall is a block structure with a shingle roof. The governing body of the town would like to renovate this building to the most secure level possible for its use during these storms. The town's engineering firm believes "only superficial modifications" are needed to make this a safer shelter for anyone seeking shelter or operating within the emergency response center during a storm or other incident. Engineering cost estimates suggest that all windows and doors be retrofitted with lockable metal shutters and hurricane clips be added to the rafters at a combined cost of \$22,550. (Completed)
- d. The Town of Kinston has developed ordinances to assist in flood mitigation and restrict development in floodplain areas through zoning. These ordinances provide language that mirrors the national model for flood damage prevention, are comprehensive and affect all existing and future structures. These efforts are consistent with a strong municipal body using its authority to mitigate a potential hazard facing the community and demonstrate that Kinston has made a concerted effort in committing to long-term flood hazard mitigation and damage reduction. (Completed)

- e. Water supply for the town is provided by the City of Opp and Covington County. During any significant disaster (hurricane or tornado) the water is frequently cut off until well after the response/recovery phase. During these times, the town is restricted only to the local well and tank which has no emergency back-up generator. Town needs another well.

Table IV-32						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Structural Projects	1, 4	All	2010-2015	High	Local Water Department	USDA/CDBG

- f. All new construction, especially those occupied by at-risk populations such as senior centers, should include sufficient protection for all occupants.

Table IV-33						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Emergency Services Protection and Structural Projects	1, 3, 4	All	2010-2015	High	Local Government	HMGP/ADECA

- g. Purchase one 45KW emergency generator to operate the town’s water well during power outages.

Table IV-34						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Emergency Services Protection	1, 4	All	2010-2015	High	Local Government	HMGP/ADECA

- h. Continue to participate in the NFIP. The local Flood Damage Prevention resolution was updated in 2009.

Table IV-35						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Prevention	1, 4	All	2010-2015	High	NFIP Coordinator	HMGP

6. New Brockton

- a) Each project will have a complete risk analysis performed to include potential damage, requirements to strengthen to codes, cost analysis and plans for completion. These additional planning details will be completed as funding is identified and included in the next revision to the plan.
- b) The Town of New Brockton has identified numerous areas that need to be repaired, reinforced, modified and/or completely rebuilt to mitigate potential natural disasters. These projects include the water treatment plant, poor drainage problems, roadway improvements, emergency shelter and an emergency operations center. Completion of these actions can prevent or reduce future potential damages, provide better protected emergency shelter for town residents, and help ensure adequate command, control and communication before, during and after any potential hazard event.

Table IV-36						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Prevention; Natural Resources Protection; Emergency Services Protection; and Structural Projects	1, 3, 4	All	Continuing	High	Local Government	HMGP/ADECA/Road/Bridge

- c) Replace wooden bridges on Byrd Mill Road and Medley Road, bringing them up to standards. There is only one way into the communities on these roads and emergency vehicles cannot get through when the bridges are flooded.

Table IV-37						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Structural Projects	1, 3, 4	All	2010-2015	High	City Engineer	HMGP/ Road/ Bridge

- d) Replace storm water drainage structure at intersection of Caldwell St. and Youngblood St.

Table IV-38						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Structural Projects	1, 4	Floods	2010-2015	Medium	City Engineer	HMGP/ Road/ Bridge

- e) Continue to participate in the NFIP.

Table IV-39						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Prevention	1, 4	All	2010-2015	High	NFIP Coordinator	HMGP

7. Public Utilities, Cooperatives and Private Non-Profits

- a. Sufficient shelter space for all occupants should be provided for all operations centers and maintenance locations.

Table IV-40						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Structural Projects	1, 4	All	2010-2015	High	Public Utilities/COOP	HMGP/ ADECA

- b. Emergency back-up generators should be provided for all operations centers, maintenance locations and all water wells.

Table IV-41						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Emergency Services Protection	1, 4	All	2010-2015	High	Public Utilities/COOP	HMGP/ADECA

- c. Hardening of critical facilities, such as operations centers, maintenance locations, sub-stations and power transmission infrastructure is critical.

Table IV-42						
Type	Goal	Hazard Addressed	Status	Priority	Lead Responsibility	Possible Funding Source
Structural Projects	1, 4	All	2010-2015	High	Public Utilities/COOP	HMGP/ADECA

C. Prioritization/Implementation/Administration

This sub-section provides an action plan describing how the previously identified mitigation actions will be prioritized, implemented, and administered by the local jurisdiction.

All the participating jurisdictions agreed to prioritize mitigation actions and projects based on both funds available and where the application of those funds can accomplish the most benefit for the population as a whole or where the funds will accomplish the greatest reduction in potential future damages.

A formal benefit cost analysis will be accomplished as a part of any future grant applications as required.

1. County School Systems Specific Projects/Actions in Priority Order

a) Enterprise City Schools

- 1) Enterprise High School is making specific additions to the current/pending architectural plans to require specific structural reinforcement of certain hallways/corridors/rooms to provide sufficient “shelter spaces/safe rooms” for the safety of students and staff. Hillcrest Elementary School is complete.
- 2) In all existing schools, and any future new school construction, retrofit select windows and doors with lockable metal shutters and add hurricane

clips to the rafters, where applicable, or perform other structural reinforcement for other types of roof structures, as needed, to provide sufficient “shelter spaces/safe rooms” for the safety of students and staff.

b) Coffee County School System

In all existing schools, and any future new school construction, retrofit select windows and doors with lockable metal shutters and add hurricane clips to the rafters, where applicable, or perform other structural reinforcement for other types of roof structures, as needed, to provide sufficient “shelter spaces/safe rooms” for the safety of students and staff.

c) Elba City Schools

In all existing schools, and any future new school construction, retrofit select windows and doors with lockable metal shutters and add hurricane clips to the rafters, where applicable, or perform other structural reinforcement for other types of roof structures, as needed, to provide sufficient “shelter spaces/safe rooms” for the safety of students and staff.

2. Coffee County Specific Projects/Actions in Priority Order

- a) Provide critical facilities with back-up emergency generators. This includes for the Coffee County Shop, the Coffee County Engineer’s Office, and the Coffee County Regional Landfill Scalehouse.
- b) The Coffee County Shop serves as support for emergency operations conducted on Coffee County roads. This support consists of fueling systems, equipment repairs, and emergency materials dispatching. These tasks are not possible without electricity. Past history indicates that most disasters cause severe power outages for extended periods of time. The Coffee County Shop needs to be retrofitted with a generator that will sustain rated output for extended outages. Current estimate for a generator to meet this demand is approximately \$30,000.
- c) The Coffee County Engineer’s Office serves as the Command Center for emergency operations conducted on Coffee County roads. As a command center, communications are essential. Communications are not possible without electricity. Past history indicates that most disasters cause severe power outages for extended periods of time. The Coffee County Engineer’s Office needs to be retrofitted with a generator that will sustain rated output for extended outages. Current estimate for a generator to meet this demand is approximately \$15,000.
- d) The Coffee County Regional Landfill serves as the primary disposal area for storm debris for both Coffee County and surrounding areas. Pre-event debris removal contracts require debris to be disposed of at the Coffee County Landfill. Debris is to be expensed by weight (per ton price). Scales must be

functional to weigh trucks in and out of the Landfill. Electricity is required to run the scales and computers. Past history indicates that most disasters cause severe power outages for extended periods of time. The Coffee County Landfill Scalehouse needs to be retrofitted with a generator that will sustain rated output for extended outages. Current estimate for a generator to meet this demand is approximately \$15,000.

- e) Planned projects include specific actions for flood mitigation through the replacement and elevation of a bridge culvert.
 - 1) BRIDGE SCOUR COUNTERMEASURES; BIN #6325; STRUCTURE #CO 655-16-89.Z. Bridge over Double Bridges Creek; CR 655. Bents #1, #6, #7, #8, #9, #10 and #11 are susceptible to scour. With a reasonable applied water and debris load, these bents could become unstable due to pushover when the ground line reaches a depth of 14' below the top of the pile cap. A 2' thick layer of riprap with filter fabric should be placed from Bent #1 to Bent #11 (wherever riprap is currently not present). The estimated cost for the project is \$80,000.
 - 2) BRIDGE SCOUR COUNTERMEASURES. BIN #10028; STRUCTURE #CO 107-16-71.Z. Bridge over Pea River; CR 107. Bent #6 is susceptible to scour. With a reasonable applied water and debris load, this bent could become undermined. A 2' thick layer of riprap with filter fabric should be placed from around Bent #6 to Bent #7 (wherever riprap is currently not present). The estimated cost for the project is \$20,000.
- f) Another project related to flooding in Coffee County is the relocation of two structures out of the ten-year floodplain. The request is to allow the two homeowners to relocate their residences out of this floodplain and thus eliminate the potential for future damage. The area involved received flood damage in 1990, 1994 and 1998 due to thunderstorm rains and a tropical system. This area is in Western Coffee County. The county administrator and engineer will be responsible for coordination of any county required actions for this project.
- g) Provide critical facilities with back-up emergency generators. The county also proposes the purchase of one additional portable trailer-mounted 150KW emergency generators to support the county's pumping stations at 4662 State Hwy 141 near the Curtis Community and 1153 C.R. 665 near Oak Grove Church. The Coffee County Water Authority will be responsible for coordinating required actions for this project. Approximate cost of \$50,000.
- h) The county siren project covers a large portion of Coffee County currently not served by an outdoor warning siren system. The lack of this system places rural residents, including those at sporting events, at risk from severe weather or other phenomena. Locations currently known to need sirens include:

- 1) New Brockton High School – South of town on S. Tyler St.
 - 2) Pathways Wilderness Camp – 152 P.R. 1204
 - 3) Curtis Community on Hwy 141
 - 4) Camp Humming Hills Girl Scout Camp – 657 C.R. 228
- i) The acquisition, installation and integration cost of the siren systems is approximately \$15,000 each. This funding is expected to be a mix of local, state and federal monies. The EMA director is responsible for the overall coordination of the siren projects.
- j) An overhead imagery project is being considered to assist in identifying structures in the floodplain as well as determining their elevation in relation to the floodplain and surrounding terrain. Identification of structures in the floodplain and their associated elevations can be accomplished by overhead imagery using lidar optical systems. This type survey would not only identify at risk structures but also determine their elevation in relation to the floodplain and surrounding terrain. It is unknown when the last overhead imagery was acquired for Coffee County. A specific cost estimate has not been determined due to the lack of funding. The EMA office and the county engineer will coordinate this project as/if funding can be identified.

3. Elba Specific Projects/Actions in Priority Order

- a) An additional project is the buyout of twelve structures and relocation of one structure currently in the ten-year floodplain. These areas have been repeatedly flooded during the past decade.
- b) The city needs emergency generators for many locations...City proposes the purchase of emergency generators for the purpose of providing power to the following:
- 1) Two generators to rotate among 40 sewer lift stations
 - 2) Two generators to operate emergency shelters
- c) The City of Elba Shop serves as support for emergency operations. Departments supported are Police, Fire, Rescue, Electric, Water, Sewer, Recreation and City Hall. This support consists of fueling systems, equipment repairs, and other emergency operations. The shop operations are vital to support all the departments of the city. The City of Elba Shop needs to be retrofitted with a generator that will meet the demand required to sustain full shop operations.

- d) City Hall, 200 Buford Street, is the emergency/disaster command center for the City of Elba. City Hall needs to be retrofitted with a generator that can meet the needs of sustained operations of the command center.
- e) Purchase debris removal equipment which would expedite debris removal, clearing of roads and restoration of power.
- f) Purchase additional flood pumps to be installed in the West end of the city to prevent future flooding in that area.
- g) Elevate and “flood proof” lift stations 1, 3, 8, and 10.
- h) A clearing project for two existing ditches located in the area of Whitman Street and Pinedale Drive. This would greatly improve flow capacity in and around that area.
- i) An erosion prevention and soil stabilization project at the Elba City School complex to help eliminate future flood damage to both facilities and streets.
- j) The city also has a “Snagging and Clearing” project request on file with the Army Corps of Engineers. This project, if approved, will greatly improve flow capacity of the waterways in and around Elba, thereby reducing out-of-bank conditions.
- k) Additionally, the city is in the formative planning stages to determine requirements and estimate remodeling needed to convert an existing structure into a self-sufficient emergency operations center. Engineering and cost estimates will be obtained as the project matures.

4. Enterprise Specific Projects/Actions in Priority Order

- a) Evaluate and make necessary improvements to buildings and structures that may be in danger of damage from natural hazards, particularly flooding.
 - 1) Enterprise City Hall is the Command Center for all emergency operations of the City. This building shows substantial signs of age and should receive some immediate repairs, including brick repairs, repairs of blistering on the roof, replacement of all sealants on the building exterior and repair or replacement of the pre-cast windows. A current mitigation project will address most of these problems.
 - 2) An excellent multi-hazard mitigation action is the evaluation of buildings or structures. Recommend and provide assistance, as allowed, to property owners for relocating buildings out of harm’s way. Where possible, recommend elevation above flood levels and retrofitting of buildings to strengthen them from the forces of wind and effects of buoyancy during

flooding. This evaluation can be done by city services. Any assistance the city provides to a property owner will be considered “In-Kind Service” toward any grants that may be received. A study may need to be conducted to determine specific areas that should be addressed.

- b) Develop and implement a program to inspect and clean the storm drainage system.**
 - 1) A flood mitigation project is to install drainage improvements on Dauphin Street. This street has no storm drainage other than a small pipe crossing at the lower elevation. During periods of rain fall, the street is flooded causing hazardous driving conditions.**
 - 2) A mitigation project is recommended at the City’s northeast and southeast sewage lagoons. Several storms have passed over these lagoons dropping trash and other debris into the lagoon thus possibly causing the infiltration pumps to be blocked. The lagoons must be de-watered allowing the removal of the sludge and debris.**
 - 3) Another flood mitigation project is to rehabilitate the drainage channel from Dauphin Street to Hillcrest Loop. This channel carries a large amount of the storm water from the downtown area. During moderate rain fall, the banks of the ditch erode causing brush and trees to enter the ditch which then restricts the flow of the stream. The Enterprise Engineer's Office will supervise this task.**
- c) Purchase and install emergency generators at critical infrastructure facilities in the city to ensure back-up power is available. Critical infrastructure facilities being any that directly support, assist, or maintain public safety, public health, continuity of government, disaster management or overall public well being.**
- d) Identify and implement a program for widening, straightening, removing, and/or replacing bridge and culvert restrictions. Another flood mitigation project is the replacement of the bridge on Northside Drive. The present bridge was constructed below the flood elevation. At the present time, the structure is safe; however, deterioration was noted during the annual inspection. The plan is to replace the bridge with large box culverts and elevate the street which crosses the creek. Estimated cost of the project is \$1,500,000. The Enterprise Engineer's Office will supervise this task.**
- e) Planned projects include updating the City Master Plan, including Planning, Zoning, Subdivision Regulations, and Building Codes. A series of multi-hazard mitigation actions includes the review and revision of the city’s planning, zoning ordinance, subdivision regulations and floodplain ordinance. These actions will require the services of a professional planner. It is estimated that the cost could approach \$50,000. Funding will be a joint effort between**

ADECA and the City. ADECA offers grants to assist municipalities in accomplishing this task. The City will assess fees as determined from landowners and developers to offset the cost of the project. The Enterprise Engineer's Office will supervise this task.

- f) Another mitigation action for flooding, hurricanes, tornadoes, and wind storms is the adoption of the most current edition of the International Building Codes. To adopt the most current edition of the "Codes" simply requires an ordinance by the City Council. The cost of advertising the ordinance and purchasing of copies of these codes will be \$3,000.00. This cost is absorbed through building permit fees. The Enterprise Engineer will spearhead this effort and assist the City of Enterprise Attorney in crafting the ordinances required for this task.
- g) Continue review and identification of critical facilities such as government buildings, health care centers, schools and infrastructure. Require these facilities to have their own emergency response plans for any hazards they may be exposed to. Determine the potential impact of the loss of the facility in terms of economic loss and impact on the community. The identification and evaluation of these facilities can be done by city services. Any assistance the city provides to a property owner will be considered "In-Kind Service" toward any grants that may be received.
- h) Provide early warning of impending hazards to areas of the city not already covered. This will involve expanding the outdoor siren warning system as well as using EAS through the local cable television system and radio station. The city is currently in need of one additional outdoor warning siren in the Oak Ridge Forrest sub-division south of the city. At approximately \$15,000 each, additional funding from the appropriate state and federal agencies will be necessary. There is not a source of revenue for the city other than the general fund, which is sorely stretched.
- i) Identify and implement a program for widening, straightening, removing, and/or replacing bridge and culvert restrictions. Another storm and flood mitigation action is the development and implementation of a program to inspect and clean the storm drainage system and for widening, straightening, removing, and/or replacing bridge and culvert restrictions. The program will focus on keeping streams, ditches and storage basins clear thus reducing flooding. Identify those areas of past damage and identify potential new areas. This program will be developed and implemented by city services. The amount of work planned each year will be based on a budget of \$50,000.00 from the City's general fund. This amount may be rolled over for three years to accumulate for more costly modifications. Additional funding, both locally and at the state and federal levels, will be sought to help resolve those issues and hazards identified. The Enterprise Engineer's Office will direct this task.

- j) To assist with floodplain determinations, an upgrade to the city's mapping services is planned. The implementation of a GIS and GPS mapping system will be in conjunction with the development of the Master Plan. There is funding available at state and federal levels, however, the city has also committed \$20,000.00 to the program. The city intends to charge a fee to developers, surveyors and engineers for maps of the city and/or infrastructure. This project will be directed by the Enterprise Engineer's Office.

5. Kinston Specific Projects/Actions in Priority Order

Based on preliminary engineer's estimates, these projects will cost approximately \$100,000. Further evaluation, planning/scheduling and contracting will be undertaken as funding is identified for the projects.

- a) Remediate downtown drainage problems
- b) The town proposes purchasing a 45KW emergency generator to operate the town's water well during power outages.
- c) Purchase second water well for the Town of Kinston. The town currently purchases water from the City of Opp and Covington Water Authority. The one water well cannot handle the approximately 800 water customers; therefore, having a second well would guarantee water usage for the town's citizens in cases of emergency/disaster.
- d) Purchase one 45KW emergency generator to operate the town's second water well (if installed) during power outages.
- e) Purchase a generator for the Town's Senior Center.
- f) Purchase fire-suppression sprinkler systems for the Senior Center and City Hall.
- g) Retrofit the new Senior Center with a safe room and/or lockable metal shutters and hurricane clips.

6. New Brockton Specific Projects/Actions in Priority Order

Further evaluation, planning/scheduling, cost estimates and contracting will be undertaken as funding is identified for the projects.

- a) A flooding mitigation action is the upgrading of the waste water treatment plant.
- b) Pave Byrd Mill road and upgrade storm water drainage structures.
- c) The town also proposes purchasing emergency generators to operate Town Hall, Senior Center, the town's sewer lift stations and water system. Three 100KW generators and one 60KW generator are needed.

- d) Repair State Highway 84 East and 84 West low points where water flows over the road from streams during flooding conditions or heavy rains.
 - e) Repair State Highway 122 low point where water stands in the road from heavy rains or flooding.
 - f) Provide structural reinforcement for the Town Hall building (old National Guard Armory) to meet wind codes and purchase and install an emergency generator, sufficient in size for the building to also serve as an emergency community shelter. Internal surface finishing work is needed as well as plumbing and electrical overhaul. Some roof repairs may be needed as well. Properly rejuvenated, this building would provide an excellent shelter for residents during tornadoes, hurricanes and other disasters.
 - g) Provide additional communications and control capability for use during natural disasters.
 - h) Improve drainage on Tyler Street, Medley Road, Youngblood Road, Durham Street, South John Street, Willow Street and Sparks Street.
 - i) Pave and widen Medley Road, Knight St., Willow St., Pearl St., and Corey St. to accommodate two-way traffic, to facilitate both rescue and evacuation.
 - j) Upgrade the old wooden bridge on Byrd Mill Road.
 - k) Widen and upgrade drainage ditch between Vester Cole Street and South John Street to prevent flooding of residences and post office.
 - l) Realign dangerous intersection at N. John St. (Hwy 122) and Railroad St.
- 7. Public Utilities, Cooperatives and Private Non-Profit Specific Projects/Actions in Priority Order**
- a) Covington Electric Cooperative**
 - 1) Install a safety shelter at the Covington Electric Cooperative office, located in the City of Enterprise, to include a generator for back-up emergency services.
 - 2) Harden the Hayes Substation (Covington Electric Cooperative) – a three phase main circuit from the City of Enterprise to Rucker Blvd.
 - 3) Harden the Kinston Substation (Covington Electric Cooperative) – a three phase main circuit from the substation to the Town of Kinston.
 - b) Jack Water System, Inc.**

Emergency back-up generator needed for the Jack Water System.

8. Specific Jurisdictional Action Items and Recommendations

a) County-wide Mitigation Efforts for Dams

- 1)** The CCMPC believes that the state should enact legislation to provide both the standards needed and the necessary enforcement tools, for effective monitoring and control of dams.
- 2)** Historically, there have been no mitigation efforts made concerning dams. This plan proposes a mitigation strategy as follows:
 - Identify and resurvey all dams in Coffee County.
- 3)** During the survey check for the following factors.
 - (a)** Type of dam: simple, core, diaphragm or complex dam.
 - (b)** Locate the emergency spillway, emergency drain, foundation pipes, embankment, crest, and other associated structures.
 - (c)** Ensure adequate spillway that is clear, a functional and protected spillway trash rack and functional emergency drain.
 - (d)** Ensure a clean embankment and crest.
 - (e)** Ensure no vegetation, rodent burrows, sloughed areas, seepage or settlement.
 - (f)** Check for ruts, settlement and surface cracks on the crest.
 - (g)** Check for any downstream obstructions.
 - (h)** Check for seepage or springs on the downstream side of the dam.
 - (i)** Determine what is downstream of the dam and what threat to life and property the dam presents.
 - (j)** Determine the type of Dam Hazard presented.
 - (1)** Type I - Dams with the potential to injure or kill a large number of people and cause serious property damage.
 - (2)** Type II - Dams with only the potential to harm a small number of people but cause substantial property damage.
 - (3)** Type III - Dams with essentially no threat to life and minimal threat to property.

- (k) Photograph and survey each dam following the United States Army Corps of Engineers recommendations.
- (l) Map each dam and identify the owner.
- (m) Obtain the plans of the dam if available.
- (n) Each dam will have an impact area identified and mapped. Once the dam hazard, if any, is qualified, and the owner identified, any corrective actions concerning the dam's status will be identified to the owner.
- (o) The Coffee County Engineer and City of Enterprise Engineer should jointly conduct the project, with assistance from Elba, Kinston and New Brockton personnel as required.

