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Acknowledgements

The 2010 update of the Dixie County Local Mitigation Strategy (LMS) was developed under the authority and support of the Dixie County Board of County Commissioners, and the cities of Horseshoe Beach and Cross City.

The Dixie County LMS update was developed in conjunction with the Dixie County Local Mitigation Strategy Committee and other interested parties. The 2010 LMS was prepared by the Dixie County Emergency Services under contract support to Disaster Strategies and Ideas Group (DSI), LLC, 1953 Thomasville Road, Tallahassee, Florida 32309. (www.dsideas.com)

The Dixie County LMS is available for public review at the Office of the Dixie County Emergency Services, Department of Emergency Management located at 17600 SE Hwy US 19, Cross City, Florida 32628, and once approved by FEMA, online at <http://www.dixieemergency.com>.

Executive Summary

Dixie County is certainly accustomed to experiencing numerous natural and manmade disasters. Given its location and the fact it shares its entire western border with the Gulf of Mexico, the County has experienced many tropical storms and other related weather events. This “Big Bend” area of Florida, which Dixie County is a part of, is predicted to experience some of the highest storm surges found anywhere in the nation. With its shallow offshore bathymetry, and the County’s low-lying coastal topography, it is extremely vulnerable to all types of tropical events, and even non-tropical events, such as the Winter Storm of 1993. That storm caused the deaths of several nearby coastal inhabitants based on the rapid rise of the Gulf of Mexico.

Due to Dixie County’s abundance of forests, it is highly susceptible to forest fires, especially in the wildland/urban interface areas. The timber industry is one of the industrial lifelines in Dixie County, and employs many of its residents. Living with the threat of wildfire and its associated impacts requires constant surveillance.

In addition, Dixie County has several areas where it is underlying Karsts topography makes sinkholes a reality, and a threat. Several have opened up in the past, causing damage, and displacing residents, transportation routes, and businesses.

Much of Dixie County is categorized as wetlands. These wetland areas are considered environmentally sensitive and are usually protected from development and encroaching activities. The County is also highly susceptible to inland flooding.

Dixie County’s motto, “Heart of the Nature Coast” illustrates the abundance of coastal land area within the County. This dramatically increases Dixie County’s susceptibility to tropical events. The eastern boundary of Dixie County is the Suwannee River, which floods frequently. This flooding is usually due to localized rainfall, and many times because of excessive rainfall anywhere along its path in other neighboring counties. Equally, the Steinhatchee River will on occasion flood, causing damages to homes and infrastructure. It is estimated that 1,350 acres of undeveloped platted land within the unincorporated area of the County, are within flood prone areas.

In view of the constant threat of these hazards, and many more, their risk, and the extensive vulnerability of the county’s infrastructure, businesses, and homes, the Dixie County Board of County Commissioners and the Town Councils of Cross City and Horseshoe Beach sanctioned the development of the Dixie County Local Mitigation Strategy (LMS). The first version was developed in 1997, and updated again in 2004. The 2004 version incorporated all the necessary changes brought about through the passage of the Disaster Mitigation Act of 2000. The purpose of the LMS is to identify the threats Dixie County is susceptible to, and develop strategies to reduce the risk to people and property from these risks. This is also important as more parts of Dixie County are being developed, with a goal of making them hazard resilient.

The 2010 Update of the Dixie County LMS is designed to provide an update of the progress made in implementing the goals, objectives, and projects developed by the LMS Committee. The identification, reduction, and management of risks from disasters are becoming increasingly important. If effective action is not taken, human and economic costs of disasters to communities in Dixie County could increase. Local governments, its citizens, businesses, industry, educational institutions, and community organizations must strive together to meet mitigation objectives. This LMS is a compilation of these stakeholders' efforts to identify their mitigation goals and objectives, and develop mitigation initiatives based on the hazards and vulnerability of Dixie County. Implementation of the hazard mitigation objectives will be accomplished through personal awareness and responsibility, coupled with governmental regulation and enforcement. Taken as a whole, these efforts will help make Dixie County a safer, more disaster resilient community.

I. Introduction

A. Purpose

The Dixie County LMS Committee has been active in helping make the population, neighborhoods, businesses, and institutions of the community more resistant to the impacts of future disasters. The LMS Committee is undertaking a comprehensive, detailed evaluation of the vulnerabilities of the community to all types of future natural, technological, and societal hazards in order to identify ways to make the county more resistant to their impacts.

The Dixie County LMS is intended by the LMS Committee to serve many purposes. These include the following:

1. Promote Compliance with State and Federal Program Requirements

Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, enacted under Section 104 of the Disaster Mitigation Act of 2000, requires new and revitalized planning requirements for local mitigation plans. In addition, there are a number of state and federal grant programs, policies, and regulations that encourage or even mandate local government to develop and maintain a comprehensive hazard mitigation plan. This plan is specifically intended to assist the participating local governments to comply with these requirements, and more quickly respond to state and federal funding opportunities for mitigation-related projects. Because the plan will define, justify and prioritize mitigation initiatives that have been formulated through a technically valid hazard analysis and vulnerability assessment process, the participating organizations will be better prepared to develop the necessary grant application materials for seeking state and federal funding.

2. Enhance Public Awareness and Understanding

The LMS Committee is interested in finding ways to make the community as a whole more aware of the natural and technological hazards that threaten the public health and safety, the economic vitality of businesses, and the operational capability of important institutions. The Dixie County LMS will identify the hazards threatening Dixie County and provide an assessment of the relative level of risk they pose. It will also detail the specific vulnerabilities of the Town of Cross City and Horseshoe Beach and many of the facilities that are important to the community's daily life. The LMS also will include a number of proposals of ways to avoid or minimize those vulnerabilities. This information will be very helpful to individuals that wish to understand how the community could become safer from the impacts of future disasters.

3. Provide a Methodical, Substantive Approach to Mitigation Planning

The approach utilized by the Dixie County LMS Committee relies on a step-wise application of soundly based planning concepts in a methodical process to identify

vulnerabilities to future disasters and to propose the mitigation initiatives necessary to avoid or minimize those vulnerabilities. Each step in the planning process builds upon the previous. This ensures that there is a high level of assurance that the mitigation initiatives proposed by the participants have a valid basis for both their justification and priority for implementation.

4. Provide a Flexible Approach to the Planning Process

The planning process is very flexible in meeting the analysis and documentation needs. The planning effort used provides for the creation of this document, as well as the preparation of numerous other reports regarding the technical analyses undertaken. In this way, the plan assists the Committee with utilizing a full range of information in the technical analysis and the formulation of proposed mitigation initiatives for incorporation into this plan.

5. Create a Decision Tool for Management

The Dixie County LMS will provide information needed by the managers and leaders of government, business and industry, community associations and other key institutions and organizations to take actions to address vulnerabilities to future disasters. It will also provide proposals for specific projects and programs that are needed to eliminate or minimize those vulnerabilities. This approach is intended to provide a decision tool for the management of participating organizations and agencies regarding why the proposed mitigation initiatives should be implemented, which should be implemented first, and the economic and public welfare benefits of doing so.

6. Enhance Policies for Hazard Mitigation Capability

A component of the hazard mitigation planning process is the analysis of the existing policy, program, and regulatory basis for control of growth and development. This process involves cataloging the current mitigation-related policies of Dixie County so that they can be compared with the hazards that threaten the unincorporated areas or the Towns of Cross City and Horseshoe Beach and the relative risks they pose to these communities. When the risks posed to the community by a specific hazard are not adequately addressed in the community's policy or regulatory framework, the impacts of future disasters can be even more severe. The planning process utilized by the LMS Committee supports detailed comparison of the community's policy controls to the level of risk posed by specific hazards.

7. Assure Inter-Jurisdictional Coordination of Mitigation-Related Programming

A key purpose of the planning process is to ensure that proposals for mitigation initiatives are reviewed and coordinated among the participating jurisdictions within the County. In this way, there is a high level of confidence that mitigation initiatives proposed by one jurisdiction or participating organization, when implemented, will be compatible with the interests of adjacent jurisdictions and unlikely to duplicate or interfere with mitigation initiatives proposed by others. The operating procedures of the Committee mandate that all proposed mitigation initiatives, regardless of their

origin, will be coordinated among all of the participants in the planning prior to their approval for incorporation into the plan.

B. Scope

The Dixie County LMS is designed to identify current projects that, if implemented and funded, could reduce the vulnerability and risk to known natural and man-made disasters to the County, and Towns of Cross City, and Horseshoe Beach. It incorporates pertinent portions of the Dixie County, Town's of Cross City and Horseshoe Beach Comprehensive Plan (growth management plan). The Dixie County Comprehensive Land Development Plan (COMP) identifies the current and future land use plans for the County. In addition, it is a powerful mitigation tool. The LMS provides guidance to the continual update of the COMP Plan, thus providing a mechanism to mitigate inappropriate development in vulnerable areas. In addition, the LMS is an integral part of the Dixie County Comprehensive Emergency Management Plan (CEMP). Mitigation is one of the key phases of emergency management, and the CEMP relies heavily on the contents of the LMS to help identify what the operational needs of the County may be based on through the identification of areas susceptible to hazards. These areas include places where residents live, critical Infrastructure/key assets (CIKR) are located, and where the basic public infrastructure is located, that may be vulnerable to any known hazard.

II. Mitigation Planning Process

A. Coordinated Planning Process

At the core of the mitigation planning process is coordination and partnership among the governmental units involved in the planning effort. In addition, the planning process relies on the close involvement of public and private sector organizations, such as environmental organizations, homeowners associations, the insurance industry and relief organizations. The creation of the organizational structure was the first step in the development of the Dixie County LMS. The second step was to ensure the citizens of Dixie County were informed and educated about the LMS.

The Dixie County Local Mitigation Strategy was developed and adopted by the Dixie Board of County Commissioners and the Towns of Cross City and Horseshoe Beach in July 2004 to meet the requirement of the Disaster Mitigation Act of 2000 (DMA2000). In 2010, the Dixie County LMS update was begun under contract to Disaster Strategies and Ideas Group (DSI, LLC), and completed in August 2010. The LMS Committee provided updated information for the plan update. The LMS Committee met six times between July 2004 and June 2010 to refine the projects and overall mitigation strategy for Dixie County and the Towns of Cross City and Horseshoe Beach. Public participation was encouraged by way of the Dixie County Emergency Management website. The Dixie County Emergency Management Division Chief and the Emergency Services Director led the overall planning effort to update the 2010

LMS. The Towns of Cross City and Horseshoe Beach were participants in the LMS Update process.

This plan has been completed and was formally adopted by the governing bodies of Dixie County on _____, and the Town's of Cross City on _____, and Horseshoe Beach on _____, 2010. A copy of the executed resolution is available in Appendix 5.

B. Public Involvement

Dixie County understands the importance of including the public in this hazard mitigation planning process. Multiple opportunities have been and will be given to allow the public to comment on the drafts of the written plan.

From July 2004 through June 2010, the LMS Committee met six times to discuss the progress of the identified mitigation projects, and the development of the plan update. This series of meetings included members of the Dixie County LMS Committee and representatives from the Town of Cross City, Town of Horseshoe Beach, Dixie County Chamber of Commerce, American Red Cross, Florida Division of Forestry, Florida Division of Emergency Management, neighboring county emergency management officials, and others. The meetings were announced and encouraged the general public to participate.

The Director of Dixie County Emergency Services (LMS Committee Chair), the LMS Committee, Town of Cross City, and Town of Horseshoe Beach worked together to update and refine the list of projects in the 2010 LMS. The standard county procedure for public comment on the procurement of services was followed. The public was made aware of the draft LMS and given the opportunity to provide comments. This was done via the public announcement made for the **August _____ 2010 LMS Meeting**. In that announcement, the public was made aware that the draft Dixie LMS was posted on the Dixie County government website, and that the purpose of June 16, 2010 LMS meeting was to solicit public comments for the draft LMS. No comments were received from the general public on the draft version of the 2010 LMS Update.

C. Other Interested Parties Participation

All LMS meetings were noticed to the general public, special districts, authorities, other utilities, Non-Government Organizations (e.g. American Red Cross), constitutional officers (e.g. Sheriff, School Board, others), appropriate state agencies (e.g. Division of Forestry, Division of Emergency Management). Between July 2004 and June 2010, these agencies were invited to send representatives to the six LMS Committee meetings held during this timeframe. A list of attendees, agendas of each meeting is provided in Appendix 3.

Some of the key participants in the LMS development and implementation include:

1. Town of Cross City

The Town of Cross City has been identified as one of the incorporated towns in the county and has been a member of the LMS Committee. Several of the ongoing LMS projects are located in the Town of Cross City.

2. Town of Horseshoe Beach

The Town of Horseshoe Beach has been identified as one of the incorporated towns in the county and has been a consistent member of the LMS Committee. The Town is entirely in the coastal high hazard area, and highly susceptible to hurricane and tropical storms. There are several proposed LMS mitigation projects located in the Town.

3. Dixie County School Board

The Dixie County School Board is a member of the LMS Committee, and has participated in the LMS planning process. Mitigation funds have been identified and secured for shuttering of school facilities. The School Board is also active in the supplying shelter spaces and transportation during emergencies in Dixie County. The School Board has formally adopted the Dixie County LMS, and will continue to participate on the LMS Committee.

4. Big Bend Water Authority (BBWA)

The Big Bend Water Authority is a public body authorized by Section 373.1962, Florida Statutes. It was created by Inter-local Agreement pursuant to Section 163.01, Florida Statutes. The counties of Dixie and Taylor are the parties to that agreement. The BBWA incorporated the Steinhatchee Water Association in 2006. The Authority has participated in the LMS planning process, and has attended LMS Committee meetings to discuss issues pertinent to the area of coverage provided by the BBWA.

5. Horseshoe Beach Community Redevelopment Agency

The Horseshoe Beach CRA is established under the provisions of Section 163, FS. It is funded primarily through money received via property taxes. The CRA receives funds from the difference between the base line tax assessments, and the increased valuations as development boosts overall valuation. The money can be used for operations, projects, capital improvements, or development incentives within the district, which can include mitigation efforts. They participate in the LMS planning process.

6. Florida Division of Forestry

During the initial planning efforts in 1997, the Florida Division of Forestry assisted the LMS Committee. Since that time, a Forestry representative continues to act in this liaison position between the State and this local organization. The Division is very involved statewide in mitigation efforts to prevent forest fires and to protect the state parks and timber areas, and their experience and expertise have assisted in the profiling of fire hazards and the effective mitigation measures. The current DOF mitigation officer responsible for Dixie County provides assistance to the LMS Committee pertinent to Dixie County fire mitigation efforts including:

- Fire Risk Assessment System (FRAS) at <http://www.fl-dof.com/wildfire/index.html>
- Historical Fire Data
- GIS data files for fire mapping and analysis
- Personal knowledge and fire profiling and fire mitigation

7. Florida Division of Emergency Management

The FDEM has provided continual support to Dixie County LMS Committee efforts. Annually, the Committee submits a report to FDEM highlighting the progress made to date on the LMS Plan projects. FDEM has attended and participated in the LMS planning process. Recently, FDEM provided critical information pertinent to the update of the 2010 LMS Plan, as it pertained to significant changes made in the Robert T. Stafford Act. FDEM is willing to offer assistance to Dixie County at any time.

8. Neighboring County Emergency Management

Four counties have contiguous borders with Dixie County. All were invited to the LMS Committee meetings. These include invitation to the directors of:

- Taylor County Emergency Management
- Levy County Emergency Management
- Gilchrist County Emergency Management
- Lafayette County Emergency Management

Historically, these counties share similar hazard vulnerabilities, and have similar risks to Dixie County. The County has provided assistance to these neighbors in prior events, and maintains a working relationship with each.

D. 2010 LMS Committee Membership

Since its original meetings, the LMS Committee agencies have changed very little, but some of the active representatives have. The 2010 LMS Committee is currently comprised of:

Dixie County LMS Committee

Tim Alexander	Emergency Services Director
Scott Garner	Division Chief of Emergency Management
Major, Scott Harden	Dixie County Sheriff Office
Mike Cassidy	Dixie County Manager
Marvin Hunt	Chairman, Dixie County BOCC
Martha McBurnette	Mayor Town of Horseshoe Beach
Howard Reed	Road Department
Robbie Lee	Property Appraiser
John Jenkins	Building and Zoning
Scott Gantt	Cross City Manager
Charlotte Lord	Dixie County School Board

E. LMS Committee Meetings

The Dixie County LMS Committee has consistently met since its inception in 2004. Between July 2004 and June 2010, the LMS Committee met six times to keep the LMS Plan up to date, and keep track of the projects identified in the 2004 LMS Plan. The purpose and general agency representation of all the LMS meetings is provided below. The minutes and announcements for these meetings is included in Appendix

- **March 14, 2005**

The Dixie County LMS Committee met to discuss the availability of 2004 Hazard Mitigation Grant Program funding based on the 2004 hurricanes. Dixie County was declared several times in 2004 based on hurricane impacts. The committee reviewed the list of projects identified in the 2004 LMS, and validated they were still viable projects. The Emergency Management Director conducted the meeting. DSI, LLC was asked to facilitate the meeting. The project was updated based on the outcome of the meeting and distributed to the LMS Committee. Those in attendance included representatives from the Dixie County Sheriff's Office, Florida Division of Forestry, representatives from the towns of Cross City and Horseshoe Beach, Big Bend Water Authority, Dixie County Emergency Services, and Emergency Management, and the Dixie County Coordinator. The general public was invited to attend.

- **February 13, 2006**

The LMS Committee convened at the City Hall, Cross City. The purpose of the meeting was to get a status update of the ongoing mitigation projects. In addition, the Committee discussed the 2005 hurricane season, and the amount of expected HMGP funding to expect based on the allocations presented by the Florida Division of Emergency Management. The Committee validated the ongoing projects, and determined the need for any new projects to be added to the project list. The Committee also received a report from the FDEM Area Coordinator on the overall status of the 2004-2005 hurricanes, and the efforts of the Joint Field Office, which is where the State recovery operations are based. Those in attendance include the Dixie County Emergency Services Director, who chaired the meeting, Emergency Management Director, Mayor of Horseshoe Beach, representative from the Town of Cross City, Building and Zoning, Property Appraiser, and the Florida Division of Forestry. The general public was invited to attend.

- **May 1, 2007**

The LMS Committee meeting was called to order by the Emergency Services Director. The purpose of the meeting was to review the status of the LMS mitigation projects. A status of each project was presented. A letter of support for the construction of the new Dixie County Emergency Operations Center was presented by Mr. Tim Alexander, Chairman of the LMS Committee. The amount of HMGP funding allocated to the County was discussed. The meeting was attended by the County Coordinator, Road Department, School Board, the Building Inspector, the Dixie County Sheriff's Office, and Emergency Services. A representative from DSI, LLC was present and helped facilitate

the meeting. The general public was invited, but no one from the public attended the meeting.

- **February 27, 2008**

The LMS Committee was convened by the Emergency Services Director (chairman). A status update was presented to the Committee on the ongoing LMS projects. The general public was invited to attend the meeting. Those in attendance included the Dixie County Emergency Management Division, Emergency Services Department, County Coordinator, Town of Cross City, Town of Horseshoe Beach, and Joe Myers, CEO of DSI, LLC. A general discussion about the LMS process occurred, and the funding availability for any new projects explored. Other options were considered that do not require federal or state mitigation funds were discussed.

- **March 16, 2010**

The initiation of the LMS update was begun. The LMS Committee was polled as to any needed changes to be made in the hazards analysis and project list. DSI, LLC has been contracted by the County to undertake the LMS plan update. Dixie County expiration date for the current plan is February 7, 2011, but based on the length of time needed to get a plan approved through the State and FEMA, the process has been initiated early. A complete update of all the ongoing or currently listed LMS projects was given. In addition, the changes needed to be made in the plan per the recent federal requirements was discussed as to how they would need to be met. A draft of the LMS will be posted on the Dixie County Emergency Management website, and a public announcement will be made giving the general public and others, the opportunity to provide comments on the plan update.

- **August _____, 2010**

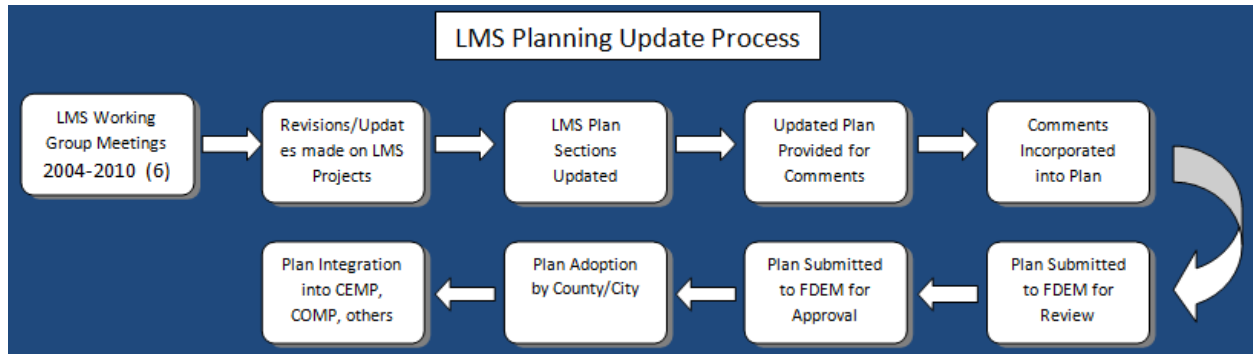
The LMS Committee held a public meeting in which the 2010 LMS Update was presented. The general public was invited to attend, as were representatives from all neighboring counties. [capture what happens at the meeting and who attended here]

F. LMS Planning Process and Schedule

The Dixie LMS Committee continues to use a straight forward planning process that involves all interested stakeholders. Using the assistance of DSI, LLC, the following process was used

to update the LMS. The flowchart below and on the next page describes the process visually.

Chart II.F.1: LMS Planning Update Process



1. **LMS Committee Meetings** - From July 2004 until August 2010, the LMS Committee met six times. At each meeting, the progress of the prioritized projects was discussed, and any new information deemed important to include in the LMS.

2. **Updated Data Solicitation** – Beginning in March, 2010, with the help of DSI, LLC, the LMS Committee gathered all relevant, existing data from various sources including the 2004 LMS, the internet, State and Federal resources and interview with team members and Dixie County citizens. The Team solicited any updated information from all stakeholders pertinent to the Plan update. This includes updated information on demographics, new codes or ordinances, hazard analyses, risk assessments, recent event impacts, or areas of general interest. The Town of Cross City, Town of Horseshoe Beach, Dixie County agencies, Dixie County School Board, and the Big Bend Water Authority participated in this process. The general public was offered the opportunity to participate in the plan update process, and to make any comments during the planning update cycle, to include review of the draft of the 2010 LMS Update.

3. **Data collation and Plan Updating** – Beginning in April 2010 – July 2010, these documents and notes were fully analyzed and related information was collated. Using all of this information the initial draft of the Plan update was prepared and submitted to the LMS Committee, the State of Florida and FEMA for review and comments.

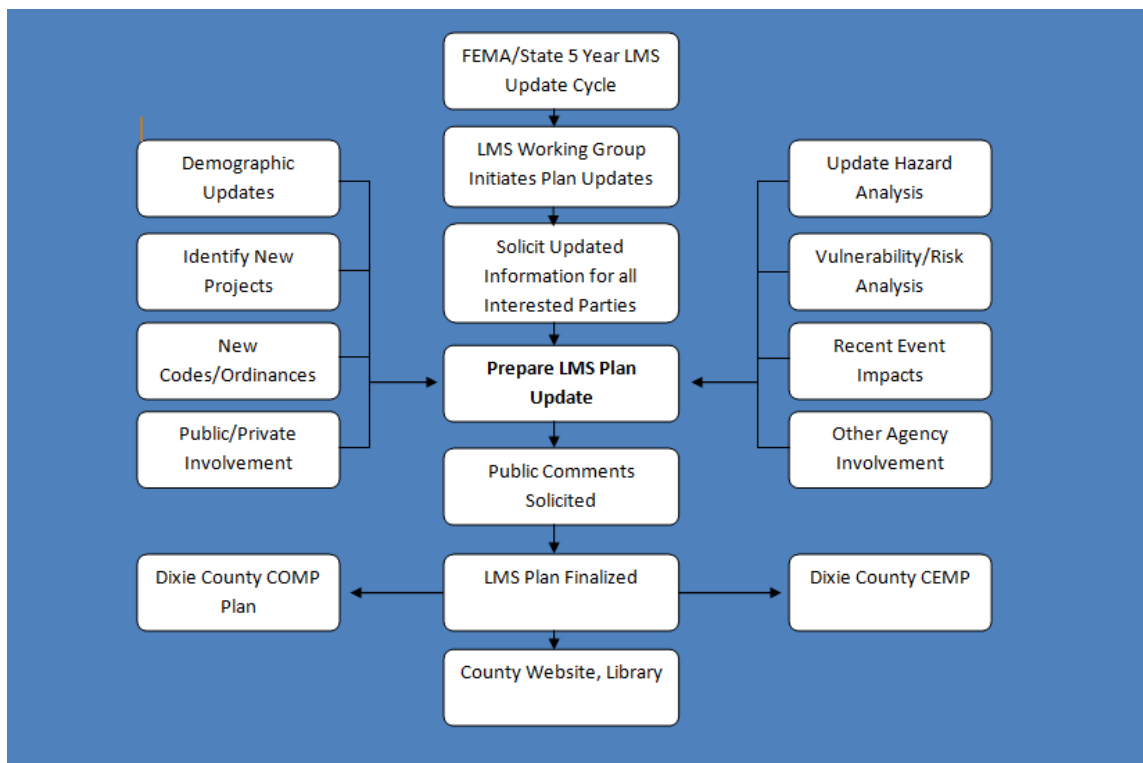
4. **Review and Comments** – From May to August 2010, all of the sections in the LMS were updated. As drafts were completed, they were reviewed by the LMS Committee. The LMS Updated draft was posted on the website for public comments at the Dixie County Emergency Management website.

5. **Finalization of the Plan** – Between July – August 2010, the Updated Plan was finalized. Copies were supplied to the FDEM and FEMA for formal review and approval.

6. **Adoption and Delivery** –The final approved LMS will be adopted by the Dixie County Board of County Commissioners, and the Town’s of Cross City and Horseshoe Beach. A copy of the adoption resolutions from the County and the Town’s of Cross City and Horseshoe Beach will be provided to the State and FEMA to ensure compliance with Section 322 of the Stafford Act.
7. **LMS Plan Integration** - Upon Plan approval and adoption, opportunities to integrate appropriate information from the 2010 LMS into the Dixie County Comprehensive Plan (land management plan), the Comprehensive Emergency Management Plan, and any other pertinent county or Town (Cross City & Horseshoe Beach) plan will commence.

Chart II.F.2: Dixie County LMS Planning Process

The following flow chart depicts the overall planning process used to update the LMS, and the various data sources.



8. **Plan Availability** - The Plan is available for downloading or viewing on the Dixie County website: <http://www.dixieemergency.com> or a hard copy can be viewed at the Dixie County Emergency Management office, located at 17600 SE Hwy US 19 Cross City, FL.
9. **Plan Integration** – Once the 2010 LMS Update is approved, it will be referenced in the Dixie County CEMP, the COMP Land Use Plan, the Floodplain Management Plan, and will be referred to when any new Code or Ordinance is proposed that mitigates the impact of Dixie County’s hazards. The data presented in this plan is beneficial to the future growth patterns of Dixie County and the Towns of Cross City and Horseshoe Beach.

Prior to revisions to the COMP Plan, Floodplain Management Plan, or any new code or ordinance, the 2010 LMS will be referenced to ensure the proposed action is compliant with the County's mitigation strategies, to the extent applicable. This will be managed by the Dixie County Emergency Management, and Dixie County Building Departments.

G. Review of Existing Plans

This 2010 Dixie County LMS is considered an extension and an update to the existing LMS plan from 2004, and incorporates the numerous required enhancements identified in the *Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008*. Therefore, this 2010 LMS plan and all its adoptions and resolutions are completely incorporated within the scope of this planning effort.

A review of the following plans and information were conducted in the preparation of the 2010 LMS Update. They include:

1. Dixie County Comprehensive Emergency Management Plan

The Dixie County CEMP was completely updated in 2006. The CEMP was an integral part of the LMS Update process, as it identified known hazards and vulnerability. The LMS is referenced in the CEMP in several places, and is intended to be used interchangeably.

2. Dixie County Terrorism Annex Draft

Provides guidance for a terrorism event and includes the following sections:

- Assumptions, purpose and scope
- Concept of Operations
- Organizational Responsibilities
- Training and Exercises

This document is not available to the public, but inquiries about this annex can be made to the Dixie County Emergency Management Department.

3. Dixie County Floodplain Management Plan

As a minimum requirement of participating in the Community Rating System, Dixie County has developed and maintains the County Floodplain Management Plan. This plan identifies policies and strategies to reduce the overall impact of flooding in Dixie County, and reduce the impact of repetitive loss properties. It is kept current to reflect any changes in County policies affecting floodplain management.

4. Dixie County Comprehensive Plan

The Dixie County COMP Plan was reviewed for codes and ordinances that impact the placement of current and future growth in the County. Key elements of the COMP are

summarized in this LMS. The COMP is updated on a regular schedule established by Florida Administrative Codes.

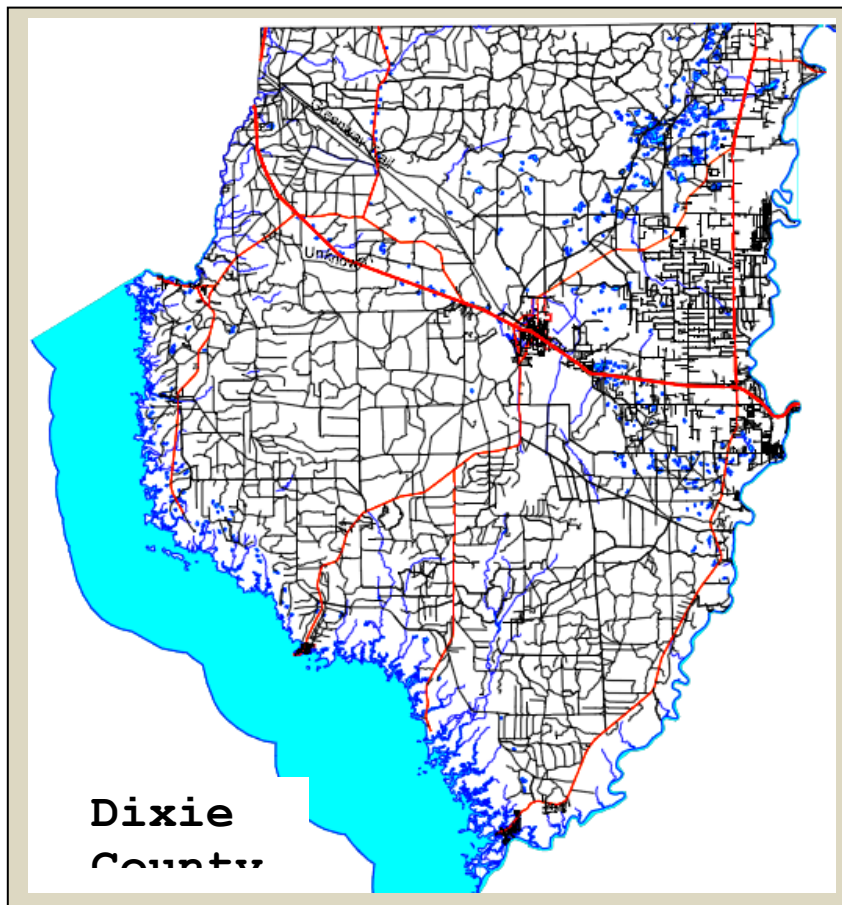
5. Critical Infrastructure/Key Assets

An Excel spreadsheet has been developed by Dixie County Emergency Management that includes a comprehensive list of all facilities in the county deemed “critical” for the continuing operations of the County. This list was updated for the 2010 LMS and is incorporated into the plan in the Vulnerability Analysis Sections. Most of these critical facilities have lat/long coordinates that will allow for geo-referencing. These critical facility locations will be overlapped with high-risk hazard areas to determine vulnerability to unique hazard events.

6. Dixie County GIS Data

The Director of Emergency Services is a current member of the LMS Committee, and oversees the daily operation of the County’s Enhanced 911 Department. The Director of

Map II.G.1: GIS Generated Map of Dixie County



the Enhanced 911 Department manages one of the County GIS networks, and contributed maps of the county and the surrounding areas for use in the LMS updating

process. This included updated maps of the county, commission districts, and population density. This GIS information is used to meet the requirements of the Disaster Mitigation Act, focusing on areas of high risk and critical facility locations. In addition, the Building Department provided an updated Future Land Use Map for Dixie County for this LMS update.

7. Dixie County Land Development Regulations (LDR)

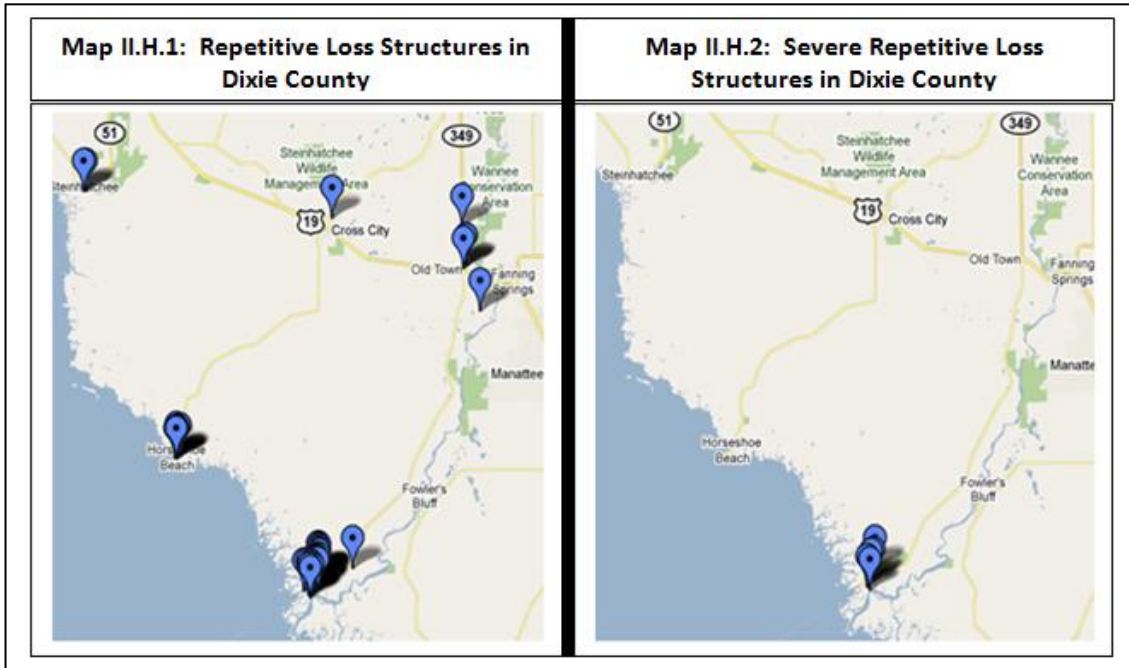
A thorough review of Dixie County's LDRs was performed for this LMS Update. Pertinent issues were extracted and placed in Section VII. This identified the substantial mitigation measures already in use in Dixie County.

H. NFIP Repetitive Loss Structures & Severe Repetitive Loss Structures

A major planning factor incorporated into the Dixie County LMS is the identification of the repetitive loss (RL) claim properties from the National Flood Insurance Program. Dixie County has aggressively addressed these RL properties through awareness campaigns, and other mitigation actions. Dixie County currently has 79 RL properties listed for the county. Total payments for all repetitive loss within the county is \$3,207,323.45. Most of these properties have not been mitigated and lie along waterways and have acquired flood damage. In particular, the Suwannee community holds a vast majority of these repetitive loss properties because it is surrounded by the Gulf of Mexico, Suwannee River, and numerous creeks.

In Dixie County, there are five properties labeled as Severe Repetitive Loss. These properties have numerous loss claims and usually cost much more than a typical repetitive loss property. These Severe Repetitive Loss properties alone have accumulated 20 loss claims at \$375,654.02. These five severe repetitive loss properties amount to almost 12% of the total payment issued to all the repetitive loss properties.

The following maps display the general areas of repetitive loss damage (left) and severe repetitive loss damage (right). Specific repetitive loss information can be obtained from the Dixie County Building Department.