9. Land Use, Building Codes and Community Shelters

- a) Perhaps the most significant item is the need for the county to adopt a resolution to regulate land-use and establish and enforce building codes. Some of the municipalities in Coffee County, such as Elba and Enterprise, have adopted building and land-use codes. Coffee County is currently unable to legislate or enforce any land-use or building codes in unincorporated areas of the county. This issue has not been studied sufficiently to determine the associated implementation costs.
 - For true pre-disaster mitigation, it is necessary for any elected body to have the municipal powers to prescribe and regulate the use of land, manage the floodplain, determine the structural standards buildings must meet and have the necessary enforcement powers as well. As noted above, Coffee County does not have all of these municipal functions. The ability to achieve these functions is likely outside the scope of influence of this planning document to persuade the County Commission to put into effect a building code resolution. However, the CCMPC believes it is important to point out the need for such legislation.
- b) Coffee County lies within Wind Zone 3 and a Hurricane Susceptible area for Design Wind Speeds (three-second gust) consistent with ASCE 7-95. This makes the entire county a High-Risk area for structural damage due to severe thunderstorm, tornado or hurricane related winds. This makes Safe Rooms or Community Shelters, complying with standards recommended by FEMA (*Taking Shelter From the Storm: Building A Safe Room Inside Your House* or *Design and Construction Guidance for Community Shelters*), very important. This may be the only refuge available for persons subjected to weather-related high winds.
 - It is, therefore, recommended that subdivision standards, building codes and zoning ordinances require a safe room for all residences that are new construction or undergo major renovations. Trailer parks and other areas

with wind susceptible structures should have community shelters constructed as mandated by the standards identified by FEMA. Major existing structures should have storm-safe locations identified within the structures and with appropriate signage. Care should be taken to ensure shelters are well clear of floodplains and avoid sites that may be subject to falling debris. These criteria if adopted would be a major deterrent to injuries resulting from wind-related phenomena.

- c) The goal of the CCMPC is to work with their respective governing bodies to effect these changes over time. The associated costs of implementing these changes are unknown at present.
- d) There are future plans for a multi-use building for citizens' use in Enterprise, Alabama. This building will not be located in a hazard prone area.

Hazard Mitigation Plan

V. Plan Maintenance

A. Monitoring, Evaluating, and Updating

The method for monitoring, evaluating, and updating the 2005 Plan worked very well; therefore, this method remains the same for the 2010 Plan revision.

As noted earlier in this plan, the overall planning process falls under the supervision of the five-member Coffee County Emergency Management Board comprised of the Mayors of the four municipalities and the Chairperson of the Coffee County Commission. The board designated the Coffee County EMA Director to coordinate all aspects of the mitigation planning process and to serve as chairperson of the Coffee County Mitigation Planning Committee.

The plan review process includes periodic reviews of the entire plan with revisions completed as necessary. As a minimum, a complete review of the plan will occur on a biennial basis and the CCMPC will conduct the review. It is understood that committee members may change over time; however, a committee member, appointed by the jurisdiction which they represent, will always represent each of the five designated jurisdictions.

The plan review process will also include the provision of a post-disaster review and the possible revision of the applicable portions of the plan as required/desired.

- Coffee County EMA will review any natural hazard incidents that occur on at least an annual basis and any relevant data from those incidents will be incorporated into the plan at least as often as the planned yearly update.
- As much data as possible will be obtained from all the involved jurisdictions throughout the county as well as public safety responders, and the media.

Critical infrastructure will be updated when mapping updates are performed. This period varies with the addition of roadways and structures within Coffee County and the municipalities. This data is obtained through a variety of sources including the E-911 addressing database, EMA databases, the county/city engineers and information derived from public safety agencies.

Incomplete sections will be addressed on an annual basis for status updates. Any needed minor revisions will occur at this time.

There will be a complete review and revision as necessary of the entire plan every five years, as required by law.

B. Plan Incorporation

This mitigation plan, even in its revision phase, has been pivotal in the revision of the Coffee County Emergency Operations Plan (EOP) and applicable portions of the mitigation plan will be incorporated into the EOP. Emergency Support Function planning was based partly on the Risk Assessment portion of the mitigation plan.

The plan will be provided to the Enterprise, Coffee, Geneva Economic Development Corporation for use in future economic development activity.

Copies of this mitigation plan will also reside with each municipality and the Coffee County Commission for use in city/town/county expansion projects as well as economic development and land use studies. Applicable data from this plan may also be incorporated into project summaries, LOIs, and applications.

C. Public Awareness/Participation

The County EMA Director, overall coordinator for the plan, will ensure all reviews are adequately publicized to promote public involvement.

Efforts will continue to involve local and state government agencies, businesses, academia and the general public in the ongoing mitigation planning process to the maximum extent possible.

The EMA Director will ensure that the public will be given the opportunity to participate in reviews of any plan updates as well as the five-year review and any required revisions.

Hazard Mitigation Plan

VI. Plan Approval/Adoption

Each jurisdiction's governing body, each of the school boards and all other participating entities received a copy of the mitigation plan as well as a formal briefing of the plan provided by the CCMPC Chairman, the Coffee County EMA Director.

Each participating entity has approved and formally adopted this plan. The jurisdictions and school boards have each passed formal resolutions, which are included as Appendix I – Approval and Implementation.

Coffee County Multi-Jurisdictional Hazard Mitigation Plan

Volume II (Maps)



Prepared By:

**COFFEE COUNTY
EMERGENCY MANAGEMENT AGENCY**

In Coordination with

ELBA, ENTERPRISE, KINSTON & NEW BROCKTON

December 10, 2009

**Coffee County Multi-Jurisdictional
Hazard Mitigation Plan**

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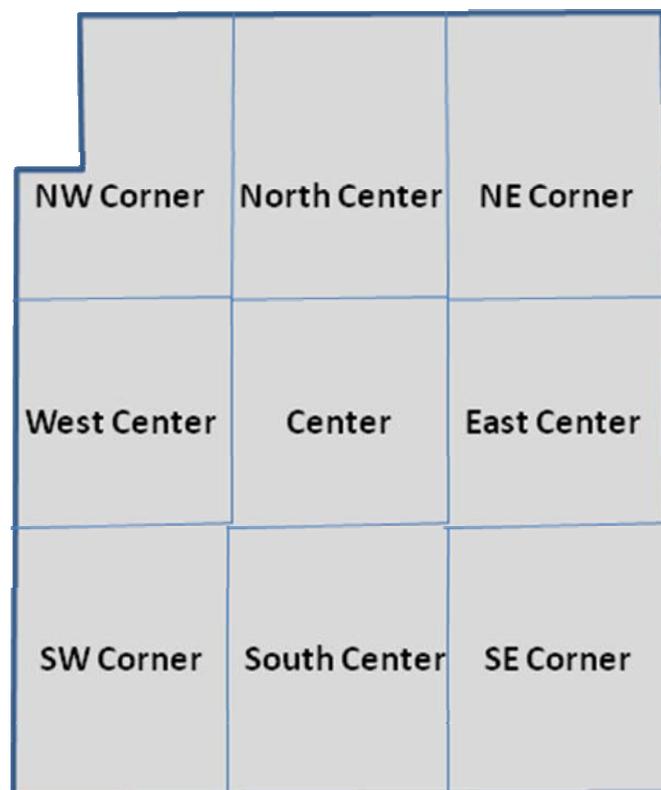
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Hazard Mitigation Plan

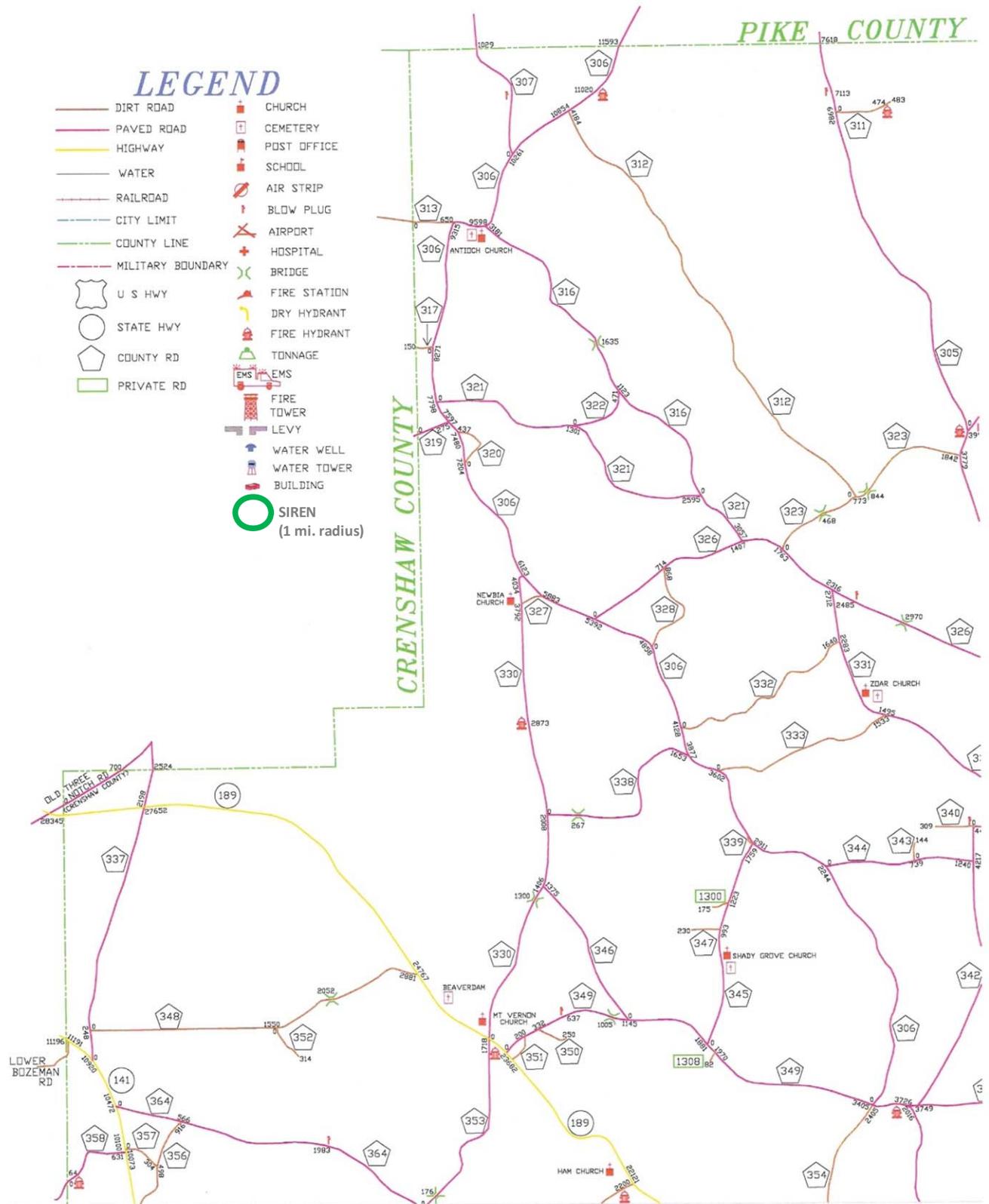
I. Coffee County - Roads, Bridges & Structures

A. Introduction – The following nine pages are the map segments for the map of Coffee County. The first three pages start with the northwest corner of the county and going across to the northeast corner. The next three pages start at the western center of the county and go across to the eastern center. The next three pages start at the southwest corner of the county and go across to the southeast corner.

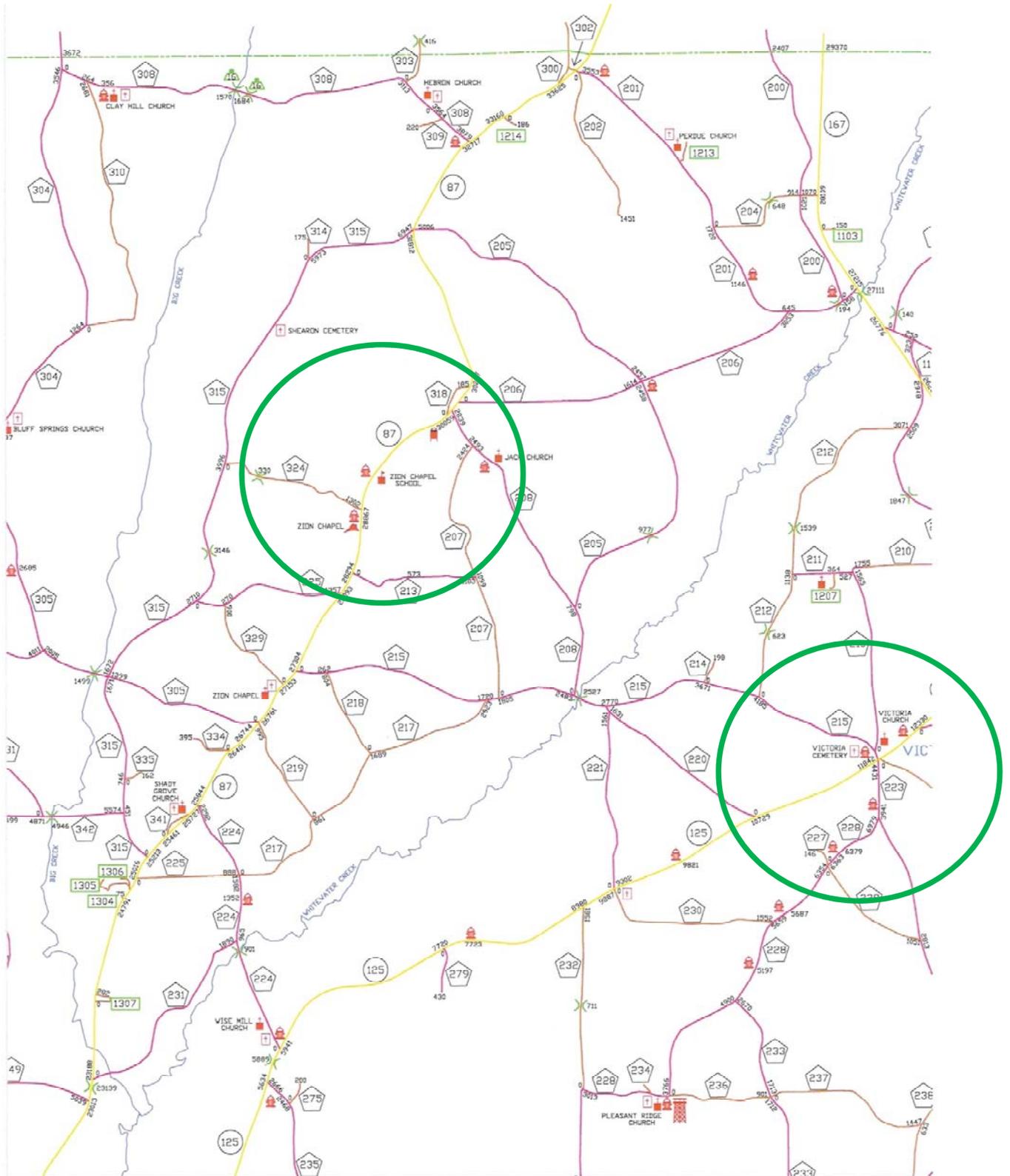
B. Template Guide – The template below is a guide for the order of the nine county map segments.



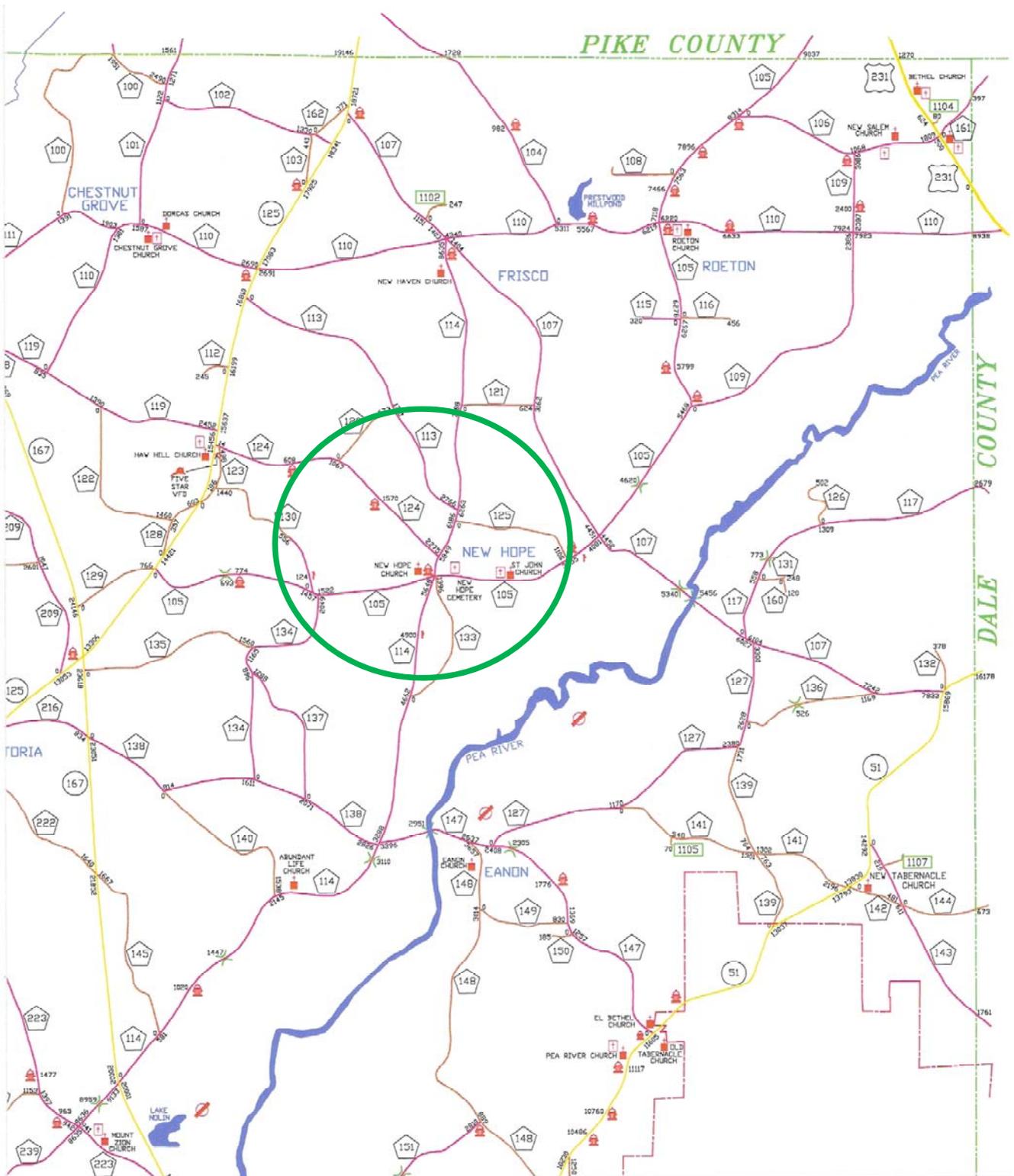
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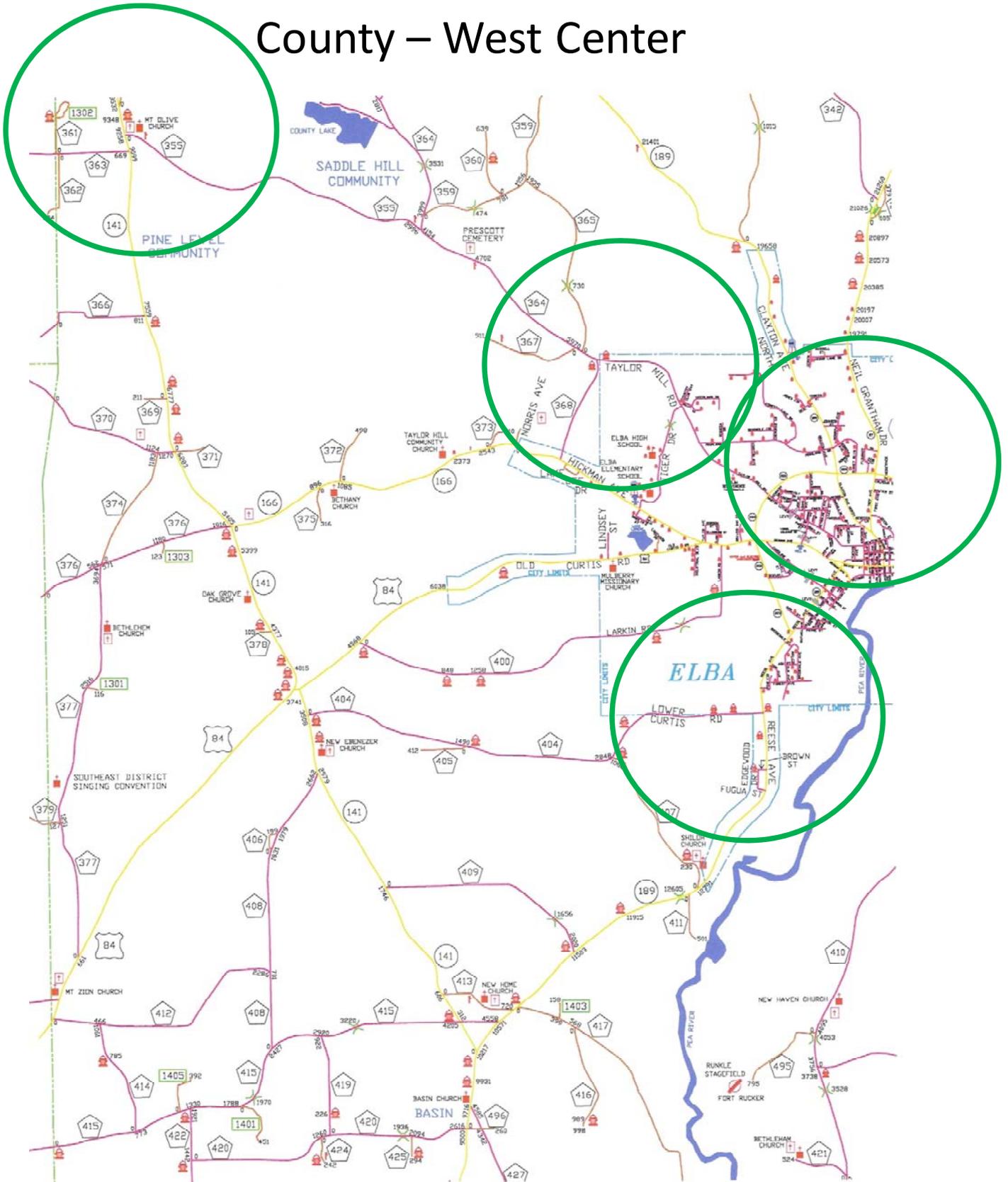
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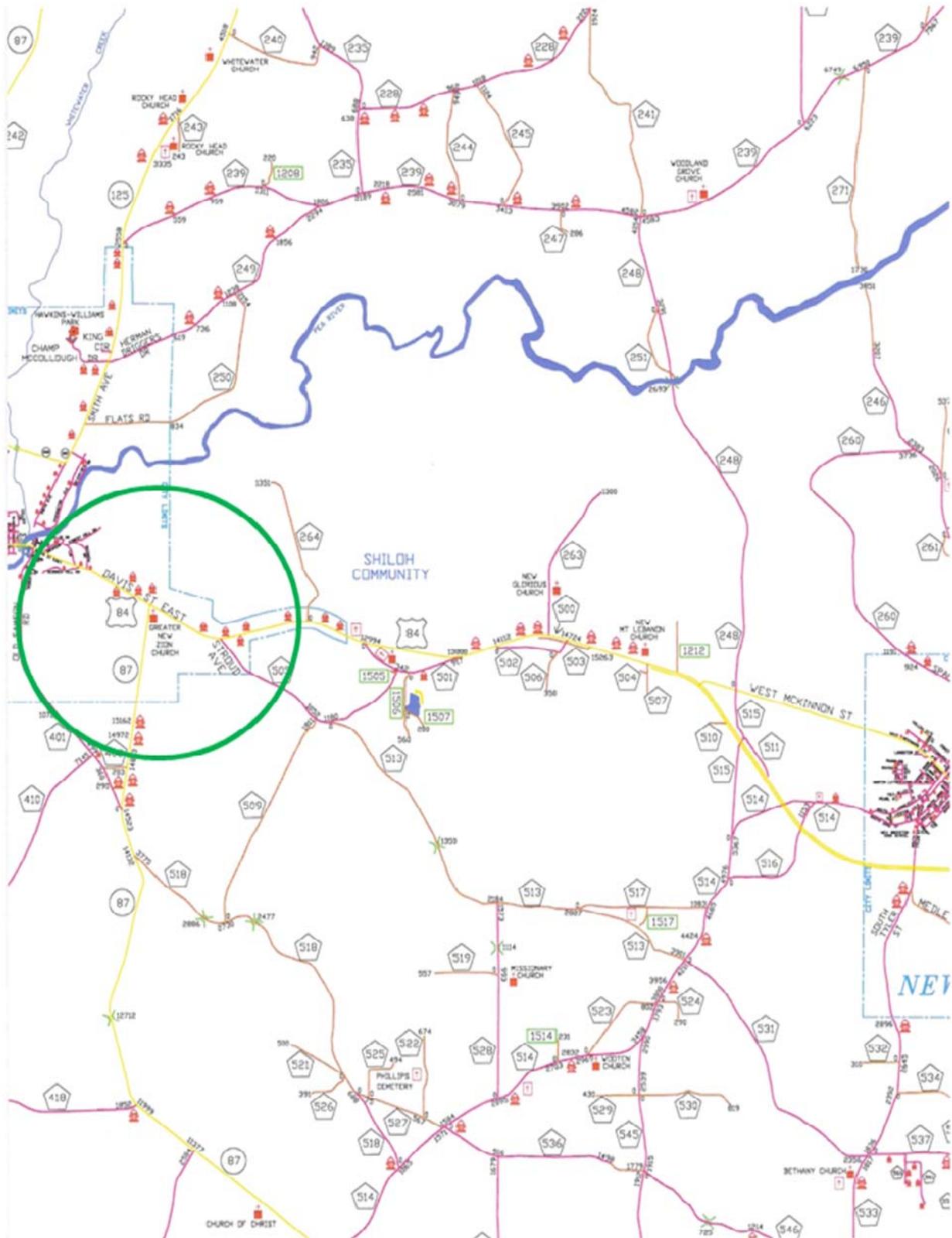
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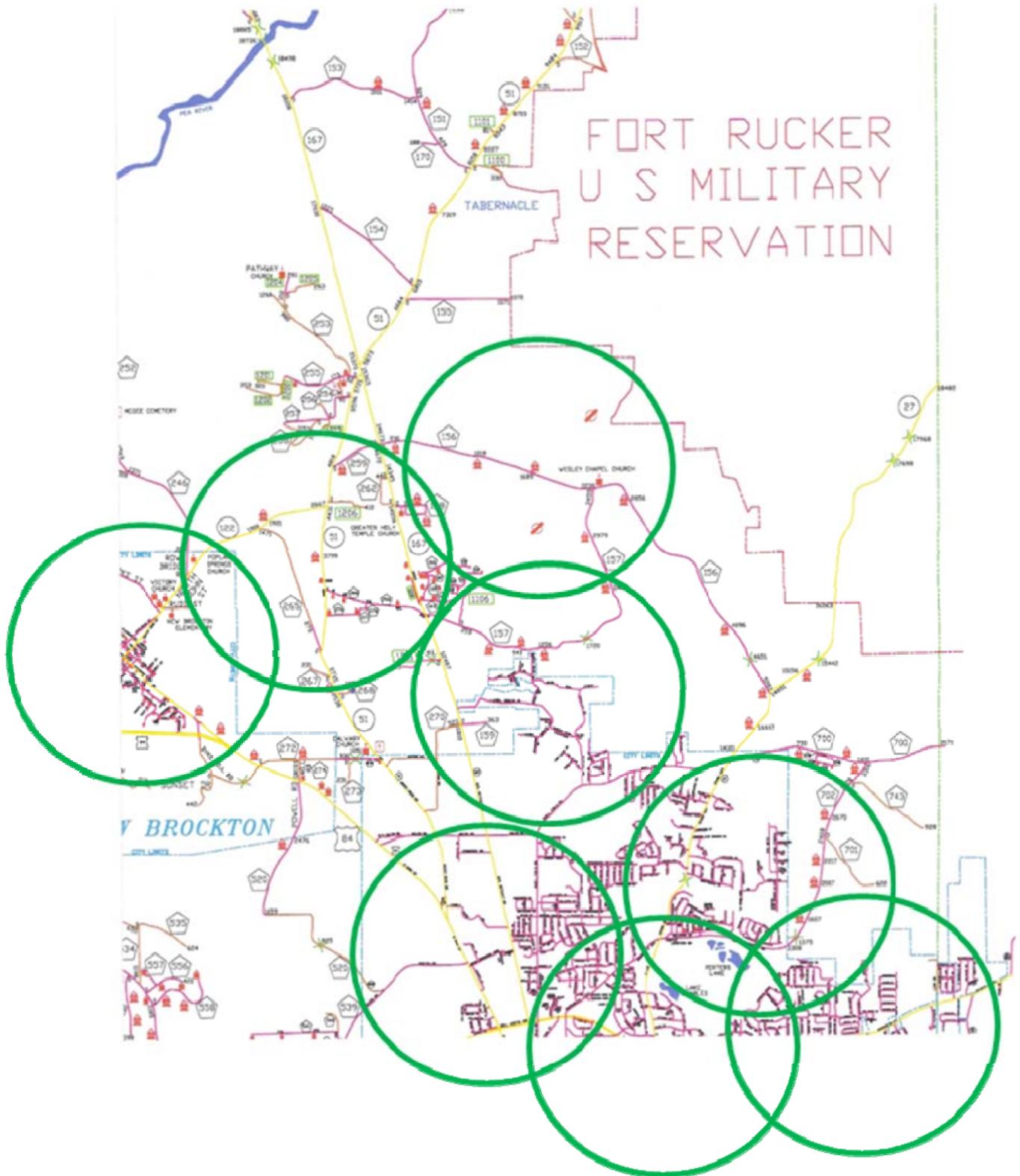
County – West Center



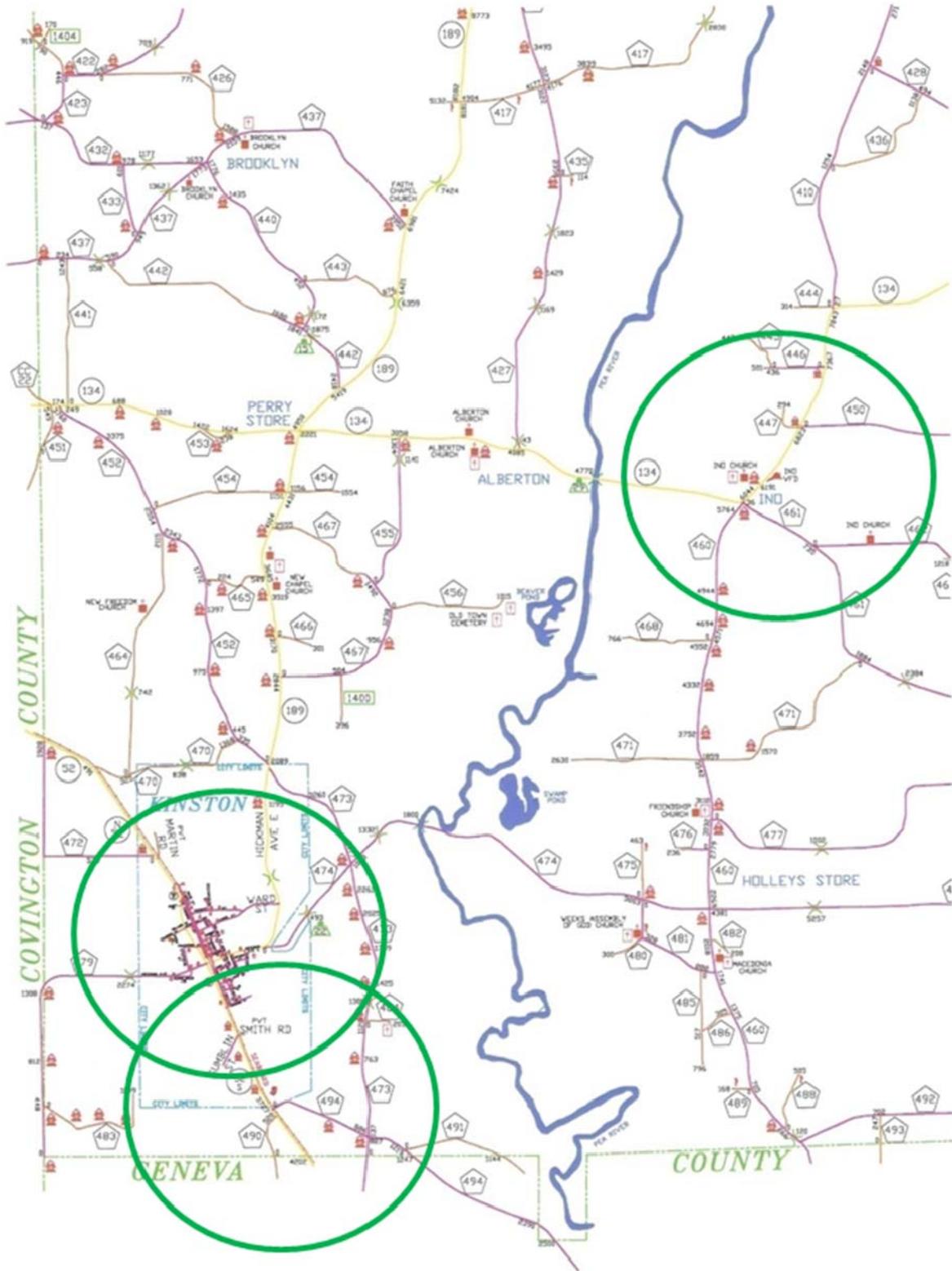
County - Center



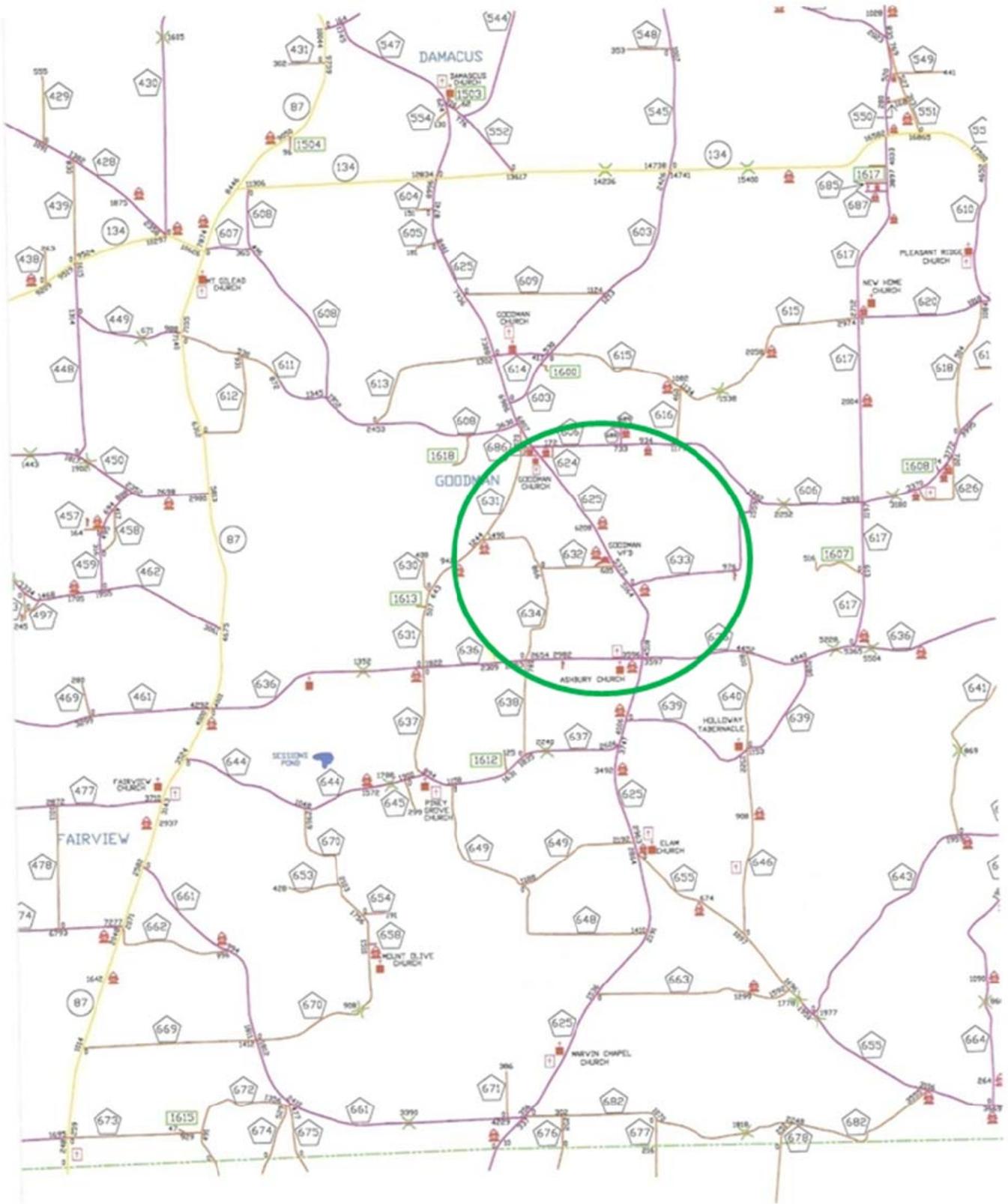
County – East Center



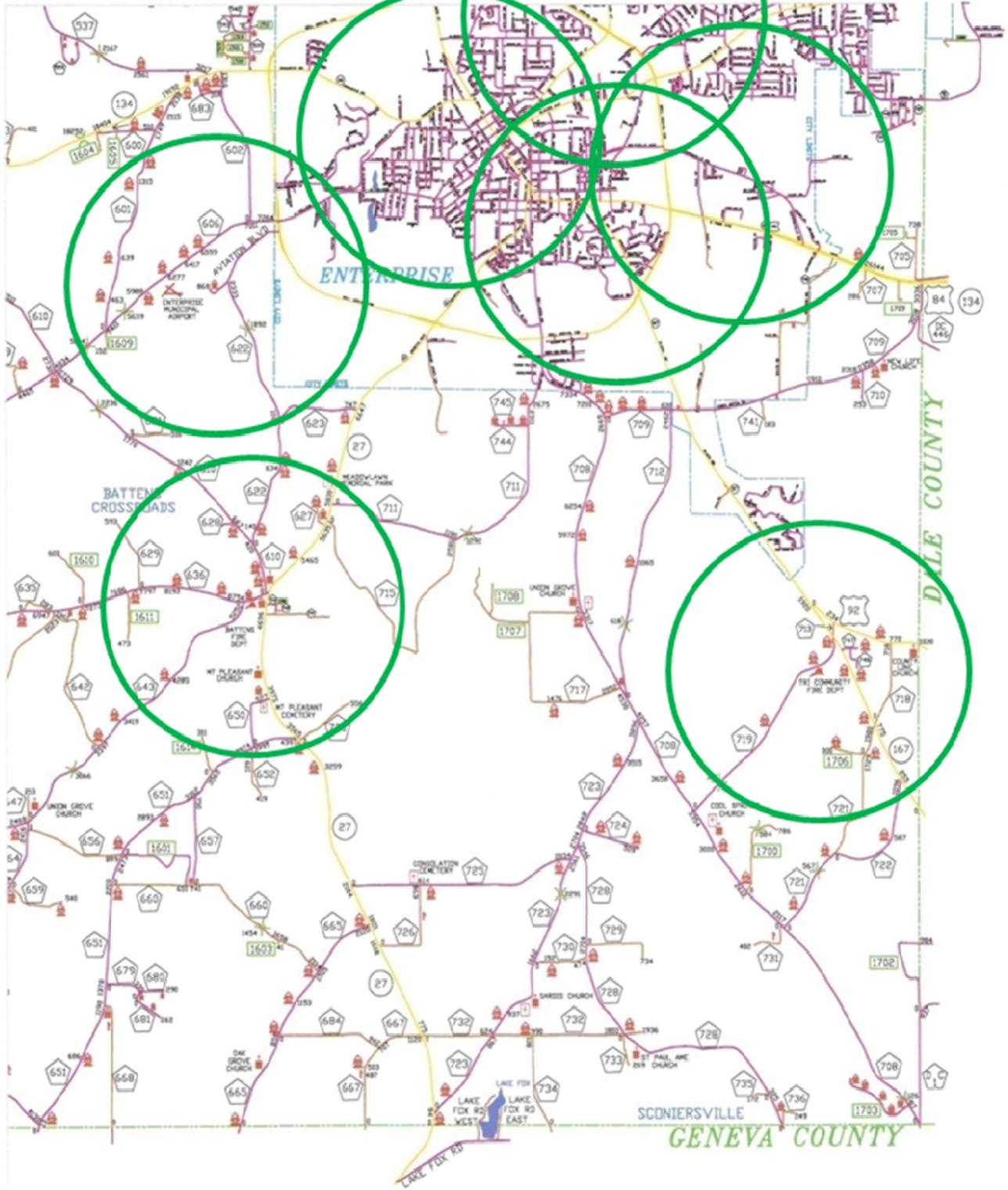
County – Southwest Corner



County – South Center



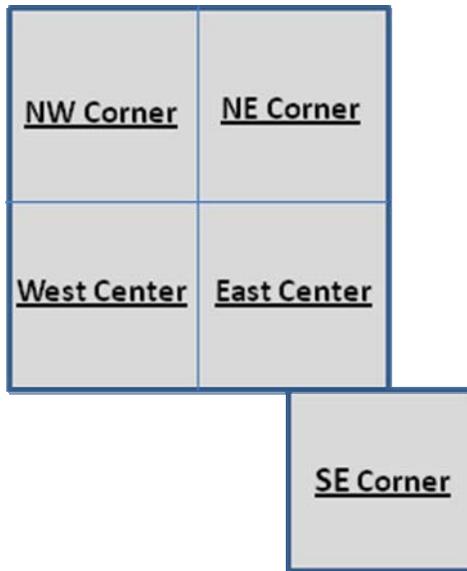
County – Southeast Corner



Hazard Mitigation Plan

II. Enterprise - Roads & Structures

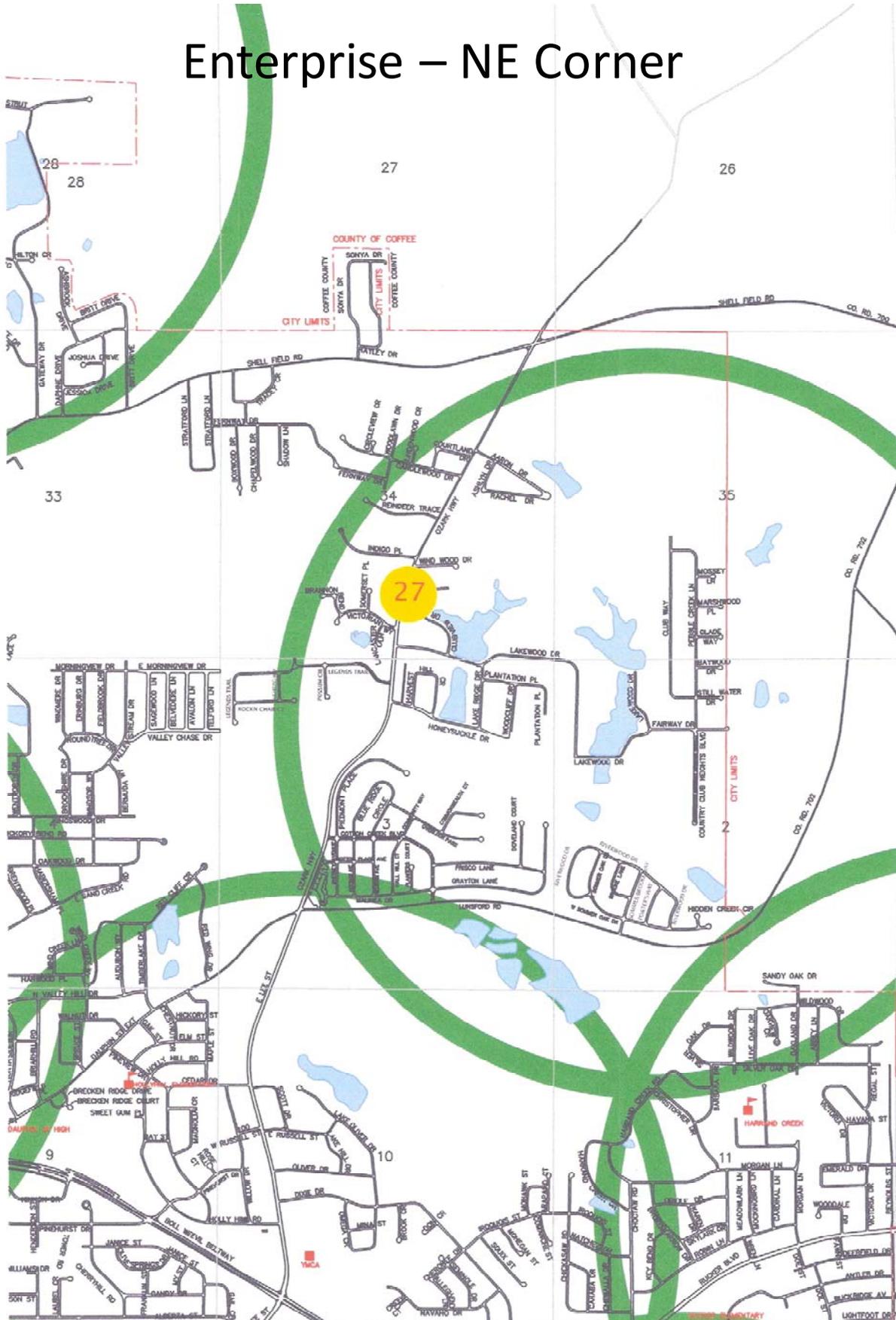
- A. Introduction** – The following five pages are the map segments for the City of Enterprise. The first two pages are the northwest corner of the city and the northeast corner. The next two pages are the western center of the city and the eastern center. The last page is the southeast corner of the city.
- B. Template Guide** – The template below is a guide for the order of the five City of Enterprise map segments.