Source: 2010 FEMA Repetitive Loss and Severe Repetitive Loss List
 Note: One map marker represents several RL or SL properties

**Table II.H.3: 2010 Repetitive Loss Properties in Dixie County
 (Severe Repetitive Loss in Orange)**

County Name	City	Occupancy	Total Building Payment	Total Contents Payment	Losses	Total Paid	Average Pay
DIXIE	OLD TOWN	SINGLE FMLY	27,489.47	803.00	2	28,292.47	14,146.24
DIXIE	SUWANNEE	SINGLE FMLY	15,169.18	4,669.69	2	19,838.87	9,919.44
DIXIE	OLD TOWN	SINGLE FMLY	7,166.73	2,918.33	2	10,085.06	5,042.53
DIXIE	SUWANNEE	SINGLE FMLY	14,305.91	10,000.00	3	24,305.91	8,101.97
DIXIE	OLD TOWN	SINGLE FMLY	22,380.95	13,971.22	2	36,352.17	18,176.09
DIXIE	SUWANNEE	NON RESIDENT	60,768.41	30,800.00	3	91,568.41	30,522.80
DIXIE	SUWANNEE	SINGLE FMLY	10,547.12	5,000.00	2	15,547.12	7,773.56
DIXIE	OLD TOWN	SINGLE FMLY	5,298.39	3,538.03	2	8,836.42	4,418.21
DIXIE	OLD TOWN	SINGLE FMLY	16,345.62	10,588.00	2	26,933.62	13,466.81
DIXIE	OLD TOWN	SINGLE FMLY	5,723.01	638.00	2	6,361.01	3,180.51
DIXIE	STEINHATCHEE	SINGLE FMLY	51,352.38	5,335.04	2	56,687.42	28,343.71
DIXIE	SUWANNEE	SINGLE FMLY	36,835.46	9,671.73	2	46,507.19	23,253.60
DIXIE	JENA	SINGLE FMLY	10,831.11	2,942.20	2	13,773.31	6,886.66
DIXIE	SUWANNEE	SINGLE FMLY	5,080.47	2,807.85	2	7,888.32	3,944.16
DIXIE	SUWANNEE	SINGLE FMLY	33,441.53	16,337.70	2	49,779.23	24,889.62
DIXIE	SUWANNEE	SINGLE FMLY	40,395.22	27,676.00	2	68,071.22	34,035.61
DIXIE	SUWANNEE	SINGLE FMLY	108,787.80	60,847.99	2	169,635.79	84,817.90
DIXIE	SUWANNEE	NON RESIDENT	24,851.89	12,567.05	3	37,418.94	12,472.98
DIXIE	SUWANNEE	ASSMD CONDO	43,144.96	3,995.30	3	47,140.26	15,713.42

County Name	City	Occupancy	Total Building Payment	Total Contents Payment	Losses	Total Paid	Average Pay
DIXIE	SUWANNEE	NON RESIDENT	83,729.90	44,422.53	2	128,152.43	64,076.22
DIXIE	SUWANNEE	SINGLE FMLY	7,361.60	9,875.84	2	17,237.44	8,618.72
DIXIE	SUWANNEE	SINGLE FMLY	49,979.10	15,337.45	3	65,316.55	21,772.18
DIXIE	SUWANNEE	SINGLE FMLY	78,791.31	32,062.45	4	110,853.76	27,713.44
DIXIE	SUWANNEE	SINGLE FMLY	3,793.26	0.00	2	3,793.26	1,896.63
DIXIE	SUWANNEE	ASSMD CONDO	137,608.75	24,755.43	3	162,364.18	54,121.39
DIXIE	SUWANNEE	SINGLE FMLY	41,720.54	21,449.03	3	63,169.57	21,056.52
DIXIE	SUWANNEE	SINGLE FMLY	12,156.41	0.00	2	12,156.41	6,078.21
DIXIE	SUWANNEE	SINGLE FMLY	28,891.91	9,857.32	2	38,749.23	19,374.62
DIXIE	SUWANNEE	SINGLE FMLY	42,030.92	14,818.51	2	56,849.43	28,424.72
DIXIE	SUWANNEE	SINGLE FMLY	38,701.08	7,294.50	2	45,995.58	22,997.79
DIXIE	SUWANNEE	SINGLE FMLY	43,631.92	14,132.46	3	57,764.38	19,254.79
DIXIE	SUWANNEE	SINGLE FMLY	34,980.46	14,577.76	2	49,558.22	24,779.11
DIXIE	SUWANNEE	SINGLE FMLY	19,022.96	8,919.80	2	27,942.76	13,971.38
DIXIE	SUWANNEE	SINGLE FMLY	37,810.50	17,933.50	3	55,744.00	18,581.33
DIXIE	SUWANNEE	SINGLE FMLY	34,799.79	13,772.45	4	48,572.24	12,143.06
DIXIE	OLD TOWN	SINGLE FMLY	49,450.54	11,141.06	3	60,591.60	20,197.20
DIXIE	SUWANNEE	SINGLE FMLY	10,333.90	829.25	2	11,163.15	5,581.58
DIXIE	SUWANNEE	SINGLE FMLY	25,972.79	14,124.07	2	40,096.86	20,048.43
DIXIE	SUWANNEE	SINGLE FMLY	18,035.35	0.00	2	18,035.35	9,017.68
DIXIE	SUWANNEE	SINGLE FMLY	27,966.12	25,667.39	2	53,633.51	26,816.76
DIXIE	SUWANNEE	SINGLE FMLY	13,513.21	0.00	2	13,513.21	6,756.61
DIXIE	STEINHATCHEE	SINGLE FMLY	1,591.24	4,924.04	2	6,515.28	3,257.64
DIXIE	SUWANNEE	SINGLE FMLY	6,500.30	997.35	2	7,497.65	3,748.83
DIXIE	SUWANNEE	SINGLE FMLY	82,243.33	14,108.62	2	96,351.95	48,175.98
DIXIE	SUWANNEE	SINGLE FMLY	12,448.62	0.00	2	12,448.62	6,224.31
DIXIE	LIUEOAKE	SINGLE FMLY	6,136.21	0.00	2	6,136.21	3,068.11
DIXIE	OLD TOWNE	SINGLE FMLY	13,957.27	0.00	2	13,957.27	6,978.64
DIXIE	SUWANNEE	SINGLE FMLY	22,528.86	13,538.00	2	36,066.86	18,033.43
DIXIE	SUWANNEE	SINGLE FMLY	16,354.99	0.00	2	16,354.99	8,177.50
DIXIE	SUWANNEE	SINGLE FMLY	9,026.30	2,467.53	2	11,493.83	5,746.92
DIXIE	SUWANNEE	SINGLE FMLY	3,199.17	561.50	2	3,760.67	1,880.34
DIXIE	SUWANNEE	SINGLE FMLY	35,042.12	16,582.00	2	51,624.12	25,812.06
DIXIE	SUWANNEE	SINGLE FMLY	12,798.04	9,982.00	2	22,780.04	11,390.02
DIXIE	SUWANNEE	NON RESIDENT	22,635.50	3,491.46	2	26,126.96	13,063.48
DIXIE	SUWANNEE	SINGLE FMLY	29,004.68	11,649.00	2	40,653.68	20,326.84
DIXIE	SUWANNEE	SINGLE FMLY	14,273.12	135.14	2	14,408.26	7,204.13
DIXIE	SUWANNEE	SINGLE FMLY	22,120.88	8,043.01	2	30,163.89	15,081.95
DIXIE	SUWANNEE	SINGLE FMLY	16,278.57	12,269.84	2	28,548.41	14,274.21
DIXIE	JENA	SINGLE FMLY	10,265.79	3,619.52	2	13,885.31	6,942.66

County Name	City	Occupancy	Total Building Payment	Total Contents Payment	Losses	Total Paid	Average Pay
DIXIE	SUWANNEE	SINGLE FMLY	14,504.98	1,635.52	2	16,140.50	8,070.25
DIXIE	SUWANNEE	SINGLE FMLY	10,500.00	4,100.00	2	14,600.00	7,300.00
DIXIE	SUWANNEE	SINGLE FMLY	9,586.47	0.00	3	9,586.47	3,195.49
DIXIE	LAKELAND	SINGLE FMLY	48,044.16	14,314.05	2	62,358.21	31,179.11
DIXIE	SUWANNEE	SINGLE FMLY	69,257.20	16,939.37	5	86,196.57	17,239.31
DIXIE	SUWANNEE	SINGLE FMLY	3,161.97	5,600.00	2	8,761.97	4,380.99
DIXIE	SUWANNEE	SINGLE FMLY	16,042.34	1,677.06	4	17,719.40	4,429.85
DIXIE	SUWANNEE	SINGLE FMLY	92,351.88	39,223.65	6	131,575.53	21,929.26
DIXIE	SUWANNEE	SINGLE FMLY	17,369.15	3,173.95	2	20,543.10	10,271.55
DIXIE	SUWANNEE	SINGLE FMLY	42,328.97	8,098.30	2	50,427.27	25,213.64
DIXIE	SUWANNEE	SINGLE FMLY	78,509.11	34,523.80	4	113,032.91	28,258.23
DIXIE	SUWANNEE	SINGLE FMLY	25,288.44	4,082.93	2	29,371.37	14,685.69
DIXIE	HORSESHOE BCH	SINGLE FMLY	11,384.04	0.00	2	11,384.04	5,692.02
DIXIE	HORSESHOE BCH	SINGLE FMLY	28,755.43	2,384.34	3	31,139.77	10,379.92
DIXIE	HORSESHOE BCH	SINGLE FMLY	29,596.58	10,000.00	2	39,596.58	19,798.29
DIXIE	HORSESHOE BCH	SINGLE FMLY	31,740.52	4,668.73	2	36,409.25	18,204.63
DIXIE	HORSESHOE BCH	SINGLE FMLY	41,208.74	11,534.94	2	52,743.68	26,371.84
DIXIE	HORSESHOE BCH	ASSMD CONDO	66,203.02	9,774.75	2	75,977.77	37,988.89
DIXIE	HORSESHOE BCH	SINGLE FMLY	11,998.45	4,046.74	2	16,045.19	8,022.60

I. Community Rating System

The Community Rating System is an initiative of the Federal Insurance Administration to encourage increased efforts in the reduction of flood losses, facilitate accurate insurance ratings, and promote the awareness of flood insurance. The CRS recognizes community efforts beyond those minimum standards by reducing flood insurance premiums for the community's property owners. The CRS is similar to — but separate from — the private insurance industry's programs that grade communities on the effectiveness of their fire suppression and building code enforcement. CRS discounts on flood insurance premiums range from 5% up to 45%. Those discounts provide an incentive for new flood protection activities that can help save lives and property in the event of a flood. Based on limited available resources, Dixie County, Town of Cross City, and Town of Horseshoe Beach are not participants in the CRS, but will review the feasibility to joining on a regular basis.

J. Flood Mitigation Assistance (FMA)

The FMA program was created as part of the National Flood Insurance Reform Act (NFIRA) of 1994 (42 U.S.C. 4101) with the goal of reducing or eliminating claims under the National Flood Insurance Program. FEMA provides FMA funds to assist States and communities implement measures that reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insurable under the National Flood Insurance Program. Dixie County has been active in the FMA program, and sought funds for projects, but has not been awarded any grants since 2005.

III. Dixie County Profile

As a required part of the Risk Assessment, it is necessary to define the general population and area to provide background about the vulnerability throughout the County. The following report is from the 2006 CEMP and from the 2009 U.S. Census Bureau. This information assesses and defines the human and economic populations and resources that can potentially be impacted by natural hazards.

A. Spatial Profile

Dixie County is located in the northern region of Florida. It is bordered to the north by Lafayette County, to the west by Taylor County, to the east by Gilchrist County and Levy County and to the southwest by the Gulf of Mexico. In addition, the Suwannee River serves as Dixie County's southern boundary and the Steinhatchee River serves as a northern boundary. Dixie County encompasses an area of 704 square miles. The highest elevations in Dixie County are located in the northeastern portion of the county (at 62 feet above sea level) while lower elevations are found in the western and southern regions. As a whole, the terrain in Dixie County is relatively flat with some wetlands and floodplains. The average elevation in Dixie County is 42 feet above mean sea level.

Dixie County is predominately rural with the majority of land dominated by forests (80%) and salt marsh (5%). Residential development accounts for only 15% of its total area. Cross City, the county seat and largest population center, is located along US 19 and 27A, SR 55 and CR 351. Residential and commercial developments are the primary land uses activities in this community. Other communities of significant size are located south of Cross City along CR 351 (Town of Horseshoe Beach), CR 349 (Suwannee community), east of Cross City at the intersection of US 19 & 27A, CR 349 (Old Town community), and along CR 358 (Jena community). In addition, residential development is scattered throughout the unincorporated area where the timber industry utilizes the majority of land for timber production.

Dixie County has over 160 square miles of lakes, rivers, and other water bodies. Two rivers and the Gulf of Mexico border Dixie County, which includes the Suwannee River, which creates the 54 miles of eastern border with Gilchrist, and Levy Counties before it discharges into the Gulf of Mexico. The Steinhatchee River creates the 13-mile western border with Taylor County before it discharges into the Gulf of Mexico. The northern border is shared with Lafayette County, and shares its 35 miles of southwestern border with the Gulf of Mexico.

Dixie County is characterized by low relief with the land sloping gently to the south and west. Much of the county's acreage can be classified as poor to moderately drained. All low-lying areas, wetlands, and floodplains in Dixie County are susceptible to flood water inundation. The soils in Dixie County are composed primarily of sands with sandy or loamy

subsoil. Because of the high permeability of these soils, rainfall easily percolates in to the ground, thus recharging the Floridian Aquifer. This trait also makes hazardous materials releases especially dangerous and difficult to control. In addition it is important to note that the hazardous materials carried on the highways (particularly US 19 and 27A, CR 351 and CR 349) create a potential for an accident to occur which would affect local water resources and local waterways as well as create numerous emergency response needs including rerouting of traffic and sheltering of displaced persons. Detailed maps and data are available in the Cedar Key Basin Hurricane Evacuation Study.

Environmentally sensitive areas include the Suwannee River basin and its tributaries, inland streams and lakes, and the Steinhatchee River basin and its tributaries. These areas all drain into the Gulf of Mexico and have the potential to pollute the shellfish industry in Suwannee Sound. The Florida Department of Environmental Protection frequently closes the zones around Suwannee and Horseshoe Beach when that area receives more than two inches of rainfall. This is due to the increase in bacterial count in the runoff water.

Floodprone areas in Dixie County are primarily within five hundred yards on either side of the Suwannee and Steinhatchee Rives along with the immediate coastal boundaries. Extreme heavy rainfall for several consecutive days could cause inland flooding of the rivers and ponds in residential areas. During a major hurricane, the immediate coastal areas up to 15 miles inland could flood if the storm passed either straight over or just to the north of the county.

B. Population and Business Profile

The 2009 estimated total population for Dixie County is 14,824. The following information is from the U.S. Census Bureau, and represents 2008 and 2009 data.

Table III.B.1: 2008 U.S. Census QuickFacts – Dixie County

Population QuickFacts (2008-2009 Estimates)	Dixie County	Florida
*Population, 2009 estimate	14,824	18,328,340
Population, percent change, April 1, 2000 to July 1, 2008	7.2%	14.7%
*Population estimates base (April 1) 2000	13,827	15,982,813
Persons under 5 years old, percent, 2008	5.8%	6.2%
Persons under 18 years old, percent, 2008	19.8%	21.8%
Persons 65 years old and over, percent, 2008	20.0%	17.4%
Female persons, percent, 2008	46.4%	50.9%
White persons, percent, 2008 (a)	88.7%	79.8%
Black persons, percent, 2008 (a)	9.5%	15.9%
American Indian and Alaska Native persons, percent, 2008 (a)	0.5%	0.5%
Asian persons, percent, 2008 (a)	0.2%	2.3%
Native Hawaiian and Other Pacific Islander, percent, 2008 (a)	2	0.1%
Persons reporting two or more races, percent, 2008	1.1%	1.4%
Persons of Hispanic or Latino origin, percent, 2008 (b)	2.8%	21.0%
White persons not Hispanic, percent, 2008	86.2%	60.3%

Living in same house in 1995 and 2000, pct 5 yrs old & over	60.2%	48.9%
Foreign born persons, percent, 2000	2.0%	16.7%
Language other than English spoken at home, pct age 5+, 2000	4.4%	23.1%
High school graduates, percent of persons age 25+, 2000	65.9%	79.9%
Bachelor's degree or higher, pct of persons age 25+, 2000	6.8%	22.3%
Persons with a disability, age 5+, 2000	4,016	3,274,566
Mean travel time to work (minutes), workers age 16+, 2000	30.2	26.2

*Institutionalized populations are not included in these numbers

Business QuickFacts	Dixie County	Florida
Private nonfarm establishments, 2007	203	523,461
Private nonfarm employment, 2007	1,698	7,425,331
Private nonfarm employment, percent change 2000-2007	20.5%	19.4%
Non-employer establishments, 2007	886	1,618,119
Total number of firms, 2002	840	1,539,207
Black-owned firms, percent, 2002	F	6.6%
American Indian and Alaska Native owned firms, percent, 2002	F	0.6%
Asian-owned firms, percent, 2002	F	2.7%
Native Hawaiian and Other Pacific Islander owned firms, percent	F	0.1%
Hispanic-owned firms, percent, 2002	F	17.3%
Women-owned firms, percent, 2002	16.9%	28.4%
Manufacturers' shipments, 2002 (\$1000)	NA	78,474,770
Wholesale trade sales, 2002 (\$1000)	D	219,490,896
Retail sales, 2002 (\$1000)	42,537	191,805,685
Retail sales per capita, 2002	\$3,044	\$11,498
Accommodation and foodservices sales, 2002 (\$1000)	5,231	29,366,940
Building permits, 2008	53	61,042
Federal spending, 2008	103,863	149,872,178

<p>Key (a) Includes persons reporting only one race. FN: Footnote on this item for this area in place of data NA: Not available D: Suppressed to avoid disclosure of confidential information F: Fewer than 100 firms S: Suppressed; does not meet publication standards X: Not applicable Z: Value greater than zero but less than half unit of measure shown</p>
<p>Source: US Census Bureau State & County QuickFacts-2009</p>

Tables III.B.2-6: 2008 QuickFacts for Dixie County

MAJOR PRIVATE SECTOR EMPLOYERS			
Suwannee Lumber Company			
Business Line: Building Materials			
Number of Employees		286	
Knight's Products			
Business Line: Cypress Mulch			
Number of Employees			81
Cross City Veneer			
Business Line: Crate Materials			
Number of Employees		65	
Anderson Columbia Construction			
Business Line: Paving Contractor			
Number of Employees			60
Gulf Coast Supply & Manufacturing, Inc.			
Business Line: Metal Building Materials, Utility Bridges			
Number of Employees		30	
WBT Trucking			
Business Line: Trucking			
Number of Employees			22
Rick's Seafood			
Business Line: Export Shellfish			
Number of Employees		20	

EMPLOYMENT BY INDUSTRY		
<i>N/D = No Data</i>	Dixie	Florida
	2008	
Average Annual Employment	2,506	7,945,162
Natural Resources & Mining	4.60%	1.20%
Construction	4.90%	6.50%
Trade, Transportation and Utilities	15.20%	20.50%
Manufacturing	15.70%	4.70%
Information	ND	
Other Services	1.30%	3.20%
Public administration	25.80%	5.90%
Unclassified	N/D	
Leisure & Hospitality	10.10%	11.90%
Education & Health Services	4.90%	19.40%
Professional & Business Services	1.40%	14.40%
Financial Activities	1.70%	6.60%

AVERAGE ANNUAL WAGE	
All Industries	\$28,078
Construction	\$24,484
Education & Health Services	\$28,874
Financial Activities	\$26,623
Information	N/D
Leisure & Hospitality	\$12,664
Manufacturing	\$33,459
Natural Resources & Mining	\$31,105
Other Services	\$22,925
Professional & Business Services	\$18,334
Public administration	\$33,533
Trade, Transportation and Utilities	\$21,489
Unclassified	N/D

STATE AND LOCAL TAXATION	
COUNTY	
Countywide Ad Valorem Millage Rates:	
Government	10.0000
Schools	7.9100
Special	0.4399
Total	18.3499
Ad Valorem Tax Exemption: Yes	
Retail Sales Tax (Local Option)	1.00
Federal Enterprise Zone	No
State Enterprise Zone	
STATE	
Corporate Income Tax	5.50%
Personal Income Tax	0.00%
Retail Sales Tax	6.00%

PER CAPITA INCOME		
	Dixie	Florida
2005	\$18,858	\$34,709
2006	\$19,534	\$37,099
2007	\$20,055	\$38,417

MIGRATION - 2008	
In-Migration	731
Out-Migration	708
Net-Migration	+23

LABOR FORCE - 2008	
Labor Force	5,684
Labor Force % of County Population	38.0
Number in County Unemployed	648
Unemployment Rate	11.4%

C. Housing Profile

The following information pertains to the housing stock in Dixie County. This is important based on the potential impact any disaster can have on housing availability.

Tables III.C.1: Dixie County Housing

Housing Units, 2008	Dixie County	Florida
Housing units, 2008	7,891	8,800,294
Homeownership rate, 2000	86.4	70.1
Housing units in multi-unit structures, percent, 2000	1.5%	29.9%
Median value of owner-occupied housing units, 2000	\$61,700	\$105,500
Owner-occupied houses and condos (2008)	4,500	NA
Renter-occupied apartments (2008)	705	NA
Persons per household, 2000	2.40	2.50
Median household income, 2008	\$32,101	\$47,778
Per capita money income, 1999	\$13,559	\$21,557
Persons below poverty, percent, 2008	22.8%	13.3%

Source: US Census Bureau State & County QuickFacts - 2008

1. Number of Household in Dixie County: 12,723

- In family households: 10,876 (2,896 male householders, 802 female householders) 2,871 spouses, 3,426 children (2,975 natural, 151 adopted, 300 stepchildren), 350 grandchildren, 78 brothers or sisters, 113 parents, 107 other relatives, 233 non-relatives.
- In nonfamily households: 1,8847 (781 male householders (595 living alone)), 746 female householders (655 living alone)), 320 nonrelatives.
- In group quarters: 1,104 (1,086 institutionalized population)
On average there are:
 - 962 people in state prisons
 - 66 people in local jails and other confinement facilities (including police lockups)
 - 50 people in nursing homes
 - 18 people in other non-institutional group quarters

2. Size of family households:

- 1-person (non-family)1,250
- 2-persons1,862
- 3-persons799
- 4-persons600
- 5-persons276
- 6-persons94
- 7+ persons67

3. Housing Statistics

Average household size:

Dixie County:  2.4 people
Florida:  2.5 people



Estimated median household income in 2008: \$32,101 (\$26,082 in 1999)

This county:  \$32,101
Florida:  \$47,778

Median contract rent in 2008 for apartments: \$338 (lower quartile is \$263, upper quartile is \$432)

This county:  \$338
State:  \$808

Estimated median house or condo value in 2008: \$117,780 (it was \$45,100 in 2000)

Dixie County:  \$117,780
Florida:  \$218,700
Lower value quartile - upper value quartile: \$64,788 - \$185,842

Source: http://www.city-data.com/county/Dixie_County-FL.html#ixzz0vBSrsFeN

D. Critical Facilities

Using information from the Dixie County Terrorism Annex, the CEMP, and input from the LMS Committee, the following list of facilities have been designated as critical due to their

necessity for responding to or recovering from any disaster event. Critical facilities are also locations that must function for routine government services to be delivered and locations that have a significant economic impact on the community.

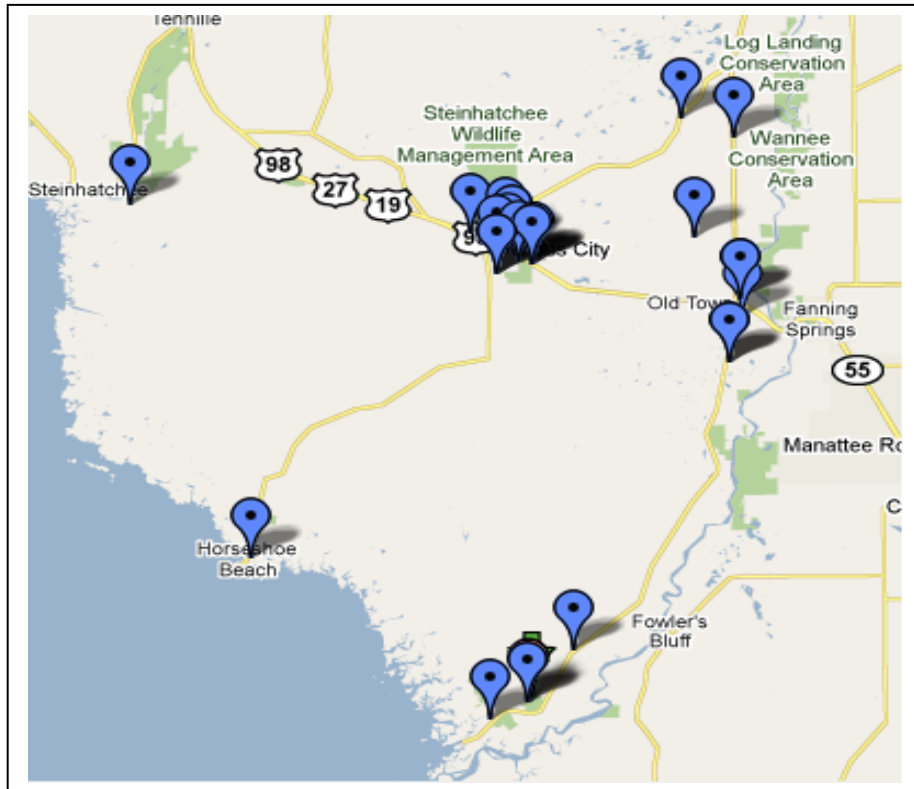
Table III.D.1: Critical Facilities – Dixie County
(Facilities listed in green are also designated public shelters)

		Longitude W	Latitude N
DIXIE COUNTY SCHOOLS			
Old Town School (special needs)	221 SE 136 Ave Old Town	-82.9780815	29.5912109
Ruth Rains Middle School	981 SE 351 Hwy Cross City	-83.130519	29.621481
Anderson Elementary School	815 SE 351 Hwy Cross City	-83.1303128	29.6241953
Dixie County High School	16077 NE 19 Hwy Cross City	-83.1331342	29.6376159
Old Town School Admin	823 SE 349 Hwy Old Town	-82.9812152	29.895272
FIRE STATIONS			
Station 1	71 NE 84 Ave. Old Town	-82.9803173	29.6037092
Station 2	227 NE 211 Ave. Old Town	-83.0128372	29.6411232
District 31	9333 NE 349 Hwy Old Town	-82.9853297	29.7368958
District 41	176 NE 210 Ave. Cross City	-83.1246056	29.6360115
District 51	66 SW 812 St Jena	-83.3621914	29.6624416
District 61	83 5 th Ave. East Horseshoe Beach	-83.2860334	29.4414698
District 71	21354 SE 349 Hwy	-83.1247454	29.3472977
EMS STATIONS			
R-1	387 NE 22 Ave. Cross City	-83.1247137	29.6318272
R-2	307 NE 349 Hwy Old Town	-82.9826162	29.60592
R-3	12756 NE 351 Hwy Old Town	-82.9848548	29.7488584
LAW ENFORCEMENT			
Dixie County Sheriff Office	386 NE 255 St Cross City	-83.0954439	29.6325582
Cross City Correctional Inst.	519 NE 255 St Cross City	-83.097577	29.5342115
Cross City PD	99 NE 210 Ave. Cross City	-83.1258421	29.6364439
FHP Station	16106 SE 19 Hwy Cross City	-83.1328758	29.6365504
MISC.			
Old Town Helistop	59 NE 84 Ave. Old Town	-82.98102036	29.6031585
Cross City Airport	5058 NE 241 Ave. Cross City	-83.1088106	29.6316016
Dixie County Health Dept.	149 NE 241 St Cross City	-83.1086301	29.6257965
Dixie County Yard	149 SE 309 St Cross City	-83.1170073	29.6365504
Dixie County EOC	17600 SE Hwy 19 Cross City	-83.11040	29.62486
Cross City Waste Water	68 SE 253 St Cross City	-83.1327873	29.6300677
Cross City Water Plant	94 NE 118 St Cross City	-83.1258344	29.6375782
Horseshoe Beach Water Plant	17189 SW 351 Hwy	-83.2751071	29.4646003
Suwannee Waste Water Plant	825 SE 327 St Suwannee	-83.1105383	29.3560968
Suwannee Water Tower	36 SE 867 Ave Suwannee	-83.1258007	29.3402167

The following map shows the basic critical facilities in Dixie County, as displayed in the Florida Division of Emergency Management’s “GATOR” tool – *Geospatial Assessment Tool for Operational Response*. The majority of the facilities are located in the Town of Cross City, and the general communities of Old Town and Suwannee River. Some of the facilities are not mapped in the GATOR system, as they do not meet the State and Federal requirements for

what a critical facility is. Most of those listed above are identified on the map below. Because of their tight clustering, some of the icons below represent multiple facilities.

Map III.D.2: Location of Critical Facilities - Dixie County



IV. Risk Assessment and Hazard Identification

A. Hazard Identification

Based on the 2006 Comprehensive Emergency Management Plan (CEMP), and the LMS Committee, the following hazards have been identified and prioritized for Dixie County, Cross City, and Horsehoe Beach. These hazards were identified by analyzing the historical occurrences in the County, Towns of Cross City, and Horsehoe Beach and by reviewing the geography, climatology and other natural features that increase human and economic risks.

Probability was defined as follows:

High – Occurrences at least once every two years

Medium – Occurrences at least once every five years

Low – Occurrences less frequently than five years

Magnitude was defined as follows:

Catastrophic – the entire county is potentially affected by an event

Major – Most of the county is potentially affected by an event

Minor – Only a specific area of the county is potentially affected

Negligible – Damages and impacts are very localized and minor

Table IV.A.1: Hazard Ratings – Dixie County

Hazard	Priority Ranking	Probability	Magnitude
Hurricane and Coastal Storms	Very High	High	Catastrophic
Severe Storms / Tornadoes	Medium	Medium	Minor
Wildfires	High	Medium	Major
Floods	High	Medium	Major
Drought / Heat Wave	Medium	Medium	Major
Freezes / Winter Storms	Medium	Medium	Major
Sinkholes	High	Medium	Major
Coastal and Riverine Erosion	Low	Medium	Negligible
Earthquakes	Low	Low	Negligible
Tsunami	Not Applicable	Low	Major
Dam / Levee Failure	Not Applicable	Low	Negligible

Since the recent earthquake in Haiti (2010) which had the potential to produced a significant tsunami, a new emphasize has been placed on this type of natural hazard. Dixie County has never been impacted by a tsunami and the LMS Committee has deemed it as low probability. The storm surge of a tsunami would emulate that of a major hurricane. However, the warning time for a tsunami would be much shorter. Therefore, any potential hurricane mitigation initiatives would automatically protect against a seismically originated tsunami. For these reasons, this hazard will not be addressed in this study.

There are no dams or levees in the Dixie County. Therefore, this hazard is not applicable with respect to this planning process.

B. Vulnerability Analysis

Dixie County is affected by a variety of natural hazards. The State of Florida has compiled significant data about some of these hazards and the potential economic impact for each county and city. The data has been used to develop a modeling and reporting system called MEMPHIS (Mapping for Emergency Management, Parallel Hazard Information System) that has been used by Taylor County to estimate its vulnerability. The following charts below show a high-level vulnerability analysis for both Dixie County and the Towns of Cross City and Horseshoe Beach for the hazards included in the MEMPHIS system.

These charts represent ELVIS - the Economic Loss Vulnerability Index System. ELVIS does a comparison of the relative risk of various hazards through the use of loss costs. A loss cost is

the long-term average of the damage a hazard causes. They are usually expressed in terms of loss per \$1000 of exposure per year.

The ELVIS data was updated for 2010 by applying a growth factor to the data. According to the Florida Department of Revenue, Dixie County property assessments, based on just values, real, personal, and centrally assessed property, grew by 46.7% between 2004 – 2009. Given that the coefficients used in the ELVIS and MEMPHIS data do not change over time, they did not need to be adjusted. The growth factor of 46.7% is applied to the value of loss estimates between 2004 and 2009. Even though there was a significant down turn in the national economy in 2009, that data is not available for this report, but tax assessors estimate that the lowered property values are expected to be temporary, and will return to normal in the near future.

Table IV.B.1: Comparative Tax Revenues – Dixie County

Florida Department of Revenue – Property Tax Oversight				
Comparative Statement of 2005-2008 Tax Rolls for Just Values, Real, Personal and Centrally Assessed Property				
Year	2005	2006	2007	2008
Tax Rolls	\$1,031B	\$1,911B	\$1,944B	\$1,902B
% Change (+)		85.39%	1.74%	-2.14%

Source: 2008 Florida Property Valuations and Tax Data, April 2009, Florida Department of Revenue

The loss values for Dixie County and Town of Horseshoe Beach have been calculated based on the hazards and the jurisdiction in which it is vulnerable to based on the LMS Committee. The combined vulnerability of the jurisdictions is significant, and adds credence to the need to reduce the community's risk and vulnerability to these hazards.

Table IV.B.2: Loss Values – Dixie County

Loss Values for Dixie County per \$1,000 by FDOR Use Code						
Hazard	SF Res	Mob Home	MF Res	Commercial	Agriculture	Gov/Instit
Wind	0.7681	0.9761	0.7681	0.7681	0.7681	0.7681
Wind (5mph)	0.4577	0.5857	0.4577	0.4577	0.4577	0.4577
Flood	4.1445	3.9376	3.7716	4.1445	4.1445	4.2689
Flood (1ft)	3.4906	3.3161	3.1763	3.4906	3.4906	3.5954
Earthquake	0.0069	0.0066	0.0071	0.0071	0.0059	0.0071
Sinkhole	0.0203	0.0193	0.0215	0.0203	0.0221	0.0209
Wildfire	0.0288	0.0288	0.0288	0.0288	0.0288	0.0288
Exposure	\$278.53M	\$167.17M	\$12.71M	\$57.64M	\$122.58M	\$716.34M

Table IV.B.3: Loss Values – Town of Horseshoe Beach

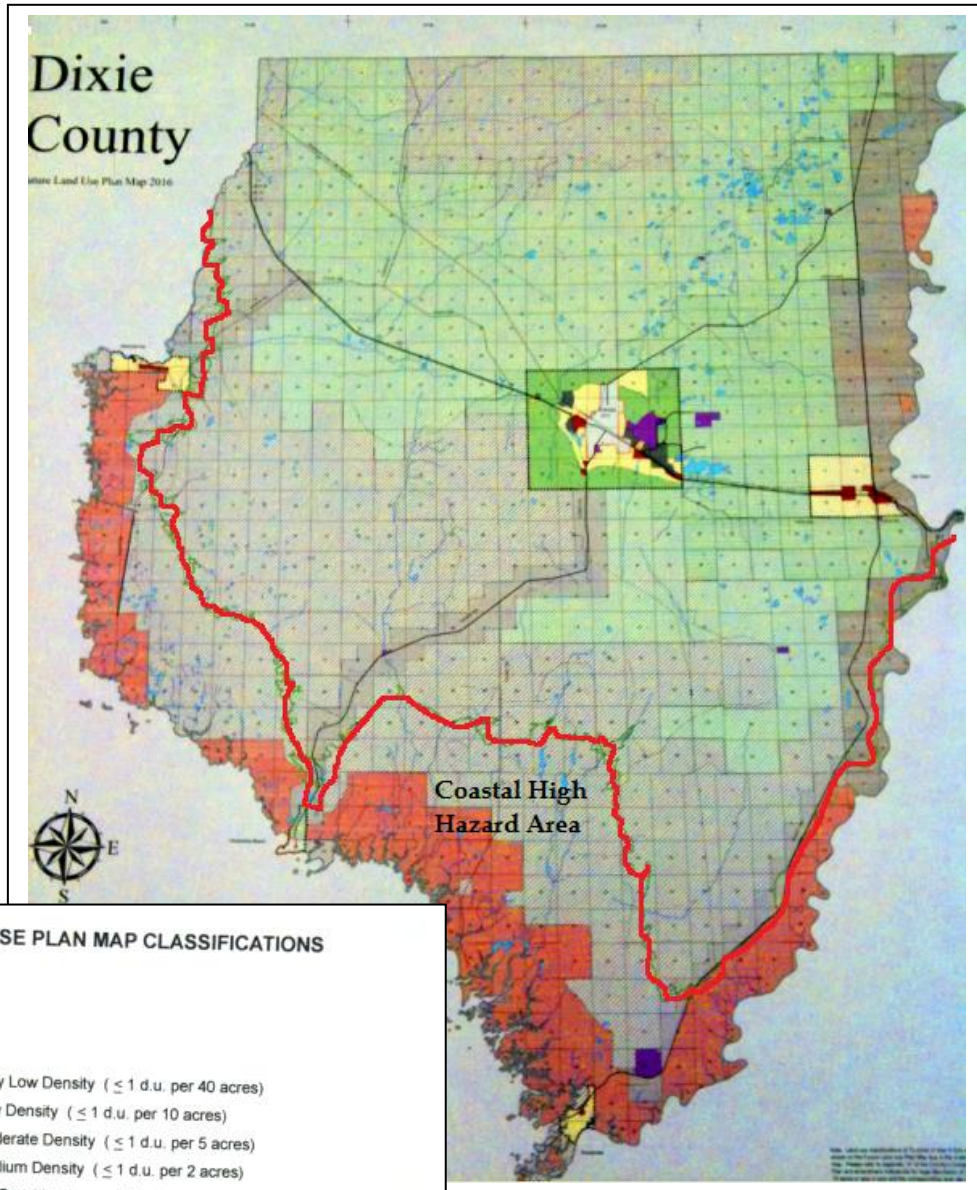
Loss Values for the Town of Horseshoe Beach per \$1,000 by FDOR Use Code						
Hazard	SF Res	Mob Home	MF Res	Commercial	Agriculture	Gov/Instit
Wind	1.8366	2.3058	1.8366	1.8366	1.8366	1.8366
Wind (5mph)	1.1049	1.3886	1.1049	1.1049	1.1049	1.1049
Flood	26.3574	25.0395	23.9852	26.3574	26.3574	27.1481
Flood (1ft)	19.8222	18.8311	18.0382	19.8222	19.8222	20.4169
Earthquake	0.0069	0.0066	0.0071	0.0071	0.0059	0.0071
Sinkhole	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Wildfire	0.0031	0.0031	0.0031	0.0031	0.0031	0.0031
Exposure	\$603.79TH	\$183.94 TH	\$22.48TH	\$0.00	\$76.19TH	\$86.48

C. Vulnerability to Future Building, Infrastructure, and Critical Facilities

Dixie County is a rural county that has experience modest growth since 2000. According to the Bureau of Economic and Business Research (BEBR) at the University of Florida, Dixie County has increased its resident population from 14,294 (2004) to 15,963 (2009), representing a 12% increase in growth since 2004. The LMS Committee has determined that due to the rural and agricultural nature of the county and its main population center of Cross City, there is only a moderate increase in vulnerability in the near future. This is also exacerbated by the downturn in the national economy, beginning in 2009. Dixie County experienced negative impacts from the downturn, but they are expected to be short-lived. The LMS Committee does not believe that any significant new construction of critical facilities, infrastructure, or buildings will occur in Dixie County that would affect the current vulnerability analysis.

Dixie County fully expects some growth to occur over time, though. The *Dixie County’s Future Land Use Map – 2016* identifies the significant future land use patterns in the County. Nearly 90% of the entire coastline is held as conservation land with virtually no opportunity for growth or new construction. The Coastal High Hazard Area in Dixie County, which designates the expected inland inundation caused by a Category 3 hurricane, is substantial in size (highlighted on the FLUM-2016). Much of the remaining land is classified as environmentally sensitive areas – very low density (less than or equal to one dwelling unit per 40 acres). This is based on the county’s low-lying topography, which results in vast wetland areas. Between the various classifications of environmentally sensitive area, and agriculture use, there is very little opportunity for significant infrastructure to be constructed in most of the county. These land use designations are designed to preserve the rural, agricultural based economy, the environmentally sensitive wetlands, and the coastal high hazard area. Only in the areas surrounding Cross City, and the communities of Jena, Old Town, and Suwannee are there designations for moderate to high density residential, and some industrial use.

Map IV.C.1: Dixie County Future Land Use Map 2016



FUTURE LAND USE PLAN MAP CLASSIFICATIONS

- Industrial
- Commercial
- Recreation
- Public
- Agriculture - Very Low Density (≤ 1 d.u. per 40 acres)
- Agriculture - Low Density (≤ 1 d.u. per 10 acres)
- Agriculture - Moderate Density (≤ 1 d.u. per 5 acres)
- Agriculture - Medium Density (≤ 1 d.u. per 2 acres)
- Environmentally Sensitive Areas - Very Low Density (≤ 1 d.u. per 40 acres)
- Environmentally Sensitive Areas - Low Density (≤ 1 d.u. per 10 acres)
- Environmentally Sensitive Areas - Moderate Density (≤ 1 d.u. per 5 acres)
- Conservation
- Residential - Low Density (≤ 2 d.u. per acre)
- Residential - Moderate Density (≤ 4 d.u. per acre)
- Residential - Medium Density (≤ 8 d.u. per acre)
- Residential - High Density (≤ 20 d.u. per acre)

OTHER MAP FEATURES

- Divided Highway
- Paved Road - High Type
- Bituminous Road - Medium and Low Type
- Gravel or Stone Road
- Railroad
- Coastal High Hazard Area
- Category 1 Storm Surge Boundary (Based on Sea, Lake and Overland Surges)
- Incorporated Area
- Designated Urban Development Area
- County Boundary Line

D. Methodology for Estimating Potential Losses

Throughout the process of updating and analyzing the hazards that affect Dixie County, the LMS Committee has worked to understand the financial implications. Major disasters and small isolated events all have a financial impact on the community on terms of damaged building and infrastructure as well as losses in productivity. Therefore, no hazard analysis would be complete without an estimate of the potential losses that may occur. With this in mind, the LMS Committee has used a variety of qualitative and quantitative data sources to make these estimations.

As was previously stated in Section IV.B, the ELVIS data was updated from 2004 by applying a growth factor to the data from the U.S. Census – 2009 estimates. According to the Florida Department of Revenue, Dixie County property assessments, based on just values, real, personal, and centrally assessed property, Dixie County experienced a growth of 46.7% between 2004 – 2009. Given the coefficients used in the ELVIS and MEMPHIS data sets do not change with time, they did not need to be adjusted. The growth factor of 46.7% is applied to the value of loss estimates between 2004 and 2009. Even though there was a significant down turn in the national economy in 2009, that data is not available for this report, but tax assessors estimate that the lowered property values are expected to be temporary, and will return to normal in the near future. In addition, the vulnerable population estimates were equally adjusted to reflect a population growth rate of 12% since 2004. Vulnerable structures were equally adjusted to reflect the corresponding 47.4% increase in mobile homes between 2004-2009, a 6.5% growth in commercial structures, a 3.8% growth rate in agricultural, and a 36.4% growth rate in government/institutional facilities. These growth factors come from a variety of sources to include tax rolls, the Bureau of Economic and Business Research (BEBR) at the University of Florida, State Department of Agriculture and Consumer Affairs, the Dixie County Tax Collector and Property Assessor's Office, and the Chamber of Commerce.

- 1.** The following lists the major elements of the methodology for estimating potential losses for the 2010-updated plan:
 - Florida Department of Revenue 2009 Evaluation of Property Tax for Dixie County.
 - MEMPHIS system – The state's MEMPHIS system was incorporated into the Dixie county estimates for potential losses for each hazard, and updated for 2010.
 - Historical Events – Financial Information about the major past events was analyzed to try and determine overall costs and future trends.
 - Personal Knowledge – Members of the LMS Committee contributed their personal memories and ideas about hazard impact and the subsequent vulnerability.
 - Hazard Research – Multiple primary and secondary sources were consulted and the subsequent research about hazards and their potential losses was incorporated into the estimating methodology.

- LMS Committee Meetings – The list of hazards and their vulnerability was vetted through the LMS Committee for the 2010 update. There were no new hazards listed, and the vulnerability and risk ratings remained the same.

2. MEMPHIS System Methodology for Estimating Losses

The Primary methodology for the loss estimates was the use of the MEMPHIS vulnerability analysis system provided by the State of Florida. For the 2010 update, the MEMPHIS estimates of loss were updated using current 2009 tax valuations for Dixie County and the other factors identified in Section IV.E. A growth coefficient of .467 was applied to the MEMPHIS values as a method to update the data, which represents the taxable growth factor in all properties in Dixie County. This methodology provides a realistic estimate of loss expected from known hazards. The following information details the methodology generally used by the MEMPHIS process for each of the natural hazards.

a. Hurricanes/Winter Storms

Historical storms (past 153 years for tropical cyclones and past 50 years for winter storms) were simulated using the TAOS model, version 10.2. Winds, wave, rainfall, and storm surge perils were computed, and hazard zones created. Flood zones and wind layers were created, and tables were created based on percent damage expected. Additionally, FEMA Flood Insurance Rate Map (FIRM) data was ingested, and the tabular data sets were run for comparison.

b. Tornadoes

Tornado track data since 1950 from the National Weather Service was analyzed to determine the annual probability that a tornado would cause damage to a structure in each 90m grid cell in Florida. The data was stratified into four annual probability classes: High risk (1 in 100 or greater), Medium risk (1 in 101 to 1 in 250), or low (1 in 250 to 1 in 500 chance).

c. Tsunami

Tsunami risk in Florida is difficult to assess, as there are minimal reliable historical records. Consequently, simulation techniques were used. Three classes of initiating events were simulated: Caribbean volcanic events, Caribbean and Central American earthquakes, and East Atlantic (Azores) volcanic events. In general, in north Florida, these events produced at worst a 4-meter wave, while in some parts of south Florida this value grew to nearly 6 meters. Expert opinion suggests that this would be approximately a 1 in 500-year event. Note that these tsunami zones are all smaller than those of a category 5 hurricane, which is probably an event of comparable frequency. However, a tsunami wave from the Azores would more than likely inundate virtually the entire Atlantic coastline, as opposed to only a few dozen miles of coastline in the case of a hurricane.

d. Wildfire Potential

The wildfire potential map was created by reclassifying the land cover data sets created for the hydrologic models. These data sets were reclassified to equate the Anderson Level II classification to fuel models used in the National Fire Danger Rating System (Burgan et al, 2000). These fuel models are an indication of the ability of a fire to start and spread in the given terrain type, and are used as the input to the Fire Potential Index as well as fire spreading models. The resulting map was compared with the NFDR Fuel Model Map created by the US Forest Service (USFS). The NFDR Fuel Model Map is used for the next generation fire danger rating system being developed by USFS, and is a nationwide map at a resolution of 1000 meters per grid cell based on data from 1997. The KAC developed map for Florida is at a resolution of 90 meters, and compares well the much more general national map while providing a great deal of additional detail, as well as being more up to date.

Each of the fuel models was assigned to a risk code of “low”, “medium”, or “high”, based on fire spreading potential during a climatologically “dry” year, and processed with the statewide parcel database to create the tables supplied with the LMS analysis. The mode of the fuel types within 500 meters of the parcel was used to determine risk category for the parcel.

e. Sinkhole Potential

Sinkhole potential was determined according to points assigned to each 90m grid cell in the state. Three classes of points were assigned, for distance to historic sinkholes, geology, and soils:

- 2 points if cell was within 2000m of an existing sinkhole;
- 1 point if cell between 2000m and 5000m of an existing sinkhole;
- 1 point if the cell was in the same USGS surface geologic unit as an existing sinkhole;
- 1 point if the cell was in the same NRCS soil unit as an existing sinkhole.

Thus, each cell as assigned a value from 0 to 4:

- 0: no significant risk
- 1: low risk
- 2: moderate risk
- 3: high risk
- 4: very high risk.

f. Earthquake Risk

The USGS 50 year 10% likelihood data set was used to assign earthquake risk. The peak ground acceleration (PGS) value was used to create four zones:

- < 0.01g Almost none
- 0.01g Minimal (0.01, 0.02)
- 0.02g Very low (0.02, 0.03)
- 0.03g Low (0.03, and higher)

Note that the earthquake risk, even in the “highest” risk zone in the state, is quite small.

g. Exposure Data Base

The 2000 Department of Revenue Tax Records and Census 2000 data sets were used to create the structure inventory database. First, the DOR records were address matched against the TIGER Road files. This resulted in positions for approximately 70% of the records statewide. The remaining records were either partial matched (15%), matched to the zip code (5%), or to the nearest TRS point (10%). The resulting loss estimates were updated for 2010 using the 2009 FDOR tax inventory database.

V. Hazard Vulnerability Analysis

A. Hurricanes and Coastal Storms

1. Characteristics

A hurricane is a tropical storm with winds that have reached a constant speed of 74 miles per hour or more. Hurricane winds blow in a large counter clockwise spiral around a relative calm center known as the "eye". The "eye" is generally 20 to 30 miles wide, and the storm may extend outward 400 miles. As a hurricane approaches, the skies will begin to darken and winds will grow in strength. As a hurricane nears land, it can bring torrential rains, high winds, and storm surges. A single hurricane can last for more than two weeks over open waters and can run a path across the entire length of the eastern seaboard. The hurricane season lasts from June 1 through November 30.

Nearly all of the coastline for Dixie County is tidal marsh, and lies within the hurricane surge zone. The surge zone extends up to four miles inland from the coast. The three main hazards caused by a hurricane are: (1) storm surge; (2) high winds; and (3) rain induced freshwater flooding. The height of the storm surge above mean sea level varies with hurricane strength, direction of travel and location of landfall. In Dixie County a Category 1 hurricane can produce a surge height of 10 feet above mean sea level; Categories 2 & 3, a 24 foot surge; and Categories 4 & 5, 34 feet above mean sea level. During a Category 5 hurricane, surge induced flooding can occur over 15 miles inland.

The greatest threat from tropical storms in Dixie County is from storm surge and flooding along the Suwannee and Steinhatchee Rivers due to heavy rains. As noted above, the tropical storm does not even have to “hit” Dixie to cause flooding.

September and October are peak months for Dixie County during the hurricane season. Hurricane winds can vary from 74 mph to greater than 155 mph. High winds areas are a hazard to mobile homes which should be evacuated before hurricane landfall. The

average hurricane drops between 5 to 10 inches of rain in the 24 hour it typically takes to pass over an area. This can cause fresh water flooding. Over the past 168 years, [1852 – 2010] 59 tropical storms have impacted Dixie County.

2. The Storm of the Century

On March 12-13, 1993, the Dixie County coast was hit by a Winter Storm that was eventually named the “Storm of the Century”. The entire coastline was impacted by a significant storm surge with four to six feet of wave action that lasted three hours, equal to a low category 1 hurricane. Eleven people lost their lives in neighboring Taylor County. Multiple homes and structures were damaged. Total Winter Storm damage estimates were placed at several million dollars in personal property damages. As a result, a Presidential declaration was issued for the cost of restoration and response. In Dixie County alone, this amount was placed at several million and the County received assistance from FEMA in Public Assistance in response to this rare winter, coastal storm.

The following graphics display the Coastal High Hazard Area, and the hurricanes and tropical storms impacting Dixie County.

Map V.A.1: Dixie County Coastal High Hazard Area

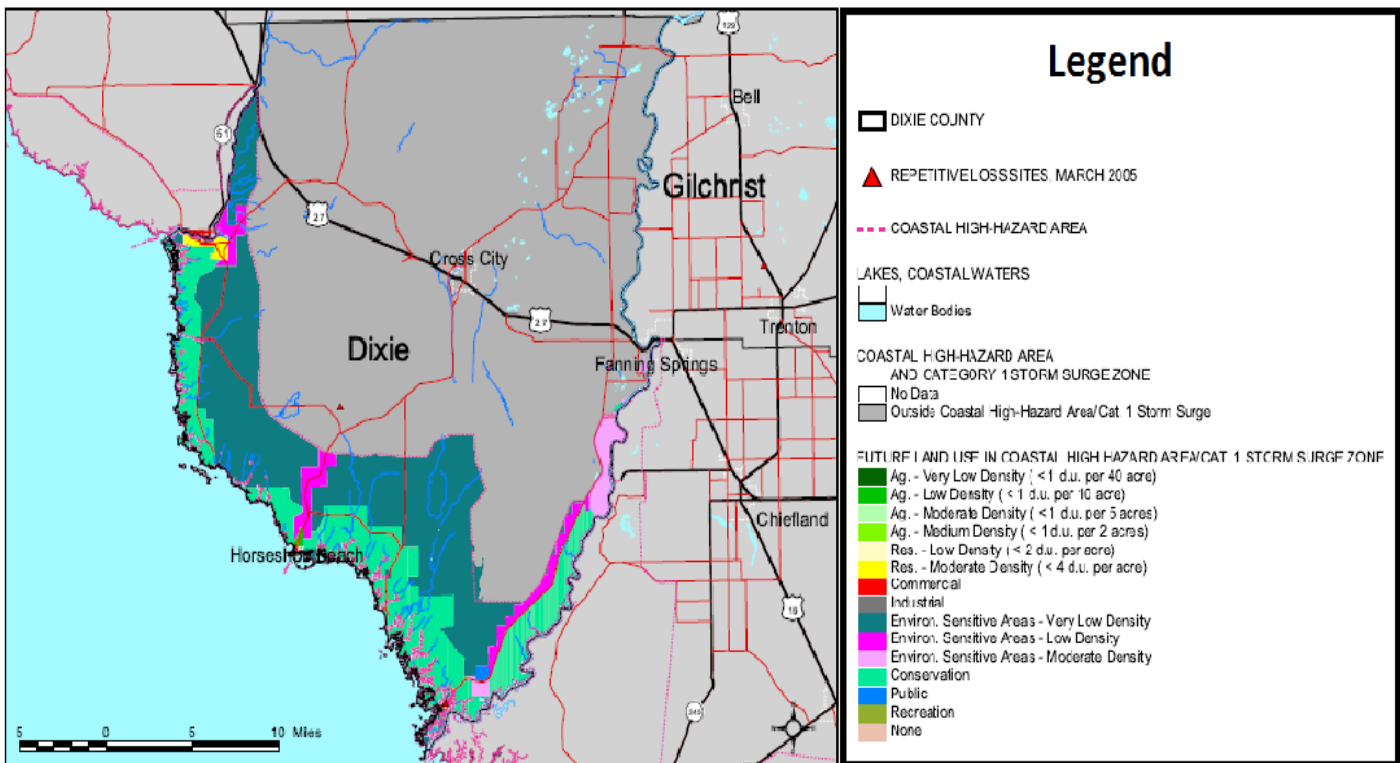
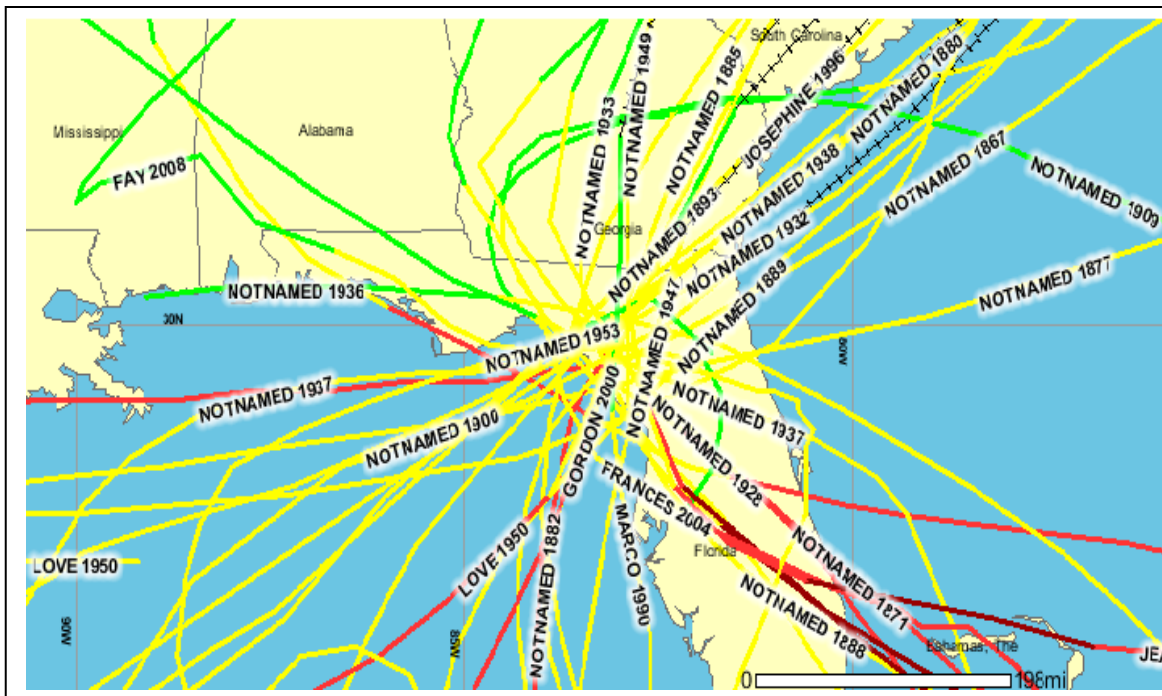


Table V.A.2: Hurricanes and Tropical Storms Impacting Dixie County: 1860-2010

YEAR	MTH	DAY	NAME	WIND_KTS	PRESS_URE	CAT	YEAR	MTH	DAY	NAME	WIND_KTS	PRESS_URE	CAT
1867	10	6	unnamed	70	0	H1	1938	10	24	unnamed	40	0	TS
1871	8	25	unnamed	50	0	TS	1941	10	20	unnamed	40	0	TS
1877	10	26	unnamed	40	0	TS	1947	10	8	unnamed	25	0	TD
1880	9	8	unnamed	50	0	TS	1949	8	27	unnamed	55	982	TS
1882	10	11	unnamed	70	0	H1	1950	10	21	unnamed	35	0	TS
1885	10	11	unnamed	60	0	TS	1953	9	20	unnamed	50	0	TS
1888	9	9	unnamed	50	999	TS	1960	7	29	unnamed	30	0	TD
1896	9	29	unnamed	110	960	H3	1964	6	6	unnamed	30	0	TD
1900	10	12	unnamed	40	0	TS	1970	5	25	ALMA	25	0	TD
1909	6	30	unnamed	35	0	TS	1990	10	12	MARCO	30	999	TD
1928	8	9	unnamed	35	0	TS	1995	8	25	JERRY	25	1004	TD
1932	9	15	unnamed	45	0	TS	2000	9	18	GORDON	60	989	TS
1933	9	5	unnamed	45	0	TS	2004	9	27	JEANNE	45	978	TS
1935	9	4	unnamed	75	0	H1	2008	8	22	FAY	45	996	TS
1937	8	31	unnamed	35	0	TS							

Source: <http://csc-s-maps-q.csc.noaa.gov/hurricanes/viewer.html>

Map V.A.3: Hurricanes and Tropical Storms Impacting Dixie County: 1852-2010

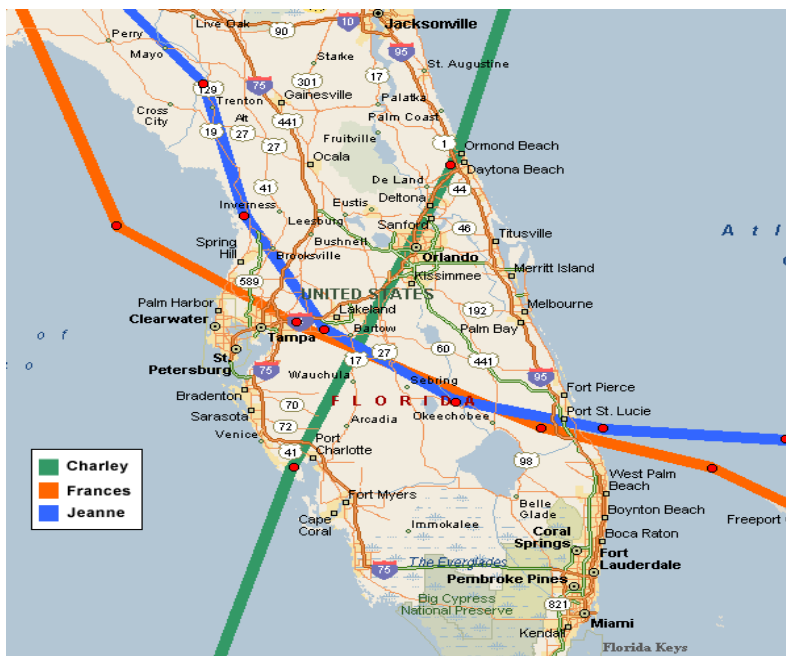


Source: <http://csc-s-maps-q.csc.noaa.gov/hurricanes/viewer.html>

3. The 2004 Hurricane Season

The 2004 hurricane season was unprecedented with four major storms hitting the United States with each storm causing significant damage. The four storms were Frances, Jeanne, Ivan, and Charlie. Dixie County was luckily not directly hit by any of the four hurricanes however, the County was impacted by the storms nonetheless. Dixie County was on alert and was prepared for impact from both Ivan and Charlie. However Charlie turned east and hit the area near Sarasota and Ivan continued north to make landfall near the Florida-Alabama border. The other two storms, Frances and Jeanne made landfall on the east coast of Florida but both traveled over Dixie County as the system weakened. See the map below showing the storm paths and the peak winds. In the aftermath of these four storms, there was significant debris throughout the county with three huge piles remaining. Many houses experienced roof damage and a police vehicle was damaged. Power outages lasted for up to 7 days and affected 1000's throughout the southern part of the county. All four storms were federally declared events.

Map V.A.4: 2004 Hurricane Season - Florida



4. Probability

Hurricane season is an annual event that produces a series of storms that randomly impact locations throughout the Caribbean, the Gulf of Mexico and the entire eastern seaboard of the United States. The probability of hurricane occurring and causing damage is very high. Eventually a storm will strike Dixie County either directly or indirectly. It is difficult to predict when a storm will hit, where exactly it will strike, the intensity, or the duration, however it is very important for Dixie County to prepare for Hurricanes and adopt responsible mitigation measures to lessen the potential damages. This represents an elevated probability based on prior year's actual occurrences.

Table V.A.5: 2010 Tropical Cyclone Landfall Probabilities – Dixie County Florida

Current State Data (Climatology in Parentheses):

State Name	Probability of Hurricane Impact	Probability of Major Hurricane Impact
Florida	68.0% (51.0%)	31.4% (21.0%)

Current Regional Data (Climatology in Parentheses):

Region Number	Probability of 1 or More Named Storms Making Landfall in the Region	Probability of 1 or More Hurricanes Making Landfall in the Region	Probability of 1 or More Intense Hurricanes Making Landfall in the Region
4	42.6% (29.3%)	21.3% (13.9%)	2.5% (1.6%)

Current Dixie County Data (Climatology in Parentheses):

County Name	Probability of 1 or More Named Storms Making Landfall in the County	Probability of 1 or More Hurricanes Making Landfall in the County	Probability of 1 or More Intense Hurricanes Making Landfall in the County	Probability of Tropical Storm-Force (>= 40 mph) Wind Gusts in the County	Probability of Hurricane-Force (>= 75 mph) Wind Gusts in the County	Probability of Intense Hurricane-Force (>= 115 mph) Wind Gusts in the County
Dixie	5.6% (3.6%)	2.5% (1.6%)	0.3% (.2%)	32.6% (21.9%)	9.9% (6.3%)	2.5% (1.6%)

50 Year Regional Data:

Region Number	50 Year Probability of 1 or More Named Storms Making Landfall in the Region	50 Year Probability of 1 or More Hurricanes Making Landfall in the Region	50 Year Probability of 1 or More Intense Hurricanes Making Landfall in the Region
4	>99.9%	>99.9%	54.8%

50 Year Dixie County Data:

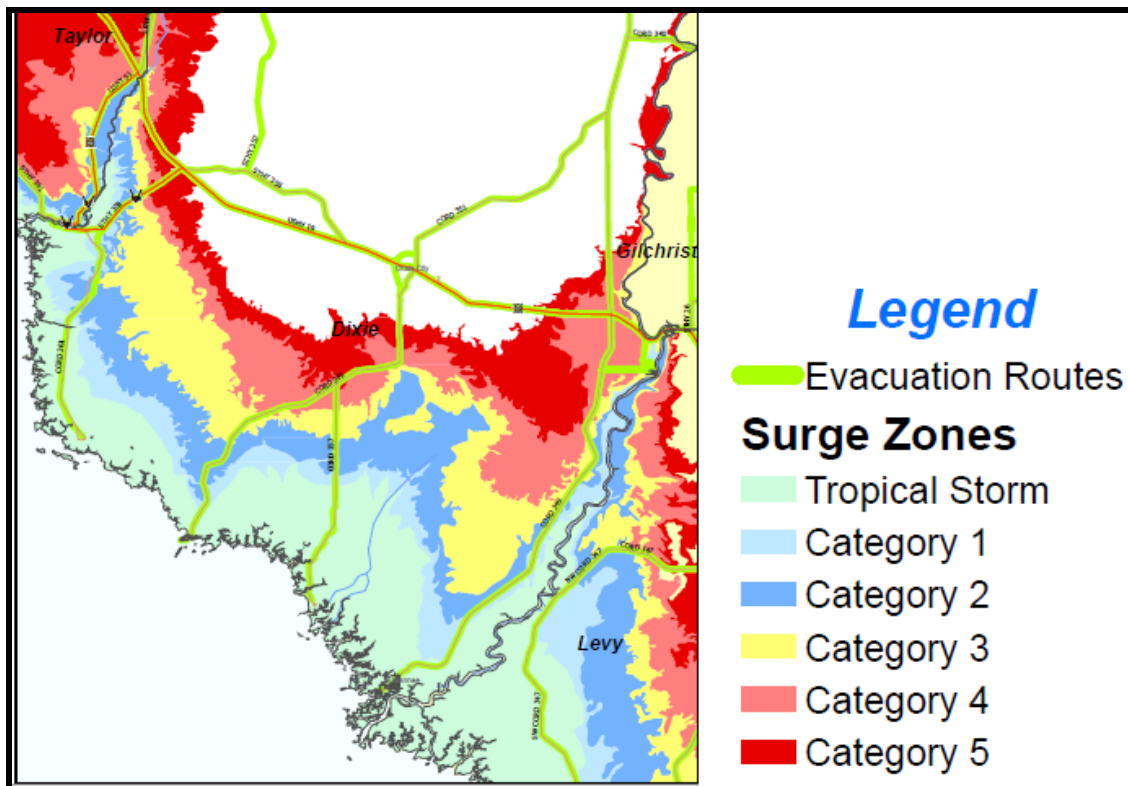
County Name	50 Year Probability of 1 or More Named Storms Making Landfall in the County	50 Year Probability of 1 or More Hurricanes Making Landfall in the County	50 Year Probability of 1 or More Intense Hurricanes Making Landfall in the County	50 Year Probability of Tropical Storm-Force (>= 40 mph) Wind Gusts in the County	50 Year Probability of Hurricane-Force (>= 75 mph) Wind Gusts in the County	50 Year Probability of Intense Hurricane-Force (>= 115 mph) Wind Gusts in the County
Dixie	84.2%	54.6%	7.9%	>99.9%	96.5%	55.4%

Note: The United States Landfalling Hurricane Web Project has been co-developed by William Gray's Tropical Meteorology Research Project at Colorado State University and the GeoGraphics Laboratory at Bridgewater State College.
 Source: <http://landfalldisplay.geolabvirtualmaps.com/>

5. Hurricane Vulnerability Analysis

The area along the coastline is the area most vulnerable to hurricanes; however, the entire County is at risk from a direct hit from a category 3, 4, or 5 event. Several hundred persons live in the coastal areas especially in the Town of Horseshoe Beach, and the communities of Jena and Suwannee. Every year there are multiple evacuation notices for citizens along the coast. During scallop season from July through September, the population swells to accommodate the thousands of visitors. In the event of a hurricane, all these persons would be vulnerable to surge, flooding, and high winds.

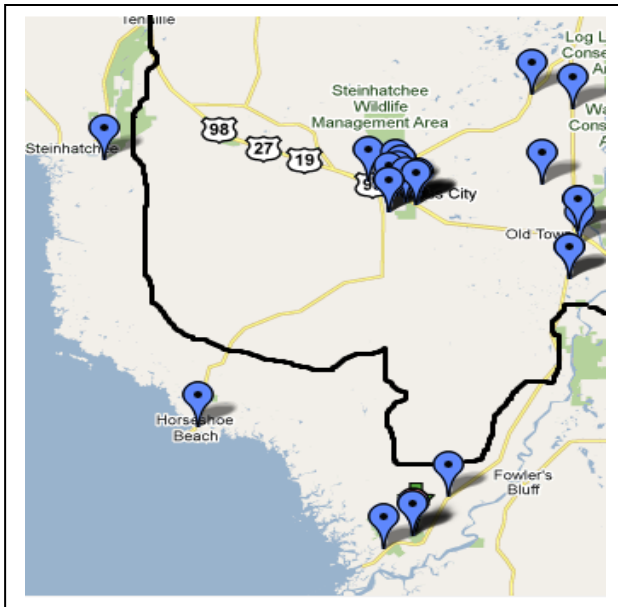
Map V.A.6: Dixie County Hurricane Surge Inundation Zones



The low-lying coastline and shallow bathymetry along the coast of Dixie County can produce storm surges ranging from 12 to 17 feet above normal tide levels. Even the most modest storm surge will create dangerous conditions along the coastal transportation routes. During a hurricane and its aftermath, the primary issues will be isolation due to debris in roads, power outages, lack of telephone service, and difficulty with notification and contact with the special needs citizens in the county.

Of the 30 critical facilities designed by the LMS Committee in 2010, seven of these locations are in the coastal high hazard area. The map below identifies the approximate location of each facility. Note: Due to close proximity of several of the critical facilities, one icon on the map represents several facilities.

**Map V.A.7:
Critical Facilities Vulnerable to Hurricane Surge Impacts**



DIXIE COUNTY SCHOOLS (facilities in green are designated shelters)

Old Town School SpNs	221 SE 136 Ave Old Town	-82.9780815	29.5912109
Ruth Rains Middle School	981 SE 351 Hwy Cross City	-83.130519	29.621481
Anderson Elementary School	815 SE 351 Hwy Cross City	-83.1303128	29.6241953
Dixie County High School	16077 NE 19 Hwy Cross City	-83.1331342	29.6376159
Old Town School Admin	823 SE 349 Hwy Old Town	-82.9812152	29.895272

FIRE STATIONS (facilities in green are designated shelters)

District 21			
Station 1	71 NE 84 Ave. Old Town	-82.9803173	29.6037092
Station 2	227 NE 211 Ave. Old Town	-83.0128372	29.6411232
District 31	9333 NE 349 Hwy Old Town	-82.9853297	29.7368958
District 41	176 NE 210 Ave. Cross City	-83.1246056	29.6360115
District 51	66 SW 812 St Jena	-83.3621914	29.6624416
District 61	83 5 th Ave. East Horseshoe Beach	-83.2860334	29.4414698
District 71	21354 SE 349 Hwy	-83.1247454	29.3472977

EMS STATIONS

R-1	387 NE 22 Ave. Cross City	-83.1247137	29.6318272
R-2	307 NE 349 Hwy Old Town	-82.9826162	29.60592
R-3	12756 NE 351 Hwy Old Town	-82.9848548	29.7488584

LAW ENFORCEMENT

Dixie County Sheriff Office	386 NE 255 St Cross City	-83.0954439	29.6325582
CCCI	519 NE 255 St Cross City	-83.097577	29.5342115
Cross City PD	99 NE 210 Ave. Cross City	-83.1258421	29.6364439
FHP Station	16106 SE 19 Hwy Cross City	-83.1328758	29.6365504

MISC.

Old Town Helistop	59 NE 84 Ave. Old Town	-82.98102036	29.6031585
Cross City Airport	5058 NE 241 Ave. Cross City	-83.1088106	29.6316016

Dixie County Health Dept.	149 NE 241 St Cross City	-83.1086301	29.6257965
Dixie County Yard	149 SE 309 St Cross City	-83.1170073	29.6365504
Cross City Waste Water	68 SE 253 St Cross City	-83.1327873	29.6300677
Cross City Water Plant	94 NE 118 St Cross City	-83.1258344	29.6375782
Horseshoe Beach Water Plant	17189 SW 351 Hwy	-83.2751071	29.4646003
Suwannee Waste Water Plant	825 SE 327 St Suwannee	-83.1105383	29.3560968
Suwannee Water Tower	36 SE 867 Ave Suwannee	-83.1258007	29.3402167

6. Future Development and Hurricanes

Dixie County is growing but the growth is relatively slow. Based on the current Future Land Use Map, which originates from the Dixie County Comprehensive (Growth Management) Plan, there is very limited opportunity for any development of significance to occur in areas susceptible to hurricane storm surge. These areas all predominantly designated as conservation or environmentally sensitive areas, which have severe construction limitations. The coastal communities of Jena, and Suwannee are classified for moderate density residential (less than 4 dwelling units per acre), while Horseshoe Beach is included in a designated urban development area which allows one dwelling unit per 10 acres. As this development continues, it will be necessary for the LMS Committee to update this plan to consider these increased risks and implement appropriate mitigation measures.

7. Town of Cross City - Vulnerability

Based on the hurricane's category, strength and landfall position the vulnerable areas, facilities and populations will vary. Obviously the stronger the storm is then the more potential damage to the County, however the primary area-at-risk is along the coastline. With this in mind the risks and vulnerability for the Cross City is not substantially different from the risks to the most of the unincorporated county. For this reason, no specific or individualized research and analysis has been performed.

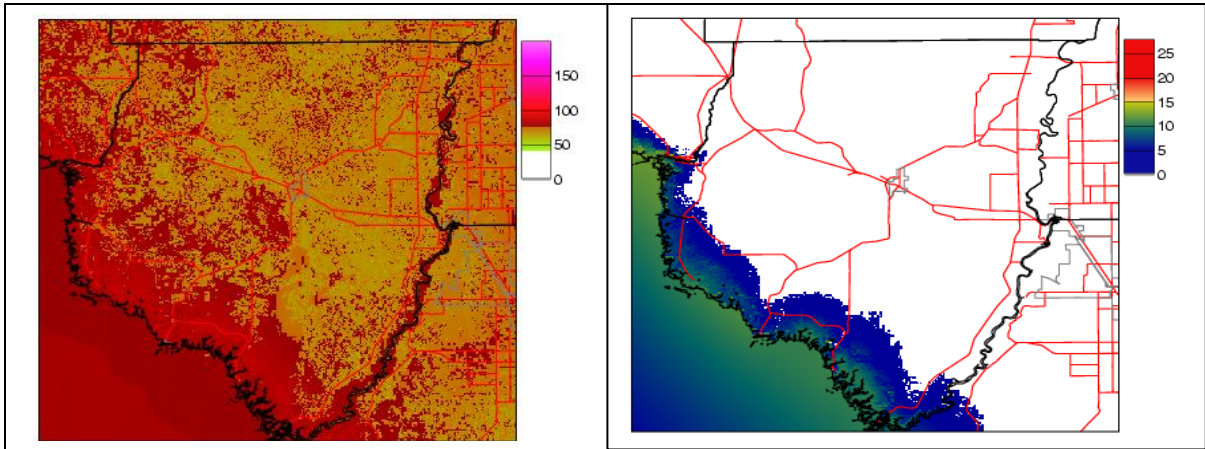
8. Town of Horseshoe Beach - Vulnerability

Based on the hurricane's category, strength and landfall position the vulnerable areas, facilities and populations will vary. Obviously the stronger the storm is the more potential damage to the County. However, the primary area-at-risk is along the coastline. With this in mind, the risks and vulnerability for the Horseshoe Beach is substantially different from the risks to most of the unincorporated county. Horseshoe Beach borders on the Gulf of Mexico, and is the most at high risk to both wind and wave action from hurricanes.