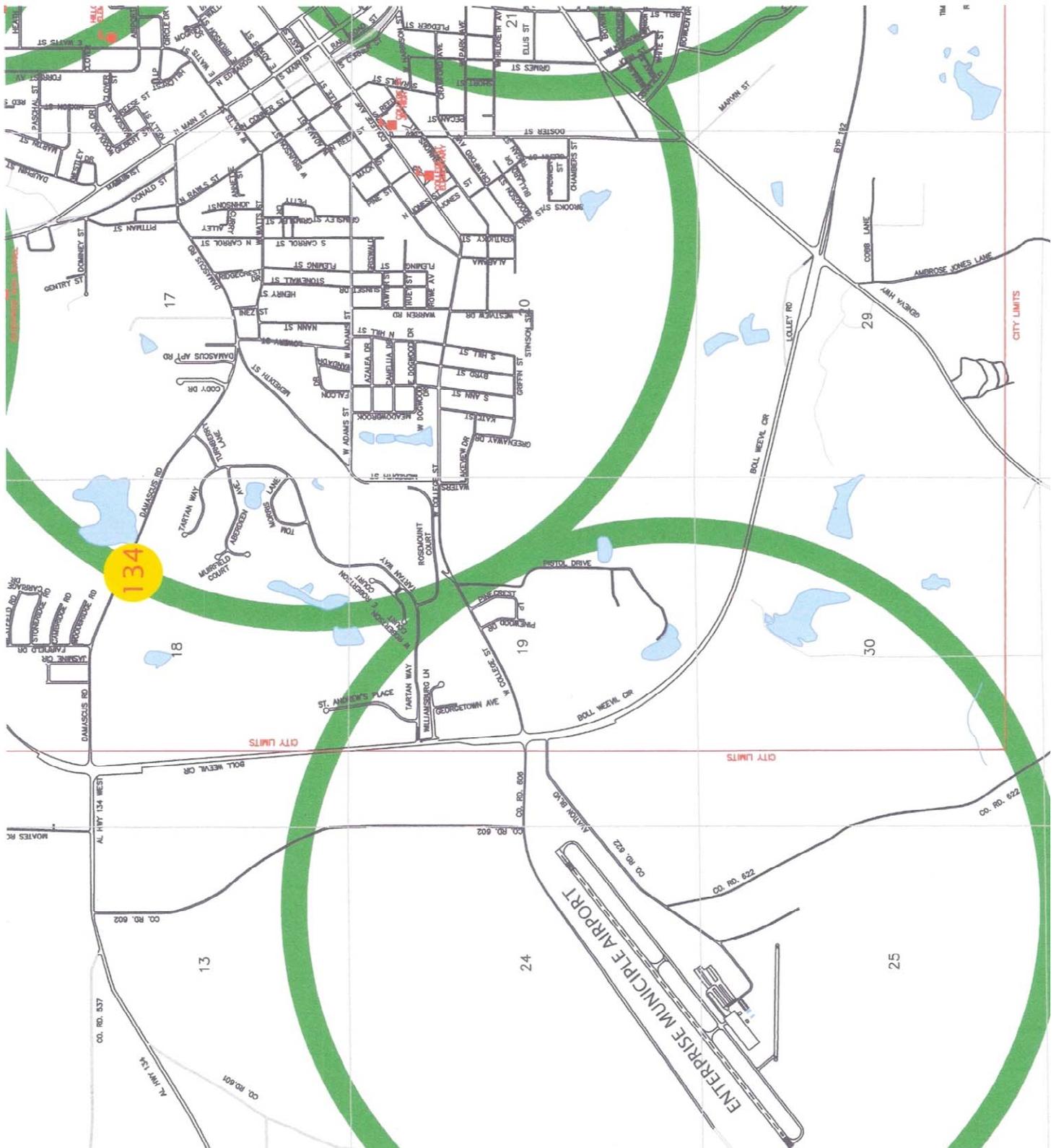
Enterprise – NW Corner



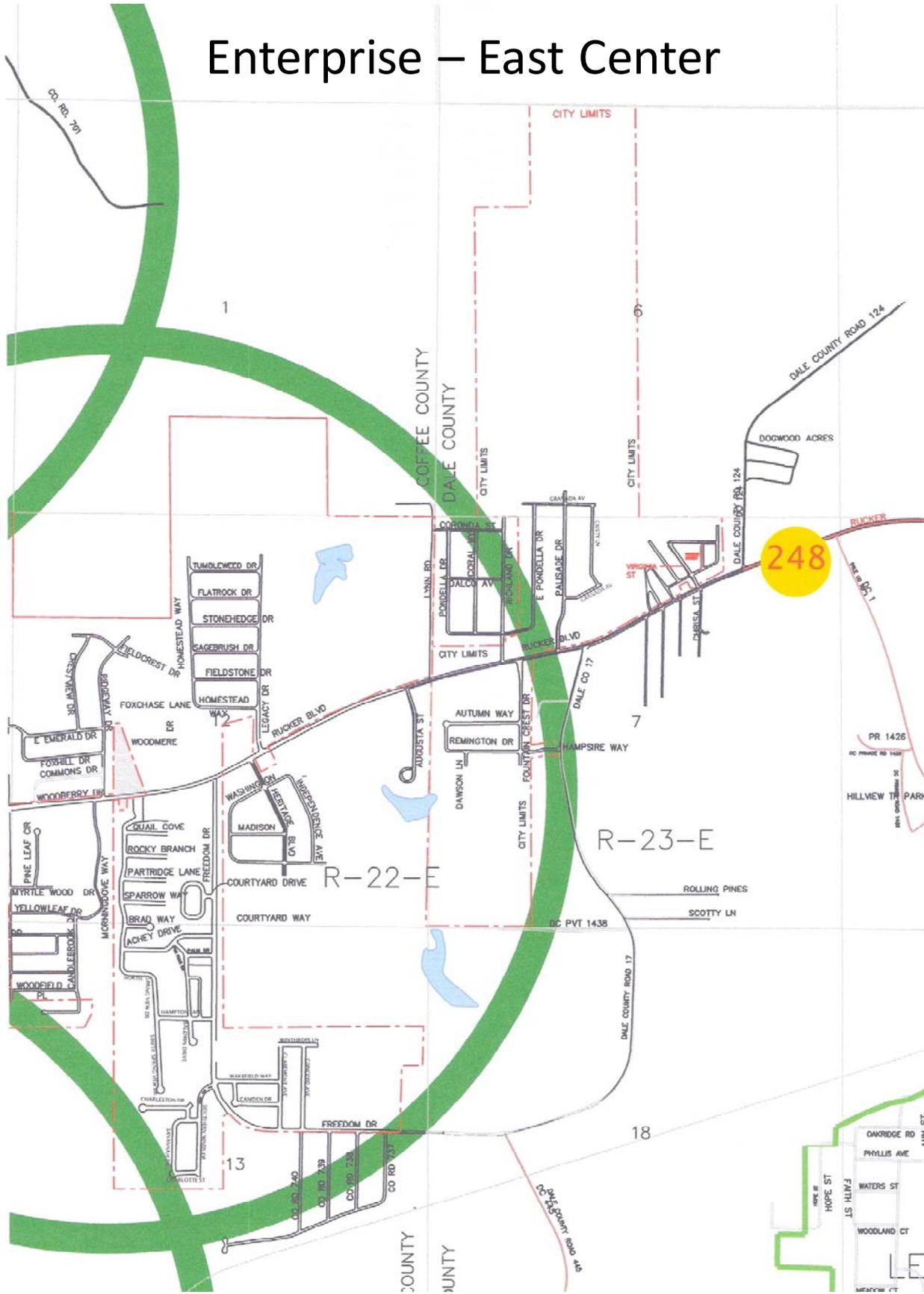
Enterprise – NE Corner



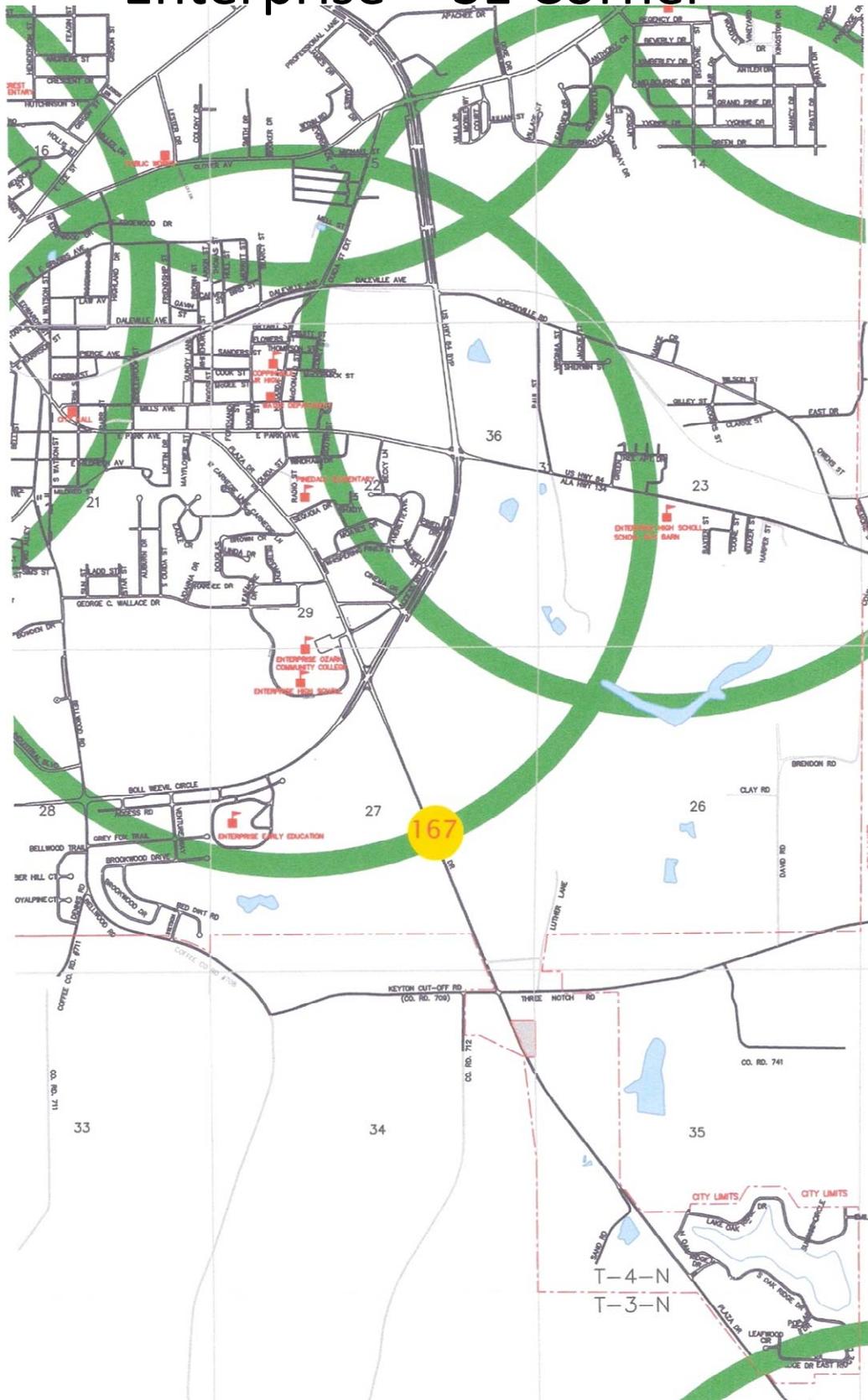
Enterprise – West Center



Enterprise – East Center



Enterprise – SE Corner



1998	9	29	0140	EF1	1	0	0	Chancellor - C.R. 725
								One residence with roof damage. Camp Wiregrass severe damage with several buildings crumpled, trees and power lines down, and scattered debris.
1998	5	3	1630	EF0	0.3	0	0	New Brockton
								downed trees/power lines at intersection of Highways 223 and 167. A funnel cloud was sighted earlier near Elba.
1996	1	11	1835	F1	1	0	0	5 N Kinston
								destroyed 4 house trailers that were unoccupied. Debris was scattered for about 1 mile
1995	12	6	2230	F0	0.4	0	1	Jack
								Flipped a mobile home and scattered debris 350 yards; woman inside received a cut, two children unharmed.
1994	3	9	1755	F2	3	0	0	2 E Frisco
								5 homes and two mobile homes were damaged. One chicken house was destroyed and 5 others were damaged. 2 homes had their roofs totally removed.
1986	11	26	0140	F1	21	0	2	2 SW Enterprise-Ozark
								Numerous homes and mobile homes were damaged. Two people injured. One helicopter was damaged at Fort Rucker.
1986	11	25	2206	F3	44	0	4	Elamville-Clio-Clayton
								Numerous homes and businesses sustained damage along the path.
1984	3	5	1245	F1	0.9	0	4	Enterprise area
								A few mobile homes were destroyed, a small concrete building was destroyed, a home and barn were destroyed, and several other buildings were damaged.
1983	5	16	0310	F3	1.5	0	1	New Brockton
								One home was totally destroyed and at least 7 others were damaged. The Masonic Lodge, 3 trailers, 8 businesses, and two churches were damaged.
1980	5	20	0215	N/A	15	0	0	3 S Opp-W New Brockton
								One home damaged and several trees uprooted.
1978	4	18	2032	N/A	0.25	0	0	10 N Elba
								One barn, three trailers, one broiler house, and one home were damaged.

1954	4	16	0800	F2	17	0	1	2 E Enterprise-3 E Ozark 4 barns were destroyed.
1931	3	31	1145	F2	7	1	5	3 S Elba Several homes destroyed. Young girl dead from fallen chimney.
1925	1	10	1200	F2	N/A	0	1	West Elba One home was destroyed.
1925	1	10	0800	F2	2	0	3	3 S Enterprise Barns & 2 tenant homes destroyed.
1924	2	4	0900	F2	10	0	0	10 NE Elba-Jack-Tarentum 5 buildings & one home unroofed.
1922	2	5	0300	F2	2	1	12	Enterprise One boy was killed and at least 40 families were left homeless.
1919	3	5	1300	F2	47	1	10	Andalusia-6 S Brantley-Brundidge 6 injured near Brantley. One girl was killed near Brundidge.
1908	4	30	0200	F3	N/A	0	10	7 S Tarentum-4 E Brundidge Most of 25 buildings destroyed.
1907	4	5	1600	F2	15	1	20	Central City-N Clayhatchee Most of Central City was destroyed.

Appendix B

National Climatic Data Center Storm Events

192 events were reported in Coffee County, Alabama
between 01/01/1950 and 10/31/2009.

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

Location or County	Date	Time	Type	Mag	Dt h	Inj	PrD (\$K)	CrD (\$K)
1 COFFEE	4/16/1954	0800	Tornado	F2	0	0	0	0
2 COFFEE	10/16/1955	1805	Tornado	F	0	0	3	0
3 COFFEE	10/16/1955	1815	Tornado	F1	0	0	25	0
4 COFFEE	10/16/1955	1840	Tornado	F2	0	0	2500	0
5 COFFEE	3/21/1959	2000	Tornado	F2	0	0	25	0
6 COFFEE	3/29/1960	0800	Hail	1.75in.	0	0	0	0
7 COFFEE	3/29/1960	0800	Tstm Wind	0 kts.	0	0	0	0
8 COFFEE	4/9/1961	0930	Tornado	F1	0	0	250	0
9 COFFEE	1/20/1963	1500	Tornado	F1	0	0	250	0
10 COFFEE	5/8/1967	1745	Tstm Wind	0 kts.	0	0	0	0
11 COFFEE	4/29/1971	1317	Tstm Wind	70 kts.	0	0	0	0
12 COFFEE	5/12/1971	1230	Tstm Wind	65 kts.	0	0	0	0
13 COFFEE	6/6/1971	1600	Tstm Wind	0 kts.	0	0	0	0
14 COFFEE	9/17/1971	1550	Tornado	F3	0	0	25	0
15 COFFEE	1/13/1972	0100	Tornado	F2	0	0	250	0
16 COFFEE	8/10/1972	1732	Tstm Wind	0 kts.	0	0	0	0
17 COFFEE	4/3/1973	0150	Tstm Wind	0 kts.	0	0	0	0
18 COFFEE	4/18/1973	1700	Tornado	F2	0	14	2500	0
19 COFFEE	4/26/1973	2010	Tstm Wind	0 kts.	0	0	0	0
20 COFFEE	5/29/1973	0205	Tstm Wind	0 kts.	0	0	0	0
21 COFFEE	12/29/1973	1625	Tornado	F3	0	11	2500	0
22 COFFEE	1/26/1974	1745	Tstm Wind	0 kts.	0	0	0	0
23 COFFEE	7/11/1974	1430	Tstm Wind	60 kts.	0	0	0	0
24 COFFEE	2/18/1975	1710	Hail	1.00in.	0	0	0	0
25 COFFEE	10/17/1975	0530	Tornado	F0	0	0	0	0
26 COFFEE	3/16/1976	0725	Tornado	F0	0	0	3	0
27 COFFEE	3/21/1976	0530	Tornado	F1	0	0	250	0
28 COFFEE	12/5/1977	0155	Tstm Wind	0 kts.	0	0	0	0
29 COFFEE	4/18/1978	1515	Hail	1.75in.	0	0	0	0

30 COFFEE	4/18/1978	2032	Tornado	F0	0	0	25	0
31 COFFEE	6/8/1978	1150	Tstm Wind	0 kts.	0	0	0	0
32 COFFEE	7/13/1979	1300	Tstm Wind	0 kts.	0	0	0	0
33 COFFEE	8/30/1979	2000	Tstm Wind	0 kts.	0	0	0	0
34 COFFEE	3/17/1980	1310	Tstm Wind	0 kts.	0	0	0	0
35 COFFEE	3/20/1980	2340	Tstm Wind	0 kts.	0	0	0	0
36 COFFEE	5/20/1980	0230	Tornado	F1	0	0	25	0
37 COFFEE	3/22/1981	1625	Hail	0.75in.	0	0	0	0
38 COFFEE	3/25/1982	1700	Tstm Wind	0 kts.	0	0	0	0
39 COFFEE	5/16/1983	0310	Tornado	F3	0	1	250	0
40 COFFEE	3/5/1984	1245	Tornado	F2	0	4	250	0
41 COFFEE	5/3/1984	0715	Tstm Wind	0 kts.	0	0	0	0
42 COFFEE	5/3/1984	1115	Tstm Wind	0 kts.	0	0	0	0
43 COFFEE	3/21/1985	1615	Hail	1.75in.	0	0	0	0
44 COFFEE	4/15/1985	1500	Tstm Wind	0 kts.	0	0	0	0
45 COFFEE	11/25/1986	2120	Tornado	F3	0	3	2500	0
46 COFFEE	11/26/1986	0140	Tornado	F1	0	2	250	0
47 COFFEE	2/2/1987	0530	Tstm Wind	0 kts.	0	0	0	0
48 COFFEE	5/24/1988	1712	Tstm Wind	0 kts.	0	0	0	0
49 COFFEE	6/26/1988	1515	Hail	1.00in.	0	0	0	0
50 COFFEE	6/26/1988	1620	Tstm Wind	0 kts.	0	0	0	0
51 COFFEE	9/2/1989	1600	Tstm Wind	0 kts.	0	0	0	0
52 COFFEE	9/3/1989	1500	Tstm Wind	0 kts.	0	0	0	0
53 COFFEE	11/8/1989	0645	Tstm Wind	0 kts.	0	0	0	0
54 COFFEE	11/22/1989	1920	Tstm Wind	0 kts.	0	0	0	0
55 COFFEE	2/10/1990	0515	Tstm Wind	0 kts.	0	0	0	0
56 COFFEE	2/16/1990	1010	Tstm Wind	0 kts.	0	0	0	0
57 COFFEE	2/22/1990	0620	Tstm Wind	0 kts.	0	0	0	0
58 COFFEE	3/16/1990	1635	Tstm Wind	0 kts.	0	0	0	0
59 COFFEE	4/1/1990	1740	Hail	1.00in.	0	0	0	0
60 COFFEE	4/1/1990	1810	Tstm Wind	0 kts.	0	0	0	0
61 COFFEE	4/6/1990	1930	Hail	1.75in.	0	0	0	0
62 COFFEE	4/28/1990	1335	Hail	0.75in.	0	0	0	0
63 COFFEE	5/21/1990	1620	Hail	1.00in.	0	0	0	0
64 COFFEE	6/8/1990	1545	Tstm Wind	0 kts.	0	0	0	0
65 COFFEE	7/8/1990	1530	Tstm Wind	0 kts.	0	0	0	0
66 COFFEE	8/19/1990	1605	Tstm Wind	0 kts.	0	0	0	0
67 COFFEE	12/3/1990	1045	Tstm Wind	0 kts.	0	0	0	0
68 COFFEE	12/3/1990	1100	Tstm Wind	0 kts.	0	0	0	0