9. Vulnerability Analysis from the MEMPHIS system

The following sets of maps and reports show the winds, water depths, and impact for all hurricane categories.

Maps V.A.8: Category 1 Hurricanes Hazards for Dixie County



Maximum Wind Speed

Maximum Water Depth

Impact Summary

Peak winds 90.mph, peak water depth 10.8ft.

Category 1 Maximum Damage Summary:

Tax Parcel based Wind Damage:	\$ 34.74 Million
DOR based Flood Damage:	\$ 15.39 Million
DOR Structures in Flood Zone:	591
Census based Wind Damage:	\$ 44.64 Million
Census based Flood Damage:	\$ 10.02 Million

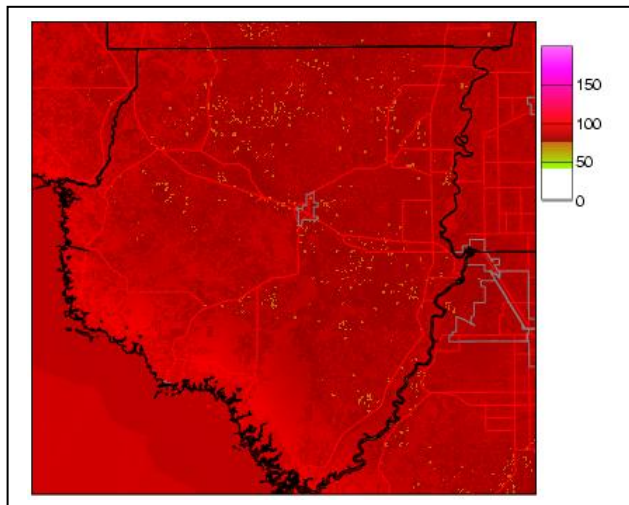
Tables V.A.9.a-c: Risk Estimates Cat I – Dixie County

Countywide Population at Risk for Category 1 Maximum					
	Total	TS Wind	Hur Wind	Ext Wind	Flooded
Total	15486	15486	1650	0	128
Minority	1614	1614	115	0	3
Over 65	2638	2638	256	0	24
Disabled	5037	5037	456	0	20
Poverty	2719	2719	299	0	30
Lang Iso	0	0	0	0	0
Sing Pnt	923	923	73	0	2

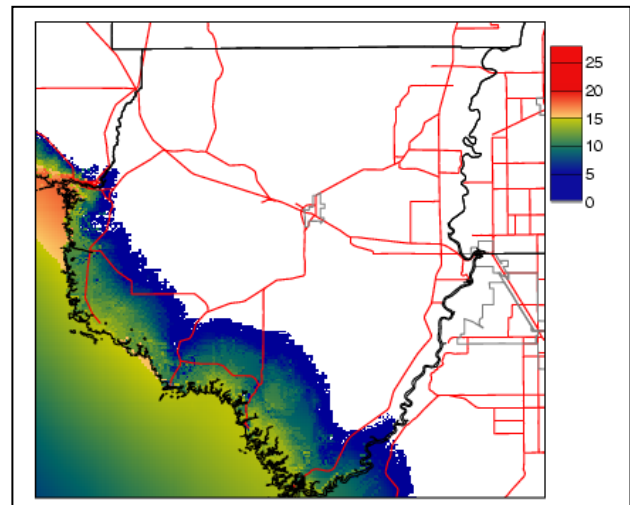
Countywide Structures at Risk for Category 1 Maximum					
	Total	TS Wind	Hur Wind	Ext Wind	Flooded
SF Res	3696	3696	723	0	214
Mob Home	5225	5225	1064	0	284
MF Res	395	395	147	0	13
Commercial	351	351	60	0	27
Agriculture	2096	2096	468	0	8
Gov/Instit	315	315	67	0	25

Countywide Loss by DOR Use for Category 1 Maximum (Millions)			
	Exposure	Loss	Percent Loss
SF Res	\$410.27	\$4.76	1.16
Mob Home	\$246.41	\$15.05	6.11
MF Res	\$12.11	\$0.14	1.16
Commercial	\$61.39	\$0.71	1.16
Agriculture	\$127.24	\$1.13	0.89
Gov/Instit	\$977.09	\$11.36	1.16

Maps V.A.10: Category 2 Hurricanes Hazards for Dixie County



Maximum Wind Speed



Maximum Water Depth

Impact Summary

Peak winds 109.mph, peak water depth 14.7ft.

Category 2 Maximum Damage Summary:

Tax Parcel based Wind Damage:	\$ 113.22 Million
DOR based Flood Damage:	\$ 30.48 Million
DOR Structures in Flood Zone:	2002
Census based Wind Damage:	\$ 121.35 Million
Census based Flood .Damage:	\$ 41.24 Million

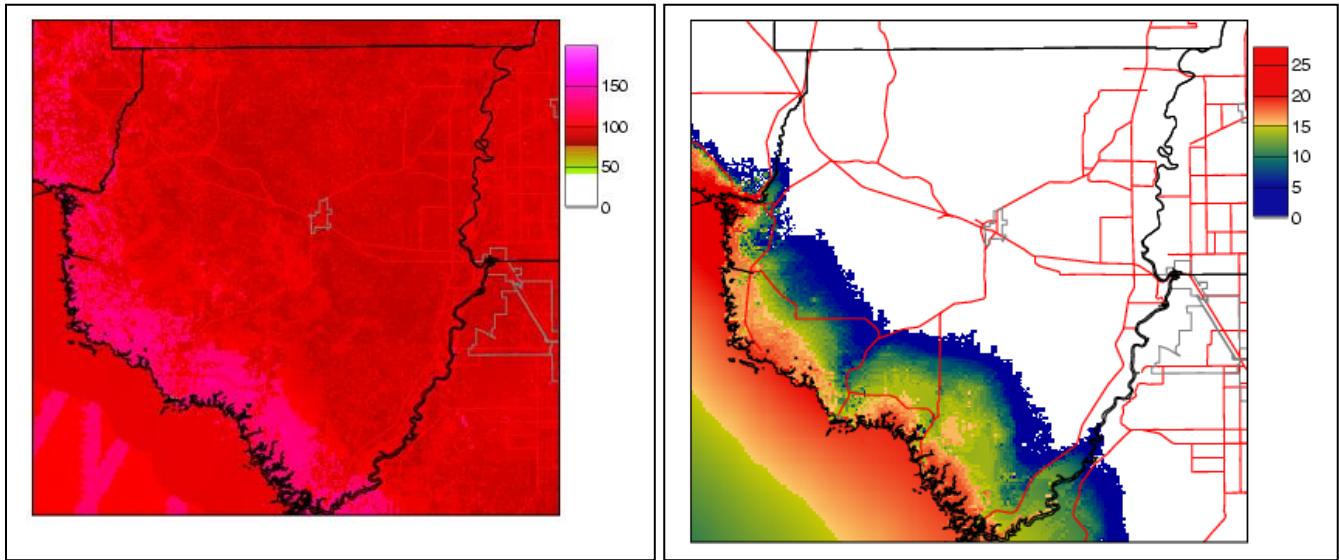
Tables V.A.11.a-c: Risk Estimates Cat 2 – Dixie County

Countywide Population at Risk for Category 2 Maximum					
	Total	TS Wind	Hur Wind	Ext Wind	Flooded
Total	15486	15486	15486	0	818
Minority	1614	1614	1614	0	3
Over 65	2638	2638	2638	0	259
Disabled	5037	5037	5037	0	169
Poverty	2719	2719	2719	0	151
Lang Iso	0	0	0	0	0
Sing Pnt	923	923	923	0	24

Countywide Structures at Risk for Category 2 Maximum					
	Total	TS Wind	Hur Wind	Ext Wind	Flooded
SF Res	3696	3696	3694	0	486
Mob Home	5225	5225	5218	0	789
MF Res	395	395	395	0	101
Commercial	351	351	350	0	42
Agriculture	2096	2096	2093	0	329
Gov/Instit	315	315	315	0	52

Countywide Loss by DOR Use for Category 2 Maximum (in Millions)			
	Exposure	Loss	Percent Loss (%)
SF Res	\$410.27	\$16.92	4.13
Mob Home	\$246.41	\$41.77	16.95
MF Res	\$12.11	\$0.51	4.19
Commercial	\$61.39	\$2.59	4.22
Agriculture	\$127.24	\$4.39	3.45
Gov/Instit	\$977.09	\$41.14	4.21

Maps V.A.12: Category 3 Hurricanes Hazards for Dixie



Maximum Wind Speed

Maximum Water Depth

Impact Summary

Peak winds 130mph, peak water depth 19.0ft.

Category 3 Maximum Damage Summary:

Tax Parcel based Wind Damage:	\$ 252.10 Million
DOR based Flood Damage:	\$ 294.44 Million
DOR Structures in Flood Zone:	4023
Census based Wind Damage:	\$ 291.58 Million
Census based Flood .Damage:	\$ 134.00 Million

Tables V.A.13 a-c: Risk Estimates Cat 3 – Dixie County

Countywide Population at risk for Category 3 Maximum					
	Total	TS Wind	Hur Wind	Ext Wind	Flooded
Total	15486	15486	15486	675	1520
Minority	1614	1614	1614	24	24
Over 65	2638	2638	2638	138	386
Disabled	4497	4497	4497	175	433
Poverty	2719	2719	2719	54	224
Lang Iso	0	0	0	0	0
Sing Pnt	923	923	923	25	36

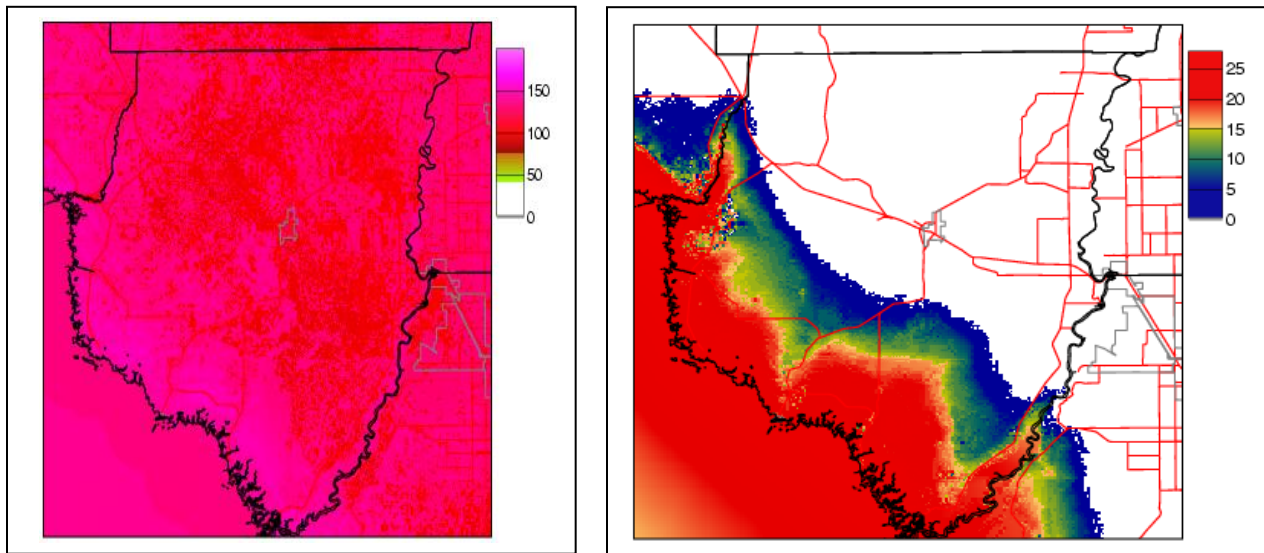
Countywide Structures at Risk for Category 3 Maximum

	Total	TS Wind	Hur Wind	Ext Wind	Flooded
SF Res	3696	3696	3696	312	922
Mob Home	5225	5225	5225	363	1468
MF Res	395	395	395	26	199
Commercial	351	351	351	28	83
Agriculture	2096	2096	2096	45	780
Gov/Instit	315	315	315	29	112

**Countywide Loss by DOR Use for Category 3 Maximum
(in Millions)**

	Exposure	Loss	Percent Loss (%)
SF Res	\$410.27	\$39.15	9.54
Mob Home	\$246.41	\$83.40	33.85
MF Res	\$12.11	\$1.20	9.91
Commercial	\$61.39	\$6.03	9.82
Agriculture	\$127.24	\$10.61	8.34
Gov/Instit	\$977.09	\$97.59	9.99

Maps V.A.14: Category 4 Hurricanes Hazards for Dixie County



Impact Summary

Peak winds 153.mph, peak water depth 21.1ft.

Category 4 Maximum Damage Summary:

Tax Parcel based Wind Damage:	\$ 598.04 Million
DOR based Flood Damage:	\$ 629.94 Million
DOR Structures in Flood Zone:	4546
Census based Wind Damage:	\$ 635.26 Million
Census based Flood .Damage:	\$ 175.66 Million

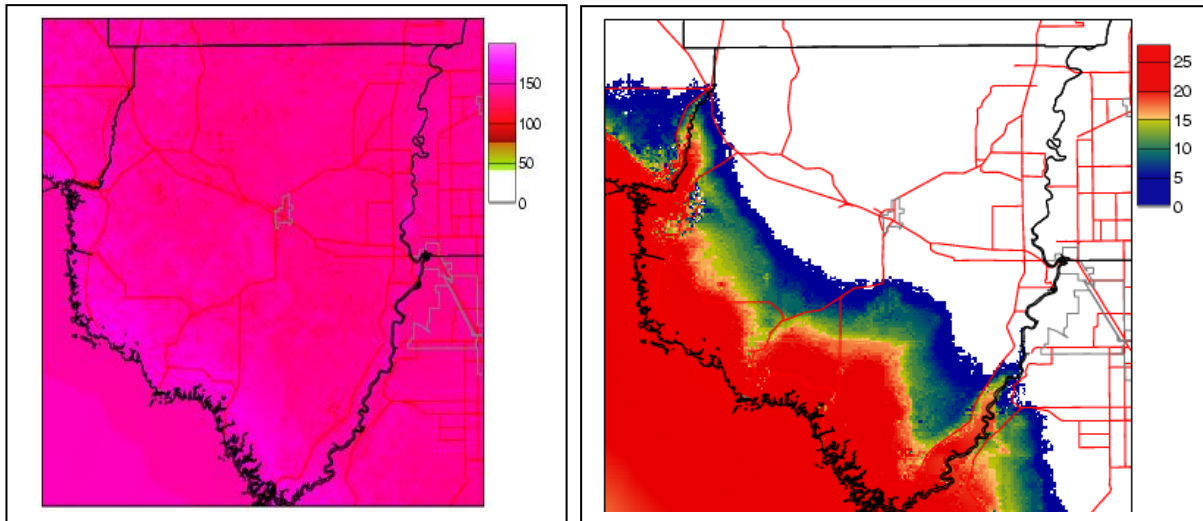
Tables V.A.15 a-c: Risk Estimates Cat 4 – Dixie County

Countywide Population at Risk for Category 4 Maximum					
	Total	TS Wind	Hur Wind	Ext Wind	Flooded
Total	15486	15486	15486	13530	1520
Minority	1614	1614	1614	1598	24
Over 65	2638	2638	2638	2335	386
Disabled	4497	4497	4497	4288	433
Poverty	2719	2719	2719	2380	224
Lang Iso	0	0	0	0	0
Sing Pnt	923	923	923	791	36

Countywide Structures at Risk for Category 4 Maximum					
	Total	TS Wind	Hur Wind	Ext Wind	Flooded
SF Res	3696	3696	3696	3594	1097
Mob Home	5225	5225	5225	5113	1601
MF Res	395	395	395	377	207
Commercial	351	351	351	347	95
Agriculture	2096	2096	2096	2037	925
Gov/Instit	315	315	315	310	124

Countywide Loss by DOR Use for Category 4 Maximum (Millions)			
	Exposure	Loss	Percent Loss (%)
SF Res	\$410.27	\$98.01	23.89
Mob Home	\$246.41	\$183.31	74.39
MF Res	\$12.11	\$2.94	24.31
Commercial	\$61.39	\$14.68	23.91
Agriculture	\$127.24	\$26.05	20.48
Gov/Instit	\$977.09	\$238.40	24.40

Maps V.A.16: Category 5 Hurricanes Hazards for Dixie County



Impact Summary

Peak winds 176.mph, peak water depth 22.2ft.

Category 5 Maximum Damage Summary

Tax Parcel based Wind Damage:	\$ 1.01 Billion
DOR based Flood Damage:	\$ 644.70 Million
DOR Structures in Flood Zone:	4554
Census based Wind Damage:	\$ 1.07 Billion
Census based Flood .Damage:	\$ 175.75 Million

Tables V.A.17 a-c: Risk Estimates Cat 5 – Dixie County

Countywide Population at Risk for Category 5 Maximum					
	Total	TS Wind	Hur Wind	Ext Wind	Flooded
Total	15486	15486	15486	1614	1520
Minority	1614	1614	1614	1614	24
Over 65	2638	2638	2638	2638	386
Disabled	4498	4498	4498	4498	433
Poverty	2719	2719	2719	2719	224
Lang Iso	0	0	0	0	0
Sing Pnt	923	923	923	923	36

Countywide Structures at risk for Category 5 Maximum					
	Total	TS Wind	Hur Wind	Ext Wind	Flooded
SF Res	3696	3696	3696	3696	1071
Mob Home	5225	5225	5225	5225	1602
MF Res	395	395	395	395	208
Commercial	351	351	351	351	95
Agriculture	2096	2096	2096	2096	925
Gov/Instit	315	315	315	315	124

Countywide Loss by DOR Use for Category 5 Maximum (in Millions)			
	Exposure	Loss	Percent Loss (%)
SF Res	\$410.27	\$179.00	43.63
Mob Home	\$246.41	\$245.57	99.66
MF Res	\$12.11	\$5.33	43.98
Commercial	\$61.39	\$26.92	43.86
Agriculture	\$127.24	\$48.63	38.22
Gov/Instit	\$977.09	\$436.25	44.65

B. Tornadoes and Severe Storms

Dixie County experiences severe storms (thunderstorms) that occasionally result in tornadoes. A tornado is a violent windstorm characterized by a twisting, funnel-shaped cloud. It is spawned by a thunderstorm (or sometimes because of a hurricane) and produced when cool air overrides a layer of warm air, forcing the warm air to rise rapidly. The damage from a tornado is a result of the high wind velocity and wind-blown debris. Tornado season is generally March through August, although tornadoes can occur at any time of year. They tend to strike between noon and midnight.

When a tornado threatens, individuals need to have a safe place to go and time to get there. Warning times may be short or sometimes not possible. Lives are saved when individuals receive and understand the warning, know what to do, and know the safest place to go.

Dixie County has not suffered a major tornado on record. However, because of their speed of onset and unpredictable paths, immediate warning must be disseminated to inform residents to seek protective sheltering. The approximately 5,225 mobile homes in the county are particularly susceptible to tornado-related damage. The greatest areas of vulnerability lie within and near the Towns of Cross City and Horseshoe Beach because of how difficult it is to warn the residents. The mobile home residents that are within or in close proximity to the city can be warned quicker due to the more densely populated areas

and because some residents are located in mobile home parks. Rural areas are equally at risk from severe thunderstorms and tornadoes. However, due to the sparsely populated nature of these areas, there is not near the amount of vulnerability as the area in and around Cross City and Horseshoe Beach. However, the issue of alerting this rural population is more difficult than in the more urban areas due to the dense population.

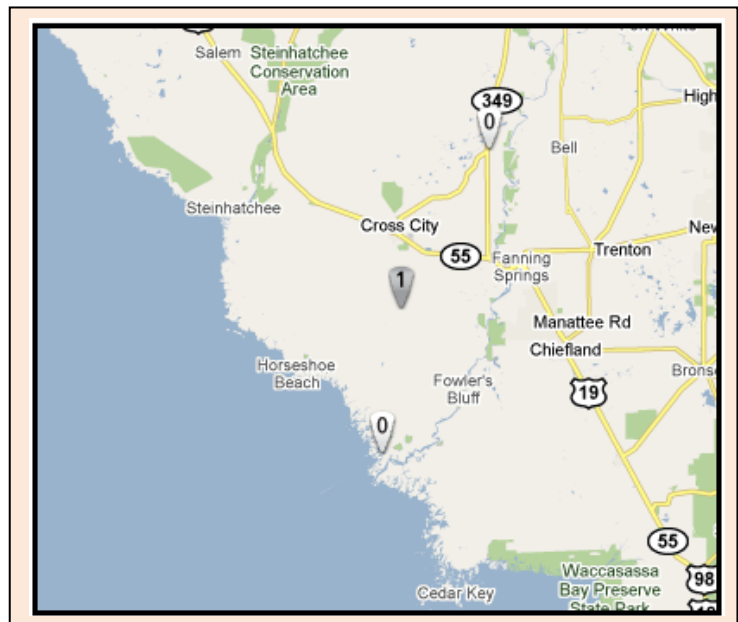
Table V.B.1: Historical Tornadoes Impacting Dixie County, Florida: 1950 - 2009

Florida								
Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1 DIXIE	05/04/1978	0330	Tornado	F0	0	0	25K	0
2 DIXIE	04/08/1982	1730	Tornado	F1	0	0	25K	0
3 FLETCHER	09/30/1998	06:00 AM	Tornado	F0	0	0	100K	0
TOTALS:					0	0	150K	0

Source: <http://www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwEvent~Storms>

Map V.B.2: Land Falling Tornadoes in Dixie County: 1950 - 2010

Legend		



As can be seen from the table below, Dixie County, Cross City, and Horseshoe Beach receive sporadic tornado activity, albeit minor events. Yet, as the county increases in growth, tornadoes will impact areas that once were undeveloped lands.

Similar to most counties in Florida, Dixie County, Cross City, and Horseshoe Beach receive many thunderstorms, many of them severe, causing minor damages. The following chart provides a listing of all of the severe thunderstorms impacting Dixie County, Cross City, and Horseshoe Beach since 1950. As can be seen, there have been 27 significant thunderstorm events, causing nearly \$520,000 in damages.

Table V.B.3: Severe Thunderstorms Impacting Dixie County

Dixie County Florida: Severe Thunderstorms Impacting Dixie County 1950-2010								
Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1 DIXIE	4/23/1983	7:00 AM	Tstm	51 kts.	0	0	0	0
2 DIXIE	7/8/1983	1:30 PM	Tstm	0 kts.	0	0	0	0
3 DIXIE	11/30/1983	7:00 PM	Tstm	0 kts.	0	0	0	0
4 DIXIE	2/6/1986	10:15 AM	Tstm	0 kts.	0	0	0	0
5 DIXIE	10/3/1988	10:55 AM	Tstm	55 kts.	0	0	0	0
6 DIXIE	3/25/1992	3:50 PM	Tstm	0 kts.	0	0	0	0
7 DIXIE	8/4/1994	6:09 PM	Tstm	0 kts.	0	0	1K	0
8 Ormond Beach	8/15/1994	3:00 PM	Tstm	0 kts.	0	0	5K	0
9 Horseshoe Beach	8/15/1995	5:19 PM	Tstm	72 kts.	0	0	0	0
10 Horseshoe	8/15/1995	5:19 PM	Tstm	0 kts.	0	0	20K	0
11 Cross City	2/2/1996	4:35 PM	Tstm	0 kts.	0	0	0	0
12 Hines	4/23/1997	7:30 AM	Tstm	0 kts.	0	0	1K	0
13 Old Town	1/2/1999	9:17 PM	Tstm	0 kts.	0	0	40K	0
14 Old Town	8/2/1999	4:30 PM	Tstm	0 kts.	0	0	2K	0
15 Countywide	7/16/2000	5:45 PM	Tstm	0 kts.	0	0	5K	0
16 Northwest	3/15/2001	3:00 PM	Tstm	0 kts.	0	0	25K	0
17 Countywide	3/29/2001	9:25 AM	Tstm	0 kts.	0	0	275K	0
18 Cross City	6/5/2001	3:48 PM	Tstm	0 kts.	0	0	10K	0
19 Horseshoe	5/31/2002	5:00 PM	Tstm	0 kts.	0	0	1K	0
20 Northwest	6/4/2002	4:30 PM	Tstm	0 kts.	0	0	2K	0
21 Cross City	6/29/2004	7:26 PM	Tstm	50 kts.	0	0	2K	0
22 Cross City	8/28/2005	5:00 PM	Tstm	50 kts.	0	0	1K	0
23 Cross City	7/27/2006	8:00 PM	Tstm	50 kts.	0	0	1K	0
24 Horseshoe	1/19/2008	3:40 PM	Tstm	50 kts.	0	0	2K	0K
25 Cross City	3/7/2008	9:05 AM	Tstm	60 kts.	0	0	100K	0K
26 Guaranto	4/13/2009	7:51 PM	Tstm	55 kts.	0	0	25K	0K
27 Cross City	8/15/2009	2:40 PM	Tstm	50 kts.	0	0	3K	0K
TOTALS:					0	0	520K	0

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

Thunderstorms are often associated with strong winds and lightening. Both are common place in Dixie County, yet historically, neither has caused any significant damages. On the chart below, when the data lists magnitude as 0kts, it means that the wind speed was not recorded for the thunderstorm at the time of the event.

1. Probability

There is a high probability of severe thunderstorms and tornadoes in Dixie County. However the possibility of severely damaging tornadoes of F3 or above is very low. In recorded history, there has never been an F3 or above tornado that occurred in Dixie County, however there have been three smaller events that have hit the region over the past 60 years. Based on historical statistics, it is expected that Dixie County, Cross City, and Horseshoe Beach will experience further storm and tornado activity. However, due to the random nature of these events, they are difficult to predict. Planning for these events must incorporate all areas of the county.

2. Tornado and Thunderstorm Vulnerability Analysis

Severe storms and tornadoes have the potential to caused significant damage to Dixie County and the Towns of Cross City and Horseshoe Beach. The damage is primarily caused by wind damage to roofs, and tree debris impacting transportation and power services. Other significant impact is related to the subsequent flooding. These storm systems are

frequent in nature even though tornadoes are relatively rare. Tornado warnings are issued several times a year and are evenly distributed throughout county. A unique vulnerability that has occurred in the past is related to recreational boaters along the rivers and coasts. Some storms have moved in very quickly and surprised kayakers and anglers who have become disoriented, lost, isolated, and some have been swept out to sea. To date, there have been no deaths but some injuries have occurred. This natural hazard has been designated as a high hazard by the LMS Committee.

3. Future Development and Tornadoes

Future Development trends in the county are based around three areas.

- Towns of Cross City and Horseshoe Beach
- Communities along the coastline
- Areas long the primary transportation routes 19, 340, 349, 351, 357, 358, and 361

Severe thunderstorms and tornadoes can hit anywhere in the county so all areas are equally vulnerable. As the County and the Towns of Cross City and Horseshoe Beach grow, more people and more infrastructures will be vulnerable to injury and damage. The biggest risk is to the more densely populated area around the Towns of Cross City and Horseshoe Beach. As the towns grow, a strong tornado directly impacting this area will have severe consequences.

4. Towns of Cross City and Horseshoe Beach Vulnerability

The Towns of Cross City and Horseshoe Beach is equally vulnerable to storms and tornadoes as the rest of the County. However due to the higher population and population density there is a greater probability of loss of life and property damage in Cross City and Horseshoe Beach than in the unincorporated areas of the County. Warning the population within Cross City and Horseshoe Beach is also more difficult due to the number of people that must be notified in a short period of time. There are a larger number of buildings with higher property values in the Towns of Cross City and Horseshoe Beach than throughout the rest of the County. Therefore, there is again a higher chance of damage if/when storm systems hit the towns rather than most of the unincorporated areas. Though the risk is the same, there is generally a greater vulnerability for the towns in terms of potential human and economic impact.

5. Vulnerability Analysis from the MEMPHIS system

Based on the MEMPHIS system for risk assessment most of Dixie County and the entire Towns of Cross City and Horseshoe Beach are considered at low risk for tornadoes. However the northeastern edge of the county has a higher risk due to the topography and the prevailing weather conditions. Due to the uncertain nature of tornadoes and the lack of warning time, it is difficult to assess the vulnerability accurately. With this in mind, all 30 critical facilities are considered “at-risk” to tornados. See the map and the financial impact tables below to assess the potential damage due to tornadoes based on the MEMPHIS modeling estimates.

Map V.B.4: Tornado Risk for Dixie County

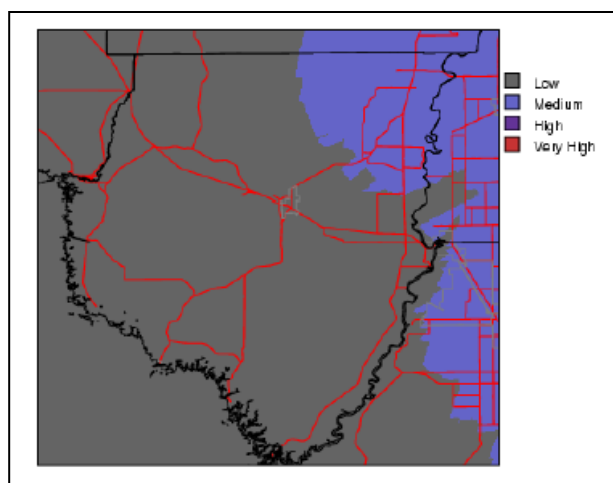


Table V.B.5 a-c: Risk Estimates Tornadoes – Dixie County

Population at risk for KAC Tornado Risk							
Zone	Total	Minority	Over 65	Disabled	Poverty	Lang Iso	Sing Pnt
Low (1 in 500)	12823	1515	2072	6955	2195	0	729
Medium (1 in 250)	2663	99	566	1691	524	0	194

Structures at risk for KAC Tornado Risk							
Zone	Total	SF Res	Mob Home	MF Res	Commercial	Agric ulture	Gov/ Instit
Low (1 in 500)	7472	2448	2534	285	234	180	1791
Medium (1 in 250)	5189	1248	2692	110	117	60	963

Value of Structures by DOR Use for KAC Tornado Risk (Millions)							
Zone	Total	SF Res	Mob Home	MF Res	Commercial	Agriculture	Gov/Instit
Low (1 in 500)	\$1,323.50	\$261.25	\$104.77	\$10.02	\$46.28	\$119.83	\$781.35
Medium (1 in 250)	\$482.57	\$149.02	\$141.64	\$2.10	\$15.09	\$7.41	\$167.31

The following analysis from the MEMPHIS system shows the potential damage due to severe storms without any tornado activity. Based on the weather patterns associated with any severe storm, it is not uncommon for the entire county to be impacted by a line of severe thunderstorms.

Map V.B.6: Thunderstorm Risk for Dixie County/Cross City

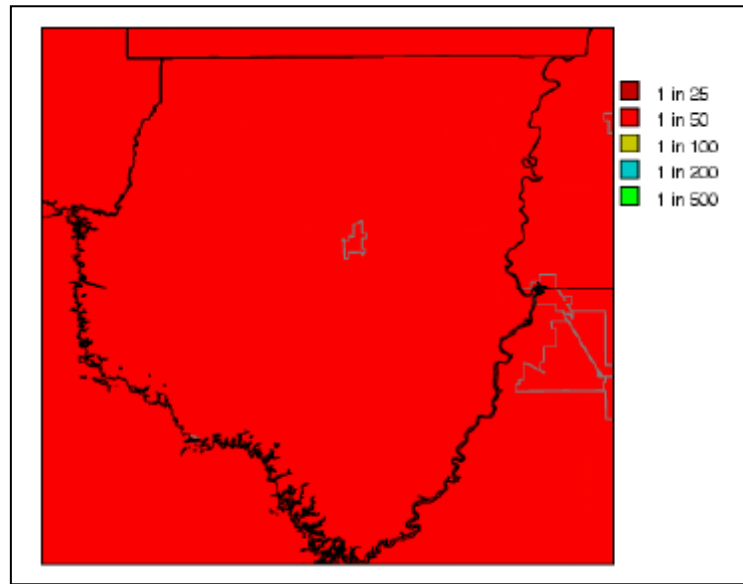


Table V.B.7 a-c: Risk Estimates Thunderstorms – Dixie County

Population at risk for KAC Severe Thunderstorm Damage Risk							
Zone	Total	Minority	Over 65	Disabled	Poverty	Lang Iso	Sing Pnt
High (50)	15486	1614	2638	8646	2719	0	923

Structures at risk for KAC Thunderstorm Damage Risk							
Zone	Total	SF Res	Mob Home	MF Res	Commercial	Agriculture	Gov/Instit
High (50)	12661	3696	5225	395	351	240	2754

Value of Structures by DOR Use for KAC Thunderstorm Damage Risk (Millions)							
Zone	Total	SF Res	Mob Home	MF Res	Commercial	Agriculture	Gov/Instit
High (50)	\$1,834.51	\$410.27	\$246.41	\$12.11	\$61.39	\$127.24	\$977.09

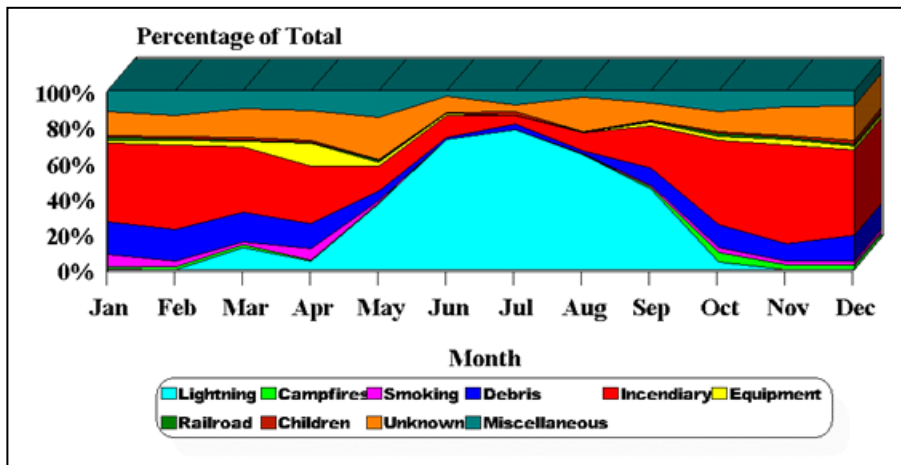
C. Forest Fires

There are three different classes of wild land or wildfires. A surface fire is the most common type and burns along the floor of a forest, moving slowly and killing or damaging trees. A ground fire is usually started by lightning and burns on or below the forest floor. Crown fires spread rapidly by wind and move quickly by jumping along the tops of trees. Forest fires are usually signaled by dense smoke that fills the area for miles around. Forest fires present a

significant potential for disaster in the northwest Florida, a region of high temperatures and large amounts of forest areas with high levels of burnable material. Combine these severe burning conditions with people or lightning and the stage is set for the occurrence of large, destructive forest fires.

Florida’s typical forest fire season is the dry portion of the year, between January and May. The largest number of naturally caused fires occurs in July due to lightning and coincides with the height of the thunderstorm season. However, lightning accounts for only 14% of the fires started during 2007 - 2010. Other sources are manmade, including arson, carelessness, debris/trash burning, and operating equipment, which may emit sparks. Because so much of the county is comprised of timberlands, a major portion of the county is vulnerable to forest fires, although the threat to the population at large is not considered significant.

Table V.C.1: Average Acres Burned per Month per Cause
Florida Division of Forestry



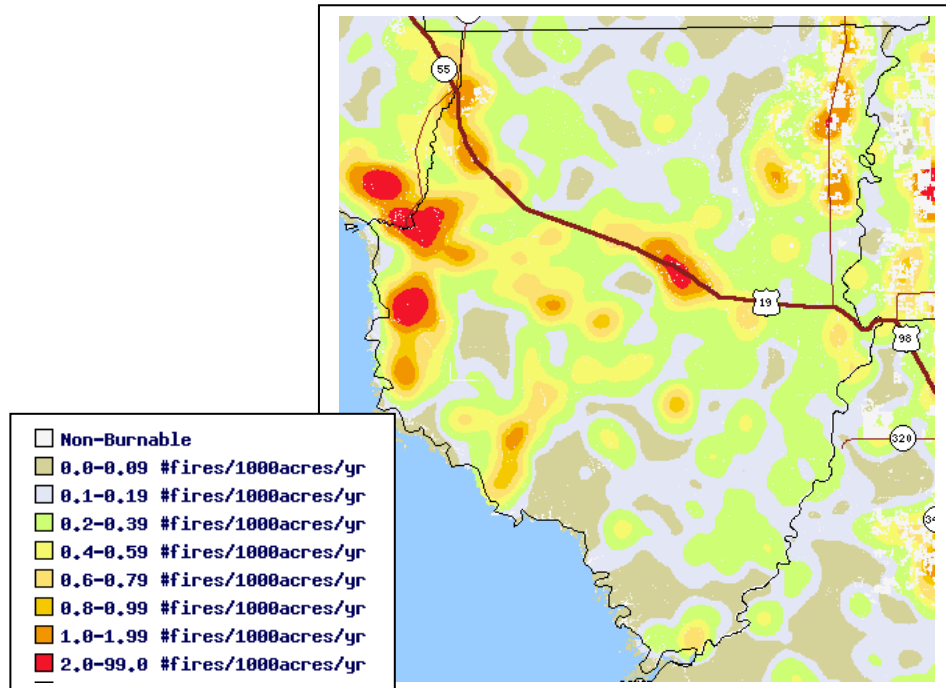
In Dixie County Unincorporated, approximately 70% of the county is comprised of timberlands, which are regularly maintained and protected by the Division of Forestry.

The approximate total acreage within the Town of Cross City is 1,025 acres. There are approximately 127 acres of forest lands within the Town. Forest lands represent approximately 12.39 percent of the total land area. The Town of Cross City is surrounded by forested land and is therefore vulnerable to the impacts of a forest fire. The likelihood of fires in Cross City is less than some of the more wooded area. However, due to the high density of population and the number of buildings and businesses in the area, this town is more vulnerable to fires than the rest of the County.

The Town of Horseshoe Beach has no forest land uses within the Town. However, the Town is surrounded mostly by forested land also making it vulnerable to forest fires.

The following map further defines the historical wild fire scenario in Dixie County. The data, the modeling and the maps are all from the Division of Forestry’s Fire Risk Assessment System (FRAS), and show the Fire Occurrence Areas by level.

Map V.C.2: Fire Occurrence Areas – Dixie County



Fire Occurrence Area - A Fire Occurrence Area (FOA) is an area where the probability of each acre igniting is the same. The historical fire locations from the past 20 years were used with a few exceptions. Pictorially, if one were to locate the point location for historic ignitions on a map of an FOA, the points would appear to be equally spaced. (Florida DOF)

As the data demonstrates, Dixie County’s historical profile shows that fires occur regularly and need to be considered a high priority with respect to mitigation.

Using the data found at the FDOF’s [<http://tlhforweb03.doacs.state.fl.us/PublicReports/>], there have been 181 recorded fire events in Dixie County between 2007 – 2010, that have burned 1,220.8 acres of land. Most of these fires were less than 10 acres in size.

The following charts lists those fires that were 8 acres or greater occurring between January 1, 2007 and May 29, 2010.

**Table V.C.3: Dixie County Fire History by Section/Township/Range: 1/1/07 – 6/01/2010
(8 Acres or Greater in Size)**

Section/ Township/ Range	County	Incident #	Start		Acres	Fire Cause
			Date/Time			
19 10S 10E	15	2008-05-0030	1/22/2008 1:00		35	Incendiary
35 10S 10E	15	2008-05-0086	2/25/2008 13:05		11	Debris Burn--Auth-- Broadcast/Acreage
15 10S 10E	15	2008-05-0092	3/1/2008 14:50		90	Debris Burn--Auth-- Broadcast/Acreage
22 10S 10E	15	2008-05-0094	3/1/2008 12:30		30	Debris Burn--Auth-- Broadcast/Acreage
27 10S 10E	15	2008-05-0095	3/1/2008 14:00		40	Debris Burn--Auth-- Broadcast/Acreage
20 10S 11E	15	2009-05-0134	4/11/2009 18:28		8	Incendiary
16 10S 13E	15	2010-05-0013	1/13/2010 13:14		12	Miscellaneous-- Other
27 11S 10E	15	2007-05-0069	2/28/2007 14:10		40	Debris Burn--Auth-- Broadcast/Acreage
17 11S 10E	15	2008-05-0254	7/3/2008 13:00		160	Lightning
17 11S 10E	15	2008-05-0274	7/24/2008 22:00		13	Lightning
24 11S 12E	15	2008-05-0207	6/7/2008 1:00		25	Lightning
24 11S 12E	15	2008-05-0210	6/7/2008 16:00		20	Lightning
7 11S 12E	15	2008-05-0266	7/13/2008 19:00		12	Lightning
2 11S 13E	15	2007-05-0391	7/8/2007 14:00		20	Incendiary
2 11S 9E	15	2010-05-0118	4/22/2010 17:18		15	Lightning
32 12S 12E	15	2008-05-0005	1/2/2008 9:00		14	Incendiary
35 12S 12E	15	2008-05-0270	7/21/2008 20:00		95	Lightning
23 12S 12E	15	2008-05-0272	7/22/2008 16:40		25	Miscellaneous -- Breakout

Section/ Township/ Range	County	Incident #	Start		Acres	Fire Cause
			Date/Time			
34 12S 12E	15	2009-05-0043	2/20/2009 12:56		10	Debris Burn--Auth-- Broadcast/Acreage
16 8S 12E	15	2007-05-0436	7/31/2007 19:00		8	Lightning
1 8S 13E	15	2007-05-0009	1/20/2007 11:25		8	Incendiary
11 8S 13E	15	2007-05-0104	3/13/2007 17:30		88	Incendiary
31 8S 13E	15	2007-05-0377	7/1/2007 20:00		8	Lightning
16 8S 13E	15	2008-05-0211	6/8/2008 20:00		50	Lightning
31 8S 13E	15	2008-05-0269	7/20/2008 21:30		8	Lightning
9 9S 10E	15	2007-05-0170	4/7/2007 12:00		15	Incendiary
3 9S 10E	15	2007-05-0364	6/28/2007 1:00		20	Lightning
33 9S 10E	15	2007-05-0393	7/8/2007 12:00		29.4	Incendiary
34 9S 10E	15	2007-05-0394	7/9/2007 11:20		15	Lightning
28 9S 10E	15	2008-05-0012	1/5/2008 10:30		15	Incendiary
18 9S 12E	15	2007-05-0007	1/18/2007 15:00		8	Incendiary
30 9S 12E	15	2007-05-0376	7/1/2007 15:50		19	Lightning
25 9S 12E	15	2009-05-0199	7/25/2009 11:00		12	Lightning
12 9S 13E	15	2008-05-0218	6/9/2008 14:00		20	Unknown
13 9S 13E	15	2009-05-0052	2/24/2009 11:08		8	Debris Burn--Auth-- Yard Trash

The following is a listing of the source of the 668 fires occurring in the Perry Fire District (Dixie, Lafayette, Madison and Dixie County), between 2007 – 2010. The cause of the fires is important for potential mitigation activities to prevent such fires in the future.

Table V.C.4: Fire Activity Report: Perry Division 2007-2010

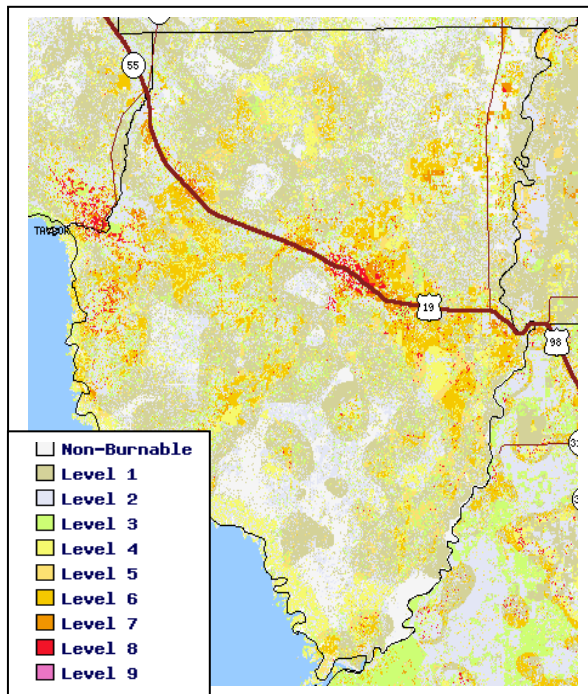
Fire Activity Report - Perry Forest District 1/1/07 - 5/29/10						
Cause	District 5		Cause	District 5		
	Count	Acres		Count	Acres	
Campfire	16	88.4	Equipment-- Transportation	41	85.3	
Children	10	5	Incendiary	91	644.6	
Debris Burn*	0	0	Lightning	172	2,265.40	
Debris Burn--Auth-- Broadcast/Acreage	29	1,719.80	Miscellaneous -- Breakout	1	25	
Debris Burn--Auth-- Piles	14	45.4	Miscellaneous -- Electric Fence	3	1.2	
Debris Burn--Auth-- Yard Trash	36	82.3	Miscellaneous -- Fireworks	2	3.8	
Debris Burn-- Nonauth-- Broadcast/Acreage	23	81.4	Miscellaneous -- Power Lines	37	60.2	
Debris Burn-- Nonauth--Piles	27	59	Miscellaneous -- Structure	7	8.9	
Debris Burn-- Nonauth--Yard Trash	33	96.3	Miscellaneous-- Other	22	72.8	
Equipment use*	0	0	Railroad	0	0	
Equipment-- Agriculture	17	25.7	Smoking	11	15.1	
Equipment--Logging	7	2.6	Unknown	63	509.5	
Equipment-- Recreation	6	1.6	All causes	668	5,899.30	

1. Probability

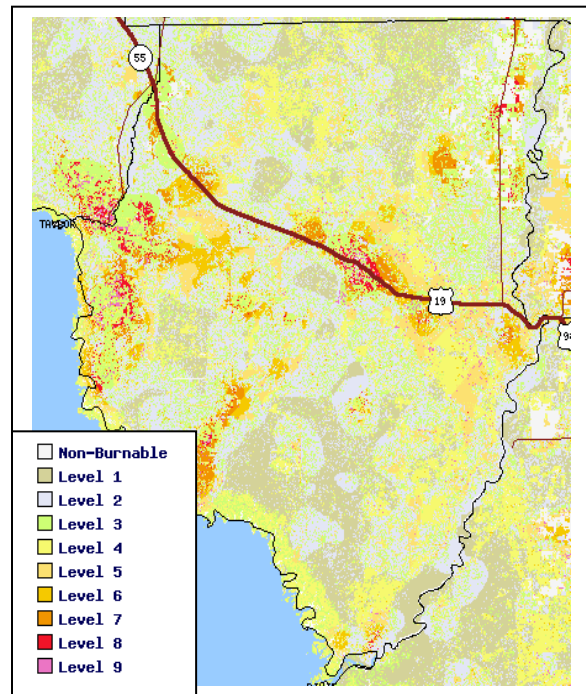
Since most of Dixie County is wooded forests especially woodlands for the timber industry, the entire county has a high level of vulnerability to wild land fires. There is a high probability that fires will occur in Dixie County.

The following two maps from the Division of Forestry's FRAS system show the areas with a high susceptibility to fires and the areas with high levels of concern.

Maps V.C.5 a-b: Fire Levels of Concern, Wildfire Susceptibility Index



Fires - Levels of Concern - The Levels of Concern are calculated as the Wildland Fire Susceptibility Index (WFSI) times the Fire Effects Index (FEI). The Level of Concern is equal to the WFSI * Fire Effects Index. The WFSI is a value between 0 and 1. The Fire Effects Index is a value between 0 and 100. Hence the LOC is a value between 0 and 100. (FL DOF)



Wildfire Susceptibility Index - is a value between 0 and 1. It was developed consistent with the mathematical calculation process for determining the probability of an acre burning. The WFSI integrates the probability of an acre igniting and the expected final fire size based on the rate of spread in four weather percentile categories into a single measure of wildland fire susceptibility.

2. Wildfire Vulnerability Analysis

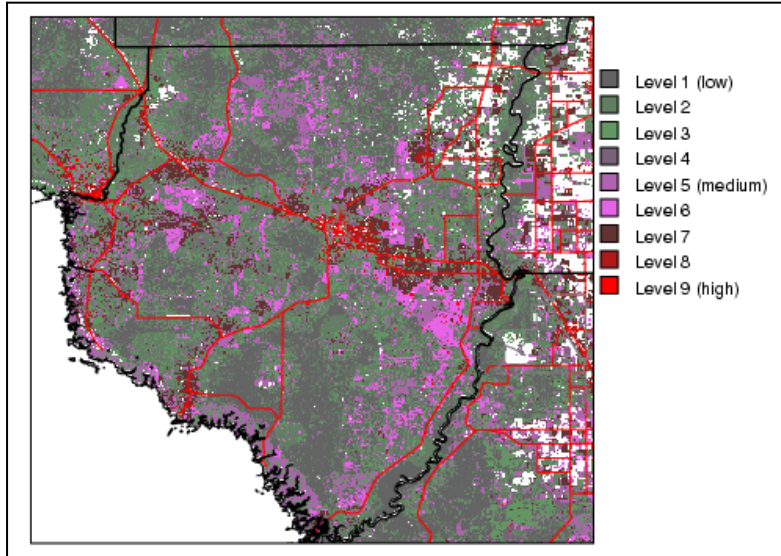
Since most of the County wooded forest, the area is extremely susceptible to fires. Whether the fire is caused by lightning or by human interaction, the resulting danger and damage is the same. Though loss of life is possible with fires, there is usually enough warning time to evacuate the impacted populations. Therefore, the primary vulnerability is buildings, structures, and the related economic impact. Another potential impact is the economic losses to the timber industry in the area.

The Towns of Cross City and Horseshoe Beach have their own fire departments and the county has six volunteer fire departments, but both of these organizations are small. The County usually has very limited fire-fighting resources to cover approximately 1000 square

miles. The difficulty in suppressing fires immediately increases the risks of larger and uncontained fires.

Critical Facilities: Based on the source data for forest fires from the MEMPHIS system, the areas mapped below in yellow and red are considered at risk for fires. Of the 30 Critical Facilities in Dixie County, virtually all of them are located in either a medium or higher fire zone, and susceptible to future fire events.

Map V.C.6: Fire Levels of Concern Hazards for Dixie



The following tables give specific numbers for vulnerable populations and buildings as well as some financial statistics relating to these potentially damaged structures for all the Dixie County.

Tables V.C.7 a-c: Risk Estimates – Wildfire Dixie County

Population at risk for FDOF Fire Risk LOC							
Zone	Total	Minority	Over 65	Disabled	Poverty	Lang Iso	Sing Pnt
Level 1 (low)	253	0	39	108	69	0	0
Level 2	3255	99	775	2008	625	0	205
Level 3	5653	812	743	2918	553	0	289
Level 4	0	0	0	0	0	0	0
Level 5 (medium)	1982	40	372	1179	241	0	131
Level 6	380	72	15	131	111	0	24
Level 7	1416	3	290	928	436	0	91
Level 8	488	0	66	194	93	0	0
Level 9 (high)	1803	585	289	1094	541	0	171

Structures at Risk for FDOF Fire Risk LOC							
Zone	Total	SF Res	Mob Home	MF Res	Commercial	Agriculture	Gov/Instit
Level 1 (low)	3237	661	1281	216	75	79	925
Level 2	6661	1142	3579	601	174	170	996
Level 3	826	237	333	40	32	11	172
Level 4	307	102	106	6	3	6	85
Level 5 (med)	341	125	134	9	5	5	63
Level 6	68	35	16	4	2	2	8
Level 7	2518	1280	335	67	81	704	52
Level 8	6171	3659	930	155	175	758	494
Level 9 (high)	569	333	62	29	12	131	3

3. Future Development and Fires

As new development happens in Dixie County there will be more area of urban interface with wooded and timber area. This increase in urban interface areas will put higher levels of population, structures, and infrastructure at risk from fires. The county is a participant in the Division of Forestry’s Firewise Community effort, which helps mitigate future damage to residential buildings.

Also, since the majority of fires are human caused, the population growth in the County will increase the subsequent number of fires in the county. Therefore, the risks due to fire are likely to increase in the future.

4. The Towns of Horseshoe Beach and Cross City Vulnerability

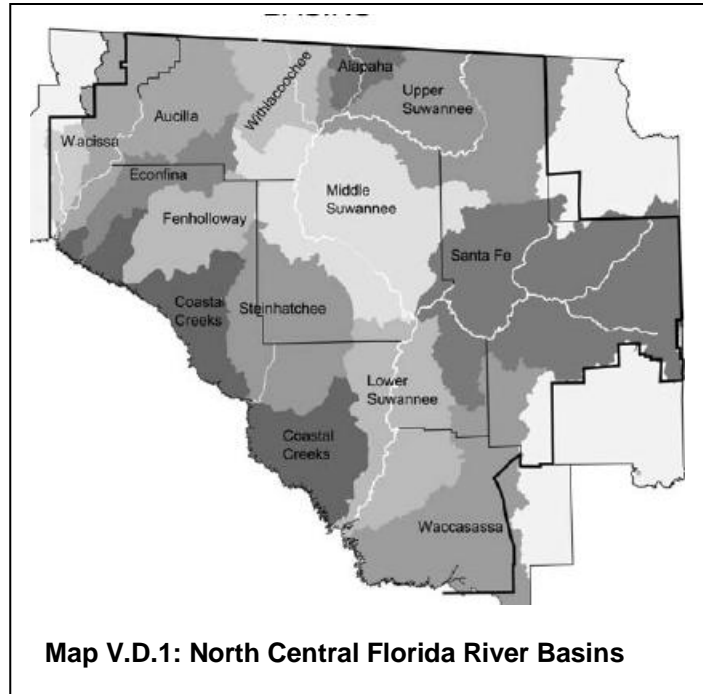
The areas around the Towns of Horseshoe Beach and Cross city are particularly susceptible to fires. In addition, the Towns have a larger population and a high density of buildings. This increases their vulnerability to fires when compared to the unincorporated county.

D. Floods

Floods are the most common and widespread of all natural disasters. Most communities in the United States have experienced some kind of flooding, after spring rains, heavy thunderstorms, coastal storms, or winter snow thaws.

Floods can be slow or fast rising but generally develop over a period of days. Mitigation includes any activities that prevent an emergency, reduce the chance of an emergency happening, or lessen the damaging effects of unavoidable emergencies. Investing in mitigation steps now, such as, engaging in floodplain management activities, constructing barriers, such as levees, and purchasing flood insurance will help reduce the amount of structural damage to homes and the financial loss from building and crop damage should a flood or flash flood occur.

Florida is affected by a large number of tropical weather systems. Although a storm surge has the greatest potential for loss of life, recent research indicates that inland flooding was responsible for the greatest number of fatalities over the last 30 years. Studies show that 59 percent of the tropical cyclone deaths in the United States resulted from severe inland flooding. Flood or flooding refers to the general or temporary conditions of partial or complete inundation of normally dry land areas of surface water runoff from any source. Floodplains are



Map V.D.1: North Central Florida River Basins

defined as any land areas susceptible to being inundated by water by any flooding source. In Florida, several variations of flooding occur due to the different effects of severe thunderstorms, hurricanes, seasonal rain and other weather-related conditions and is a natural part of the earth’s hydrologic system.

Based on frequency, floods are the most destructive category of natural hazards in the United States. The loss of life, personal property, crops, business facilities, utilities, and transportation are major impacts of flooding. Additional losses and economic hardships ensue when supplies or supply routes are damaged or destroyed. Floodwaters present an additional hazard as a public health problem when they inundate drinking water facilities, chemical and waste storage facilities, wastewater treatment facilities and solid waste disposal sites. In general, flooding can be divided into two major categories: Coastal and riverine. In Florida, the same hazard, such as a hurricane or severe winter storm, can result in both types of flooding, sometimes in different area, but many areas of Florida are susceptible to flooding from both storm surge and watershed runoff.

Coastal flooding is usually the result of a severe weather system such as a tropical cyclone, hurricane, tropical storm or “nor’easter” which contains the element of high winds. The extent and nature of coastal flooding is related to the physical features of the terrain and the characteristics of the adjoining body of water. The damaging effects of coastal floods are caused by a combination of higher water levels of the storm surge, the winds, rains, erosion and battering by debris. Floodwaters are usually driven ashore by the wind, an event known as storm surge. Loss of life and property damage are often more severe since it involves high velocity wave action and accompanying winds. The velocity and range of coastal floods vary in part with the severity of the storm that induces them. Florida’s low-lying topography combined with its subtropical climate makes it highly vulnerable to inland or riverine flooding. Riverine flooding is associated with a river’s

watershed, which is the natural drainage basin that conveys water runoff from rain. Riverine flooding occurs when the flow of runoff is greater than the carrying capacities of the natural drainage systems. Rainwater that is not absorbed by soil or vegetation, seek surface drainage lines following natural topography lines. These lines merge to form hierarchical systems of rills, creeks, streams, and rivers. Generally, floods can be slow or fast rising, depending on the size of the river or stream. The rivers in north Florida drain portions of Alabama and Georgia, and excessive rainfall in those states often cause flood conditions in Florida. One of the consequences of flooding is repetitive loss properties. A repetitive loss property is one for which two or more NFIP losses of at least \$1000 each have been paid over a 10-year period.

Although Dixie County historically experiences only moderate rainfall, the primary causes of flooding are hurricanes and tropical storms, which generally occur between June and October. In addition, northern Florida is subject to flooding from heavy rains in southern Georgia, which contains the headwaters for the rivers and streams that crisscross much of the panhandle. In Dixie County, the Suwannee and Steinhatchee Rivers are a source of flooding during periods of heavy rainfall. Flooding is primarily caused by periods of heavy rainfall resulting in riverbank overflows and ponding, or from coastal surge associated with hurricanes and tropical storms due to the County's proximity to the Gulf of Mexico.

Areas of 100-year flood prone probability were identified as those lands which are subject to occasional flooding due to seasonal rainfall or other storm events with the probability of being flooded one percent in any given year. Flood prone areas include those areas within the 100-year floodplain, being a broad belt around existing river and stream channels. Other flood prone areas are associated with lakes and other isolated depressions. Floodplains and flood prone areas are shaped in part by topography, storm water volume, vegetation and other natural or artificial forces which affect water flow.

The entire county is subject to flooding and many of the flood prone areas contain wetlands. Since the County's participation in the National Flood Insurance Program, development has been required to meet standards which protect new construction from future flooding. In addition, wetland areas located within flood prone areas require special permits from the County, state and/or federal government to dredge and fill these lands.

1. Historical Profile

Knowledge of flood hazard is important in land use planning. This section includes a history of floods affecting Dixie County. Historical data for this was provided by NOAA's National Climatic Data Resource Center.

- a. 13 Mar 1993, 0800 EST:** Influenced by the "No-Name Storm of 1993", this event caused extensive coastal surge inundation and inland flooding. Many mobile homes on stilts were flooded in Jena and Steinhatchee.
- b. 15 Sep 1994, 0000 EST:** Two synoptic-scale systems, one tropical and one non-tropical brought heavy rain to most of peninsular Florida, including Dixie County, the

last half of September. Rivers and streams overflowed, flooding roadways and inundating or isolating residential areas. Other sections of Florida, particularly northeast and east central experienced urban flooding which closed roads and flooded schools and homes.

Table V.D.2: Historical Occurrences of Floods – Dixie County

Florida - Dixie County (1950-2010)								
Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1 Steinhatchee	3/13/1993	800	Flood	N/A	0	0	5.0M	0
2 Peninsular	9/15/1994	0	Flooding	N/A	0	0	500K	0
3 West-central FL	10/2/1994	1600	Flood	N/A	0	0	5.0M	0
4 FLZ007 - 009>019 - 026>029 - 034	3/10/1998	12:00 AM	Flood	N/A	0	0	367.0M	0
5 FLZ034	9/26/2004	9:00 PM	Flood	N/A	0	0	50K	0
TOTALS:					0	0	377.550M	0

Source: <http://www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwevent~storms>

- c. **02 Oct 1994, 1600 EST:** The remnants of tropical depression number 10 moved from the northeast Gulf of Mexico on October 1 across the Florida Panhandle and into Georgia on October 2. High winds produced rough seas along the west central and northwest Florida coasts causing minor tidal flooding and beach erosion. A total of 18 people had to be rescued from sinking boats in the northeast Gulf of Mexico. Heavy rains in the Florida Big Bend (Dixie County) and Panhandle accompanied the system causing extensive flooding to roadways, creeks, low-lying areas, and minor flooding of rivers. Damage estimates to roadways was more than \$1 million. Flooding was slow to recede in Leon, Wakulla, Dixie and Hernando Counties where homes and roadways remained flooded through October 15.

- d. **10 Mar 1998, 12:00:00 AM EST:** Flooding rainfall occurred across the entire Big Bend/panhandle portions of North Florida. Calhoun, Franklin, Gadsden, Gulf, Holmes, Jackson, Walton, and Jackson counties were declared federal disaster areas. Nearly 6 inches of rain from March 8-9 caused urban/small stream flooding in Dixie County. In Dixie County, rising waters along the Suwannee River forced the evacuation of 200 residents. Numerous county and secondary roads were closed. In Lafayette County, the Suwannee River crested near 33.9 feet at Branford and 14.9 feet at Wilcox on March 9. In Taylor County, lowland flooding was observed in Perry where rainfall where 3 to 5 inches of rain fell within a 48-hour period. Twenty homes were severely damaged with water damage and there was significant economic impact to the timber industry due to transportation issues to and from the forests. In Jefferson County,

widespread lowland flooding occurred as the Aucilla River crested between 12.5 and 13 feet at Lamont.

- e. **26 Sep 2004, 09:00:00 PM EST:** Torrential rain from Tropical Storm Jeanne washed out 30 county roads and isolated 300 homes by high water. Reported by Dixie County EMA

2. Probability

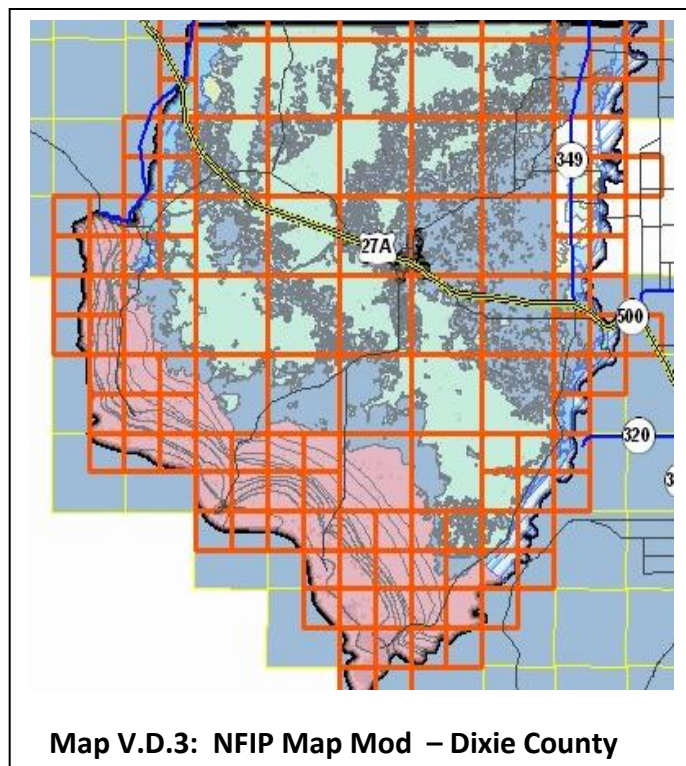
Flooding is the most likely event that occurs nationwide. Flooding occurs regularly in Dixie County and it will continue to happen due to thunderstorms, winter thaws, and seasonal tropical storm. There is a very high probability that flood areas of the County, Town of Cross City, Town of Horseshoe Beach, and Suwannee Community will continue to cause damage and potential injury and loss of life.

The areas most likely to flood are around the major rivers and are delineated on the printed FIRM maps on file with the County. In addition, the map modernization effort is well underway with the Suwannee River Water Management District. Individual FIRM panels can be viewed at <http://www.srwmfloodreport.com/Welcome.htm>.

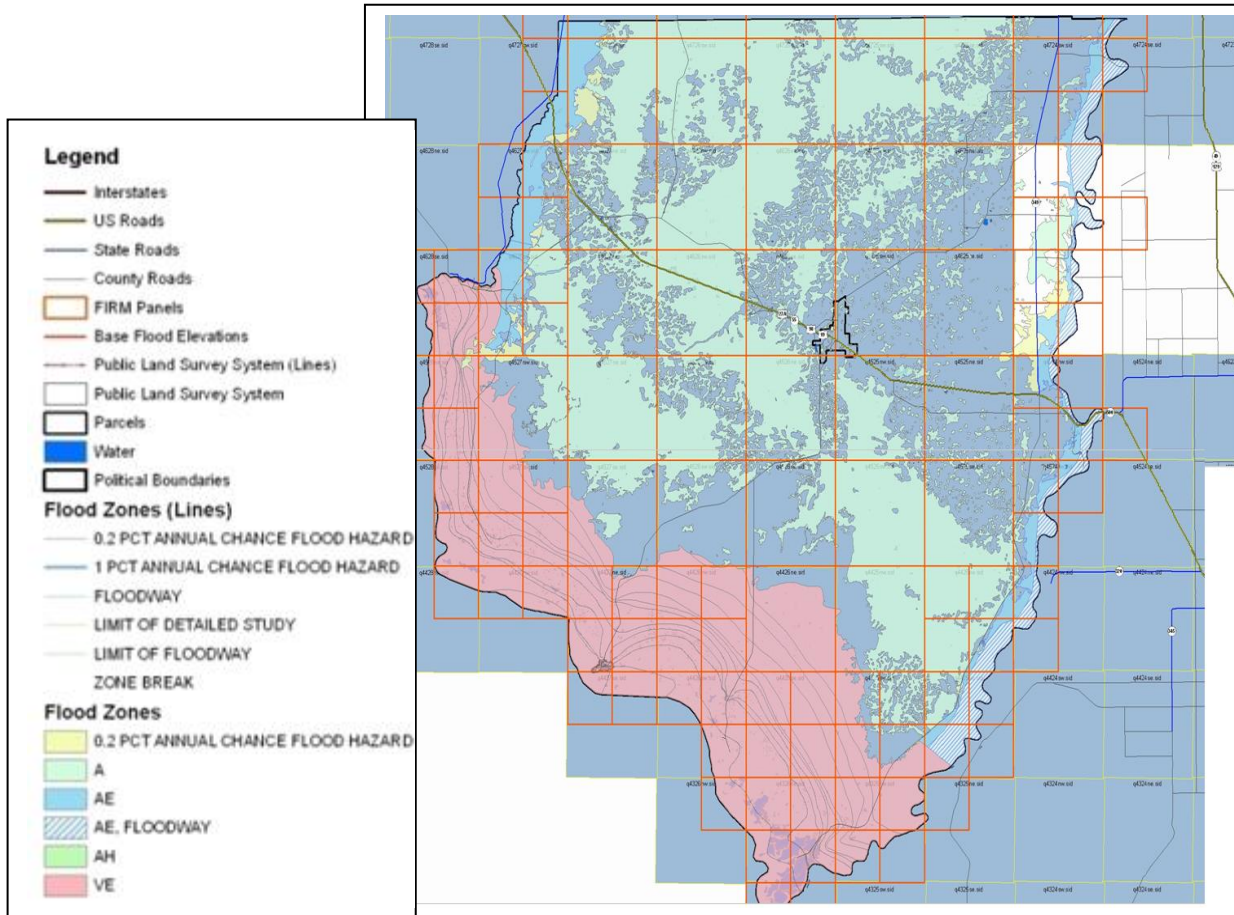
3. Flooding Vulnerability Analysis

The FEMA Map Modernization effort has produced new FIRM maps for all of Dixie County. They are maintained and easily accessed by anyone by going to the website provided above. The map quality is superior over what was available in 2005. Many of these maps include LIDAR images of actual facilities in the approximate flood zones. The following are examples of the maps that can be viewed online via the Suwannee River Water Management District's website.

This electronic map provides all of the FIRM panels for Dixie County. The website provides the capability to zoom down to property boundaries for determination of the flooding potential anywhere in Dixie County. The maps clearly show the extensive velocity zone Dixie County has, and the facilities located within that critical zone. This web-based capability is a significant improvement, and allows for ease of determining what flood zone a piece of property is located.

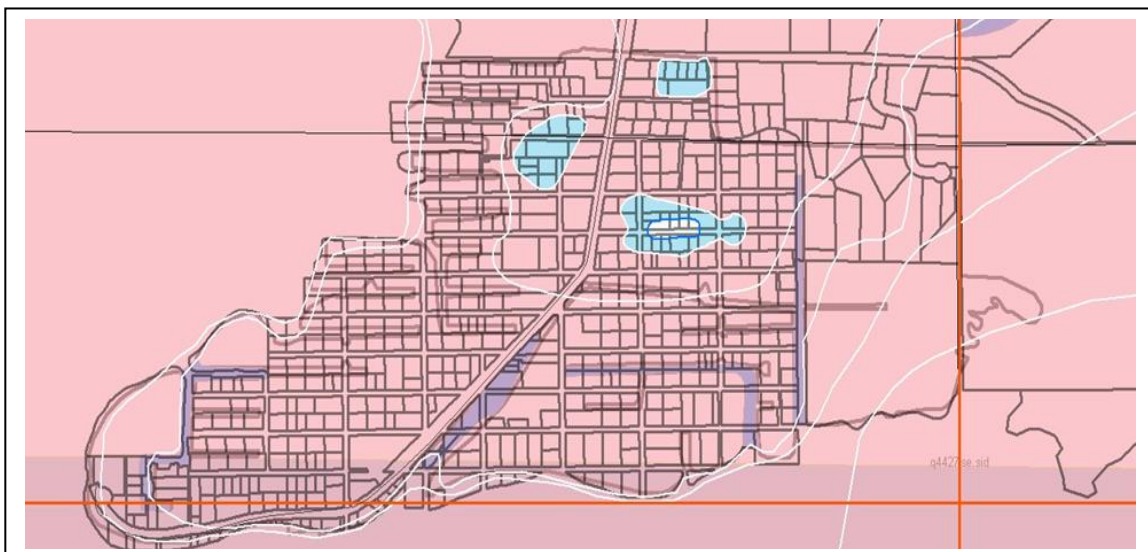


Map V.D.4: NFIP Flood Zones (Updated September, 2009)



Using the same map, the section below shows the full expansion of one portion of a FIRM panel covering Horseshoe Beach. Individual property parcels, street names, and LIDAR imaging are available for some areas of the County.

Map V.D.5: Maximum Resolution of FIRM Map for Horseshoe Beach



Total population potentially affected by inland flooding is in excess of 294 year round residents,(not including tourists which can increase these numbers), and all the coastal inhabitants are continually vulnerable. Additionally, certain roadways in the county could be inundated such as:

- County Road 349 – a low segment is located near Pine Landing and the Faith Tabernacle Church, approximately 4 miles from Old Town. County Road 349 runs parallel with the Suwannee River and its probability of flooding is increased if the Suwannee River is in a flood stage;
- County Road 351 – bridge located 3 miles inland from Horseshoe Beach;
- County Road 351 – Located 7 miles inland from Horseshoe Beach at the canal near the Horseshoe Lookout Tower; and
- County Road 358 – 2 ½ miles North of Cross City; runs NE to Hwy 357.

The following are the number of active NFIP policies in Dixie County, and is an indication of the vulnerability of the County’s residents.

Table V.D. 6: NFIP Policy Statistic – Dixie County, Cross City, and Horseshoe Beach

NFIP Policy Statistics			
Town of Cross City, Town of Horseshoe Beach, and Unincorporated Dixie County as of 07/31/2009			
Community Name	Policies In-force	Insurance In-force whole \$	Written Premium In-force
-----	-----	-----	-----
Cross City, Town of	9	\$1,061,700	3,354
Horseshoe Beach, Town of	140	\$15,776,300	186,267
DIXIE COUNTY*	625	\$76,744,300	655,363

The combined vulnerability of Dixie County, Town of Cross City, and Town of Horseshoe Beach to a 100-year flooding event is over \$93,500,000.00. The total value could be higher when agricultural losses are added to the total. In addition, there are very few government facilities in the flood zone, as indicated below. There are 774 active NFIP policies in Dixie County.

The following represents data from the National Flood Insurance Administration pertinent to Dixie County. As can be seen, the amount of flood losses has not been large when averaged over the 31 years of records.

Table V.D.7: NFIP Loss Statistics for Dixie County and Town's of Cross City and Horseshoe Beach

NFIP LOSS STATISTICS: 1/1/78 - 3/31/2010					
Name	Total Losses	Closed Losses	Open Losses	CWOP* Losses	Total Payments
Cross City, Town of	4	3	0	1	\$9,608.43
Horseshoe Beach, Town of	54	46	0	8	\$647,491.06
DIXIE COUNTY	541	443	0	98	\$6,377,910.76

*Closed Without Payment Losses


Source: <http://bsa.nfipstat.com/reports/1040.htm>

4. Critical Facilities

Using the Map Modernization Tool provided by the Suwannee River Water Management District, each critical facility in Dixie County can easily be identified as being in a flood zone or not. For example, the Map-Mod website allows you to insert an address, and the location will appear in relationship to the flood zone. The following is an example of the location of the Old Town School located at 221 SE 136 Ave Old Town. As can be seen, the facility is in the 100-year flood zone.