69 COFFEE	5/1/1991	1255	Tstm Wind	0 kts.	0	0	0	0
70 Frisco	3/9/1994	1755	Tornado	F2	0	0	500	50
71 Enterprise	8/20/1994	0600	Tstm Wind	N/A	0	0	50	0
72 N Enterprise	1/28/1995	0715	Hail	0.75in.	0	0	0	0
73 Enterprise	7/21/1995	1715	Lightning	N/A	0	0	1	0
74 New Brocton	7/26/1995	0300	Lightning	N/A	0	0	10	0
75 Enterprise	8/16/1995	1730	Tstm Wind	N/A	0	0	1	0
76 New Brockton	8/16/1995	1730	Tstm Wind	N/A	0	0	1	0
77 Elba	8/19/1995	2000	Tstm Wind	N/A	0	0	55	0
78 Southeast Alabama	10/4/1995	n/a	Hurr. Opal	N/A	0	0	20000	10000
79 Jack	12/6/1995	2230	Tornado	F	0	1	30	0
80 Kinston	1/11/1996	1835	Tornado	F1	0	0	100	0
81 Enterprise	1/11/1996	1845	Tstm Wind	0 kts.	0	0	3	0
82 Countywide	4/29/1996	1630	Tstm Wind	0 kts.	0	1	100	0
83 Eastern	5/24/1996	1530	Tstm Wind	0 kts.	0	0	0	0
84 Enterprise	6/26/1996	1430	Lightning	N/A	1	2	0	0
85 Enterprise	8/25/1996	1515	Tstm Wind	0 kts.	0	0	8	0
86 Mt Pleasant	9/11/1996	1445	Lightning	N/A	0	0	0	0
87 Enterprise	4/22/1997	2010	Hail	1.25in.	0	0	0	0
88 Enterprise	2/22/1998	0810	Hail	0.88in.	0	0	0	0
89 Countywide	3/8/1998	0640	Tstm Wind	0 kts.	0	0	10	0
90 Elba	3/8/1998	1030	Flash Flood	N/A	4	0	105000	0
91 Elba	4/8/1998	1038	Funnel Cloud	N/A	0	0	0	0
92 Elba	4/8/1998	1158	Hail	0.75in.	0	0	0	0
93 Elba	4/17/1998	2100	Hail	1.75in.	0	0	0	0
94 New Brockton	5/3/1998	1730	Tornado	F0	0	0	5	0
95	5/3/1998	2310	Hail	1.75in.	0	0	0	0

Enterprise								
96 Countywide	6/5/1998	1700	Tstm Wind	0 kts.	0	0	10	0
97 Southwest Portion	7/9/1998	2000	Tstm Wind	0 kts.	0	0	5	0
98 ALZ065>069	9/2/1998	2100	Trop Storm	N/A	0	0	120	0
99 Northeast Portion	9/28/1998	1420	Tstm Wind	0 kts.	0	0	50	0
100 Elba	9/28/1998	0000	Flash Flood	N/A	0	0	2500	15000
101 Enterprise	9/29/1998	0240	Tornado	F1	0	0	1500	0
102 New Brcktn	9/29/1998	0245	Tornado	F1	0	0	500	0
103 Countywide	5/13/1999	1530	Tstm Wind	0 kts.	0	0	750	0
104 New Brockton	1/10/2000	0400	Tstm Wind	0 kts.	0	0	15	0
105 Kinston	4/3/2000	2010	Funnel Cloud	N/A	0	0	0	0
106 Enterprise	4/3/2000	2030	Tornado	F0	0	0	0	0
107 Enterprise	4/3/2000	2030	Tstm Wind	0 kts.	0	0	1	0
108 Kinston	5/13/2000	1745	Hail	0.75in.	0	0	0	0
109 S. West Portion	5/13/2000	1745	Tstm Wind	0 kts.	0	0	2	0
110 Elba	6/22/2000	1500	Tstm Wind	0 kts.	1	0	10	0
111 Kinston	7/21/2000	1500	Hail	1.00in.	0	0	0	0
112 Kinston	7/21/2000	1500	Tstm Wind	0 kts.	0	0	100	0
113 Enterprise	8/27/2000	1500	Tstm Wind	0 kts.	0	0	20	0
114 Enterprise	3/3/2001	1345	Tstm Wind	0 kts.	0	0	1	0
115 Countywide	3/3/2001	1400	Flood	N/A	0	0	5	0
116 Countywide	3/12/2001	1400	Tstm Wind	0 kts.	0	0	75	0
117 Enterprise	3/12/2001	0950	Hail	0.75in.	0	0	0	0
118 Enterprise	6/19/2001	1730	Tstm Wind	0 kts.	0	0	5	0

119 ALZ065>069	8/5/2001	1800	TropStorm	N/A	0	0	250	0
120 Northeast	1/19/2002	1615	Tstm Wind	0 kts.	0	0	1	0
121 Southeast	7/24/2002	1200	Tstm Wind	0 kts.	0	0	1	0
122 Goodman	3/9/2003	1055	Hail	0.75in.	0	0	0	0
123 Eprise Arpt	3/14/2003	1740	Hail	0.88in.	0	0	0	0
124 Enterprise	03/01/2007	1315	Tornado	55kts.	0	0	0	0
125 Victoria	05/02/2004	0300	Tstm Wind	55 kts.	0	0	25	0
126 Kinston	05/31/2004	1401	Hail	1.75in.	0	0	0	0
127 Elba	06/02/2004	1455	Hail	0.75in.	0	0	0	0
128 Countywide	06/02/2004	1240	Tstm Wind	50 kts.	0	0	1	0
129 Enterprise	06/27/2004	1545	Tstm Wind	50 kts.	0	0	1	0
130 Elba	07/15/2004	1815	Hail	1.75in.	0	0	0	0
131 Elba	07/15/2004	1840	Funnel Cld	N/A	0	0	0	0
132 Elba	07/15/2004	1845	Hail	0.75in.	0	0	0	0
133 Countywide	07/15/2004	1910	Tstm Wind	55 kts.	0	0	250	0
134 Enterprise	07/15/2004	1915	Hail	0.75in.	0	0	0	0
135 Enterprise	07/15/2004	1920	Lightning	N/A	0	0	150	0
136 Ino	07/15/2004	1940	Tstm Wind	55 kts.	0	0	1	0
137 Countywide	09/15/2004	1200	Tropical Storm	NA	0	0	3500	0
138 Victoria	03/26/2005	0221	Hail	2 in.	0	0	50	0
139 Countywide	03/27/2005	1330	Flash Flood	N/A	0	0	0	0
140 New Brockton	04/06/2005	1900	Hail	0.88in.	0	0	0	0
141 Countywide	04/30/2005	0750	Tstm Wind	55kts.	0	0	15	0
142 Enterprise	05/20/2005	1830	Hail	0.75in.	0	0	0	0
143 Enterprise	05/20/2005	1850	Hail	1.25in.	0	0	0	0

144 Countywide	07/09/2005	1800	Hurricane/ Typhoon	N/A	0	0	1500	0
145 Enterprise	01/13/2006	1255	Tstm Wind	50	0	0	1	0
146 Elba	04/08/2006	1322	Hail	0.88in.	0	0	0	0
147 Enterprise	04/08/2006	1432	Hail	0.75in.	0	0	0	0
148 Enterprise	05/10/2006	2116	Tstm Wind	55kts.	0	0	2	0
149 New Brockton	06/25/2006	1900	Tstm Wind	55 kts.	0	0	50	0
150 Jack	08/15/2006	1900	Tstm Wind	50 kts.	0	0	1	0
151 Enterprise	08/15/2006	1935	Funnel Cloud	N/A	0	0	0	0
152 Elba	08/30/2006	1840	Tstm Wind	50kts.	0	0	0	0
153 Danley	11/15/2006	1145	Tstm Wind	60 kts.	0	0	30	0
154 Elba	11/15/2006	1153	Tornado	F0	0	2	350	0
155 Enterprise	11/15/2006	1200	Tstm Wind	60 kts.	0	0	25	0
156 Roeton	11/15/2006	1212	Tornado	F0	0	0	2	0
157 Enterprise Municipal Airport	03/01/2007	1308	Tornado	EF4	9	50	2500	0
158 Elba	04/14/2007	1730	Tstm Wind	50kts.	0	0	0	0
159 New Brockton	04/14/2007	1740	Tstm Wind	60 kts.	0	0	15	0
160 Elba	06/12/2007	1556	Hail	0.75in.	0	0	0	0
161 Kinston	06/12/2007	1620	Tstm Wind	50 kts.	0	0	1	0
162 Elba	06/12/2007	1640	Tstm Wind	55 kts.	0	0	50	0
163 Clintonville	07/01/2007	1730	Lightning	N/A	0	1	0	0
164 Elba	07/20/2007	1715	Tstm Wind	50 kts.	0	0	0	0
165 Enterprise	07/20/2007	1815	Tstm Wind	50 kts.	0	0	0	0
166 Elba	02/06/2008	0927	Tstm Wind	50 kts.	0	0	0	0
167 Jack	02/17/2008	1417	Tornado	EF1	0	0	25	0
168 Frisco	02/17/2008	1551	Tstm Wind	60 kts.	0	0	300	0
169 Victoria	02/17/2008	1556	Tstm Wind	60 kts.	0	0	50	0
170 New Brockton	02/17/2008	1600	Lightning	N/A	0	1	0	0
171 Jack	02/17/2008	1601	Tstm Wind	55 kts.	0	0	5	0

172 Roeton	02/17/2008	1606	Tstm Wind	60 kts.	0	0	60	0
173 Newby	02/26/2008	0805	Tstm Wind	50 kts.	0	0	1	0
174 Newby	02/26/2008	0810	Tstm Wind	50 kts.	0	0	0	0
175 Jack	02/26/2008	0815	Tstm Wind	50 kts.	0	0	0	0
176 Cool Springs	06/03/2008	1650	Tstm Wind	50 kts.	0	0	1	0
177 Cool Springs	06/03/2008	1655	Tstm Wind	50 kts.	0	0	1	0
178 Tabernacle	07/12/2008	1520	Hail	0.75in.	0	0	0	0
179 Tabernacle	07/12/2008	1520	Tstm Wind	51 kts.	0	0	0	0
180 Countywide	08/23/2008	0000	Tropical Storm	N/A	0	0	30	0
181 Enterprise	10/08/2008	1054	Tornado	EF1	0	0	4000	0
182 Elba	12/10/2008	0600	Flood	N/A	0	0	0	0
183 Marvin Chapel	12/10/2008	0600	Flood	N/A	0	0	5	0
184 Countywide	12/11/2008	0300	Strong Wind	45 kts.	0	0	50	0
185 Enterprise Municipal	03/26/2009	0745	Tstm. Wind	60 kts.	0	0	100	0
186 Elba	03/27/2009	0530	Tstm. Wind	55 kts.	0	0	0	0
187 Elba	03/27/2009	0600	Tstm. Wind	55 kts.	0	0	1	0
188 Enterprise	03/27/2009	0805	Tstm. Wind	60 kts.	0	0	0	0
189 Enterprise	03/28/2009	0509	Hail	0.88in.	0	0	0	0
190 Damascus	06/14/2009	1420	Tstm Wind	50 kts.	0	0	0K	0K
191 Cool Springs	06/14/2009	1430	Tstm Wind	55 kts.	0	0	1K	0K
192 Brooklyn	07/05/2009	0300	Tstm Wind	55 kts.	0	0	250K	0K
Totals					15	93	384.575M	15.050M

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<http://www4.ncdc.noaa.gov/cgi-win/wwcqi.dll?wwEvent~storms>

Fujita Tornado Scale

F0: 40-72 mph (35-62 kt)

F1: 73-112 mph (63-97 kt)

F2: 113-157 mph (98-136 kt)

F3: 158-206 mph (137-179 kt)

F4: 207-260 mph (180-226 kt)

F5: 261-318 mph (227-276 kt)

Appendix C

Social Vulnerability (U.S. Census Data)

1. Introduction

Social Vulnerability refers to the ability of a community to recover socially and economically from a disaster. It is based on the assumption that demographic characteristics taken from census statistics can identify locales that would be more vulnerable to the impacts of a disaster. Two areas may have equal risk of experiencing a particular hazard event and the areas may have similar geographic and infrastructural characteristics. However, the area with the higher social vulnerability would be much more seriously damaged by the event in terms of the ability of families to rebuild their homes and jobs, and return to normal life. This can be due to lesser income, higher percentages of elderly or children, or higher percentages of mobile homes, which are extremely vulnerable in disaster situations.

2. Vulnerability Calculation Variables

Eleven categories of data were used. The significance of each is explained below. Each category is weighted equally with 1.00 as the highest value in each category. Although these references are county to county measurements, they do give some idea of the impact of natural hazard events within Coffee County.

a. Total Population

Although more densely populated areas will have greater numbers of families affected by hazard events, the rural, less populated areas with fewer governmental services readily available will be more negatively impacted.

b. Percent of Households with Children Under Age 9

Children under the age of nine are more susceptible to respiratory problems and other illnesses related to post-flooding, tornado, and hurricane situations.

c. Percent of Households with Children Under Age 18

Evacuation and shelter become important considerations for counties with large numbers of younger children.

d. Percent of Households with Persons Over Age 64

This statistic indicates concentrations of elderly residents that will likely require greater levels of assistance in case of a disaster, and will also require significant medical support. They will also require greater support during any prolonged recovery. In addition, this

subgroup is more prone to respiratory distress from certain inhaled toxins as well as other illnesses.

e. Percent of Population that is Non-White

While not applicable to all locales, this variable often correlates with a lack of resources, less than optimum housing construction, inadequate medical coverage, and higher rates of inadequately insured homes and property.

f. Median Income

Median income identifies areas with populations that may lack adequate resources to recover from a disaster or to mitigate structural damage.

g. Percent of Households with Children Living Below Poverty

This variable identifies areas that may require greater assistance in terms of medical support, evacuation, and recovery. Children are more susceptible to respiratory problems and other illnesses related to post-flooding, tornado, and hurricane situations.

h. Percent of Households with Persons Living Below Poverty

This variable identifies areas with populations that may lack adequate resources to recover from a disaster or to mitigate structural damage. It identifies areas that may require greater assistance in terms of medical support, evacuation, and recovery.

i. Percent of Households Headed by Single Mothers with Children

This variable is included for several of the reasons described above. Single mothers often have fewer available resources and will likely require greater assistance to recover from a disaster.

j. Percent of Housing Units that are Mobile Homes

This variable is an indicator of housing units that will likely represent a greater risk than standard housing construction. This type of housing is particularly vulnerable to high winds, tornadoes, and hurricanes.

k. Median Home Value

Median home value can indicate a more vulnerable sector of the population due to a lack of resources for mitigating structural damage and recovery, or it may indicate housing that is structurally more vulnerable.

3. Vulnerability Score

Coffee County is rated as medium on the Social Vulnerability scale as illustrated in the table below. There are no specific internal references to determine which areas of the county, if any, are more vulnerable than others. However, it can be inferred that the unincorporated areas, with no building codes, lack of governmental oversight and minimal assistance from government entities, would be the more adversely affected. Most of the incorporated cities regulate the use of mobile homes and require stringent safety precautions, as opposed to the unincorporated areas where few regulations are applicable and there is little, if any, enforcement.

Social Vulnerability Scores for Coffee County												
County	Pop.	<9 age	<18 age	>64 age	Minority	Income	Child Pov.	Gen. Pov.	Sing. Mom	Mob Home	Home Value	Score
Coffee	0.07	0.79	0.82	0.81	0.27	0.73	0.51	0.41	0.42	0.17	0.76	5.75

4. Vulnerability Assessment

Coffee County will have significant social issues during recovery from a disaster. This will be particularly true in the unincorporated areas of the county.

Appendix D

Current EHS Storage Sites, Buildings & Infrastructure

1. Extremely Hazardous Substances (EHS) & Storage Sites

a. Chlorine

Elba

Water and Electric Warehouse, 475 Hwy. 203
Water System Well #1, Jackson Street at U.S. Hwy. 84
Water System Well #2, U.S. Hwy. 84 at County Road 401
Water System Well #3, 1458 North Claxton
Water System Well #4, Tiger Drive
Water System Well #5, Lower Curtis Road
1561 E. Davis St., Bradshaw Community

Enterprise

Well #2, 515 N. Main Street
Well #3, 215 Railroad Street
Well #4, 1026 Boll Weevil Circle
Well #5, 915 Daleville Avenue
Well #6, 2555 Neil Metcalf Road
Well #7, Regency Drive
Well #9, 806 Aviation Boulevard
Well #10, 2003 Three Notch Road
Well #11, 5201 Shellfield Road
Well #12, 13060 Hwy 167 North
Well #14, County Road 606, Enterprise

Goodman Well #1, 57 County Road 624, Enterprise
Goodman Well #2, 99 County Road 626, Enterprise

Macedonia Well #1, Lynne Road, Enterprise
Macedonia Well #2, Lynne Road, Enterprise

Mount Pleasant/Battens Well #1, 4822 Highway 27, Enterprise
Mount Pleasant/Battens Well #2, 355 County Road 650, Chancellor

Kinston

Well #1, Courson Alley

New Brockton

Well #3, Sparks Street
Well #4, King Street Extension
Well #5, County Road 514 at Highway 87

Well #6, Junctions of South John and South Ainsley Streets

New Hope

New Hope Water Authority, 2248 County Road 105, Brundidge

Jack

Jack Water System, xxx Hwy 87, Jack

b. Anhydrous Ammonia

Elba - Kelley Foods, 1697 Lower Curtis Road

Enterprise - Pilgrims Pride, Inc., 4693 County Rd. 636

Jack - Wayne Farms/Southland Foods, 1020 County Road 114

c. Pesticides and Herbicides

Elba - Coffee County COOP

Enterprise - Coffee County COOP

Kinston – Crop Production Services, 720 Highway 52 South

d. Propane Gas Bulk Storage

Elba - Amerigas, 7728 Highway 87

Enterprise - Propane Gas, Inc., 1005 North Main Street
- Amerigas, 900 North Main Street Enterprise

New Brockton - Propane Gas, Inc., 327 Railroad Street

2. Other Essential Waterworks

State Highway 52, six-inch water main, Kinston

Coffee County Road 472 at Covington County Road 40, six inch water main, near Kinston

100,000 gallon storage tank 842 Main Street North, Kinston

100,000 gallon storage tank 635 Kimbro Street, Kinston

3. Shelter Locations

Enterprise Civic Center, 2415 Neal Metcalf Rd, Enterprise

Enterprise Junior High School, 401 West College, Street, Enterprise

First Baptist Church, 201 N. Main St., Enterprise
College Avenue Church of Christ, 211 West College Street, Enterprise
College Street Elementary School, 605 West College Street, Enterprise
Elba Elementary School, 145 Tiger Drive, Elba
First Assembly of God, 1320 Highland Drive, Elba
New Brockton Town Hall, 706 East McKinnon Street
Kinston Town Hall, 856 Main Street

4. Fire Departments

Battens Fire Department 8838 County Road 636, Enterprise
Elba Volunteer Fire Department, 205 Buford Street, Elba
Enterprise Fire Department Station One, 531 South Main Street, Enterprise
Enterprise Fire Department Station Two, 1201 Dauphin Street, Enterprise
Enterprise Fire Department Station Three, 1701 Rucker Boulevard, Enterprise
Five Star Volunteer Fire Department, 15376 Highway 125, Jack
Goodman Volunteer Fire Department, 5405 County Road 625, Enterprise
Ino, 6282 Highway 134 Kinston, AL
Kinston Volunteer Fire Department, 853 Main Street North, Kinston
New Brockton Volunteer Fire Department, 419 South Ainsley Street, New Brockton
Tri-Communities Volunteer Fire Department, 1652 County Road 719, Enterprise
Zion Chapel Volunteer Fire Department, 28641 Highway 87, Jack

5. Medical Facilities

Elba General Hospital and Nursing Home, 987 North Drayton Avenue, Elba
Enterprise Medical Center, 400 North Edwards Street, Enterprise
Enterprise Nursing Home, 300 Plaza Drive, Enterprise
Wynwood Personal Care Retirement Living, 201 Wynn Road, Enterprise

6. Law Enforcement

Coffee County Sheriff's Department, 4 County Complex, New Brockton
Coffee County Jail, 1133 East McKinnon Street, New Brockton
Elba Police Department, 304 Simmons Street, Elba
Enterprise Police Department, 501 South Main Street, Enterprise
Kinston Police Department, 856 Main Street, Kinston
New Brockton Police Department, 202 South John Street, New Brockton

7. EMS

Coffee County EMS, Inc., 325 Yelverton Avenue, Elba
Enterprise Rescue Squad, 205 West Lee Street, Enterprise

8. Government Facilities

Coffee County Courthouse, 230 Court Avenue, Elba
Elba City Hall, 200 Buford Street
Kinston Town Hall, Police, Fire and Rescue, 856 Main Street
Kinston Water Shop, 327 Pierce Street
Enterprise City Hall, Police Station, 911 Center, Central Fire Station, 501 South Main St.
Civic Center, 2415 Neal Metcalf Rd, Enterprise
Public Works Building, 529 Glover Avenue, Enterprise
Coffee County Court House Annex, 99 South Edwards Street, Enterprise
Coffee County Commission Complex, 1065 East McKinnon Street, New Brockton
Town Hall, 706 E. McKinnon St., New Brockton

9. Roadways and Bridges

Highway 84 East and West with Bridge, Elba
Highway 189 South and North with Bridge, Elba
Highway 125 North
North and South John Street, New Brockton
State Highway 52, Kinston
State Highway 189, Kinston
U.S. Highway 84, New Brockton
Byrd Mill Road, South New Brockton

10. Electrical Substations

Pea River Electric Substation on Highway 52 north of Kinston
Highway 84 West at Jackson Avenue, Elba
Highway 84 at Birds Mill Road, New Brockton
Caroline Street, Elba

11. Utility Companies

South Alabama Electric Cooperative, P. O. Box 449, Troy, AL 36081-0449
Wiregrass Electric Cooperative, P. O. Box 158, Hartford, AL 36344
Covington Electric Cooperative, P. O. Box 1357, Andalusia, AL 36420
Pea River Electric Cooperative, P. O. Box 969, Ozark, AL 36361
Southeast Alabama Gas District, 102 Lester Drive, Enterprise, AL 36330
Alabama Power, P. O. Box 449, Troy, AL 36081-0449

12. Telephone Switch Locations

CenturyTel, 110 Courson Avenue, Kinston
CenturyTel, 216 Polka Avenue, Elba
Century Tel, 351 East Church Street, New Brockton

13. Relocation Sites, Schools and Temporary Shelters

Elba City Schools, 131 Tiger Drive
Recreation Department, 704 North Claxton Avenue
Senior Citizens Center, 200 Buford St., Elba
Kinston Town Hall, 856 Main Street
Kinston School, 201 College Street
Methodist Church, 105 College Street, Kinston
First Baptist Church, 230 College Street, Kinston
Assembly of God Church, 209 Hickman Avenue East, Kinston
New Brockton High School, 210 South Tyler Street
New Brockton Elementary School, 504 North John Street
Enterprise High School, 1801 Boll Weevil Circle, Enterprise
Hillcrest Elementary, 400 East Watts Street, Enterprise
Dauphin Jr. High, 425 Dauphin Street Extension, Enterprise
Holly Hill Elementary, 201 Pineview Drive, Enterprise
Enterprise Junior High, 401 West College Street, Enterprise
College Street Elementary, 605 West College Street, Enterprise
Pinedale Elementary, 207 Plaza Drive, Enterprise
Rucker Blvd. Elementary, 209 Regency Drive, Enterprise
Harrand Creek Elementary, 216 Morgan Lane, Enterprise
Coppinville Middle School, 301 North Ouida Street, Enterprise
College Ave. Church of Christ, 211 W. College St., Enterprise
First Assembly of God, 1320 Highland Dr., Elba
Enterprise Civic Center, 2415 Neal Metcalf Rd, Enterprise
Enterprise-Ozark Community College, Plaza Dr, Enterprise
Zion Chapel School, Hwy 87, Jack
New Brockton Town Hall, 706 E. McKinnon St.