Map V.D.8: NFIP Map Modernization FIRM Maps – Address Search

1. Start search by entering an address.
 Address:
 City:
 State:
 Zip Code:

2. Click on the Report Tool  in the toolbar.
 3. Click on a parcel to bring up a report.

Source: <http://www.srwmfloodreport.com/Dixie.htm>

Based on this data, the following critical facilities were found to be in a velocity zone, or a 100-year flood zone:

DIXIE COUNTY SCHOOLS (facilities in green are designated shelters)

Old Town School SpNs	221 SE 136 Ave Old Town	-82.9780815	29.5912109
Old Town School Admin	823 SE 349 Hwy Old Town	-82.9812152	29.895272

FIRE STATIONS (facilities in green are designated shelters)

Station 1	71 NE 84 Ave. Old Town	-82.9803173	29.6037092
District 51	66 SW 812 St Jena	-83.3621914	29.6624416
District 61	83 5 Th Ave. East Horseshoe Beach	-83.2860334	29.4414698
District 71	21354 SE 349 Hwy	-83.1247454	29.3472977

EMS STATIONS

R-2	307 NE 349 Hwy Old Town	-82.9826162	29.60592
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LAW ENFORCEMENT

CCCI	519 NE 255 St Cross City	-83.097577	29.5342115
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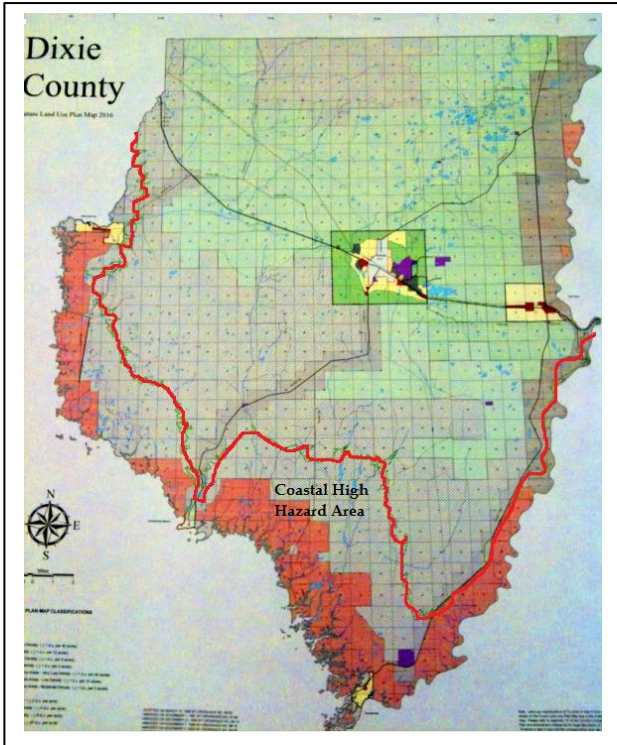
MISC.

Old Town Helistop	59 NE 84 Ave. Old Town	-82.98102036	29.6031585
Horseshoe Beach Water Plant	17189 SW 351 Hwy	-83.2751071	29.4646003
Suwannee Waste Water Plant	825 SE 327 St Suwannee	-83.1105383	29.3560968
Suwannee Water Tower	36 SE 867 Ave Suwannee	-83.1258007	29.3402167

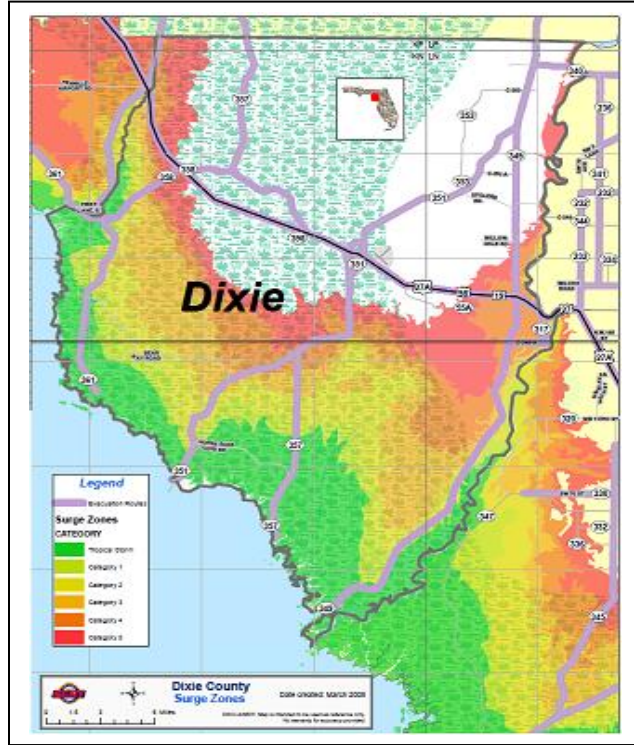
5. Future Development and Flooding

As mentioned earlier in the LMS, much of Dixie county is located in the 100 year floodplain. Dixie County is a participant in the National Flood Insurance Program, and as such, has adopted and incorporated a local floodplain ordinance that contains the federal requirements for building in the 100-year floodplain. Dixie County has substantial tracts of undeveloped coastal property, and as development pressure is placed on the County, the LMS Committee will continue to work to ensure future development in all flood zones meets or exceeds minimum flood standards. The areas along the coastline and near the Steinhatchee River are particularly susceptible to flooding. As these areas grow, the risks due to flooding will increase proportionally. In addition, as Cross City and Horseshoe Beach continue to grow, there is the likelihood of increased damage due to flooding. The development associated with streets and infrastructure and the increases of concrete could cause issues with storm water drainage that could result in flooding and damage.

The following maps display the Future Land Use Map – 2016 besides a map of the Coastal High Hazard Area. Much of the CHHA is categorized as environmentally sensitive areas, and as such, limited to much development.



Map V.D.9: Future Land Use Map - 2016



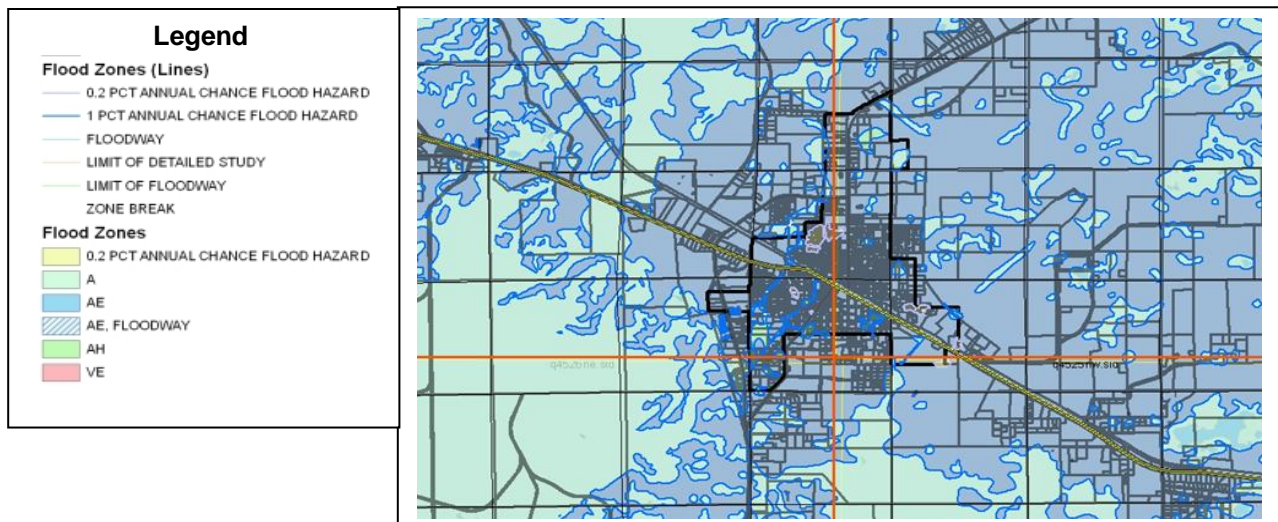
Map V.D.10: Surge Inundation Map

6. The Town of Cross City Vulnerability

The Town of Cross City has an individualized FIRM map that shows the specific areas prone to flooding. The City has experienced flooding events in the past based on a lot of the city is in a 100 year floodplain.

The following FIRM map is for the Town of Cross City. As noted earlier, greater detail can be secured by expanding any panel from the website.

Map V.D.11: NFIP FIRM Map for Town of Cross City



7. The Town of Horseshoe Beach Vulnerability

The Town of Horseshoe Beach has an individualized FIRM map that shows the specific areas prone to flooding. Virtually the entire town is in a VE zone, meaning it is extremely vulnerable to hurricane storm surges. The entire community would be inundated with virtually any size of approaching hurricane.

The following FIRM map is for the Town of Horseshoe Beach. As noted earlier, greater detail can be secured by expanding any panel from the website.

Map V.D.12: NFIP FIRM Map for the Town of Horseshoe Beach



E. Drought and Heat Wave

A drought is a period of drier-than-normal conditions that results in water-related problems. Precipitation falls in uneven patterns across the country. When no rain or only a small amount of rain falls, soils can dry out and plants can die. When rainfall is less than normal for several weeks, months, or years, the flow of streams and rivers declines. Water levels in lakes and reservoirs fall, and the depth to water in wells decreases. If dry weather persists and water supply problems develop, the dry period can become a drought. The first evidence of drought usually is seen in records of rainfall. Within a short period of time, the amount of moisture in soils can begin to decrease. The effects of a drought on flow in streams and rivers or on water levels in lakes and reservoirs may not be noticed for several weeks or months. Water levels in wells may not reflect a shortage of rainfall for a year or more after the drought begins. A period of below-normal rainfall does not necessarily result in drought conditions. Some areas of the United States are more likely to have droughts than other areas. In humid, or wet, regions, a drought of a few weeks is quickly reflected in a decrease in soil moisture and in declining flow in streams. In arid, or dry, regions, people rely on ground water and water in reservoirs to supply their needs. They are protected from short-term droughts, but may have severe problems during long dry periods because they may have no other water source if wells or reservoirs go dry.

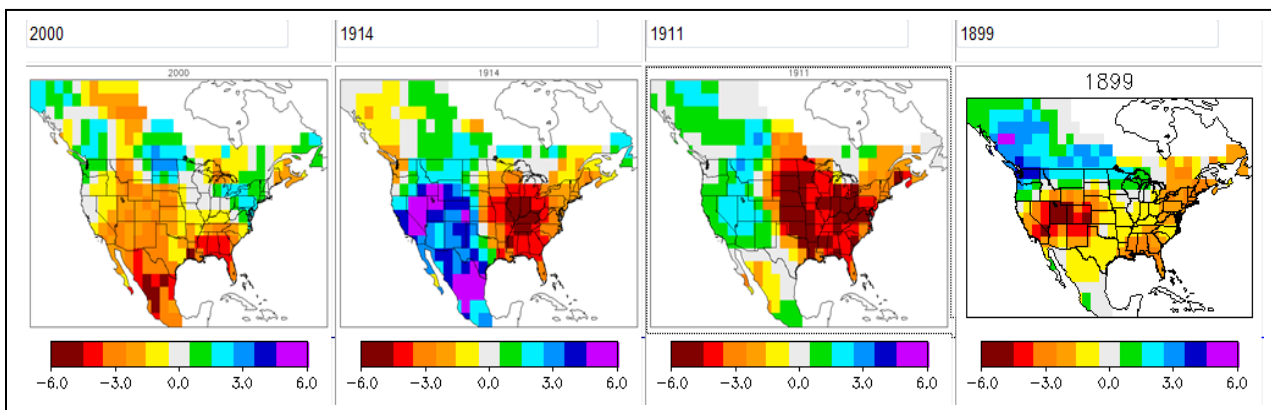
Temperatures that hover 10 degrees or more above the average high temperature for a region and last for several weeks are defined as extreme heat. Humid or muggy conditions, which add to the discomfort of high temperatures, occur when a "dome" of high atmospheric pressure traps hazy, damp air near the ground. Excessively dry and hot conditions can provoke dust storms and low visibility. Droughts occur when a long period passes without substantial rainfall. A heat wave combined with a drought is a very dangerous situation.

Heat kills by pushing the human body beyond its limits. Under normal conditions, the body's internal thermostat produces perspiration that evaporates and cools the body. However, in extreme heat and high humidity, evaporation is slowed and the body must work extra hard to maintain a normal temperature. Most heat disorders occur because the victim has been overexposed to heat or has over exercised for his or her age and physical condition. Other conditions that can induce heat-related illnesses include stagnant atmospheric conditions and poor air quality.

A prolonged drought can have a serious economic impact on a community. Increased demand for water and electricity may result in shortages of resources. Dixie County has not experienced any major droughts in the past several years. However, should a prolonged drought occur during the summer months, with temperatures above normal levels, there could be losses in certain areas of the agriculture production.

In the recent past, Dixie County has documented several occurrences of drought. These are the more notable ones.

Map V.E.1: Historical Droughts Impacting Dixie County



North American Drought Atlas PDSI Reconstructions, Version 2a(2008) - Annual Maps

<http://www.ncdc.noaa.gov/cqi-bin/paleo/pd08plot.pl>

Using data from the Palmer Drought Severity Indices (PDSI) for summer (June-August), the above data can be generated for the past 100 years, and beyond that into the 1700's based on data gathered from tree rings. Additional years of drought occurred in 1999, 1998, 1986, 1981, 1967, 1955, 1932, 1927, 1925, 1898, 1897, 1896, 1890, and 1849. Between 1845 – 2009, there have been approximately 18 years of extreme dry conditions, averaging one

event every 8.25 years. Consequences have resulted in some drinking water wells going dry, and crop losses.

1. Probability

Heat related hazard such as drought or a heat wave can occur in Dixie County, however it has not been a major issue to date. The probability of a significant event of this nature occurring is moderate and does not demand a great deal of attention by the County's resources. If an issue arises, it will occur over a period of days and weeks, so there will be time for preparations and contingency planning at the time of the event. Due to the hot and humid climate of Florida, all residents and business are used to high temperatures so this type of hazard does not represent as much of a hazard as it would to other areas with less water resources, air-conditioning, and refrigeration capabilities.

2. Future Development and Drought

As Dixie County and the Towns of Cross City and Horseshoe Beach grow, it increases the risks of drought and related heat issues. Higher population will increase the demand on water resources for human, agricultural and livestock needs. This will make the environment more prone to drought conditions. In addition, larger populations of human and animals will increase the possibilities of injury, sickness, and death due to heat conditions.

3. Vulnerability Analysis

The topography of Dixie County varies from coastline and marshes to wooded forests and production farmland making some areas more susceptible to damage from heat and drought. The inland areas with the timber forests and agricultural farms are most likely to be the most impacted in the event of extended heat and minimal rain. The timber industry would be the most impacted with trees dying from drought and the even greater danger of forest fires due to the lack of moisture. Secondly the economy of the agricultural sector would be adversely affected with decreases in production and higher costs. There is minimal information about the effects of a long term drought in Dixie County, so more research is required to fully analyze the community' vulnerability. Besides the coastline and marsh area, the rest of Dixie County has equal risk and equal vulnerability to heat and drought.

4. The Towns of Cross City and Horseshoe Beach - Vulnerability

The Towns of Cross City and Horseshoe Beach has a slightly different vulnerability to heat and drought than the rest of the county. The urban environment of the towns and the surrounding areas puts a higher population of humans at risk from heat related illnesses. There are additional resources in the towns that can aid these problems, but the human risk is higher than the rest of the county at large.

On the other hand, the towns do not have a substantial economic risk from this hazard. The County areas with the high level of agriculture, livestock, and timber forest are much more economically vulnerable than the Towns of Cross City and Horseshoe Beach.

F. Freeze and Winter Storms

A winter storm can range from moderate snow over a few hours to blizzard conditions with high winds, freezing rain or sleet, heavy snowfall with blinding wind-driven snow and extremely cold temperatures that lasts several days. Some winter storms may be large enough to affect several states while others may affect only a single community. All winter storms are accompanied by cold temperatures and blowing precipitation, which can severely reduce visibility.

Dixie County has limited vulnerability to moderate freezes every one to two years and severe freezes possibly once every 15 to 20 years. The climate in the Florida Panhandle is mild, compared to the remainder of the nation to the north, and winter storms of this nature are very rare. During the winter, Florida has approximately double the amount of hours of sunlight than the states to the north, resulting in milder temperatures, so winter storms and freezes are not a very high priority for the Dixie County LMS Committee. However, should a prolonged freeze occur any time between January and March, there is potential risk to human life due to exposure to the weather and more importantly automobile accidents due to freezing road conditions.

Dixie County has been impacted by a winter storm in recent history. In March 1993, the Blizzard of 1993 dumped record amounts of snow on an area that stretched from Alabama to New England. The storm left more than 170 people dead and caused hundreds of thousands of people to be without power for several days. Total damages were estimated at upward of \$800 million. Dixie was impacted by freezing rain, and wind during this event.

1. Probability

There is a distinct probability that winter weather will again impact northern Florida in the near term. Every winter this possibility has to be considered and appropriate preparations made for traffic conditions and potential power outages. However, the chance of a seriously damaging winter season is not high when compared with the rest of the country. With this in mind, the probability of a significantly damaging winter storm is considered low by the LMS Committee.

2. Vulnerability Analysis

Vulnerability in Dixie County due to winter storms and freezing conditions can be characterized in three categories:

- Human health issues due to exposure. In severed conditions many Floridians will be unprepared for extreme cold. Being a state near the tropics, warm and hot temperatures are the norm. Therefore most residents focus on cooling and air-conditioning investments rather than heating. Some residents will not have sufficient heat and could be exposed and suffer the consequences. Other residents will cause themselves injury or worse using dangerous electric and propane heaters or even open fires. At least once per year, Dixie County opens a small shelter or puts one on standby to assist citizens without proper heating capabilities.

- Agricultural and livestock issues due to exposure. Much of Dixie County's economy is based on agriculture and livestock, so extreme cold conditions will severely impact this sector. Prolonged periods of cold will result in losses to crops and animals that will endanger the businesses of many small and medium sized farms.
- Transportation issues due to icy driving conditions. Highways 19 and County Roads 340, 349, 351, 357, 358, and 361 are the major transportation corridors for the County. With winter storms, these roads may become icy causing dangerous conditions for commercial and residential traffic throughout the county. Accidents are highly probability and will be accompanied by subsequent injuries and economic impact. In addition, there will be increase costs to the county for providing services such as police for accident reporting and traffic control, public works for debris removal and road repairs, and emergency services for managing the event.

3. Towns of Cross City and Horseshoe Beach - Vulnerability

The likelihood of winter weather affecting the Towns of Cross City and Horseshoe Beach is exactly the same as it is for the rest of the unincorporated County. Based on the overall vulnerability for the County, the Town of Cross City and Horseshoe Beach do differ in the lack of agriculture and commercial livestock. The towns will be most vulnerable to transportation and traffic issues due to the greater number of roads and the higher and denser population. Also the larger number of people will increase the probability of injuries, illnesses or deaths related to the cold.

G. Sinkholes and Landslides

Landslides are a serious geologic hazard common to almost every state in the nation. It is estimated that nationally they cause up to \$2 billion in damages and from 25 to 50 deaths annually. Globally, landslides cause billions of dollars in damage and thousands of deaths and injuries each year.

Some landslides move slowly and cause damage gradually, whereas others move so rapidly that they can destroy property and take lives suddenly and unexpectedly. Gravity is the force driving landslide movement. Factors that allow the force of gravity to overcome the resistance of earth material to landslide movement include geological issues, saturation by water, steepening of slopes by erosion or construction, alternate freezing or thawing, earthquake shaking, and volcanic eruptions.

Landslides are typically associated with periods of heavy rainfall and tend to worsen the effects of flooding that often accompanies these events. In areas burned by forest and brush fires, a lower threshold of precipitation may initiate landslides. Florida is not particularly susceptible to landslides however; sinkholes are a similar phenomenon that does occur in the area and cause occasional damage.

Sinkholes are a common feature of Florida's landscape. They are only one of many kinds of karsts landforms, which include caves, disappearing streams, springs, and underground drainage systems, all of which occur in Florida. Karst is a generic term which refers to the characteristic terrain produced by the erosion processes associated with the chemical weathering and dissolution of limestone or dolomite, the two most common carbonate rocks in Florida. Dissolution of carbonate rocks begins when they are exposed to acidic water. Most rainwater is slightly acidic and usually becomes more acidic as it moves through decaying plant debris.

The limestone foundation covering most of Florida is porous, allowing the acidic water to percolate through their strata, dissolving some limestone and carrying it away in solution. Over eons of time, this persistent erosion process has created extensive underground voids and drainage systems in much of the carbonate rocks throughout the state. Collapse of overlying sediments into the underground cavities produces sinkholes.

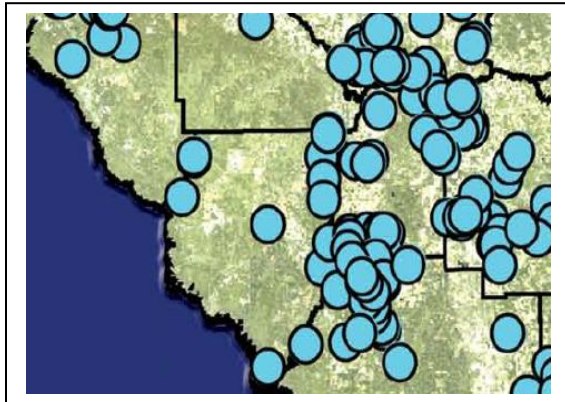
When groundwater discharges from an underground drainage system, it normally flows through a spring, such as Wakulla Springs, Silver Springs, or Rainbow Springs. Sinkholes can occur in the beds of streams, sometimes taking all of the stream's flow, creating an underground stream. Dry caves are parts of karsts drainage systems that are above the water table, such as Marianna Caverns. The image below show the damage caused by an active sinkhole in South Florida.

Map V.G.1: Sinkhole Impacting Florida Community



The following map identifies the known sinkholes in Dixie County, as maintained by the Florida Department of Environmental Protection.

**Map V.G.2: FDEP Sinkhole Atlas – Including
Dixie County, Florida**



Source: Florida Department of Environmental Protection

http://www.dep.state.fl.us/geology/geoloigtocpics/sinkhole/florida_sinkhole_poster.pdf

The Florida Department of Environmental Protection maintains the official sinkhole database for the State of Florida, and has over 2,759 individual reports. The following is pulled directly from the FDEP website, and is a site map of all reported sinkholes in the general area of Dixie County.

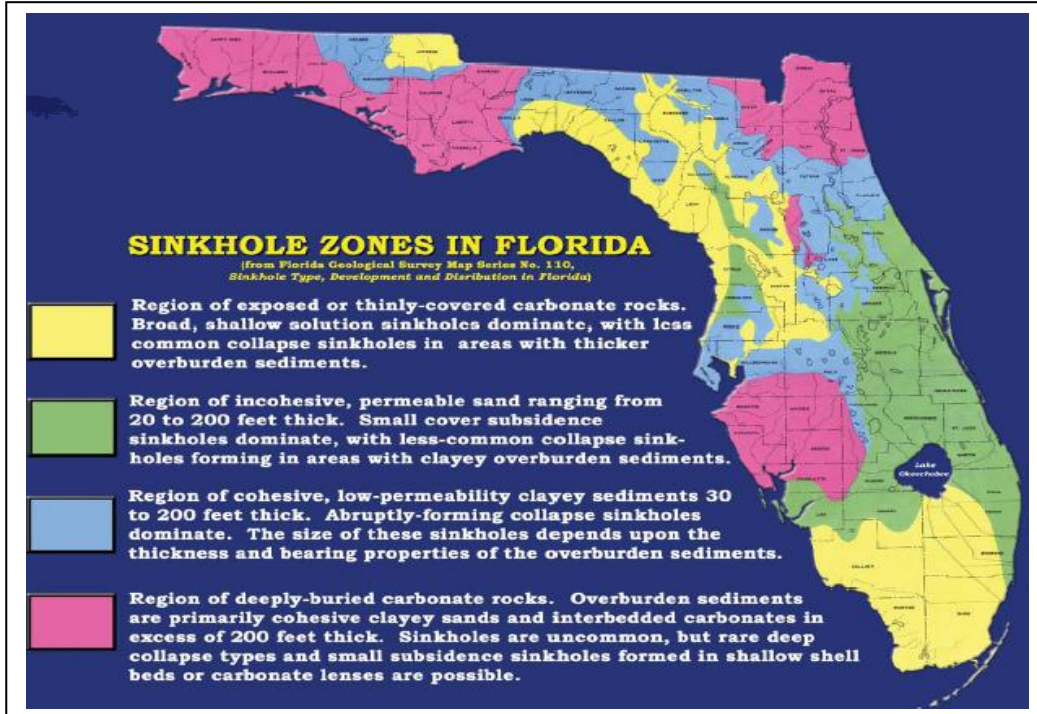
Dixie County Sinkhole Database - 2010										
COUNTY	DATE_ADD	DATE_REV	YR	LONGDEC	LATDEC	QUAD	OSTREET	LNGTH	WIDTH	DEPTH
DIXIE			1969	-82.99027778	29.54583333	SUWANNEE RIVER		12.000	12.000	10.000
DIXIE	8/5/2005		1997	-83.28888889	29.70416667	JENA	CR 358	4.000	4.000	2.000
DIXIE		9/10/2006	1967	-83.14188461	29.33262733	SUWANNEE, 0-26		25.000	0.000	20.000
DIXIE			1982	-82.98750000	29.77083333	HATCHBEND5	RT 2 P.O. BOX 511	30.000	30.000	20.000
DIXIE			1984	-82.96861111	29.82305556	HATCHBEND		4.000	4.000	6.000
DIXIE			1984	-82.96861111	29.59472222	SUWANNEE RIVER		8.000	12.000	7.000
DIXIE		9/10/2006	1983	-82.99283994	29.71570836	WANNEE		4.000	4.000	30.000
DIXIE			1983	-82.98250000	29.68111111	WANNEE		2.000	4.000	25.000
DIXIE			1985	-82.96888889	29.81722222	HATCHBEND K-28		10.000	10.000	8.000
DIXIE		9/10/2006	1985	-83.32704550	29.68352806	CLARA K-25		5.000	5.000	1.500
DIXIE			1989	-83.13194444	29.63194444	CROSS CITY WEST L-2	CROSS CITY SUBSTATION	3.000	3.000	4.000
DIXIE			1989	-83.13194444	29.63194444	CROSS CITY WEST L-26	CROSS CITY SUBSTATION	3.000	3.000	4.000

Table V.G.3: Sinkhole Database – Dixie County, Florida

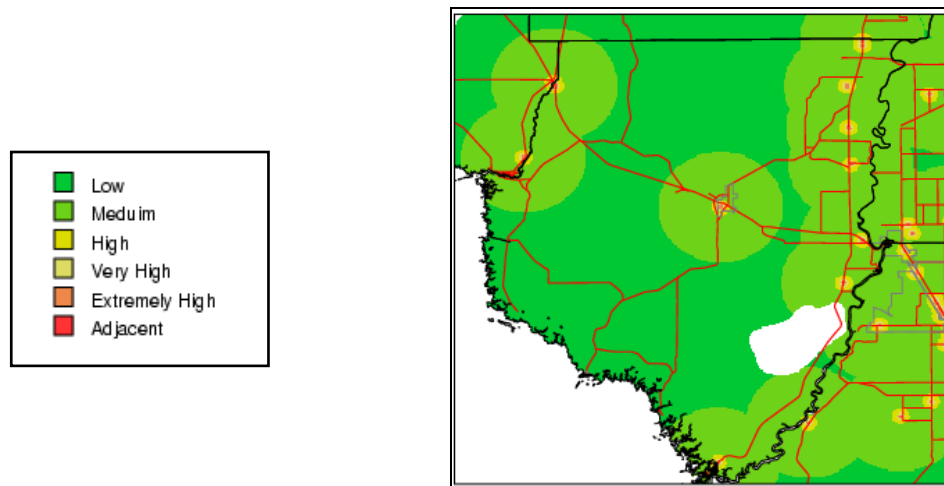
Source: http://www.dep.state.fl.us/geology/geoloigtocpics/sinkhole/sink_dis_excel.htm

The following map from the Department of the Interior, Geological Survey, shows that Dixie County has two distinct risk zones for sinkholes. Most of the County is in the yellow area marking bare or thin covered limestone, and the northeastern portion is blue designating it a higher risk area with 30 to 200 feet covering the limestone.

Map V.G.4: Sinkhole Zones in Florida



Map V.G.5: Vulnerability – Sinkholes, Dixie County



1. Probability

The probability that a sinkhole will occur in Dixie County sometime in the near future is moderate, but the likelihood of this hazard causing significant damage to the county in general is very relatively high. These events are isolated and usually very small in geographic extent. This hazard is considered a high priority for the LMS Committee.

2. Vulnerability Analysis

Based on the data and modeling from the MEMPHIS risk assessment system the following map and reports detail the estimated vulnerability and damages associated with sinkhole hazards.

Tables V.G.6 a-c

Population at Risk for KAC Sinkhole Risk							
Zone	Total	Minority	Over 65	Disabled	Poverty	Lang Iso	Sing Pnt
Low	1900	95	401	878	335	0	59
Medium	11808	846	1963	6915	1880	0	675
High	1779	673	273	853	504	0	188
Extreme	0	0	0	0	0	0	0

Structures at Risk for KAC Sinkhole Risk							
Zone	Total	SF Res	Mob Home	MF Res	Commercial	Agriculture	Gov/Instit
Low	3456	809	1262	193	67	79	1046
Medium	8903	2844	3866	197	280	161	1554
High	66	13	37	1	0	0	15
Very High	17	1	13	1	0	0	1
Extreme	6	3	3	0	0	0	0
Adjacent	0	0	0	0	0	0	0

Value of Structures by DOR Use for KAC Sinkhole Risk (Millions)							
Zone	Total	SF Res	Mob Home	MF Res	Commercial	Agriculture	Gov/Instit
Low	\$732.58	\$79.09	\$43.34	\$4.89	\$16.24	\$4.34	\$584.69
Medium	\$999.14	\$327.09	\$199.98	\$7.20	\$44.43	\$122.90	\$297.53
High	\$5.46	\$1.26	\$1.38	\$0.00	\$0.00	\$0.00	\$2.82
Very High	\$0.47	\$0.02	\$0.41	\$0.01	\$0.00	\$0.00	\$0.04
Extreme	\$0.37	\$0.26	\$0.11	\$0.00	\$0.00	\$0.00	\$0.00
Adjacent	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

3. Future Development and Sinkholes

Based on the levels of risk shown on the map above, the area around the Town of Cross City has a higher degree of risk than other areas of the county. As the Towns continue to grow more than the unincorporated County, the risks associated with sinkholes in this area will increase with the higher populations and the greater number of structures.

4. Town of Cross City and Horseshoe Beach – Vulnerability

The areas in and around the Town of Cross City are more at risk to sinkholes than the Town of Horseshoe Beach and any other areas of the unincorporated County. Based on participation and feedback from the County Public Works Department, sinkhole can damage the town's infrastructure including water, sewer pipes, and roads.

H. Coastal and Riverine Erosion

Erosion is a process that involves the gradual wearing away, transportation, and movement of land. However, not all erosion is gradual. It can occur quite quickly as the result of a flash flood, coastal storm, or other event. Most of the geomorphic change that occurs in a river system is in response to a peak flow event. It is a natural process but its effects can be exacerbated by human activity. Erosion is a problem in developed areas where the disappearing land threatens development and infrastructure.

Over 50% of the Florida's beaches, are experiencing erosion. At present, about 299 of the state's 825 miles of sandy beaches are experiencing "critical erosion", a level of erosion which threatens substantial development, recreational, cultural, or environmental interests. Dixie County has approximately 30 miles of coastline. Most of this coastal area is partially vulnerable to erosion. Particular attention is focused on the roads that run along the coastlines. Coastal roads tend to be impacted multiple times by saltwater and debris and over time the ground around the roads is eroded. This road damage is in constant need of repair by the County. US 19 and County Road 349, 351, and 361 are all very close to the coast and are vulnerable to erosion. This also can directly affect the Town of Horseshoe Beach and other coastal communities.

The major rivers do have some erosion and the potential for more, but there is little established data for comparisons and analysis. The LMS Committee does not consider this hazard to be a primary threat to human life or of significant economic potential. Further research about the probability, extent and damage associated with this hazard needs to be conducted and will be addressed in the future by the LMS Committee as applicable.

Most issues dealing with erosion will relate to flooding, storm and hurricane issues. Consequently, most of the profiling and analysis has been conducted on these higher priority hazards.

1. Probability

There is a low probability that coastal or riverine erosion will seriously impact Dixie County and the Towns of Cross City and Horseshoe Beach. When it does occur, it happens in conjunction with severe storms, hurricanes and other flooding events.

2. Future Development and Erosion

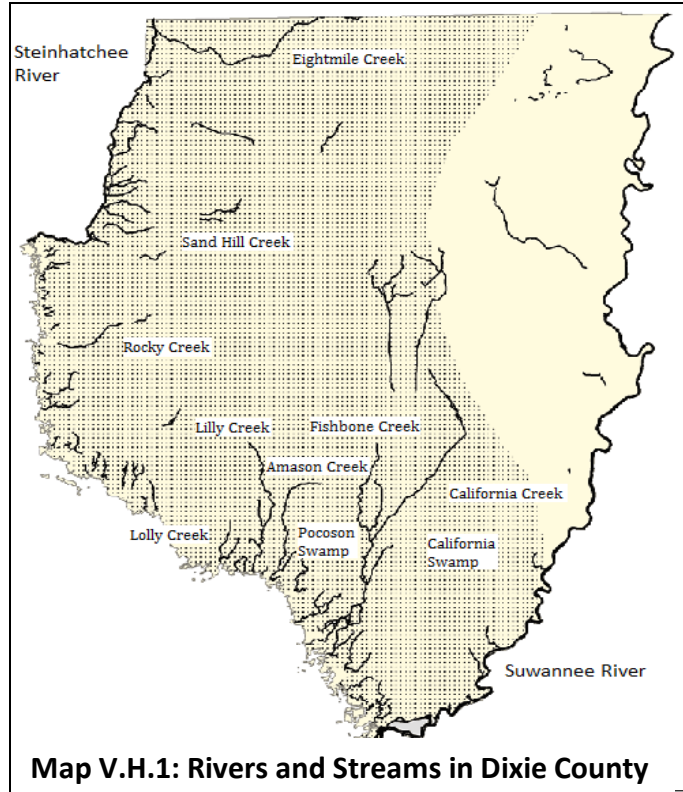
As the County and the Towns of Cross City and Horseshoe Beach grow and develop, the issue of erosion may become more important. The Town of Cross City is not at an immediate risk because it is positioned in the middle of the county with no large flooding

hazard directly affecting it. The Town of Horseshoe Beach is at the greatest vulnerability to erosion due to its coastal positioning along the Gulf of Mexico. At even greater risk, is the community of Suwannee, which is surrounded by the Gulf of Mexico, Suwannee River, and numerous creeks. The LMS Committee will continue to monitor the situation as it occurs.

3. Vulnerability Analysis

The areas most vulnerable to erosion are along the banks of the major rivers and creeks in the County. See the map above with the major watersheds delineated.

Dixie County does not have fast flowing rivers, and is not susceptible to any significant degree of riverine erosion. The coastline is predominately tidal marsh land, and does not erode. The coastal area is not susceptible to subsidence either.



Map V.H.1: Rivers and Streams in Dixie County

4. Town of Horseshoe Beach – Vulnerability

The Town of Horseshoe Beach is along the Gulf Coast and is susceptible to coastal erosion. The probability of coastal erosion occurring is moderate and is a low priority for LMS Committee.

5. Town of Cross City – Vulnerability

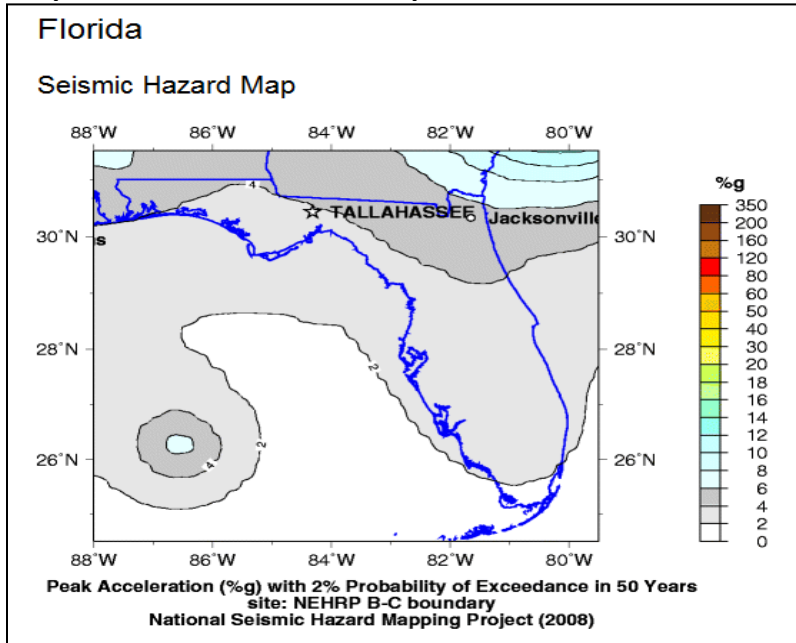
The Town of Cross City is not susceptible to erosion due to its central location within the County. For this reason, Dixie County LMS Committee does not consider this hazard a priority in Cross City.

I. Earthquakes

Most earthquakes are causally related to compression or tension stresses built up at the margins of the huge moving lithospheric plates that make up the earth's surface. The immediate cause of most shallow earthquakes is the sudden release of stress along a fault, or fracture in the earth's crust, resulting in movement of the opposing blocks of rock past one another. These movements cause vibrations to pass through and around the earth in wave form, just as ripples are generated when a pebble is dropped into water. The entire State of

Florida is in the lowest risk category for earthquakes as seen in the Seismic Hazard Map below from the USGS.

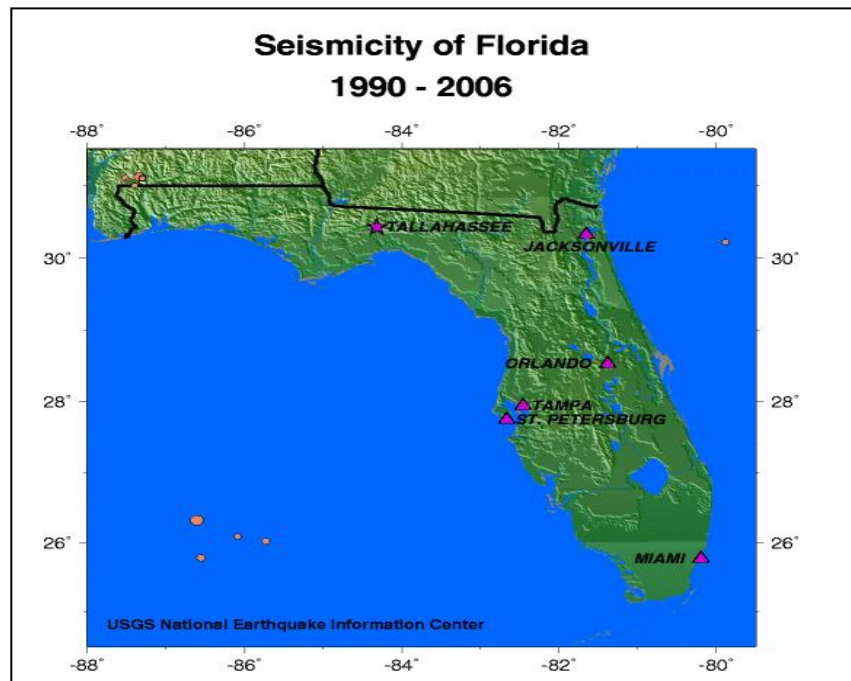
Map V.I.1: Seismic Hazard Map – State of Florida



Source: <http://earthquake.usgs.gov/earthquakes/states/florida/hazards.php>

The following map shows the locations of the historical earthquakes impacting Florida. Only four recorded minor earthquakes have affected Florida since 1990, and none of these were experienced in Dixie County. There have been several tremors felt in Florida since the 1700's, but none have cause significant damage or loss of life.

Map V.I.2: Seismic Activity – State of Florida



Source: <http://earthquake.usgs.gov/earthquakes/states/florida/hazards.php>

Seismic activity in the Atlantic Ocean can trigger a tsunami event. The probability of this type of event occurring is very small however it needs to be considered. Because of the location of Dixie County in the Gulf of Mexico, this possibility is less than for locations on the east coast of Florida.

1. Probability

The probability is extremely low that a major earthquake will impact Dixie County and cause significant damage. Dixie County is in the low risk category for seismic activity and there are no past-recorded incidents.

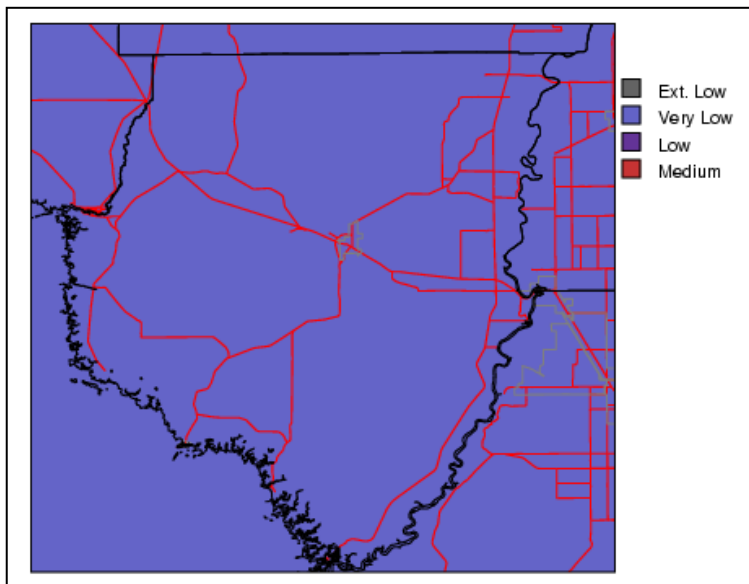
2. Future Development and Earthquakes

As the County grows and there is a larger population with more infrastructure, there will be more vulnerability to earthquakes. However, the probability remains extremely low that this event will impact Dixie County.

3. Vulnerability Analysis

If an earthquake were to affect Dixie County and the Towns of Cross City and Horseshoe Beach it would most likely not cause significant damage or loss of life. The following map and reports from the MEMPHIS system estimate the potential damages for the County.

Map V.I.3: Earthquake Risk for Dixie County



Tables V.I.4 a-c: Risk Estimates- Earthquake, Dixie County

Population at risk for USGS 50 Year Earthquake							
Zone	Total	Minority	Over 65	Disabled	Poverty	Lang Iso	Sing Pnt
Very low	15486	1614	2638	8646	2719	0	923

Structures at risk for USGS 50 Year Earthquake							
Zone	Total	SF Res	MHome	MF Res	Commercial	Agric	Gov/Instit
very low	12659	3696	5224	395	351	240	2754

Value of Structures by DOR Use for USGS 50 Year Earthquake (\$Millions)							
Zone	Total	SF Res	Mob Home	MF Res	Commercial	Agriculture	Gov/Instit
very low	\$1,834.45	\$410.27	\$246.35	\$12.11	\$61.39	\$127.24	\$977.09
Low	\$0.05	\$0.00	\$0.05	\$0.00	\$0.00	\$0.00	\$0.00

4. Future Development and Earthquakes

No foreseeable future development trends will significantly alter the risks and vulnerability of Dixie County to earthquakes and seismic activity.

5. Towns of Cross City and Horseshoe Beach - Vulnerability

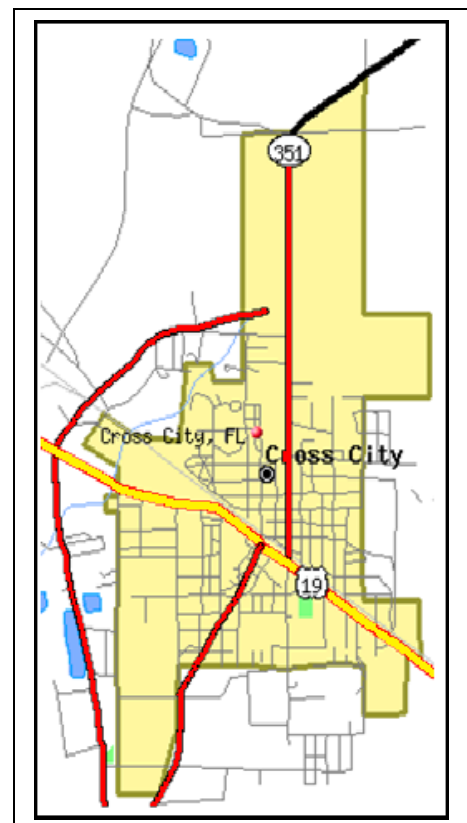
There are no differences in the risks and vulnerability for the Towns of Cross City and Horseshoe Beach and Dixie County. The Towns have a higher and denser population and much more infrastructure and buildings, however the risk of seismic activity is very low and the chances of significant damage are even lower.

J. Town of Cross City Risk Assessment

Throughout Section V of this report, the Town of Cross City vulnerability's and risk to each hazard are discussed. This section provides a summary of those individual assessments.

The Town of Cross City is the largest town in Dixie County. It is the county seat and is the intersection of two of the major roads. A high congestion of the business and industry is located in or around the incorporated town. However, much of the agricultural and timber industry is conducted well outside of the town. Approximately 12 percent of the County's population lives within the Town's boundaries.

The following sections describe any differences between the Town of Cross City and the unincorporated County with respect to hazard risks and vulnerabilities.



Map V.J.1: City of Cross City Borders

1. Hurricanes

Based on the hurricane’s category, strength and landfall position the vulnerable areas, facilities and populations will vary. Obviously the stronger the storm is then the more potential damage to the County, however the primary area-at-risk is along the coastline. With this in mind the risks and vulnerability for the Town of Cross City is not substantially different from the risks to the unincorporated county.

The following data is specific to the Town of Cross City from the Memphis data. This data was updated using the 2010 FDOR Property Valuations and Tax Data. The graphics for the Town of Cross City are in Section V under the hurricane section. They are the same as those of the County

Impact Summary – Category 1

Peak winds 79.mph, peak water depth 0.0ft.

Category 1 Maximum Damage Summary:

Tax Parcel based Wind Damage:	\$ 1.39 Million
DOR based Flood Damage:	\$ 0.00 dollars
DOR Structures in Flood Zone:	0
Census based Wind Damage:	\$ 2.27 Million
Census based Flood .Damage:	\$ 0.00 dollars

Table V.J.2 a-c: Risk Estimates – Cat 1 Hurricanes, Town of Cross City

Population at Risk for Category 1					
	Total	TS Wind	Hur Wind	Ext Wind	Flooded
Total	2060	2060	342	0	0
Minority	594	594	20	0	0
Over 65	383	383	65	0	0
Disabled	1173	1173	226	0	0
Poverty	543	543	65	0	0
Lang Iso	0	0	0	0	0
Sing Pnt	207	207	25	0	0

Structures at Risk for Category 1					
	Total	TS Wind	Hur Wind	Ext Wind	Flooded
SF Res	155	155	27	0	0
Mob Home	56	56	19	0	0
MF Res	32	32	2	0	0
Commercial	23	23	1	0	0
Agriculture	12	12	8	0	0
Gov/Instit	12	12	0	0	0

Loss by DOR Use for Category 1 (Millions)			
	Exposure	Loss	Percent Loss (%)
SF Res	\$23.29	\$2.21	.89
Mob Home	\$2.14	\$0.12	5.66
MF Res	\$8.82	\$0.04	0.46
Commercial	\$14.00	\$0.12	0.87
Agriculture	\$123.13	\$0.57	0.46
Gov/Instit	\$1.75	\$0.02	1.33

Impact Summary – Category 3

Peak winds 117.mph, peak water depth 0.0ft.

Category 3 Maximum Damage Summary

Tax Parcel based Wind Damage:	\$ 18.09 Million
DOR based Flood Damage:	\$ 0.00
DOR Structures in Flood Zone:	0
Census based Wind Damage:	\$ 15.73 Million
Census based Flood .Damage:	\$ 0.00

Table V.J.3 a-c: Risk Estimates – Cat 3 Hurricanes, Cross City

Population at risk for Category 3					
	Total	TS Wind	Hur Wind	Ext Wind	Flooded
Total	2060	2060	2060	0	0
Minority	594	594	594	0	0
Over 65	383	383	383	0	0
Disabled	1173	1173	1173	0	0
Poverty	543	543	543	0	0
Lang Iso	0	0	0	0	0
Sing Pnt	207	207	207	0	0

Structures at Risk for Category 3					
	Total	TS Wind	Hur Wind	Ext Wind	Flooded
SF Res	155	155	155	0	0
Mob Home	56	56	56	0	0
MF Res	32	32	32	0	0
Commercial	23	23	23	0	0
Agriculture	12	12	12	0	0
Gov/Instit	12	12	12	0	0

Loss by DOR Use for Category 3 (Millions)			
	Exposure	Loss	Percent Loss (%)
SF Res	\$23.29	\$2.25	9.68
Mob Home	\$2.14	\$0.74	34.48
MF Res	\$8.82	\$0.61	6.88
Commercial	\$14.00	\$1.46	10.42
Agriculture	\$123.13	\$8.47	6.88
Gov/Instit	\$1.75	\$0.18	10.31

Impact Summary – Category 5

Peak winds 161.mph, peak water depth 0.0ft.

Category 5 Maximum Damage Summary

Tax Parcel based Wind Damage:	82.62 Million
DOR based Flood Damage:	\$ 0.00 dollars
DOR Structures in Flood Zone:	0
Census based Wind Damage:	\$ 67.67 Million
Census based Flood .Damage:	\$ 0.00 dollars

Table V.J.4 a-c: Risk Estimates – Cat 5 Hurricanes, Town of Cross City

Population at Risk for Category 5					
	Total	TS Wind	Hur Wind	Ext Wind	Flooded
Total	2060	2060	2060	2060	0
Minority	594	594	594	594	0
Over 65	383	383	383	383	0
Disabled	1173	1173	1173	1173	0
Poverty	543	543	543	543	0
Lang Iso	0	0	0	0	0
Sing Pnt	207	207	207	207	0

Structures at Risk for Category 5					
	Total	TS Wind	Hur Wind	Ext Wind	Flooded
SF Res	155	155	155	155	0
Mob Home	56	56	56	56	0
MF Res	32	32	32	32	0
Commercial	23	23	23	23	0
Agriculture	12	12	12	12	0
Gov/Instit	12	12	12	12	0

Loss by DOR Use for Category 5 (Millions)			
	Exposure	Loss	Percent Loss (%)
SF Res	\$23.29	\$10.64	45.67
Mob Home	\$2.14	\$2.11	98.62
MF Res	\$8.82	\$2.83	32.11
Commercial	\$14.00	\$6.39	45.63
Agriculture	\$123.13	\$39.54	32.11
Gov/Instit	\$1.75	\$0.83	47.66

2. Tornadoes

The Town of Cross City is equally vulnerable to storms and tornadoes as the rest of the County. However due to the higher population and population density there is a greater probability of loss of life and property damage in Cross City than in the unincorporated areas of the County. Warning the population is also more difficult due to the number of people that must be notified in a short period of time. Along this same line, there are a larger number of buildings with higher property values in the Town of Cross City than throughout the rest of the County. Therefore, there is again a higher chance of damage if/when storm systems hit the Town rather than the unincorporated areas. Though the risk is the same, there is a greater vulnerability for the Town in terms of potential human and economic impact.

Tables V.J.5 a-c: Risk Estimates – Tornado, Town of Cross City

POPULATION AT RISK FOR KAC TORNADO RISK						
Total	Minority	Over 65	Disabled	Poverty	Lang Iso	Sing Pnt
8763	3847	1284	4000	2387	0	950

Structures at risk for KAC Tornado Risk						
Total	SF Res	Mob Home	MF Res	Commercial	Agriculture	Gov/Instit
9525	5080	3523	315	72	342	192

Value of Structures by DOR Use for KAC Tornado Risk (in Millions)						
Total	SF Res	Mob Home	MF Res	Commercial	Agriculture	Gov/Instit
\$2,818.19	\$1,519.84	\$633.88	\$25.73	\$27.70	\$242.89	\$368.14

3. Fires

The areas around the Town of Cross City are susceptible to fires. Also the Town has a larger population and a higher density of buildings. This increases the Town's vulnerability to fires when compared to the unincorporated county. The expected losses would be the same as those of a tornado. Every building in the Town would be susceptible to a fire, similar to the way every building in the Town could be susceptible to a tornado. Refer to the tornado loss estimates as an estimate of the potential for fire losses in Cross City.

4. Floods

The Town of Cross City has FIRM maps maintained by the Suwannee River Water Management District as part of the FIRM map modernization program. They are available online at <http://www.srwmdfloodreport.com/Dixie.htm#>. They show the specific areas prone to flooding.

As can be seen from the statistics below from the NFIP, the Town of Cross City does not experience any significant flooding losses on properties that have flood insurance. It is not expected to change in the future.

Tables V.J.6: NFIP Loss Statistics – Dixie County and Town of Cross City

NFIP LOSS STATISTICS: 1/1/78 - 3/31/2010					
Name	Total Losses	Closed Losses	Open Losses	CWOP* Losses	Total Payments
Cross City, Town of	4	3	0	1	\$9,608.43
DIXIE COUNTY	541	443	0	98	\$6,377,910.76
*Closed Without Payment Losses					

5. Drought and Heat Wave

The Town of Cross City has a slightly different vulnerability to heat and drought than the rest of the county. The urban environment of the Town of Cross City and the surrounding areas puts a higher population of humans at risk from heat related illnesses and possible deaths. There are additional resources in the Town that can aid these problems, but the human risk is higher than the rest of the county at large.

On the other hand, the town does not have a substantial economic risk from this hazard. The County areas with the high level of agriculture, livestock, and timber forest are

much more economically vulnerable than the Town of Cross City. There have been no related deaths caused by heat or drought in the Town of Cross City.

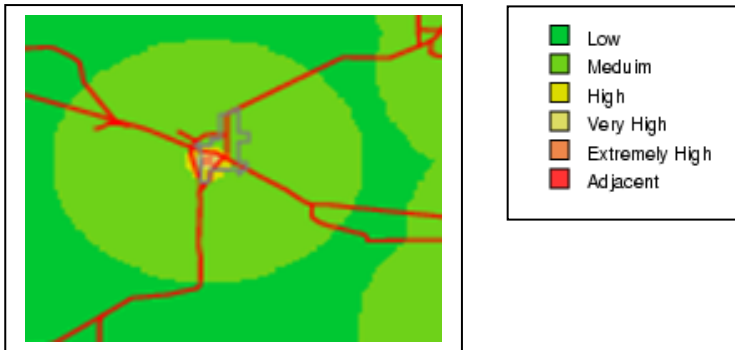
6. Freezing and Winter Storms

The likelihood of winter weather affecting the Town of Cross City is exactly the same as it is for the rest of the unincorporated County. Based on the overall vulnerability for the County, the Town of Cross City does differ in the lack of agriculture and commercial livestock. The Town will be most vulnerable to transportation and traffic issues due to the greater number of roads and the higher and denser population. Also the larger number of people will increase the probability of injuries, illnesses or deaths related to the cold.

7. Sinkholes and Landslides

The areas in and around the Town of Cross City are more at risk to sinkholes than other areas of the unincorporated County. Based on participation and feedback from the Town Public Works Department, sinkhole can damage the Town’s infrastructure including water and sewer pipes and roads. As can be seen from the map below, the Town is in a high sinkhole vulnerability zone, surrounded by a medium vulnerability zone.

Map V.J.7: Sinkhole Vulnerability – Town of Cross City



8. Earthquakes

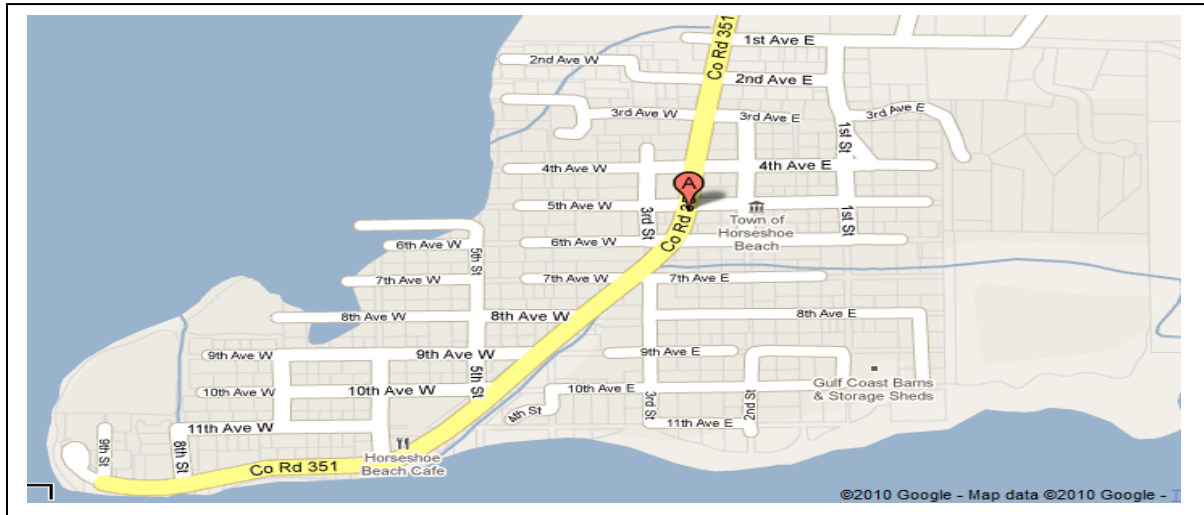
There are no differences in the risks and vulnerability for the Town of Cross City and Dixie County. The Town does have a higher and denser population and much more infrastructure and buildings, however the risk of seismic activity is very low and the chances of significant damage even lower. Earthquake hazard maps are located in Section V.

9. Coastal and Riverine Erosion

The Town of Cross City has virtually no riverine erosion issues. This is not a high priority for Dixie County LMS Committee.

K. Town of Horseshoe Beach Risk Assessment

Throughout Section V of this report, the Town of Horseshoe Beach is discussed, and its vulnerability and risk to each hazard identified. This section provides a summary of those individual assessments.



Map V.K.1: Horseshoe Beach

The Town of Horseshoe Beach is the second largest and one of two towns in Dixie County. Horseshoe Beach is the coastal community along the Gulf of Mexico on the southwestern border of the county. Some of the business and industry is located in or around the incorporated Town. Approximately 2% of the County's population lives within the City boundaries.

The following sections describe any differences between the Horseshoe Beach and the unincorporated County with respect to hazard risks and vulnerabilities.

1. Hurricanes

Based on the hurricane's category, strength and landfall position the vulnerable areas, facilities and populations will vary. Obviously, the stronger the storm is, the higher the potential damage will be. However, the primary area-at-risk is along the coastline which is where Horseshoe Beach is located. Potential damage to Horseshoe Beach is much greater than the rest of the county.

The following is specific to the Town of Horseshoe Beach from the Memphis data, and updated using the 2009 FDOR Property Valuations and Tax Data. The graphics for the Town of Horseshoe Beach are in Section V under the hurricane section. They are the same as those of the County.

Impact Summary – Category 1

Peak winds 79.mph,

Category 1 Maximum Damage Summary:

Tax Parcel based Wind Damage:	\$ 67.14 Thousand
DOR based Flood Damage:	\$ 420.50 Thousand
DOR Structures in Flood Zone:	31
Census based Wind Damage:	\$ 3.52 Million
Census based Flood .Damage:	\$ 10.02 Million

Table V.K.2 a-c: Risk Estimates – Cat 1 Hurricanes. Horseshoe Beach

Loss by DOR Use for Category 1 (\$Thousand)			
	Exposure	Loss	Percent Loss (%)
SF Res	\$889.38	\$25.41	2.86
Mob Home	\$271.13	\$33.33	12.29
MF Res	\$21.42	\$699.36	3264.46
Commercial	\$0.00	\$0.00	N/A
Agriculture	\$79.09	\$1.88	2.38
Gov/Instit	\$117.96	\$3.91	3.32

Population at Risk for Category 1					
	Total	TS Wind	Hur Wind	Ext Wind	Flooded
Total	226	226	226	0	128
Minority	3	3	3	0	3
Over 65	49	49	49	0	24
Disabled	86	86	86	0	35
Poverty	50	50	50	0	30
Lang Iso	0	0	0	0	0
Sing Pnt	12	12	12	0	2

Structures at risk for Category 1					
	Total	TS Wind	Hur Wind	Ext Wind	Flooded
SF Res	15	15	15	0	15
Mob Home	7	7	7	0	6
MF Res	4	4	4	0	4
Commercial	0	0	0	0	0
Agriculture	1	1	1	0	1
Gov/Instit	3	3	3	0	3

Impact Summary – Category 3

Peak winds 117.mph,

Category 3 Maximum Damage Summary

Tax Parcel based Wind Damage:	\$ 385.73 Thousand
DOR based Flood Damage:	\$ 929.37 Thousand
DOR Structures in Flood Zone:	32
Census based Wind Damage:	\$ 20.58 Million
Census based Flood .Damage:	\$ 17.78 Million

Table V.K.3 a-c: Risk Estimates – Cat 3 Hurricanes, Horseshoe Beach

Population at risk for Category 3					
	Total	TS Wind	Hur Wind	Ext Wind	Flooded
Total	226	226	226	226	226
Minority	3	3	3	3	3
Over 65	49	49	49	49	49
Disabled	86	86	86	86	86
Poverty	50	50	50	50	50
Lang Iso	0	0	0	0	0
Sing Pnt	12	12	12	12	12

Structures at Risk for Category 3					
	Total	TS Wind	Hur Wind	Ext Wind	Flooded
SF Res	15	15	15	15	15
Mob Home	7	7	7	7	7
MF Res	4	4	4	4	4
Commercial	0	0	0	0	0
Agriculture	1	1	1	1	1
Gov/Instit	3	3	3	3	3

Loss by DOR Use for Category 3(\$Thousand)			
	Exposure	Loss	Percent Loss (%)
SF Res	\$889.38	\$167.41	18.82
Mob Home	\$271.13	\$168.05	61.98
MF Res	\$21.42	\$4.45	20.77
Commercial	\$0.00	\$0.00	N/A
Agriculture	\$79.09	\$12.86	16.26
Gov/Instit	\$117.96	\$24.85	21.07

Impact Summary – Category 5

Peak winds 161.mph

Category 5 Maximum Damage Summary

Tax Parcel based Wind Damage:	1.11 Million
DOR based Flood Damage:	\$ 1.14 Million
DOR Structures in Flood Zone:	32
Census based Wind Damage:	\$ 67.72 Million
Census based Flood .Damage:	\$ 20.14 Million

Table V.K.4 a-c: Risk Estimates – Cat 5 Hurricanes, Horseshoe Beach

Population at Risk for Category 5					
	Total	TS Wind	Hur Wind	Ext Wind	Flooded
Total	226	226	226	226	226
Minority	3	3	3	3	3
Over 65	49	49	49	49	49
Disabled	86	86	86	86	86
Poverty	50	50	50	50	50
Lang Iso	0	0	0	0	0
Sing Pnt	12	12	12	12	12

Structures at Risk for Category 5					
	Total	TS Wind	Hur Wind	Ext Wind	Flooded
SF Res	15	15	15	15	15
Mob Home	7	7	7	7	7
MF Res	4	4	4	4	4
Commercial	0	0	0	0	0
Agriculture	1	1	1	1	1
Gov/Instit	3	3	3	3	3

Loss by DOR Use for Category 5 (Thousand)			
	Exposure	Loss	Percent Loss
SF Res	\$889.38	\$638.90	71.84
Mob Home	\$271.13	\$271.13	100.00
MF Res	\$21.42	\$17.19	80.25
Commercial	\$0.00	\$0.00	N/A
Agriculture	\$79.09	\$51.45	65.06
Gov/Instit	\$117.96	\$96.11	81.48

2. Tornadoes

The Town of Horseshoe Beach is just as vulnerable to storms and tornadoes as the rest of the County. However, due to the condensed population density, there is a greater probability of loss of life and property damage in Horseshoe Beach than in the unincorporated areas of the County. Warning the population is also more difficult due to the number of people that must be notified in a short period of time. Along this same line, there are a larger number of buildings with higher property values in the Town of Horseshoe Beach than throughout the rest of the unincorporated County. Therefore, there is again a higher chance of damage if/when storm systems hit the Town rather than the unincorporated areas. Though the risk is the same, there is a greater vulnerability for the Town in terms of potential human and economic impact.

Tables V.K.5 a-c: Risk Estimates – Tornado, Town of Horseshoe Beach

POPULATION AT RISK FOR KAC TORNADO RISK						
Total	Minority	Over 65	Disabled	Poverty	Lang Iso	Sing Pnt
226	3	49	86	50	0	12

Structures at risk for KAC Tornado Risk						
Total	SF Res	Mob Home	MF Res	Commercial	Agriculture	Gov/Instit
29	15	7	4	0	2	1

Value of Structures by DOR Use for KAC Tornado Risk (\$Thousands)						
Total	SF Res	Mob Home	MF Res	Commercial	Agriculture	Gov/Instit
\$1,378.98	\$889.38	\$271.13	\$21.42	\$0.00	\$79.09	\$117.96

3. Fires

The areas around the Town of Horseshoe Beach are particularly susceptible to fires. Also the Town has a more condensed population and a high density of buildings. This increases the Town’s vulnerability to fires when compared to the unincorporated county. See the map and the reports below from the MEMPHIS system for the specific vulnerability analysis for the Town of Horseshoe Beach. The expected losses would be the same as those of a tornado. Every building in the Town would be susceptible to a fire, similar to the way every building in the Town could be susceptible to a tornado. Refer to the tornado loss estimates as an estimate of the potential for fire losses in Horseshoe Beach.

4. Floods

The Town of Horseshoe Beach has FIRM maps maintained by the Suwannee River Water Management District as part of the FIRM map modernization program. They are available online at <http://www.srwmfloodreport.com/Dixie.htm#>. They show the specific areas prone to flooding. These are the areas around the Steinhatchee, Suwannee, and Gulf of Mexico. The entire Town of Horseshoe Beach is extremely vulnerable to flooding caused by a storm surge.

As can be seen from the statistics below from the NFIP, the Town of Horseshoe Beach experiences flood losses on properties that have flood insurance.

Tables V.K.6: NFIP Loss Statistics – Dixie County & Town of Horseshoe Beach

NFIP LOSS STATISTICS: 1/1/78 - 3/31/2010					
Name	Total Losses	Closed Losses	Open Losses	CWOP* Losses	Total Payments
Horseshoe Beach, Town of	54	46	0	8	\$647,491.06
DIXIE COUNTY	541	443	0	98	\$6,377,910.76

*Closed Without Payment Losses

5. Drought and Heat Wave

The Town of Horseshoe Beach has a slightly different vulnerability to heat and drought than the rest of the county. The urban environment of the Town and the surrounding areas puts a higher population of humans at risk from heat related illnesses and possible deaths. There are additional resources in the Town that can aid these problems, but the human risk is higher than most of the unincorporated county at large.

On the other hand, the Town does not have a substantial economic risk from this hazard. The County areas with the high level of agriculture, livestock, and timber forest are much more economically vulnerable than the Town of Horseshoe Beach. There have been no related deaths caused by heat or drought in the Town of Horseshoe Beach.

6. Freezing and Winter Storms

The likelihood of winter weather affecting the Town of Horseshoe Beach is exactly the same as it is for the rest of the unincorporated County. Based on the overall vulnerability for the County, the Town of Horseshoe Beach does differ in the lack of agriculture and commercial livestock. The Town will be most vulnerable to transportation and traffic issues due to the greater number of roads and the higher and denser population. In addition, the larger number of people will increase the probability of injuries, illnesses or deaths related to the cold.

7. Sinkholes and Landslides

The areas in and around the Town of Horseshoe Beach are at very low risk for Sinkholes. Sinkholes can damage the Town’s infrastructure including water and sewer pipes and roads. See the map and the reports below to compare the vulnerability of Horseshoe Beach to the rest of Dixie County.

Map V.K.7: Sinkhole Vulnerability – Town of Horseshoe Beach

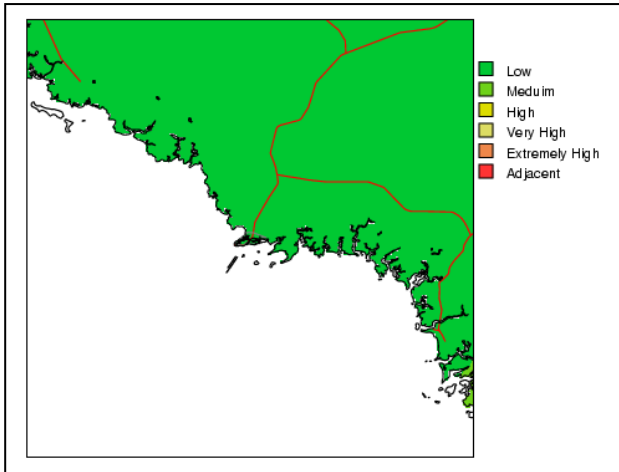


Table V.K.8 a-c: Risk Estimates – Sinkholes, Town of Horseshoe Beach

Population at Risk for KAC Sinkhole Risk Town of Horseshoe Beach							
Zone	Total	Minority	Over 65	Disabled	Poverty	Lang Iso	Sing Pnt
Low	226	3	49	86	50	0	12

Structures at risk for KAC Sinkhole Risk Town of Horseshoe Beach							
Zone	Total	SF Res	Mob Home	MF Res	Commercial	Agriculture	Gov/Instit
Low	28	15	6	4	0	2	1

Value of Structures by DOR Use for KAC Sinkhole Risk (Thousand) Town of Horseshoe Beach							
Zone	Total	SF Res	Mob Home	MF Res	Commercial	Agriculture	Gov/Instit
Low	\$1,359.46	\$889.38	\$251.61	\$21.42	\$0.00	\$79.09	\$117.96

8. Earthquakes

There are no differences in the risks and vulnerability for the Town of Horseshoe Beach and Dixie County. The Town does have a higher and denser population and much more infrastructure and buildings, however the risk of seismic activity is very low and the chances of significant damage are even lower. Earthquake hazard maps are located in Section V.

Table V.K.10 a-c: Risk Estimates – Earthquakes, Town of Horseshoe Beach

Population at Risk for USGS 50 Year Earthquake						
Total	Minority	Over 65	Disabled	Poverty	Lang Iso	Sing Pnt
226	3	49	86	50	0	12

Structures at risk for USGS 50 Year Earthquake						
Total	SF Res	Mob Home	MF Res	Commercial	Agriculture	Gov/Instit
29	15	7	4	0	2	1

Value of Structures by DOR Use for USGS 50 Year Earthquake (Thousands)						
Total	SF Res	Mob Home	MF Res	Commercial	Agriculture	Gov/Instit
\$1,378.98	\$889.38	\$271.13	\$21.42	\$0.00	\$79.09	\$117.96

9. Coastal and Riverine Erosion

The Town of Horseshoe Beach has virtually no riverine erosion issues. However, Horseshoe Beach is at a higher risk for coastal erosion compared to the rest of the County. The area is a low wave impact beach area, yet still susceptible to any storm surge, and the scouring action it would produce. This situation will be monitored by the LMS Committee.

VI. Land Uses and Future Development Trends

Dixie County is in a rural area with a stable population of approximately 15,963. The county is growing but the growth rates are moderate. New business is encouraged by the Chamber of Commerce and some new industry is moving into the area. However, the area has traditionally had a low level of unemployment so there is not a large pool of human resources to support significant development.

Most growth in the County centers around the Town of Cross City with the nearby unincorporated areas becoming more urban. This interface area outside of the City limits constitutes the area with the most expected development over the next ten years.

A. Future Growth Patterns

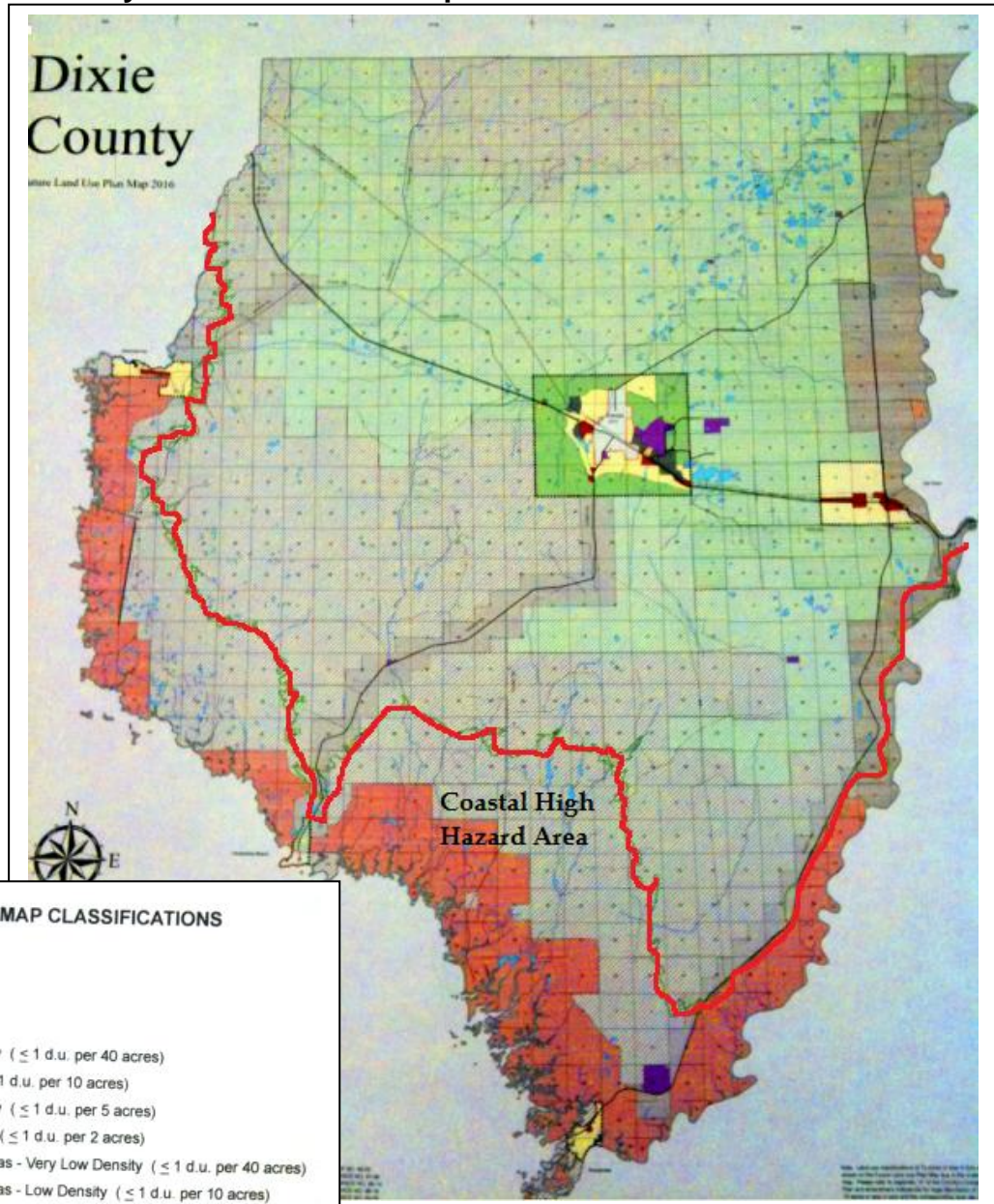
Based on the lessons learned from the growth rates of neighboring counties, a 2016 target for achieving wise, sustainable growth to maximize the county's natural resources, and preserve its natural beauty. Much of this proposed growth would occur along the Dixie County coastline, which is susceptible to hurricane wind and surge action. Also, much of this area lies within the 100 year flood zone. Implementing this aggressive growth plan will provide many opportunities for the LMS Committee to ensure growth is occurring in a manner that reduces resident vulnerable to known hazards to the greatest degree possible.