14. Levee and Dams

Elba Levee, City of Elba

Elba Hydro Power Dam, 500 County Road 411

See Appendix E for a listing of other dams.

15. National Guard and Reserve Centers

National Guard Armory 348 Larkin Road, Elba

National Guard Armory 1881 Guardian Way, Enterprise

16. Other Structures

Adult Day Care Center, 128 Court Avenue, Elba

American Legion Building, 1084 Neal Grantham Drive, Elba

Alabama Work Release Center, 1620 Boswell Street, Elba

17. Waste Water and Sewage Related Structures

Sewage Lagoon, Elba
Waste Water Lift Pumps, Elba (42 sites)
College Street, Sewage Disposal Plant, Enterprise
NE Lagoon, Enterprise
SE Lagoon, Enterprise
South Lagoon and 7 lift sites, New Brockton

18. Media

WVVL, 100 North Main Street, Enterprise
WKMX, 886 County Road 248 (Tower Site), New Brockton
WELB, 20334 Highway 87, Elba
The Southeast Sun, 628 Glover Avenue, Enterprise
The Enterprise Ledger, 106 North Edwards Street, Enterprise
The Elba Clipper, 417 Buford Street, Elba

19. Airports

Enterprise Municipal Airport, 867 Aviation Boulevard, Enterprise
Carl Folsom Municipal Airport, Larkin Rd., Elba

20. Senior Citizen Centers

Damascus, 129 County Road 514, Elba
Elba, 200 Buford Street, Elba
Elba Adult Day Care, 128 North Court Street, Elba
Enterprise, 2415 Neal Metcalf Rd, Enterprise
Enterprise Adult Day Care, 106 Douglas Brown Circle, Enterprise
Ino, 62842 Highway 134, Kinston
Kinston, 104 Suzanne Street
Mount Pleasant, 4047 Highway 27, Enterprise
New Brockton, 130 Vester Cole Street, New Brockton
New Hope, 2142 County Road 124, Brundidge
Pine Level, 63 County Road 355, Elba
Zion Chapel, 28742 Highway 87, Jack

21. Gas Transmission Lines

Following Highway 134 into Enterprise to U S 84 to New Brockton to Elba

22. Outdoor Warning Sirens (26)

Elba (4)

1. Vicinity 1301 Country Club Way
2. NE side of intersection of Highway 203 and Highway 87
3. NW side of intersection of Highway 189 and County Road 404
4. Vicinity 790 Davis Street East

Enterprise (9)

1. 904 E. Lee St. @ YMCA
2. 120 S. Carroll St. @ Head Start School
3. North Industrial Park Rd. @ Donaldson Park
4. Arrowhead Dr. @ Tennis Courts by the lake
5. Fairway Dr. @ Cul-de-sac
6. 1701 Rucker Blvd. @ Eastside Fire Station
7. Coppinville Rd. @ Nance Cr. intersection
8. 207 Plaza Dr. @ Pinedale Elementary School
9. C.R. 622 @ Enterprise Airport

Kinston (2)

1. Kinston - 218 Courson Alley
2. Kinston Rec Park – Hwy 52

New Brockton (1)

1. New Brockton - Vicinity 108 West McKinnon Street

Coffee County (9)

1. Goodman VFD - 5405 County Road 625
2. Tri-Communities VFD - 1652 County Road 719
3. New Hope Senior Center - 2142 County Road 124
4. Battens VFD - 8838 County Road 636
5. Ino VFD - 6282 Highway 134
6. Pine Level Senior Center - 63 County Rd 355
7. Clintonville - 3783 Highway 51
8. Boy Scout Camp Alaflo – C.R. 156
9. Victoria – 11544 Hwy 125

Coffee County School Board (1)

1. Zion Chapel - Vicinity 29256 Highway 87

This page is a place holder for Appendix E – Dam Inventory. The actual appendix can be found on this disk as a pdf file titled as “Appendix E – Safe Dams.pdf.”

Appendix F

Repetitive Loss Data				
Jurisdiction	Address	Date of 1st Loss	Date of 2nd Loss	Hazard Mitigation Payment
Coffee Co.		07/06/1994	03/08/1998	\$19,677.47
Coffee Co.		07/06/1994	03/08/1998	\$21,949.31
Coffee Co.		07/06/1994	03/08/1998	\$22,999.97
Enterprise		10/04/1995	03/08/1998	\$110,067.96
Enterprise		07/03/1994	03/02/1998	\$19,627.04
Enterprise		07/06/1994	10/04/1995	\$5,331.97
Enterprise		05/03/1978	02/23/1979	\$4,055.82
Enterprise		04/17/1979	03/18/1980	\$12,729.47
Elba		07/05/1994	03/08/1998	\$21,599.65
Elba		07/07/1994	03/08/1998	\$46,766.77
Elba		03/17/1990	03/08/1998	\$34,438.09
Elba		03/17/1990	03/08/1998	\$72,616.25
Elba		03/17/1990	03/08/1998	\$11,043.64
Elba		03/17/1990	03/08/1998	\$32,400.00
Elba		03/17/1990	03/08/1998	\$136,714.82
Elba		07/05/1994	03/08/1998	\$18,672.62
Elba		07/07/1994	03/08/1998	\$24,659.77
Elba		07/05/1994	03/08/1998	\$34,997.44
Elba		03/16/1990	03/08/1998	\$31,298.87
Elba		03/17/1990	03/08/1998	\$64,229.54
Elba		07/06/1994	03/08/1998	\$84,196.26
Elba		07/05/1994	03/08/1998	\$11,527.07
Elba		07/06/1994	03/08/1998	\$76,217.12
Elba		07/05/1994	03/08/1998	\$94,353.94
Elba		03/18/1990	03/04/1998	\$49,236.41
Elba		07/05/1994	03/08/1998	\$62,898.75
Elba		03/17/1990	03/08/1998	\$32,642.46
Elba		03/17/1990	03/08/1998	\$68,176.20
Elba		07/07/1994	03/07/1998	\$37,642.16
Elba		03/17/1990	03/08/1998	\$31,822.42
Elba		03/17/1990	03/08/1998	\$75,598.57
Elba		07/06/1994	03/08/1998	\$49,014.33
Elba		07/07/1994	03/08/1998	\$48,336.35
Elba		03/17/1990	03/08/1998	\$74,310.26
Elba		07/07/1994	03/08/1998	\$49,860.34

Elba		07/07/1994	03/08/1998	\$216,367.40
Elba		07/06/1994	03/08/1998	\$38,870.99
Elba		07/05/1994	03/08/1998	\$34,202.00
Elba		07/07/1994	03/08/1998	\$25,408.80
Elba		07/05/1994	03/08/1998	\$23,822.63
Elba		07/08/1994	03/08/1998	\$48,514.33
Elba		07/05/1994	03/08/1998	\$29,475.06
Elba		07/07/1994	03/08/1998	\$31,172.44
Elba		07/06/1994	03/08/1998	\$154,360.52
Elba		03/17/1990	07/05/1994	\$54,172.02
Elba		07/06/1994	03/08/1998	\$63,277.70
Elba		07/06/1994	03/08/1998	\$18,022.37
Elba		07/05/1994	03/08/1998	\$77,757.99
Elba		07/05/1994	03/04/1998	\$62,106.43
			Total	\$2,469,239.79

Appendix G
Sign-In Sheets and Meeting Announcements



**COFFEE COUNTY
OFFICE OF EMERGENCY MANAGEMENT
OFFICE OF HOMELAND SECURITY**

8 County Complex – 1065 E. McKinnon Street – New Brockton, Alabama 36351
(334) 894-5415 – (334) 894-5375 – Facsimile (334) 894-5610
<http://www.ccema.com>

BOARD MEMBERS

Kenneth Boswell
James E. Grimes
Lenwood Herron
Heflin Smith
Jim Thompson

DIRECTOR

John C. Tallas
DEPUTY DIRECTOR
Larry O. Walker

June 24, 2009

Memorandum For:

Chairman Jim Thompson, Coffee County Commission, 2 County Complex, New Brockton, AL 36351

Mayor Kenneth Boswell, City of Enterprise, 501 South Main Street, Enterprise, AL 36330

Mayor James E. Grimes, City of Elba, 200 Buford Street, Elba, AL 36323

Mayor Lenwood Herron, Town of New Brockton, P.O. Box 70, New Brockton, AL 36351

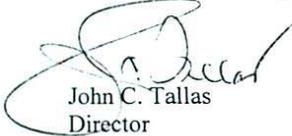
Mayor Heflin Smith, Town of Kinston, P.O. Box 26, Kinston, AL 36453

Subject: Coffee County Multi-Jurisdictional Hazard Mitigation Plan Update Status

1. I am writing to inform you about our ongoing Mitigation Plan update. As many of you recall, we completed our initial plan in January 2005 in response to a FEMA requirement. The FEMA-approved plan must be updated and re-submitted in 2010 for re-approval by FEMA.
2. For us to receive any type of mitigation money, we must not only have a FEMA-approved plan but we must also ensure projects for which we are requesting grant money are contained in our plan. Again, many of you have received significant benefits from participating in the planning process and having your projects in the plan.
3. We have engaged Lee Helms Associates to update both our Emergency Operations Plan as well as our Mitigation Plan. Our goal is to have the Mitigation Plan submitted to AEMA in September of this year for their review. In turn, AEMA will submit the plan to FEMA for their re-approval.
4. Each of you has designated a representative or yourself to serve on the Mitigation Planning Committee. Towards that end, I am providing the attached milestones for your use. It is imperative that your representative attend each of the three meetings: planning committee meeting and two public hearing meetings. Certainly, elected officials are encouraged to participate in any and all of the planning sessions.
5. One administrative note pertains to the Commission's approval of the final draft. FEMA requires at least one government agency to approve the draft prior to FEMA's review. At some point after FEMA's review, we will have a final document and will come to each governing body and request that you approve the final plan – just as we did last time.

6. In closing, it is particularly important to be an active participant in the process either directly or through your designated representative. Please contact me with any questions.

With Professional Regards,



John C. Tallas
Director

Attachment

CC: Lee Helms Associates, LLC, 236 Town Mart, Clanton, AL 35045

**COFFEE COUNTY
HAZARD MITIGATION PLANNING MEETING**

July 15, 2009

(PLEASE PRINT CLEARLY)

NAME	AGENCY/DEPARTMENT	PHONE/FAX	E-MAIL
Paula Katouskas	TOWN OF KINSTON Town Clerk	334-565-3188 334-565-9026	townofkinston@centurytel.net
SEYMOUR HERRON	Town of New Britain Mayor	(334) 894-5283 (334) 894-0321	lawpouderharron@centurytel.net
Herby McCall	City of Elba Special Projects	334.897.2333 334.897.3337	elbacity2@trfcable.net
Tracy Sanders	Enterprise City Schools Maintenance Supervisor	334-389-0722 334-347-6261	tracy.sanders@enterpriseschools.net
JOHN C. TALLAS	COFFEE COUNTY EMA	334 894-5415 334 894-5610	jtallas@ccema.com
LARRY WALKER	CCEMA	894-5375	lwalker@ccema.com
MARTY LENTZ	COFFEE Co. ENGINEERS	894-6112/894-6317	mlentz@co.coffee.al.us
JULIUS NOBLE	CITY OF ENTERPRISE ENGINEERING DEPT.	348-2671 OFFICE 348-2672 FAX	jnoble@cityofenterprise.net rbickley@cityofenterprise.net



**COFFEE COUNTY
HAZARD MITIGATION PLANNING MEETING**

July 15, 2009

(PLEASE PRINT CLEARLY)

NAME	AGENCY/DEPARTMENT	PHONE/FAX	E-MAIL
ALAN THRASH	Covington Electric Cooperative	334-427-3531	athrash@covington.coop
JULIUS NOBLE	CITY OF ENTERPRISE ENGINEERING DEPT.	348-2671 OFFICE 348-2672 FAX	jnoble@cityofenterprise.net rbickley@cityofenterprise.net
LENWOOD HERRON	Town of New Brockton Mayor	(334) 894-5283 OFC (334) 894-0321 FAX	lenwoodherron@ centurytel.net
JAMES APLIN	Covington Electric Coop.	334-427-3570	JApLin@Covington.Coop



INSIDE



Hutcherson-Mitchell announce wedding plans

INSIDE



Elba Dixie Youth All-Stars place third at tourney

INSIDE



Keith Riegle named Paul Harris Fellow

The Elba Clipper

Volume 113 Number 07 50 Cents Thursday, July 23, 2009 1 Section, 12 Pages Plus 1 Ad

the Coffee Sherling, Ingram, McWaters, Neuwien, fee County



(left) and Kayla Rials (right) represented sessions of Alabama Boys State and Girls State by invitation. Both Vaughan and Rials were selected and nominated by their teachers at Elba High School to participate in Boys State and Girls State community activities.

Area Happenings

THE COFFEE COUNTY HAZARD MITIGATION PLANNING COMMITTEE will hold its first public hearing meeting Monday, July 27, to describe the current update efforts for the Coffee County Multi-Jurisdictional Hazard Mitigation Plan and allow for public comment. The meeting will be held immediately after the Coffee County Commission meeting, which begins at 9 a.m. Depending upon the number of attendees, the meeting will be held either in the community room or the EMA conference room, located in the county complex in New Brockton.

KINDERGARTEN JUMPSTART AT ELBA ELEMENTARY SCHOOL will be held July 28-30 from 8-11 a.m. each morning. This is for students registered for kindergarten at Elba Elementary School for the 2009-2010 year. Parents will meet briefly with administrators Tuesday, July 28, at 8 a.m. During Jumpstart, students will meet their teachers and get accustomed to the new surroundings. No buses will run. For more information, call 897-2814.

JUMPSTART AT COFFEE COUNTY SCHOOLS (Kinston, New Brockton and Zion Chapel) will be Aug 5-6 from 8 until 11 a.m. On the first day, all students and parents are to report to the school library with their beginning school supplies. Parents will need to provide transportation for the child during this two-day session. For questions, call Carol Mooney at 897-5016.

OPEN HOUSE WILL BE HELD AT Kinston School, New Brockton Elementary, New Brockton High and Zion Chapel School on Thursday, Aug. 6, from 5-7 p.m. All parents and students are encouraged to attend this event to tour the school, locate classroom/locker, meet teachers, review schedules, pickup supply list and receive important announcements. For questions concerning this event, call the child's school.



THE ENTERPRISE Ledger

Serving the Wiregrass since 1898

Friday

www.eprisenow.com

July 24, 2009

today's WEATHER



H: 90
W: 71
Partly cloudy,
20 percent
chance of rain



Check out the
interactive
weather maps at
www.eprisenow.com

For more weather
see the Dothan
Eagle, PAGE 2A

A



when an article about

offer and how

book and will attend a special reception with Miss Alabama 2009, Liz Cochran. Forms are available at www.miss-wiregrassarea.com, or call Tricia Janasky at 898-2045 after 5 p.m. or 898-2728, or e-mail director@misswiregrassarea.com.

Saturday Reunion

The descendants of Marlon Forsythe and

Monday Hazard planning meeting

The Coffee County Hazard Mitigation Planning Committee will have its first public hearing meeting on Monday following the county commission meeting, which begins at 9 a.m. at the County Complex in New Brockton.

Youth World Series kicks off tonight

By Michelle Mann
Ledger Staff Writer

Alabama National Guardsmen will deliver the game ball to the field as the Dixie Youth Machine Pitch AA Regional All Star World Series Tournament

tournaments, nearly 400 coaches and players will be in town. "And then you need to realize that many of the family members will be coming to town, too," Powell said.

Powell has talked with personnel at area hotels and restaurants to

**COFFEE COUNTY
2ND HAZARD MITIGATION PLANNING MEETING**

July 27, 2009 9:00 a.m.

(PLEASE PRINT CLEARLY)

NAME	AGENCY/DEPARTMENT	PHONE/FAX	E-MAIL
JULIUS NOBLE	CITY OF ENTERPRISE ENGINEERING DEPT.	348-2671 OFFICE 348-2672 FAX	j.noble@cityofenterprise.net rbokley@cityofenterprise.net
ALAN THRASH	Covington Electric Cooperative	334-222-4121 334-222-1544	a.thrash@covington.coop
JAMES APLIN	Covington Elect. Cooperative	334-347-9449 WORK 334-347-2685 FAX	japlin@covington.coop
MARTY LENTE	COFFEE COUNTY ENGINEERS	334-894-6112 work 334-894-6317 FAX	m.lente@co.coffee.al.us
Paula Katauskas	TOWN OF KINSTON TOWN CLERK	334-565-3188 334-565-9026	townofkinston@ centurytel.net
Herby McCall	City of Elba Special Projects	334-897-2333	elbacity2@ traycastle.net
LEWIS HERRON	Town of New Britain Mayor's Office	(321) 894-5293/OF (321) 894-5686/FAX	lewis@harron@ centurytel.net
Lee Helms	Lee Helms Assoc., L.L.C.	205-280-3027 205-280-0543	lee@leehelmsllc.com
Larry Walker	Coffee Co. EMA	334-894-5415 334-894-5610	walker@ccema.com



EMA to hold final hazard plan meeting Aug. 28

By Michelle Mann
Ledger Staff Writer

Disaster preparedness is part of the mission of the Coffee County Emergency Management Agency and the public's input is requested at the last in a series of public meetings set Aug. 28.

The Coffee County Hazard Mitigation Planning Committee is holding the hearing to gather citizen input on issues that may need to be incorporated as the current plan is revamped.

The current plan has been in existence since January 2005 and Coffee County EMA Director

John Tallas said the meeting's purpose is to describe the current update effort for the Coffee County Multi-Jurisdictional Hazard Mitigation Plan and allow public comment.

"When people attend the meetings, they are given the opportunity to write down the issues affecting their property," Tallas said. The Citizen Input Form asks people to describe emergency events that have occurred at their home or in their neighborhoods during the past decade.

Possible emergency events cited on the form include brush or grass fires, building fires, tor-

nadoes, drought, hazardous material spills or releases from pipelines, trucks, trains or aircraft. People are asked to note whether they had to vacate their home due to any of these events and whether they lost time from work or school because of any of these events.

"Which of the following events are you concerned about in the next 12 months?" is a question on the form. "Are you familiar with the Emergency Alert System?" is another.

The public's answers provide a venue for the EMA to use to revamp the existing plan, Tallas said. Every five years,

the county develops and adopts or updates mitigation plans to be eligible for Federal Emergency Management Agency funds. There have been six revisions to the current plan; most of them occurred after the March 1, 2007, tornado in Enterprise.

"The planning process is as important as the plan itself," said Tallas. The intention is to help the county prepare for and recover from natural or man-made disasters, he added. "It is important to understand how much of the community can be affected by specific hazards and what the impacts would be on important community

assets. invited the public to attend the meeting Aug. 28 at 9:30 a.m. at the County Complex in New Brockton.

"It's important to conduct public meetings and make revisions as needed," said Tallas, who

Wednesday, August 26, 2009

LOCAL NEWS

Coffee County Emergency Management Agency seeks input for disaster plan

By Melissa Braun
Sun Staff Writer

The Coffee County Emergency Management Agency needs the public's help in securing funds to aid the county in the case of a disaster.

The Coffee County Hazard Mitigation Planning Committee in conjunction with CCEMA will hold a public hearing Aug. 28 at 9:30 a.m. to give residents an opportunity to voice concerns about issues like hazardous material spills or flooding that officials may not be aware of.

The public input can then be included in the county's Hazardous Mitigation Plan.

The plan, a requirement of the Federal Emergency Management Agency, highlights hazardous situations or materials within Coffee County and includes procedures on how to prevent or recover from said situation.

"Having a public hearing

allows us to identify problems we may have in the county and how we might protect our residents and prevent damage," said CCEMA Deputy Director Larry Walker.

Public involvement gives officials the opportunity to identify problems they might otherwise not know about.

Walker said the CCEMA wants to identify all disasters throughout the county that have occurred within the last 10 years, including brush or grass fires, building fires, severe weather, droughts or even power failure for more than two hours that have caused personal or property damage. They also want public input on ways the disasters could either be avoided or ways in which property can be protected.

Once problems or hazardous areas are identified, they are included in the Hazardous Mitigation Plan in priority order. The plan is used

as a resource for officials to apply for federal grant funding that can be used toward making Coffee County safer for all residents.

The county developed a plan in 2005.

The document is ever-evolving, however, as was evident following a March 1, 2007 tornado in Enterprise.

Six amendments were made to the plan following the natural disaster. Examples of the plan include making structural changes to the city's schools to ensure safety during storms, Walker said.

As a result of the amendment, the Enterprise City School System received federal funding to include safe rooms in each of the city's schools.

"We want the public's input. It is important," Walker said.

The public hearing will be held at the County Complex at 1065 E. McKinnon St., New Brockton.

City works to secure technological future

By Melissa Braun
Sun Staff Writer

The City of Enterprise is working to secure funding that would create a public computer center for the city's residents.

Council members unanimously agreed Aug. 18 to apply for a \$1 million grant through the Department of Commerce National Telecommunication and Information Broadband Technology Program.

If received, the grant would require a \$200,000 match from the city.

Grant funding would be used to build an addition to the Enterprise Public Library and purchase up to 25 computers to outfit the newly constructed center, said Enterprise Mayor Kenneth Boswell.

The addition would be



Councilman Bill Cooper passes the gavel to councilman Tommy Johnson.

quish control in June of 2010.

Councilman Kirk Donaldson will serve as president pro-tem.

Enterprise council members rotate the chairmanship amongst each of the five councilmen.

Coffee County has new Junior Miss

CCEMA seeks public input

INSIDE: Don't miss The Sun's annual football preview

The SUN

locally owned, home to WBTV.com

Wednesday August 26, 2009

FOOTBALL SOLUTION
 A YEAR'S WORTH OF
 COACHING
 EQUIPMENT
 REVIEW ONLINE
 SECURE POSITION TO
 15 CLUBS
 PLAYERS

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COFFEE COUNTY
HAZARD MITIGATION PLANNING AND EOP MEETING
August 28, 2009
9:30 a.m.

(PLEASE PRINT CLEARLY)

NAME	AGENCY/DEPARTMENT	PHONE/FAX	E-MAIL
LEE HELMS	LHA	205-280-3027 205-280-0543	Lee.C.LeeHelms@kc.com
JAMES Aplin	Cornington G/BC	Ph-334-347-9449 Fax-334-347-2683	J.Aplin@Cornington-GOP
Hepkin Smith	Town of Kinsho-Mayon	Ph. 334-565-3188	
Herby McCall	City of Elba	334.897.2333 334.897.3337	elbacity2@ froycable.net





ALABAMA OPEN MEETINGS ACT



A PUBLIC SERVICE OF
SECRETARY OF STATE
BETH CHAPMAN

Posted-By: Coffee County Emergency Management Agency

Meeting-Date: 8/28/2009

Meeting-Time: 9:30 AM

Notice History:

Submitted on 8/5/2009 3:23:40 PM

Meeting-Location:
1065 E. McKinnon Street
New Brockton, AL 36351

Phone-Number: 334-894-5415
Meeting-Type: special/called
Submission-datetime: 8/5/2009 3:23:40 PM

Notice:

This is a public meeting for the purpose of review ing and commenting on the Draft Copy of the
The current FEMA-approved plan is approaching the mandatory five-year revision milestone (:

APPENDIX H

Crosswalk

LOCAL MITIGATION PLAN REVIEW CROSSWALK

INSTRUCTIONS FOR USING THE PLAN REVIEW CROSSWALK FOR REVIEW OF LOCAL MITIGATION PLANS

Attached is a Plan Review Crosswalk based on the **Local Multi-Hazard Mitigation Planning Guidance**, published by FEMA in July, 2008. This Plan Review Crosswalk is consistent with the *Robert T. Stafford Disaster Relief and Emergency Assistance Act* (Stafford Act), as amended by Section 322 of the *Disaster Mitigation Act of 2000* (P.L. 106-390), the *National Flood Insurance Act of 1968*, as amended by the *National Flood Insurance Reform Act of 2004* (P.L. 108-264) and *44 Code of Federal Regulations (CFR) Part 201 – Mitigation Planning*, inclusive of all amendments through October 31, 2007.

SCORING SYSTEM

N – Needs Improvement: The plan does not meet the minimum for the requirement. Reviewer's comments must be provided.

S – Satisfactory: The plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Each requirement includes separate elements. All elements of a requirement must be rated "Satisfactory" in order for the requirement to be fulfilled and receive a summary score of "Satisfactory." A "Needs Improvement" score on elements shaded in gray (recommended but not required) will not preclude the plan from passing.

When reviewing single jurisdiction plans, reviewers may want to put an N/A in the boxes for multi-jurisdictional plan requirements. When reviewing multi-jurisdictional plans, however, all elements apply. States that have additional requirements can add them in the appropriate sections of the *Local Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements. Optional matrices for assisting in the review of sections on profiling hazards, assessing vulnerability, and identifying and analyzing mitigation actions are found at the end of the Plan Review Crosswalk.

The example below illustrates how to fill in the Plan Review Crosswalk.:

Assessing Vulnerability: Overview				
<i>Requirement §201.6(c)(2)(ii): [The risk assessment shall include a] description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community.</i>				
Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the new or updated plan include an overall summary description of the jurisdiction's vulnerability to each hazard?	Section II, pp. 4-10	The plan describes the types of assets that are located within geographically defined hazard areas as well as those that would be affected by winter storms.		<input type="checkbox"/>
B. Does the new or updated plan address the impact of each hazard on the jurisdiction?	Section II, pp. 10-20	The plan does not address the impact of two of the five hazards addressed in the plan. Required Revisions: <ul style="list-style-type: none"> Include a description of the impact of floods and earthquakes on the assets. Recommended Revisions: This information can be presented in terms of dollar value or percentages of damage.	<input type="checkbox"/>	
SUMMARY SCORE			<input type="checkbox"/>	

LOCAL MITIGATION PLAN REVIEW CROSSWALK

LOCAL MITIGATION PLAN REVIEW SUMMARY

The plan cannot be approved if the plan has not been formally adopted. Each requirement includes separate elements. All elements of the requirement must be rated "Satisfactory" in order for the requirement to be fulfilled and receive a score of "Satisfactory." Elements of each requirement are listed on the following pages of the Plan Review Crosswalk. A "Needs Improvement" score on elements shaded in gray (recommended but not required) will not preclude the plan from passing. Reviewer's comments must be provided for requirements receiving a "Needs Improvement" score.

Prerequisite(s) (Check Applicable Box)	NOT MET	MET
1. Adoption by the Local Governing Body: §201.6(c)(5) OR	X	
2. Multi-Jurisdictional Plan Adoption: §201.6(c)(5) AND	X	
3. Multi-Jurisdictional Planning Participation: §201.6(a)(3)	X	
Planning Process	N	S
4. Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)	X	
Risk Assessment	N	S
5. Identifying Hazards: §201.6(c)(2)(i)	X	
6. Profiling Hazards: §201.6(c)(2)(i)	X	
7. Assessing Vulnerability: Overview: §201.6(c)(2)(ii)	X	
8. Assessing Vulnerability: Addressing Repetitive Loss Properties. §201.6(c)(2)(ii)		X
9. Assessing Vulnerability: Identifying Structures, Infrastructure, and Critical Facilities: §201.6(c)(2)(ii)(B)	X	
10. Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		X
11. Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		X
12. Multi-Jurisdictional Risk Assessment: §201.6(c)(2)(iii)	X	

*States that have additional requirements can add them in the appropriate sections of the *Local Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

SCORING SYSTEM

Please check one of the following for each requirement.

N – Needs Improvement: The plan does not meet the minimum for the requirement. Reviewer's comments must be provided.

S – Satisfactory: The plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Mitigation Strategy	N	S
13. Local Hazard Mitigation Goals: §201.6(c)(3)(i)	X	
14. Identification and Analysis of Mitigation Actions: §201.6(c)(3)(ii)	X	
15. Identification and Analysis of Mitigation Actions: NFIP Compliance. §201.6(c)(3)(ii)		X
16. Implementation of Mitigation Actions: §201.6(c)(3)(iii)	X	
17. Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)	X	
Plan Maintenance Process	N	S
18. Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(ii)	X	
19. Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)	X	
20. Continued Public Involvement: §201.6(c)(4)(iii)		X
Additional State Requirements*	N	S
Insert State Requirement		
Insert State Requirement		
Insert State Requirement		

LOCAL MITIGATION PLAN APPROVAL STATUS

PLAN NOT APPROVED

See Reviewer's Comments

PLAN APPROVED

LOCAL MITIGATION PLAN REVIEW CROSSWALK

Local Mitigation Plan Review and Approval Status

Jurisdiction: Coffee County, AL	Title of Plan: Coffee County Multi-Jurisdictional Hazard Mitigation Plan	Date of Plan: 12/10/2009
Local Point of Contact: John Tallas	Address: 1065 E. McKinnon St New Brockton, AL 36351	
Title: EMA Director		
Agency: EMA		
Phone Number: 334-894-5415	E-Mail: jtallas@ccema.com	

State Reviewer: Zakiya Darby	Title: Mitigation Planner	Date: 01/22/10
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FEMA Reviewer:	Title:	Date:
Date Received in FEMA Region [Insert #]		
Plan Not Approved		
Plan Approved		
Date Approved		

Jurisdiction:	DFIRM**		NFIP Status*			
	In Plan	NOT in Plan	Y	N	N/A	CRS Class
1. Coffee County			X			
2. City of Elba			X			
3. City of Enterprise			X			
4. Town of Kinston			X			
5. Town of New Brockton			X			
6. Coffee County Board of Education					X	

LOCAL MITIGATION PLAN REVIEW CROSSWALK

7. City of Elba Board of Education					X	
8. City of Enterprise Board of Education					X	

* Notes: Y = Participating N = Not Participating N/A = Not Mapped

** FEMA ONLY

LOCAL MITIGATION PLAN REVIEW CROSSWALK

PREREQUISITE(S)

1. Adoption by the Local Governing Body

Requirement §201.6(c)(5): [The local hazard mitigation plan **shall** include] documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County Commissioner, Tribal Council).

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			NOT MET	MET
A. Has the local governing body adopted new or updated plan?		Will take place after final approval	X	
B. Is supporting documentation, such as a resolution, included?		Will be provided after final approval	X	
SUMMARY SCORE			X	

2. Multi-Jurisdictional Plan Adoption

Requirement §201.6(c)(5): For multi-jurisdictional plans, each jurisdiction requesting approval of the plan **must** document that it has been formally adopted.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			NOT MET	MET
A. Does the new or updated plan indicate the specific jurisdictions represented in the plan?	Pg 4	The plan update identifies the specific jurisdictions represented in the plan.		X
B. For each jurisdiction, has the local governing body adopted the new or updated plan?		Will take place after final approval	X	
C. Is supporting documentation, such as a resolution, included for each participating jurisdiction?		Will be provided after final approval	X	
SUMMARY SCORE			X	

3. Multi-Jurisdictional Planning Participation

Requirement §201.6(a)(3): Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process ... Statewide plans will not be accepted as multi-jurisdictional plans.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			NOT MET	MET
A. Does the new or updated plan describe how each jurisdiction participated in the plan's development?	Pgs 9-10	The plan update states that a 5 person board was created called the Coffee County Emergency Management Board. The members are from 5 of the participating jurisdiction. Each board member appointed a representative from their respective jurisdiction to serve on the committee. The committee was responsible for updating the plan.	X	X

LOCAL MITIGATION PLAN REVIEW CROSSWALK

		<p>Required Revisions:</p> <ul style="list-style-type: none"> This information is the same as the original plan. If this information is still valid and accurate, the plan update must state this. <i>Added statement: The board members are the same as in 1990 by position, County Commission Chairman and the mayors of Elba, Enterprise, Kinston, and New Brockton.</i> The plan update says, "Following notification of the award of a grant from FEMA for the development of a Hazard Mitigation Plan, initial mitigation planning project scope was reviewed and considered by the Coffee County Emergency Management Board." However, no grant was awarded for the update of the plan. This information was in the original plan. <i>Corrected information....the grant was a Homeland Security Grant.</i> The plan update includes the school boards as participating jurisdictions, but the plan update does not describe how they participated in the plan's development. <i>The three Boards of Education are considered as separate jurisdictions. They all participated in the plan's development, though not all attended the meetings. Those that did not have any specific changes to review/submit did not attend the meetings; however, all reviewed the overall plan as well as their respective sections of the plan and they submitted comments either by email or verbally.</i> <p>Reference: Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008: pgs 21-24</p>		
<p>B. Does the updated plan identify all participating jurisdictions, including new, continuing, and the jurisdictions that no longer participate in the plan?</p>	<p>Not addressed</p>	<p>The plan update does not identify if the participating jurisdictions are new, continuing, or no longer participating. <i>Identified the jurisdictions.</i></p> <p>Reference: Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008: pgs 21-24</p>	<p>X</p>	<p>X</p>
<p>SUMMARY SCORE</p>			<p>X</p>	

LOCAL MITIGATION PLAN REVIEW CROSSWALK

PLANNING PROCESS: §201.6(b): *An open public involvement process is essential to the development of an effective plan.*

4. Documentation of the Planning Process

Requirement §201.6(b): *In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include:*

- (1) *An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;*
- (2) *An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and*
- (3) *Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.*

Requirement §201.6(c)(1): *[The plan shall document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the plan provide a narrative description of the process followed to prepare the new or updated plan?	Pg 9-12	<p>The plan update describes the process followed to prepare the plan. The plan update also outlines the expectations of the committee members. The plan update states that the committee met 3 times to gather information from the committee members and the public.</p> <p>Required Revisions: The information in section B on pages 9-10 is the same as the original plan. If this information is still valid and accurate the plan update must state this.</p> <p>Corrected grant type and made statement referencing the information.</p> <p>Reference: Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008: pgs 26-28</p>	X	X
B. Does the new or updated plan indicate who was involved in the current planning process? (For example, who led the development at the staff level and were there any external contributors such as contractors? Who participated on the plan committee, provided information, reviewed drafts, etc.?)	Pgs 9-12	<p>The plan update states that each participating jurisdiction appointed a representative to be on the planning committee. The plan also lists the various agencies that participated in the planning process.</p>		X

LOCAL MITIGATION PLAN REVIEW CROSSWALK

4. Documentation of the Planning Process

Requirement §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:

- (1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;
- (2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and
- (3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

Requirement §201.6(c)(1): [The plan **shall** document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

	Location in the		SCORE	
C. Does the new or updated plan indicate how the public was involved? (Was the public provided an opportunity to comment on the plan during the drafting stage and prior to the plan approval?)	Pgs 11-12	The plan update states that the public was allowed input at 2 meetings that were held July 27 and August 28, 2009. These meetings were advertised on TV, radio and in various newspapers. The meeting held August 28, 2009 allowed the public to review the draft plan. Required Revisions: The plan update shall indicate how the public will have an opportunity to comment on and review the final plan prior to adoption. This can be accomplished by allowing the public access to the meetings when the plan will be adopted by each jurisdiction. Added information on how the public will have an opportunity to comment on and review the final plan prior to adoption.	X	X
D. Does the new or updated plan discuss the opportunity for neighboring communities, agencies, businesses, academia, nonprofits, and other interested parties to be involved in the planning process?	Pgs 11-12	The plan update states that the planning meetings were advertised in neighboring communities via radio and TV affording the opportunity for all interested parties to be involved in the planning process.		X
E. Does the planning process describe the review and incorporation, if appropriate, of existing plans, studies, reports, and technical information?	Pg 12	The plan update provides a list of the reports, plans and studies that were reviewed for the plan update. Required Revisions: The list is the same as in the original plan. If the information is still valid and relevant the plan must state this. Added statement.	X	X
F. Does the updated plan document how the planning team reviewed and analyzed each section of the plan and whether each section was revised as part of the update process?	Not Addressed	The plan update does not address the review and analyzing of each section. Required Revisions: The update plan shall describe the process used to review and analyze each section of the plan. If the planning team or committee finds that some sections of the plan warrant an update and others do not, the process the team undertook to make that determination must be	X	X

LOCAL MITIGATION PLAN REVIEW CROSSWALK

4. Documentation of the Planning Process

Requirement §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:

- (1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;
- (2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and
- (3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

Requirement §201.6(c)(1): [The plan **shall** document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

Location in the		SCORE	
		documented in the plan. Added information. <i>Reference: Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008: pgs 26-27</i>	
SUMMARY SCORE			X X

RISK ASSESSMENT: §201.6(c)(2): The plan shall include a risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards.

5. Identifying Hazards

Requirement §201.6(c)(2)(i): [The risk assessment **shall** include a] description of the type ... of all natural hazards that can affect the jurisdiction.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the new or updated plan include a description of the types of all natural hazards that affect the jurisdiction?	Pg 14-31	The plan update provides of natural hazards that affect the jurisdiction. Required Revisions: The following discrepancies must be corrected for this element to be met. <ul style="list-style-type: none"> ➤ A large portion of the hazard identification section of the plan is the same as the original plan. If the information is still relevant and valid, the plan update shall document that it will remain the same. ➤ Added statement. ➤ The plan update is unclear as to which specific hazards will be profiled. The various descriptions provided in pages 14-31, are not consistent and need to be clarified. 	X	X

LOCAL MITIGATION PLAN REVIEW CROSSWALK

		<ul style="list-style-type: none"> ➤ Corrected. Combined information and joined like-hazard information. <ul style="list-style-type: none"> • General Hazard Identification and Background Information (pgs 14-18): This section describes tornados, high winds (due to thunderstorms, tornados and hurricanes), winter storms/ice storms, drought/heat, hurricanes, floods, dam failure and wildfires. The plan update also provides a description of earthquakes, tsunamis, volcanoes and landslides; but states that they will not be considered for mitigation measures. • Overview of Most Significant Natural Hazards (pgs 21-23): This section provides a description of: tornados, hurricanes and floods. • Most Severe Natural Hazard Affecting Coffee County (pg 23): This section provides a description for only floods. • Natural Hazard Descriptions (pgs 24-27): This section provides a description of: floods, hurricanes, tornados, dam safety and ice storms and winter weather. • Vulnerability Assessments (pgs 27-31): This section provides a description of: floods, hurricanes, tornados, dam safety, ice storms and winter weather and earthquakes. ➤ The statistical information throughout the plan update needs to be reviewed and updated to include information through 2009. One example is: <ul style="list-style-type: none"> • On pg 15, part G; the plan update discusses the number of thunderstorm winds over a 50 year period. This is the same information from the original plan. • Updated all information on hazards through 2009. <p><i>Reference: Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008: pgs 30-31</i></p>			
SUMMARY SCORE				X	X

LOCAL MITIGATION PLAN REVIEW CROSSWALK

6. Profiling Hazards

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

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the risk assessment identify the location (<i>i.e.</i> , geographic area affected) of each natural hazard addressed in the new or updated plan?	Pg 14-31 Appendix E	<p>The plan update states that the whole county is affected by all hazards equally, except for flooding and dam safety. The plan includes the areas that flooding most often occurs and also provides a list of dams in appendix E.</p> <p>Required Revisions: Since the hazards are not clearly identified in Element 5A, and are inconsistent throughout the document, these disasters cannot be properly assessed; therefore, this requirement cannot be met.</p> <p>Hazards have been clearly identified in Element 5A.</p>	X	X
B. Does the risk assessment identify the extent (<i>i.e.</i> , magnitude or severity) of each hazard addressed in the new or updated plan?	Pg 14-31	<p>The plan update does not identify the extent of potential hazard events for Coffee County.</p> <p>Required Revision: The updated plan must clearly define any classification method to illustrate the extent. Extent is not necessarily determined by historical data. This element asks "How bad CAN it get?"</p> <p>Added: The extent of the hazard provides the range of magnitude or severity that could be experienced by the county if such an event occurred. The hazard is classified using terms of major, minor, and minimum based on the probability of future damage estimates providing information on the range of magnitude or severity the county can anticipate from potential hazard events. A Major ranking requires continuous action and participations from the entire community and has a 100% or greater chance of an annual occurrence. A Minor ranking involves fewer people, effort, and area of the community and has a 50% - 99% chance of an annual occurrence. A Minimum ranking involves a small number of people and plans for a specific action and has a 49% or less chance of an annual occurrence.</p> <p>Added extent to each hazard.</p> <p>Reference: Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008: pgs 32-34</p> <p>Required Revisions: Since the hazards are not clearly</p>	X	X

LOCAL MITIGATION PLAN REVIEW CROSSWALK

		<p>identified in Element 5A, and are inconsistent throughout the document, these disasters cannot be properly assessed; therefore, this requirement cannot be met. Hazards have been clearly identified in Element 5A.</p>		
<p>C. Does the plan provide information on previous occurrences of each hazard addressed in the new or updated plan?</p>	<p>Pg 14-31</p>	<p>The plan update describes previous occurrences of each hazard in narrative form and in chart form in Appendix B pages 65-70.</p> <p>Required Revisions: The plan update added only two additional previous occurrences on pages 18-21. There are a number of events that took place between 1995 and 2007. Some of these events were federally declared disasters. An example would be Hurricane Ivan. The plan update should include occurrences since the original plan was approved. Corrected and added information. Reference: Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008: pgs 32-34</p> <p>Required Revisions: Since the hazards are not clearly identified in Element 5A, and are inconsistent throughout the document, these disasters cannot be properly assessed; therefore, this requirement cannot be met. Hazards have been clearly identified in Element 5A.</p>	<p>X</p>	<p>X</p>
<p>D. Does the plan include the probability of future events (i.e., chance of occurrence) for each hazard addressed in the new or updated plan?</p>	<p>Pg 14-31</p>	<p>The plan update does not include the probability of future events for all hazards.</p> <p>Required Revision: The probability is a statistical measure of the likelihood that the hazard event would occur in an area. Probability of the Hazard: This section discusses the probability (frequency) of the various hazards. The information in this section is drawn from a combination of sources, expertise, and the NCDC Storm Event Database for Alabama. Where possible, the probability is discussed in terms of a commonly accepted design event, i.e., the 100-year flood. For the plan update, the probability of each hazard was reviewed and revised in cases where better information was available.</p> <p>The probability (%) that an identified hazard will occur on an annual basis was determined using the following formula:</p> <p><i>Number of historical or reported events in a time period divided by the number of years the incidents occurred within = Probability of Future Annual Event Occurrences</i></p>	<p>X</p>	<p>X</p>

LOCAL MITIGATION PLAN REVIEW CROSSWALK

		<p>Example: 13 Extreme Temperature events experienced divided by a 6 year period; 13 divided 6 = >100%</p> <p>A similar formula was used to determine an estimate of the expected damages from each event:</p> <p><i>Total amount of damages (in dollars) for each historical or reported event divided by the number of damage causing events within the time period = Estimate of expected future damages</i></p> <p>Example: \$172,000 total reported hail damage from 1960-2003 with 21 of those being reported as damage causing; \$172,000/21=\$8,190</p> <p>Added probability to each hazard.</p> <p>Reference: Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008: pgs 32-34</p> <p>Required Revisions: Since the hazards are not clearly identified in Element 5A, and are inconsistent throughout the document, these disasters cannot be properly assessed; therefore, this requirement cannot be met.</p> <p>Hazards have been clearly identified in Element 5A.</p>		
SUMMARY SCORE			X	X

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7. Assessing Vulnerability: Overview

Requirement §201.6(c)(2)(ii): [The risk assessment **shall** include a] description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description **shall** include an overall summary of each hazard and its impact on the community.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the new or updated plan include an overall summary description of the jurisdiction's vulnerability to each hazard?	Pgs 6-8 & 31-36 Appendix C & D	<p>The plan update includes a list of critical facilities and structures for the jurisdiction. The plan also includes the population that would be affected by the identified hazards.</p> <p>Required Revisions: Some of the information concerning the number of structures and the replacement values are the same as the original plan. For any statistical information that will remain the same, the plan update must indicate why this information is the same. This information has been revised</p> <p>Reference: Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008: pgs 36-38</p> <p>Required Revisions: Since the hazards are not clearly identified in Element 5A, and are inconsistent throughout the document, these disasters cannot be properly assessed; therefore, this requirement cannot be met. Hazards have been clearly identified in Element 5A.</p>	X	X
B. Does the new or updated plan address the impact of each hazard on the jurisdiction?	Pgs 32-36	<p>The updated plan addresses the impact of each hazard on the jurisdictions. In addition to the information being presented in narrative form, it is also presented in tabular form for vulnerable structures by dollar value. With the exception of flood, all jurisdictions within the County are equally at risk of five of the natural hazards. The plan also addresses the impact by describing the previous occurrences.</p> <p>Required Revisions: Since the hazards are not clearly identified in Element 5A, and are inconsistent throughout the document, these disasters cannot be properly assessed; therefore, this requirement cannot be met. Hazards have been clearly identified in Element 5A.</p>	X	X
SUMMARY SCORE			X	X

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8. Assessing Vulnerability: Addressing Repetitive Loss Properties

Requirement §201.6(c)(2)(ii): [The risk assessment] **must** also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged floods.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the new or updated plan describe vulnerability in terms of the types and numbers of repetitive loss properties located in the identified hazard areas?	Pgs 38 & 82	Note: This requirement becomes effective for all local plans approved after October 1, 2008. The plan update provides the numbers and types of repetitive loss structures.		X
SUMMARY SCORE				X

9. Assessing Vulnerability: Identifying Structures

Requirement §201.6(c)(2)(ii)(A): The plan **should** describe vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard area

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the new or updated plan describe vulnerability in terms of the types and numbers of existing buildings, infrastructure, and critical facilities located in the identified hazard areas?	Pgs 32-36 Pgs 74-80	Note: A "Needs Improvement" score on this requirement will not preclude the plan from passing. The plan update provides a list of all existing structures in the jurisdiction.		X
B. Does the new or updated plan describe vulnerability in terms of the types and numbers of future buildings, infrastructure, and critical facilities located in the identified hazard areas?	Not addressed	Note: A "Needs Improvement" score on this requirement will not preclude the plan from passing. The plan update does not address the types and numbers of future structures. The plan states, "There are no plans for future development in hazard prone areas." There are future plans for a multi-use building for citizens' use in Enterprise, Alabama; however, this building will not be located in a hazard prone area.	X	X
SUMMARY SCORE			X	X

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10. Assessing Vulnerability: Estimating Potential Losses

Requirement §201.6(c)(2)(ii)(B): [The plan **should** describe vulnerability in terms of an] estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(ii)(A) of this section and a description of the methodology used to prepare the estimate

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the new or updated plan estimate potential dollar losses to vulnerable structures?	Pgs 32-36	Note: A "Needs Improvement" score on this requirement will not preclude the plan from passing. The plan update provides the potential dollar losses to vulnerable structures.		X
B. Does the new or updated plan describe the methodology used to prepare the estimate?	Pg 32	Note: A "Needs Improvement" score on this requirement will not preclude the plan from passing. The plan update states that the estimates were based on engineering estimates and/or current insurance replacement amounts.		X
SUMMARY SCORE				X

11. Assessing Vulnerability: Analyzing Development Trends

Requirement §201.6(c)(2)(ii)(C): [The plan **should** describe vulnerability in terms of] providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the new or updated plan describe land uses and development trends?	Pgs 39-40	Note: A "Needs Improvement" score on this requirement will not preclude the plan from passing. The plan update provides a description of the development in Coffee County, Elba and Enterprise.		X
SUMMARY SCORE				X

12. Multi-Jurisdictional Risk Assessment

Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment **must** assess each jurisdiction's risks where they vary from the risks facing the entire planning area.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the new or updated plan include a risk assessment for each participating jurisdiction as needed to reflect unique or varied risks?	Pgs 27-31	The plan update does not include a risk assessment for each hazard in the participating jurisdictions.	X	X

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		<p>Required Revisions: The plan update must present risk assessment information for the planning area as a whole. However, where hazards and associated losses occur in only part of the planning area, this information must be attributed to the particular jurisdiction in which they occur. Added risk to each hazard. All hazards profiled affect all jurisdictions countywide.</p> <p>Reference: Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008: pgs 50-51</p> <p>Required Revisions: Since the hazards are not clearly identified in Element 5A, and are inconsistent throughout the document, these disasters cannot be properly assessed; therefore, this requirement cannot be met. Hazards have been clearly identified in Element 5A.</p>		
SUMMARY SCORE			X	X

MITIGATION STRATEGY: §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, policies, programs and resources, and its ability to expand on and improve these existing tools.*

13. Local Hazard Mitigation Goals

Requirement §201.6(c)(3)(i): *[The hazard mitigation strategy shall include a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.*

Element	Location in the Plan (section or annex and page #)	Reviewer’s Comments	SCORE	
			N	S
A Does the new or updated plan include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards?	Pg 41	The plan update provides a list of mitigation goals. Required Revision: The goals listed are the same as those in the original plan. The plan update must indicate why the goals have remained the same. It is not necessary to change goals from the previous plan if they remain valid; however, the plan must document that goals were re-evaluated and that they were determined to remain valid and effective. Revised goals. Reference: Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008: pgs 53-55 Required Revisions: Since the hazards are not clearly identified in Element 5A, and are inconsistent throughout the	X	X

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		document, these disasters cannot be properly assessed; therefore, this requirement cannot be met. Hazards have been clearly identified in Element 5A.		
SUMMARY SCORE			X	X

14. Identification and Analysis of Mitigation Actions

Requirement §201.6(c)(3)(ii): [The mitigation strategy **shall** include 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.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the new or updated plan identify and analyze a comprehensive range of specific mitigation actions and projects for each hazard?	Pgs 41-47	<p>The plan update does not include specific actions and projects for each hazard identified in the plan.</p> <p>Required Revision:</p> <ul style="list-style-type: none"> The plan update has a number of actions and projects that are the same as the original plan. The plan update needs to identify why these actions have been carried forward from the original plan. Added statement. The plan update shall list potential loss reduction actions that the jurisdictions have identified in its planning process and analyze various actions that achieve the community's goals and objectives to reduce or avoid the effects of the identified hazards. Pages 69-72 discuss loss estimates. A majority of the actions and projects that have been identified in the plan update are being worked on or have been completed. The plan update needs to identify future actions and projects that will continue to mitigate against future natural hazards. <p>In parenthesis following each mitigation action/project is the status of the action/project, i.e., continuing; completed; or new referenced 2010-2015.</p> <ul style="list-style-type: none"> The plan update shall also indicate which hazard the action or project will be addressing. <p>Added this information.</p> <p>Reference: Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008: pgs 56-60</p>	X	X

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		<p>Required Revisions: Since the hazards are not clearly identified in Element 5A, and are inconsistent throughout the document, these disasters cannot be properly assessed; therefore, this requirement cannot be met. Hazards have been clearly identified in Element 5A.</p>		
B. Do the identified actions and projects address reducing the effects of hazards on new buildings and infrastructure?	Pgs 41-47	<p>The plan update does identify actions and projects for new buildings. Some examples are:</p> <ul style="list-style-type: none"> • All existing schools and any future new school construction should include sufficient “shelter spaces/safe rooms” to provide adequate protection and safety for all students and staff. • Planned projects include updating the City Master Plan, including Planning, Zoning, Subdivision Regulations, Floodplain Ordinance and Building Codes. • Install a safety shelter at the airport to include a generator for back-up emergency services. <p>Required Revisions: Since the hazards are not clearly identified in Element 5A, and are inconsistent throughout the document, these disasters cannot be properly assessed; therefore, this requirement cannot be met. Hazards have been clearly identified in Element 5A.</p>	X	X
C. Do the identified actions and projects address reducing the effects of hazards on existing buildings and infrastructure?	Pgs 41-47	<p>The plan update does identify actions and projects for existing buildings. Some examples are:</p> <ul style="list-style-type: none"> • All existing schools and any future new school construction should include sufficient “shelter spaces/safe rooms” to provide adequate protection and safety for all students and staff. • Install back-up generators • The buyout of twelve structures and relocation of one structure in the ten-year floodplain. <p>Required Revisions: Since the hazards are not clearly identified in Element 5A, and are inconsistent throughout the document, these disasters cannot be properly assessed; therefore, this requirement cannot be met. Hazards have been clearly identified in Element 5A.</p>	X	X
SUMMARY SCORE			X	X

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15. Identification and Analysis of Mitigation Actions: National Flood Insurance Program (NFIP) Compliance

Requirement: §201.6(c)(3)(ii): [The mitigation strategy] must also address the jurisdiction's participation in the National Flood Insurance Program (NFIP), and continued compliance with NFIP requirements, as appropriate.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the new or updated plan describe the jurisdiction (s) participation in the NFIP?	Pg 29	<p>Note: This requirement becomes effective for all local mitigation plans approved after October 1, 2008.</p> <p>The plan update identifies the jurisdictions that participate in the NFIP.</p>		X
B. Does the mitigation strategy identify, analyze and prioritize actions related to continued compliance with the NFIP?	Pgs 41-47	<p>Note: This requirement becomes effective for all local mitigation plans approved after October 1, 2008.</p> <p>The plan update identifies actions related to continued compliance with the NFIP, such as:</p> <ul style="list-style-type: none"> Updating the local Flood Damage Prevention resolution. Proposing a study of Beaverdam and Moore's Creek Basin to eliminate flooding in these areas. The buyout of twelve structures and relocation of one structure in the ten-year floodplain. 		X
SUMMARY SCORE				X

16. Implementation of Mitigation Actions

Requirement: §201.6(c)(3)(iii): [The mitigation strategy section **shall** include] an action plan describing how the actions identified in section (c)(3)(ii) 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.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the new or updated mitigation strategy include how the actions are prioritized? (For example, is there a discussion of the process and criteria used?)	Pgs 47-55	<p>The plan update states that all the participating jurisdictions agreed to prioritize mitigation actions and projects based on both funds available and where the application of those funds can accomplish the most benefit for the population as a whole or where the funds will accomplish the greatest reduction in potential future damages.</p> <p>Required Revisions: The actions listed on pages 47-55 are different from the actions identified on pages 41-47. After</p>	X	X

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		<p>describing the mitigation actions to be included in the mitigation strategy, the local jurisdiction shall describe the method for prioritizing the order in which actions will be implemented. The identified actions and projects in each sub-section need to be consistent.</p> <p>Added charts with pertinent information.</p> <p>Reference: Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008: pgs 63-65</p>		
B. Does the new or updated mitigation strategy address how the actions will be implemented and administered, including the responsible department, existing and potential resources and the timeframe to complete each action?	Pgs 47-55	<p>The plan update does not address this requirement for all identified actions and projects.</p> <p>Required Revisions: The plan update shall include how actions will be implemented and administered, including the department or agency responsible for carrying out the actions, the potential funding sources, and the implementation timeline.</p> <p>Added charts with pertinent information.</p> <p>Reference: Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008: pgs 63-65</p>	X	X
C. Does the new or updated prioritization process include an emphasis on the use of a cost-benefit review to maximize benefits?	Pg 47	<p>The plan update states that cost benefit was used when prioritizing the actions and projects.</p>		X
D. Does the updated plan identify the completed, deleted or deferred mitigation actions as a benchmark for progress, and if activities are unchanged (<i>i.e.</i> , deferred), does the updated plan describe why no changes occurred?	Not Addressed	<p>The plan update does not identify the completed, deleted or deferred mitigation actions. The plan update does not provide a description as to why some of the actions are the same as in the original plan.</p> <p>Required Revisions: The update plan must identify the completed, deleted or deferred actions from the previously approved plan as a benchmark for progress. Further, the update plan shall include any new mitigation actions identified in its evaluation and prioritization since the previous plan was approved.</p> <p>Added charts with pertinent information.</p> <p>Reference: Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008: pgs 65-66</p>	X	X
SUMMARY SCORE			X	X

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17. Multi-Jurisdictional Mitigation Actions

Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there **must** be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A Does the new or updated plan include identifiable action items for each jurisdiction requesting FEMA approval of the plan?	Pgs 41-47	<p>The plan update includes identifiable action items for each participating jurisdiction.</p> <p>Required Revisions: The plan update shall indicate why the plan update has the same actions from the original plan. Added statement.</p> <p>Reference: Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008: pgs 65-66</p>	X	X
B. Does the updated plan identify the completed, deleted or deferred mitigation actions as a benchmark for progress, and if activities are unchanged (<i>i.e.</i> , deferred), does the updated plan describe why no changes occurred?	Not Addressed	<p>The plan update does not identify the completed, deleted or deferred mitigation actions. The plan update does not provide a description as to why some of the actions are the same as in the original plan.</p> <p>Required Revisions: The update plan must identify the completed, deleted or deferred actions from the previously approved plan as a benchmark for progress. Further, the update plan shall include any new mitigation actions identified in its evaluation and prioritization since the previous plan was approved. Added statement.</p> <p>Reference: Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008: pgs 65-66</p>	X	X
SUMMARY SCORE			X	X

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PLAN MAINTENANCE PROCESS

18. Monitoring, Evaluating, and Updating the Plan

Requirement §201.6(c)(4)(i): [The plan maintenance process **shall** include a] section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the new or updated plan describe the method and schedule for monitoring the plan, including the responsible department?	Pg 58	<p>The plan update states that the Coffee County Emergency Management Board will be responsible for monitoring the plan. The plan update states that the plan will be reviewed at a minimum on a biennial basis.</p> <p>Required Revisions: This section is the same as the original plan. The plan update shall indicate why this section has remained the same.</p> <p>Added statement: The method for monitoring, evaluating, and updating the 2005 Plan worked very well; therefore, this method remains the same for the 2010 Plan revision.</p> <p>Reference: Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008: pgs 68-69</p>	X	X
B. Does the new or updated plan describe the method and schedule for evaluating the plan, including how, when and by whom (<i>i.e.</i> the responsible department)?	Pg 58	<p>The plan update states that the Coffee County Emergency Management Board will be responsible for evaluating the plan. The plan update states that the plan will be evaluated at a minimum on a biennial basis.</p> <p>Required Revisions: This section is the same as the original plan. The plan update shall indicate why this section has remained the same.</p> <p>Added statement: The method for monitoring, evaluating, and updating the 2005 Plan worked very well; therefore, this method remains the same for the 2010 Plan revision.</p> <p>Reference: Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008: pgs 68-69</p>	X	X
C. Does the new or updated plan describe the method and schedule for updating the plan within the five-year cycle?	Pg 58	<p>The plan update states that the Coffee County Emergency Management Board will be responsible for updating the plan. The plan will be updated every 5 years.</p> <p>Required Revisions: This section is the same as the original plan. The plan update shall indicate why this</p>	X	X

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		<p>this section has remained the same. The method for monitoring, evaluating, and updating the 2005 Plan worked very well; therefore, this method remains the same for the 2010 Plan revision.</p> <p><i>Reference: Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008: pgs 68-69</i></p>		
SUMMARY SCORE			X	X

19. Incorporation into Existing Planning Mechanisms

Requirement §201.6(c)(4)(ii): [The plan **shall** include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the new or updated plan identify other local planning mechanisms available for incorporating the mitigation requirements of the mitigation plan?	Pg 59	The plan update identifies the Coffee County EOP and local economic development and land use studies.		X
B. Does the new or updated plan include a process by which the local government will incorporate the mitigation strategy and other information contained in the plan (e.g., risk assessment) into other planning mechanisms, when appropriate?	Pg 59	<p>The plan update states that the plan will be available to each jurisdiction for incorporation.</p> <p>Required Revisions: The plan update does not include a process for incorporating the plan. The plan update shall specify how the mitigation strategy, including the goals and objectives, and mitigation actions will be incorporated into other planning mechanisms.</p> <p>Added information on page 11. The plan update states that the EOP references the Hazard Mitigation Plan as well as other plans related to all potential threats. This Hazard Mitigation Plan update has been integrated in the planning process through meetings, discussions, and references in the plans.</p> <p><i>Reference: Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008: pgs 70-72</i></p>	X	X
C. Does the updated plan explain how the local government incorporated the mitigation strategy and other information contained in the plan (e.g., risk assessment) into other planning mechanisms, when appropriate?	Pg 59	<p>The plan update does not address how the original plan incorporated into other planning mechanisms.</p> <p>Required Revisions: The update plan must explain how the local government incorporated the mitigation plan into other planning mechanisms, when appropriate, as a demonstration of progress in local</p>	X	X

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		<p>mitigation efforts. If the original plan was not incorporated into other planning mechanism, the plan update must state that.</p> <p>Added information on page 11. The plan update states that the EOP references the Hazard Mitigation Plan as well as other plans related to all potential threats. This Hazard Mitigation Plan update has been integrated in the planning process through meetings, discussions, and references in the plans.</p> <p>Reference: Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008: pgs 70-72</p>		
SUMMARY SCORE			X	X

20. Continued Public Involvement

Requirement §201.6(c)(4)(iii): [The plan maintenance process **shall** include a] discussion on how the community will continue public participation in the plan maintenance process.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the new or updated plan explain how continued public participation will be obtained? (For example, will there be public notices, an on-going mitigation plan committee, or annual review meetings with stakeholders?)	Pg 59	The plan update states that plan review meetings will be publicized to promote public involvement.		X
SUMMARY SCORE				X

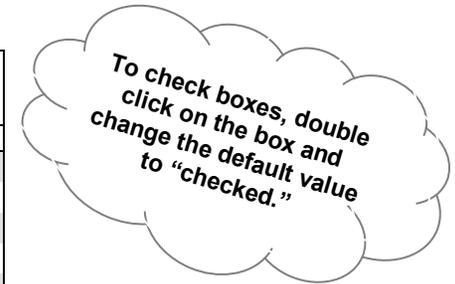
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MATRIX A: PROFILING HAZARDS

This matrix can assist FEMA and the State in scoring each hazard. Local jurisdictions may find the matrix useful to ensure that their plan addresses each natural hazard that can affect the jurisdiction. **Completing the matrix is not required.**

Note: First, check which hazards are identified in requirement §201.6(c)(2)(i). Then, place a checkmark in either the N or S box for each applicable hazard. An “N” for any element of any identified hazard will result in a “Needs Improvement” score for this requirement. List the hazard and its related shortcoming in the comments section of the Plan Review Crosswalk.

Hazard Type	Hazards Identified Per Requirement §201.6(c)(2)(i)	A. Location		B. Extent		C. Previous Occurrences		D. Probability of Future Events	
	Yes	N	S	N	S	N	S	N	S
Avalanche	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coastal Erosion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coastal Storm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dam Failure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drought	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Earthquake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Expansive Soils	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Levee Failure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hailstorm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hurricane	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Land Subsidence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Landslide	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Severe Winter Storm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tornado	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tsunami	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Volcano	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wildfire	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Windstorm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Legend:

§201.6(c)(2)(i) Profiling Hazards

- A. Does the risk assessment identify the location (*i.e.*, geographic area affected) of each hazard addressed in the **new or updated** plan?
- B. Does the risk assessment identify the extent (*i.e.*, magnitude or severity) of each hazard addressed in the **new or updated** plan?
- C. Does the plan provide information on previous occurrences of each natural hazard addressed in the **new or updated** plan?
- D. Does the plan include the probability of future events (*i.e.*, chance of occurrence) for each hazard addressed in the plan?

LOCAL MITIGATION PLAN REVIEW CROSSWALK

MATRIX B: ASSESSING VULNERABILITY

This matrix can assist FEMA and the State in scoring each hazard. Local jurisdictions may find the matrix useful to ensure that the new or updated plan addresses each requirement. **Completing the matrix is not required.**

Note: First, check which hazards are identified in requirement §201.6(c)(2)(i). Then, place a checkmark in either the N or S box for each applicable hazard. An "N" for any element of any identified hazard will result in a "Needs Improvement" score for this requirement. List the hazard and its related shortcoming in the comments section of the Plan Review Crosswalk. Note: Receiving an N in the shaded columns will not preclude the plan from passing.

To check boxes, double click on the box and change the default value to "checked."

Hazard Type	Hazards Identified Per Requirement §201.6(c)(2)(i)	A. Overall Summary Description of Vulnerability				B. Hazard Impact				A. Types and Number of Existing Structures in Hazard Area (Estimate)				B. Types and Number of Future Structures in Hazard Area (Estimate)				A. Loss Estimate				B. Methodology			
	Yes	N		S		N		S		N		S		N		S		N		S		N		S	
Avalanche	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coastal Erosion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coastal Storm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dam Failure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drought	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Earthquake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Expansive Soils	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Levee Failure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hailstorm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hurricane	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Land Subsidence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Landslide	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Severe Winter Storm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tornado	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tsunami	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Volcano	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wildfire	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Windstorm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Legend:

§201.6(c)(2)(ii) Assessing Vulnerability: Overview

- A. Does the **new or updated** plan include an overall summary description of the jurisdiction's vulnerability to each hazard?
- B. Does the **new or updated** plan address the impact of each hazard on the jurisdiction?

- B. Does the **new or updated** plan describe vulnerability in terms of the types and numbers of future buildings, infrastructure, and critical facilities located in the identified hazard areas?

§201.6(c)(2)(ii)(A) Assessing Vulnerability: Identifying Structures

- A. Does the **new or updated** plan describe vulnerability in terms of the types and numbers of existing buildings, infrastructure, and critical facilities located in the identified hazard areas?

§201.6(c)(2)(ii)(B) Assessing Vulnerability: Estimating Potential Losses

- A. Does the **new or updated** plan estimate potential dollar losses to vulnerable structures?
- B. Does the **new or updated** plan describe the methodology used to prepare the estimate?

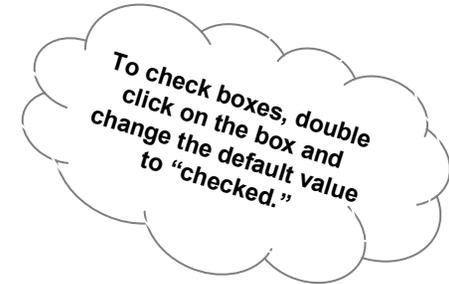
LOCAL MITIGATION PLAN REVIEW CROSSWALK

MATRIX C: IDENTIFICATION AND ANALYSIS OF MITIGATION ACTIONS

This matrix can assist FEMA and the State in scoring each hazard. Local jurisdictions may find the matrix useful to ensure consideration of a range of actions for each hazard. **Completing the matrix is not required.**

*Note: First, check which hazards are identified in requirement §201.6(c)(2)(i). Then, place a checkmark in either the N or S box for each **applicable** hazard. An “N” for any identified hazard will result in a “Needs Improvement” score for this requirement. List the hazard and its related shortcoming in the comments section of the Plan Review Crosswalk.*

Hazard Type	Hazards Identified Per Requirement §201.6(c)(2)(i)	A. Comprehensive Range of Actions and Projects	
	Yes	N	S
Avalanche	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coastal Erosion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coastal Storm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dam Failure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drought	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Earthquake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Expansive Soils	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Levee Failure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hailstorm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hurricane	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Land Subsidence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Landslide	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Severe Winter Storm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tornado	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tsunami	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Volcano	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wildfire	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Windstorm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Legend:

§201.6(c)(3)(ii) Identification and Analysis of Mitigation Actions

A. Does the **new or updated** plan identify and analyze a comprehensive range of specific mitigation actions and projects for each hazard?