The Dixie County COMP Plan, Future Land Use Element, establishes a framework for future growth in the County. In terms of preventing future hazards, the COMP plan directs that environmentally sensitive areas, which are lands within the 100-year floodplain, shall conform to lower densities than other classifications. The FLUM also prohibits the location of non-residential uses such as industrial activities and commercial uses within these areas. Land uses permitted within these areas are to provide mitigating measures to protect the natural functions of the County's environmentally sensitive areas. Furthermore, the FLUM requires that areas within the 100 year floodplain shall maintain an average lot size of 10 acres with no lot being less than 5 acres in size or having a length or with ratio of greater than 3 to 1. It requires the County to participate in the NFIP, and regulate development and the installation of utilities in flood hazard areas in conformance with the requirements of the NFIP.

Dixie County is conscience of directing growth in recognition of the known hazards identified in this LMS. The more prominent hazards such as hurricanes, floods and fires have several policies associated with the prevention of growth in such areas without proper risk reduction measures taken.

The following is an image of the most recent FLUM for Dixie County from now until 2016.

Map IV.A.1: Dixie County Future Land Use Map - 2016



FUTURE LAND USE PLAN MAP CLASSIFICATIONS

- Industrial
- Commercial
- Recreation
- Public
- Agriculture - Very Low Density (≤ 1 d.u. per 40 acres)
- Agriculture - Low Density (≤ 1 d.u. per 10 acres)
- Agriculture - Moderate Density (≤ 1 d.u. per 5 acres)
- Agriculture - Medium Density (≤ 1 d.u. per 2 acres)
- Environmentally Sensitive Areas - Very Low Density (≤ 1 d.u. per 40 acres)
- Environmentally Sensitive Areas - Low Density (≤ 1 d.u. per 10 acres)
- Environmentally Sensitive Areas - Moderate Density (≤ 1 d.u. per 5 acres)
- Conservation
- Residential - Low Density (≤ 2 d.u. per acre)
- Residential - Moderate Density (≤ 4 d.u. per acre)
- Residential - Medium Density (≤ 8 d.u. per acre)
- Residential - High Density (≤ 20 d.u. per acre)

OTHER MAP FEATURES

- Divided Highway
- Paved Road - High Type
- Bituminous Road - Medium and Low Type
- Gravel or Stone Road
- Railroad
- Coastal High Hazard Area
- Category 1 Storm Surge Boundary (Based on Sea, Lake and Overland Surges)
- Incorporated Area
- Designated Urban Development Area
- County Boundary Line

Much of the fresh water wetlands designated on this map is held as primary conservation areas along the coast. The County is actively assessing the extent of these conservation areas to ensure their safety. Human encroachment on these conservation areas is one of the primary concerns in Dixie County which is actively managing these trends to ensure the development is beneficial to the citizens.

B. Transportation Improvements

Roads and transportation are the main factors leading to growth and development. As roads develop and are maintained, human population follows with residential property development, agriculture, industry and further infrastructure. The following chart details the Florida Department of Transportation’s five year work plan for Dixie County. Potential future development trends will follow closely behind these road improvements.

Table VI.B.1: FDOT 5 Year Plan – Dixie County

DIXIE COUNTY 5 YEAR FDOT WORK PLAN - 2010 - 2015	Type	Project Length (Mi)	2011	2012	2013	2014	2015
From Old Town to Lafayette C/L Resurfacing	Preliminary Engineering	15.529	\$ 1				
	Construction		\$ 8,990	\$ 80	\$ 83		
From Taylor C/L to Lafayette C/L Resurfacing	Construction	1.518	\$ 52	\$ 53			
County DDR Box Funding Action Target	Construction					\$1,087	\$ 3,576
Dixie County Traffic Signal Maintenance Agreement Traffic Control Devices/System	Operations		\$ 9	\$ 10	\$ 10	\$ 10	\$ 11
@ Spillers Highway and @ CR 353 and Turn Lane(s)	Construction	7.161	\$ 642				
US 19) From 3.880 BMP to 4.219 Safety Project	Preliminary Engineering	0.339	\$ 1				
	Construction		\$ 1,074				
US 19) From SR 349 to Gilchrist C/L Resurfacing	Preliminary Engineering	3.384	\$ 95				
	Construction				\$3,874	\$ 171	
ne Maintenance	BRDG/RDWY/Contract Maintenance		\$ 600	\$ 600	\$ 600	\$ 600	\$ 600
ng	BRDG/RDWY/Contract Maintenance		\$ 5	\$ 5	\$ 6	\$ 6	\$ 6
City Remove Pavement Connecting Runways Aviation Safety Project	Capital			\$ 12			
City APT DSG & Const 8 Place T-Hangars Aviation Preservation Project	Capital					\$ 600	
City Relocate Wind Cone & Segmented Circle Aviation Safety Project	Capital		\$ 7				
City Runway /22 Pavement Rejuvenate Aviation Preservation Porject	Capital		\$ 193				
City Design & Const. Taxiway C PH 1 & Lighting SYS Aviation Preservation Project	Capital			\$ 322			
City Airport Runway 13/31 Reconstruction & Overlay Aviation Preservation Project	Capital						\$ 1,200
T TOTAL/TOTAL		\$26,750	\$12,007	\$1,430	\$4,912	\$2,822	\$ 5,579

Source: <http://www2.dot.state.fl.us/fmsupportapps/WorkProgram/Support/Download.aspx>

VII. Dixie County Mitigation Strategy

Through the combined efforts of the Dixie County Local Mitigation Strategy Committee, Dixie County has developed and updated the County mitigation strategy in order to reduce potential future losses due to natural hazards. Existing plans and policies have already been developed by the County that are crucial components to the overall hazard mitigation strategy. During the 2010 LMS Update process, all relevant ordinances and policies that work as the blueprint for the Dixie County mitigation strategy were reevaluated. All of these existing authorities, policies, programs and codes are adopted official mechanisms for county government and can all be expanded and improved as required. The LMS Committee is the lead agency for proposing new ideas to the county commissioners for improving these overall mitigation efforts.

The primary source for Dixie County policies pertaining to mitigation is the Dixie County Comprehensive Plan, which was updated and evaluated in 2010, and the Dixie County Land Development Regulations, which are continually updated. The following elements of the COMP Plan have mitigation provisions.

- Land Use Element
- Housing Element
- Sanitary Sewer, Solid Waste, Drainage, Potable Water and Natural Groundwater Aquifer Recharge Element
- Coastal Management Element
- Conservation Element
- Recreation and Open Space

In addition, two other county plans were reviewed for mitigation activities and strategies. They include:

- County Emergency Management Plan
- Dixie County Debris Management Plan

A. Ongoing Mitigation Provisions in Current Plans, Ordinances, Codes

The following table lists excerpts from existing plans, codes, and ordinances relating to on-going mitigation strategies in the county.

Table VII.A.1: Current Dixie County Ongoing Mitigation Provisions

DIXIE COUNTY COMP PLAN	
Future Land Use Element	
The County's land development regulations shall contain standards for coordination and siting of proposed urban development near agricultural or forested areas, or environmentally sensitive areas (including but not limited to wetlands and floodplain areas) to avoid adverse impact upon existing land uses.	County Comprehensive Plan, Future Land Use Element, Policy I.1.5

The County shall restrict development within unsuitable areas due to flooding , improper drainage, steep slopes, rock formations and adverse earth formations, unless acceptable methods and formulated by the developer and approved by the County to solve the problems created by the unsuitable land conditions.	County Comprehensive Plan, Future Land Use Element, Policy I.2.1
Protect environmentally sensitive lands (100 year floodplains) identified within the Conservation Element	County Comprehensive Plan, Future Land Use Element, Policy I.4.1 (c)
Regulate areas subject to seasonal and periodic flooding and provide for drainage and stormwater management	County Comprehensive Plan, Future Land Use Element, Policy I.4.1 (d)
Lands Classified as Environmentally Sensitive are areas which are considered in need of special planning and treatment regarding land development regulations. These are not preservation areas, but land uses permitted within these areas are to provide mitigating measures to protect the natural functions of the County's environmentally sensitive areas as designated within this Comprehensive Plan as regionally significant areas. Environmentally Sensitive Areas are lands within the 100-year floodplain , as designated by the Federal Emergency Management Agency, Flood Insurance Rate Map, as amended as identified within the Appendix of the Comprehensive Plan shall conform with the following densities provided that an average lot size of 10 acres is maintained with no lot being less than 5 acres in size, nor having a length to width ratio of greater than 3 to 1.	County Comprehensive Plan, Future Land Use Element, Policy I.5.2
The areas within the 100-year floodplain , as designated by the Federal Emergency Management Agency, Flood Insurance Rate Map, as amended, which are located in the regionally significant areas identified within the Appendix of this Comprehensive Plan shall maintain an average lot size of 10 acres with no lot being less than 5 acres in size or having a length or width ratio of greater than 3 to 1. In addition, non-residential uses such as industrial activities and non-marine oriented commercial uses shall be prohibited from locating within these areas, although resource- based activities, such as special exceptions.	County Comprehensive Plan, Future Land Use Element, Policy I.5.5
The County shall maintain provisions for adequate drainage, stormwater management, open space and convenient on site traffic flow and needed vehicle parking for all development	County Comprehensive Plan, Future Land Use Element, Policy I.6.4
The County shall participate in the National Flood Insurance Program and regulate development and the installation of utilities in flood hazard areas in conformance with the requirements of the program	County Comprehensive Plan, Future Land Use Element, Policy I.6.6
The County shall adopt regulations to protect natural resources and environmentally sensitive lands (including but not limited to wetlands and floodplains).	County Comprehensive Plan, Future Land Use Element, Objective I.10
The County shall continue to include provisions which will mitigate adverse effects of land uses on environmentally sensitive areas. In addition, the County shall prohibit the location of an structure, other than permitted docks, piers, walkways, or essential services (upon approval of the Florida Department of Environmental Regulation and the Water Management District) within a wetland .	County Comprehensive Plan, Future Land Use Element, Policy I.10.2
As part of the County's development review process environmentally sensitive and shall identified for protection. These environmentally sensitive lands shall include, but not be limited to, wetlands, floodprone areas , areas designated as prime groundwater aquifer recharge areas and critical habitat areas for designated rare, threatened, endangered, or species of special concern.	County Comprehensive Plan, Future Land Use Element, Policy I.10.4
The County shall restrict development within unsuitable areas due to flooding , improper drainage, steep slopes, rock formations and adverse earth formations, unless acceptable methods are formulated by the developer and approved by the County to solve the problems created by the unsuitable land conditions.	County Comprehensive Plan, Future Land Use Element, Policy I.13.1
Regulate areas subject to seasonal and periodic flooding and provide for drainage and stormwater management	County Comprehensive Plan, Future Land Use Element, Policy I.15.1 (d)

COMP Plan – Housing Element	
The County, to address the quality of housing and stabilization of neighborhoods, shall include minimum housing standards for structural strength, stability, sanitation, adequate light and ventilation and safety to life and property from fire and other hazards incident to the construction, alteration, repair, removal, demolition, use and occupancy of residential buildings.	County Comprehensive Plan, Housing Element, Policy III.2.1
The County shall continue to enforce a hazardous building code and shall require the rehabilitation or demolition and clearance of housing and other structures which pose a threat to public safety consistent with Chapter 553 (Building Construction Standards), Florida Statutes.	County Comprehensive Plan, Housing Element, Policy III.5.1
The hazardous building code , consistent with Chapter 553 (Building Construction Standards), Florida Statutes, shall be remedial and shall be constructed to secure the beneficial interest and purposes which are public safety , health and general welfare through provisions dealing with structural strength, stability, sanitation, adequate light and ventilation, and safety to life and property from fire and other hazardous incident to the construction alteration, repair, removal, demolition, use and occupancy of building, structure or premises;	County Comprehensive Plan, Housing Element, Policy III.5.1 (a)
COMP Plan - Sanitary Sewer, Solid Waste, Drainage, Potable Water and Natural Groundwater Aquifer Recharge Element	
For all projects not exempted from Chapter 40B-4 and 62025, Florida Administration Code, in effect on January 1, 2003, stormwater management systems must be installed such that the peak rate of post-development runoff will not exceed the peak-rate of predevelopment runoff for storm events up through and including either one of the following design storms.	County Comprehensive Plan, Sanitary Sewer, Solid Waste, Drainage, Potable Water and Natural Groundwater Aquifer Recharge Element, Policy IV.4.1
The county shall continue to implement provisions which prohibit the construction of structures or landscape alterations which would interrupt natural drainage flows, including sheet flow and flow to isolated wetland systems.	County Comprehensive Plan, Sanitary Sewer, Solid Waste, Drainage, Potable Water and Natural Groundwater Aquifer Recharge Element, Policy IV.4.2
COMP Plan, Conservation Element	
The County shall review and comment on proposals for the purchase of environmentally sensitive lands by the State of Florida, as part of the Florida Forever Program as listed by the Acquisition and Restoration Council for the Board of Trustees of the Internal Improvement Trust Fund, Water Management District, or U.S. Government, under the programs administered by the U.S. Department of the Interior, Florida Department of Community Florida Department of Environmental Protection or the land acquisition program of the Water Management District.	County Comprehensive Plan, Conservation Element, Policy V.2.3
The County shall require all new development to maintain the natural functions of environmentally sensitive areas, including but not limited to wetlands and 100-year floodplains so that the long term environmental integrity and economic and recreational value of these areas is maintained.	County Comprehensive Plan, Conservation Element, Policy V.2.6
The County shall provide for the regulation of development within 100-year floodplains in order to maintain the flood-carrying and flood storage capacities of the floodplains and reduce the risk of property damage and loss of life.	County Comprehensive Plan, Conservation Element, Policy V.2.7
The County shall consult with the Florida Fish and Wildlife Conservation Commission prior to the issuance of a development order where there is an indication that such issuance would result in an adverse impact to any endangered or rare species. All new development will maintain the natural functions of environmentally sensitive areas, including but not limited to wetlands and 100-year floodplains so that the long term environmental integrity and economic impact and recreation value of these areas is maintained.	County Comprehensive Plan, Conservation Element, Policy V.4.3

COMP Plan, Coastal Element	
The County shall continue to request assistance from the Florida Department of Environmental Protection, Lower Suwannee National Wildlife Refuge Management Office, and the Big Bend Aquatic Preserve Management Office to assist the County with the identification and protection of the coastal wetlands and sea grasses to ensure that there will be no net loss of the existing coastal natural resources of the County.	County Comprehensive Plan, Coastal Element, Objective IX.1
Coastal wetlands and sea grasses areas within the County shall be deemed environmentally sensitive, in recognition of their many natural functions and values and, to further the public interest, shall be protected from incompatible land uses. The County shall afford protection to these resources regardless of size.	County Comprehensive Plan, Coastal Element, Objective IX.1.1
No development including residential development, shall be permitted within a coastal wetland area unless project alternatives that would avoid wetland impacts are unavailable and mitigation is provided by the applicant to offset adverse impacts. For purposes of this policy, sufficient mitigation is as required by Florida Administration Code Rules 62-312.300 through 62-312.390, in effect January 1, 2003. It is intended that all standards in these citation are to apply to all new development and redevelopment.	County Comprehensive Plan, Coastal Element, Objective IX.1.4
The County shall maintain standards for the permitting of marinas which address at a minimum; land use compatibility, availability of upland support services, existing protective status or ownership, hurricane contingency planning , protection of water quality, water depth, environmental disruptions and mitigation actions, availability for public use, and economic need and feasibility.	County Comprehensive Plan, Coastal Element, Policy IX.3.2
The County through the procedure for monitoring and Evaluation of the Capital Improvements Element, shall limit expenditures that subsidized development within coastal high-hazard areas , to the restoration or enhancement of natural resources.	County Comprehensive Plan, Coastal Element, Objective IX.5
The County shall limit development which is vulnerable to natural hazards such as storm surge and high winds within coastal high hazard areas .	County Comprehensive Plan, Coastal Element, Policy IX.5.2
The County, as part of the development review process, shall require the location of public facilities away from coastal high hazard areas, where such public facilities have the potential for being damaged during a storm . Public facilities, which are owned and operated by local government or a governmental authority and such facility serves area where private sanitary facilities are not adequate to protect surface and ground water quality, shall be permitted to be located within coastal high hazard areas.	County Comprehensive Plan, Coastal Element, Policy IX.5.3
The County shall maintain the residential land use densities provided within this element of the Comprehensive Plan to assist in the limitation of undue population concentration in known or predicted coastal high-hazard areas .	County Comprehensive Plan, Coastal Element, Objective IX.6
The County shall participate in the National Flood Insurance Program and regulate development and installation of utilities in flood hazard areas in conformance with the program's requirements for minimizing damage caused by flooding and storm surge.	County Comprehensive Plan, Coastal Element, Policy IX.6.2
The County shall comply with appropriate provisions of the hazard mitigation annex of the County's peacetime emergency plan and applicable existing interagency hazard mitigation reports.	County Comprehensive Plan, Coastal Element, Policy IX.6.3
The County shall limit residential development and resident populations within coastal high hazard areas to locations and numbers which can be safely evacuated during hurricane hazard periods.	County Comprehensive Plan, Coastal Element, Policy IX.6.4
The County shall limit dwelling unit density to four units per acre in designated urban development areas within the Coastal High Hazard Area .	County Comprehensive Plan, Coastal Element, Policy IX.6.5
The County shall maintain hurricane evacuation time of 9 hours for a category 1 storm for the residents of Coastal High Hazard Area.	County Comprehensive Plan, Coastal Element, Objective IX.7
The County shall coordinate the procedures for notifying the public of potential dangers and appropriate preparatory measures for natural disasters , including the location of evacuation routes, with the applicable regional and local evacuation plans.	County Comprehensive Plan, Coastal Element, Policy IX.7.1

The County shall continue to plan for post-disaster redevelopment which reduces or eliminates the exposure of human life and public and private property to natural hazards.	County Comprehensive Plan, Coastal Element, Objective IX.8
The County Peacetime Emergency Plan shall address immediate repair and cleanup actions needed to protect the public health and safety, including repairs to potable water, wastewater and electrical power facilities; removal of debris, stabilization or removal of structures about to collapse; and minimal repairs to make dwellings habitable before commencing with or permitting long-term repair and redevelopment activities.	County Comprehensive Plan, Coastal Element, Policy IX.8.1
The County shall remove, relocate or structurally modify damaged public facilities, as appropriate, in light of factors such as cost to construct, cost to maintain, recurring damage, impacts on land use , impacts on the environment and public safety.	County Comprehensive Plan, Coastal Element, Policy IX.8.2
The County shall require the removal, relocation or structural modification of unsafe structures, as appropriate, if rebuilt, require structures which have suffered damage to an extent of more than 70 percent of their replacement value at the time of such damage to be rebuilt in conformance with current building requirements.	County Comprehensive Plan, Coastal Element, Policy IX.8.3
The County shall limit redevelopment in areas of repeated damage by requiring structures which suffer repeated damage to rebuilding landward of their current location or to modify the structure to delete the areas most prone to damage.	County Comprehensive Plan, Coastal Element, Policy IX.8.4
The County, as part of the monitoring and evaluation process of the Comprehensive Plan, shall identify areas needing redevelopment, including eliminating unsafe conditions and inappropriate uses as opportunities arise.	County Comprehensive Plan, Coastal Element, Policy IX.8.5
The County shall continue implement provision for the protection, preservation or sensitive reuse of historical resources within the Coastal High Hazard Area.	County Comprehensive Plan, Coastal Element, Objective IX.10
DIXIE COUNTY CODES AND ORDINANCES	
Article IV. ZONE REGULATIONS	
4.2.1 District and Intent The “CSV” Conversation category includes one (1) zone district: CSV Lands in this district are publicly owned lands devoted to the conservation of the unique natural functions within these lands. To conserve these lands, no use other than non-intensive resource based recreation activities shall be permitted.	Section 4.2 Conservation District
4.2.7 Minimum Yard Requirements A minimum thirty-five (35) foot natural buffer shall be required from all wetlands and a seventy-five (75) foot natural buffer shall be required from perennial rivers, streams, and creeks identified as regionally significant areas within the Comprehensive Plan. The location of any structure shall be prohibited within these buffer areas, although non-intensive resource-based recreation activities shall be permitted within these buffer areas. For all uses other than single-family residential, agricultural and silvicultural, adjacent to a “Work of the District” as established in Rule 40B-4, Florida Administrative Code, as amended, a minimum buffer setback shall e required for rivers, streams and creeks, and their floodways, as required within such rule.	Section 4.2 Conservation District
4.3.1 Districts and Intent The “ESA” category includes four (4) zone districts: ESA-1, 2, 3, 4. Lands in these districts are considered in need of special planning and treatment regarding land development regulation. These are not preservation districts, but land uses permitted within these districts are to provide mitigation measures to protect the natural functions of the County’s environmentally sensitive areas as designated within the Comprehensive Plan as regionally significant areas, and with a special emphasis on the planning and treatment of land development within the one-hundred (100) year floodplain of the Suwannee River. These regulations prohibit intensive residential, recreational, and agricultural uses and prohibit industrial and non-water-dependent commercial development within the 100-year floodplain of the areas designated as Environmentally sensitive Areas.	Section 4.3 Environmentally Sensitive Areas

<p>4.3.2 Permitted Principal Uses and Structures (1.) Agricultural uses subject to the provisions of Section 4.18.32 and silviculture uses operating under best management practices (with the exception of feedlot operations and buildings housing livestock within the one-hundred (100) year floodplain of the Suwannee River).</p>	<p>Section 4.3 Environmentally Sensitive Areas</p>
<p>4.3.4 Prohibited Uses and Structures Industrial uses, high intensity agricultural uses within the one-hundred (100) year floodplain of the Suwannee River (i.e. feedlots and buildings housing livestock), private recreational uses and any use or structure not specially, provisionally, or by reasonable implication permitted herein or permissible as a special exception.</p>	<p>Section 4.3 Environmentally Sensitive Areas</p>
<p>4.3.7 Minimum Yard Requirements Special Provisions: A minimum thirty-five (35) foot natural buffer shall be required from all wetlands and a seventy-five (75) foot natural buffer shall be required from perennial rivers, streams and creeks identified as regionally significant areas within the Comprehensive Plan. The location of any structure shall be prohibited within these buffer areas, although non-intensive resource-based recreation activities shall be permitted within these buffer areas. For all uses other than single-family residential, agricultural and silvicultural, adjacent to a “Work of the District” as established in Rule 40B-4, Florida Administrative Code, as amended, a minimum buffer setback shall be required for rivers, streams and creeks, and their floodways, as required within such rule.</p>	<p>Section 4.3 Environmentally Sensitive Areas</p>
<p>4.3.9 Maximum Lot Coverage by All Buildings 20% Note: In addition to providing the required lot, yard, lot coverage, landscaped buffering and off-street parking requirements of this section, no structure shall exceed a 1.0 flood area ratio.</p>	<p>Section 4.3 Environmentally Sensitive Areas</p>
<p>4.3.12 Additional Restrictions in Environmentally Sensitive Areas Environmentally Sensitive Areas, including wetlands, shall be conserved by prohibiting, where other alternatives for development exist, any development or dredging and filling which would alter the natural function of a wetland.</p>	<p>Section 4.3 Environmentally Sensitive Areas</p>
ARTICLE VII. STORMWATER MANAGEMENT REGULATIONS	
<p>7.1.1 General In addition to meeting the requirements of these land development regulations, the design and performance of all stormwater management systems shall comply with applicable state regulations (Chapter 17-25, Florida Administrative Code, as amended) and rules of the Water Management District. In all cases the strictest of the applicable standards and the following shall apply: Stormwater management systems shall be installed such that the peak rate of post-development runoff for storm events up through and include:</p> <ul style="list-style-type: none"> (1) A design storm with a 10-year, 24-hour rainfall depth with Soil Conservation Service Type II distribution falling on average antecedent moisture conditions for projects serving exclusively agricultural, forest, conservation, or recreational uses (2) A design storm with 100-year critical duration rainfall depth for projects serving any land use other than agricultural, silvicultural, conservation, or recreational uses. 	<p>Section 7.1 Relationship to Other Stormwater Management Requirements</p>
<p>7.3.3 Developments Must Drain Properly All developments shall be provided with a drainage system that is adequate to prevent the undue retention of stormwater on the development site.</p>	<p>Section 7.3 Stormwater Management Requirements</p>
<p>7.3.7.1-21 Design Standards</p>	<p>Section 7.3 Stormwater Management Requirements</p>
ARTICLE VIII. FLOOD DAMAGE PREVENTION REGULATIONS	
<p>Section 8.1 Standards for Reducing Flood Hazards in the Area of Special Flood Hazard; Section 8.2 Standards for Residential Construction; Section 8.3 Standards for Non-Residential Construction; Section 8.3 Standards for Non-Residential Construction; 8.4 Standards for Elevated Buildings; Section 8.5 Standards for Floodways; Section 8.6 Standards for Streams Without Established Base Flood Elevations and/or Floodways; Section 8.7 Standards for Areas of Shallow Flooding; Section 8.8 Required Flood Elevation; Section 8.9 Mobile Home Criteria; Section 8.10 Stabilization of Slopes; Section 8.11 Special Provisions for Subdivisions</p>	

<p>(2) Notify, in riverine situations, adjacent communities and the Water Management District prior to any alteration or relocation of a watercourse and submit copies of such notification to the Federal Insurance Administrator</p> <p>(3) Ensure that the flood-carrying capacity within the altered or relocated portion of any watercourse is maintained</p>	<p>Section 8.13 Additional Duties of the Land Development Regulation Administrator Related to Flood Insurance and Flood Control</p>
<p>In any area located outside a designated floodplain but where a perennial river stream or creek is located, no building or fill may be located within a distance of the stream bank equal to seventy-five (75) feet if the river, stream or creek has been designated as a regionally significant area in the County's Comprehensive Plan and thirty-five (35) feet for all other perennial rivers, streams or creeks. Although, this does not preclude these setback areas from being used for agriculture, silviculture and resource-based recreational activities subject to best management practices.</p>	<p>Section 8.15 Setbacks From Perennial Rivers Streams and Creeks</p>
<p>In all areas designated as Coastal High Hazard Areas the following standards must be met: 8.16.1 Setback, 8.16.2 Elevation, 8.16.3 Fill, and 8.16.4 Obstructions, 8.16.5 Anchoring, 8.16.6 Certification</p>	<p>Section 8.16 Standards for Reducing Flood Hazards in Coastal High Hazard Areas</p>
<p>8.17.9 General Requirements and Minimum Standards of Design In all areas where the official one hundred (100) year flood elevations have been provided as set forth in these land development regulations the following provisions are required: 8.17.9.1 Construction, 8.17.9.2 Roads, 8.17.9.3 Increase in Flood Elevations, 8.17.9.4 Permanent Elevation Monument, 8.17.9.5 Drainage Facilities, 8.17.9.6 Wastewater Disposal, 8.17.9.7 Erosion and Sedimentation Control, 8.17.9.8 Riverbank Setback</p>	<p>Section 8.17 Standards for Reducing Flood Hazards in the Suwannee River Corridor</p>
<p>Pre-Disaster Initiatives</p>	
<p>Evacuation Procedures</p>	<p>County Emergency Management Plan</p>
<p>Post-Disaster Development</p>	
<p>Post-Disaster Clean Up</p>	<p>Dixie County Debris Management Plan</p>
<p>Post-Disaster Redevelopment</p>	<p>County Emergency Management Plan</p>

B. Dixie County Mitigation Goals and Objectives

The Dixie County LMS Committee met six times between July 2004 to June, 2010 to review and edit the 2004 mitigation goals and strategies. To assist in analyzing regional, county, and municipal policies, ordinances and programs that affect mitigation the LMS Committee developed the following mitigation goals, with supporting objectives, listed below. The list was developed from a review of County and Towns' comprehensive plans, land development regulations, and the comprehensive emergency management plan to determine those elements of the plans and regulations with mitigation implications.

These LMS goals and objectives are critical in executing mitigation initiatives that are described in this document. Whether or not a proposed mitigation initiative met one or more of the Mitigation goals, they were considered when prioritizing the individual mitigation initiatives.

Goal 1: Establish an ongoing Local Mitigation Strategy Program, which is in the interest of the public health safety and welfare.

Objective 1.1: The Local Mitigation Strategy Program shall identify available mechanisms to promote training classes for County personnel, responders and elected officials to improve emergency management preparedness and response through education and training.

Objective 1.2: Prepare county wide geographical information system mapping so that Emergency Management officials can integrate hazard mitigation efforts with all local government entities.

Objective 1.3: Prepare county wide critical/vital facility inventories, as well as a procedure to update periodically.

Goal 2: Complete Storm water Management Plan for the riverine drainage basins currently being prepared by the Suwannee River Water Management District.

Objective 2.1: The Local Mitigation Strategy Committee shall identify available funding sources for the expansion of the current storm water management study to lead to the creation of a comprehensive storm water management plan for all lands within the drainage basins of the county and municipalities. The City of Cross City has a special need to coordinate such a storm water plan with the County and the region, as a regional study and plan for storm water management should be prepared to address the City's storm water management.

Objective 2.2: The Local Mitigation Strategy Committee shall work closely with the Suwannee River Water Management District to identify needs identified by the riverine basin study, currently being prepared.

Objective 2.3: Link the storm water management study being prepared for the County to the recent contamination of water wells to determine if improvements may be constructed to prevent storm water infiltration into surface aquifers (the majority of land area within the County is within a groundwater discharge area).

Goal 3: In order to improve the floodplain management capabilities of the county and municipalities, the Local Mitigation Strategy committee will assist local governments with eligibility requirements for the Community Rating System.

Objective 3.1: The Local Mitigation Strategy committee shall contact the regional representatives of the Insurance Services Offices to assist the county and municipalities with the Community Rating System Application.

Objective 3.2: FEMA, Flood insurance Rate Maps should be amended to include new data provided by stormwater management studies conducted through the Local Mitigation Strategy Program.

Objective 3.3: Solve evacuation route problems within the County and municipalities, specifically

regarding CR351, which is the only evacuation route for the Town of Horseshoe Beach.

Goal 4: Use the hazard identification and vulnerability assessment to identify uses, which may have an adverse impact on the county's natural resources.

Objective 4.1: Identify projects for the protection of natural resources, which are potentially impacted by uses identified in the County's hazard identification portion of the Local Mitigation Strategy Program.

Objective 4.2: Identify canals, which have been dug on property without governmental review and approval.

Goal 5: Establish business protection mechanisms as part of the overall Local Mitigation Strategy.

Objective 5.1: Endeavor to collect hazard mitigation plans prepared by the major employers within the County in an effort to determine existing plans and procedures before establishing new strategies.

Goal 6: Identify substandard housing within the municipalities and the coastal communities, which have been repeatedly damaged by natural disasters.

Objective 6.1: Where feasible (economically and logistically), the substandard housing identified in Goal 6 should be either rehabilitated to standard conditions or purchased for removal. The Local Mitigation Strategy committee should coordinate with existing grant programs to achieve funding for accomplishing this objective.

Goal 7: Establish an early warning system for the coastal communities.

Objective 7.1: Identify funding sources for the improvement of NOAA radio warning systems within the coastal communities.

Objective 7.2: Locate and install civil defense type warning devices within the coastal communities to enhance early warning systems.

C. Dixie County Mitigation Projects and Action Plan

For the 2010 LMS Update, the LMS Committee reviewed the 46 mitigation actions and projects that will assist in the reduction of effects from natural hazards. Within these 46 projects, eight of them are specific to the Town of Cross City, four of them are specific to the Town of Horseshoe Beach, while the remaining 34 are countywide initiatives. Most of these actions are related to improving current critical facilities and shelters. The remaining projects are primarily related to flooding. Each of these projects has been evaluated and

analyzed and compared to other potential actions. This evaluation and analysis focused on the protection of lives and property, the ability to reduce economic losses and on the cost effectiveness of the specific actions.

The LMS Committee has established this action plan that addresses the various mitigation actions. Specific focus was placed on prioritization and identifying the lead agencies responsible for the implementation and administration of these projects. See the following table that details the mitigation projects in priority groupings, implementation timelines, the lead agencies, and the estimated cost for each project. The projects have been prioritized by hazard category by the LMS Committee, however this ranking is subject to modifications, as required to meet the growing needs of the community. The prioritization and ranking of each project used the “STAPLEE” method, which is provided in Appendix 2. The listing of all of the projects is provided in Appendix 3.

The LMS Committee will continually review this list of actions. As necessary, new actions will be added to this list and re-prioritized to meet the on-going and growing needs of the community. This update and modification process will be part of the on-going maintenance procedures for the County and Towns.

D. Funding Sources

As part of the 2010 LMS Plan Update, research was done to validate potential sources of funding for various types of mitigation. The following is a list of the primary funding sources discovered during this extensive research effort.

- FEMA
- Hazard Mitigation Grant Program
- Pre-disaster Mitigation Grant Program
- Flood Mitigation Assistance Program
- Repetitive Flood Claims Program
- Severe Repetitive Loss Program
- Florida Communities Trust
- Florida Small Cities Community Development Block Grant Program
- Emergency Management Preparedness and Assistance Trust Fund
- Suwannee River Economic Council Programs
- State Housing Initiative Partnership Program
- Low-Income Home Energy Assistance
- Weatherization Assistance Program
- Low-Income Emergency Home Repair Program
- Energy Neighbor Fund

The following is a brief explanation of the most logical FEMA-based programs to seek funding from. They include:

Hazard Mitigation Grant Program - is authorized by Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended (the Stafford Act), Title 42, United States Code (U.S.C.) 5170c. The key purpose of HMGP is to ensure that the opportunity to take critical mitigation measures to reduce the risk of loss of life and property from future disasters is not lost during the reconstruction process following a disaster. HMGP is available, when authorized under a Presidential major disaster declaration, in the areas of the State requested by the Governor. The amount of HMGP funding available to the Applicant is based upon the estimated total Federal assistance to be provided by FEMA for disaster recovery under the Presidential major disaster declaration.

Pre-Disaster Mitigation Program - is authorized by Section 203 of the Stafford Act, 42 U.S.C. 5133. The PDM program is designed to assist States, Territories, Indian Tribal governments, and local communities to implement a sustained pre-disaster natural hazard mitigation program to reduce overall risk to the population and structures from future hazard events, while also reducing reliance on Federal funding from future disasters.

Flood Mitigation Assistance Program - is authorized by Section 1366 of the National Flood Insurance Act of 1968, as amended (NFIA), 42 U.S.C. 4104c, with the goal of reducing or eliminating claims under the National Flood Insurance Program (NFIP).

Repetitive Flood Claims Program - is authorized by Section 1323 of the NFIA, 42 U.S.C. 4030 with the goal of reducing flood damages to individual properties for which one or more claim payments for losses have been made under flood insurance coverage and that will result in the greatest savings to the National Flood Insurance Fund (NFIF) in the shortest period of time.

Severe Repetitive Loss Program - is authorized by Section 1361A of the NFIA, 42 U.S.C. 4102a, with the goal of reducing flood damages to residential properties that have experienced severe repetitive losses under flood insurance coverage and that will result in the greatest savings to the NFIF in the shortest period of time.

More information about each program can be found on the FEMA Hazard Mitigation Assistance Web site at www.fema.gov/government/grant/hma/index.shtm.

E. Cross City Projects

The Town of Cross City has identified eight projects that are included in this LMS Update that were determined to be cost effective, environmentally sound, and technically feasible. These eight projects are listed above in the overall mitigation actions table and they are also listed again below to meet this requirement for individual action items for each jurisdiction. An update for each project is provided in Appendix 3.

F. Horseshoe Beach Projects

The Town of Horseshoe Beach has identified four projects that are mostly related to improving critical facilities. These are projects that are included in this LMS Update because they were determined to be cost effective, environmentally sound and technically feasible. These four projects are listed above in the overall mitigation actions table and they are also listed again below to meet this requirement for individual action items for each jurisdiction. An update for each project is provided in Appendix 3.

G. Monitoring, Evaluating and Updating the Dixie County LMS Plan

The Dixie County LMS Committee is committed to maintaining and updating this plan. This finalized adopted plan represents a snapshot in time for Dixie County while the overall mitigation strategy is a process that is ongoing in nature. As disaster occur throughout the county, appropriate mitigation actions will be taken to reduce the impact to citizens and the county's economic base. Dixie County Emergency Management will spearhead these efforts. However, the LMS Committee will continue to be primary agent for further development of the plan and the on-going mitigation process.

This adopted plan can be revised and updated by the LMS Committee as needed to address new and on-going vulnerabilities. When significant revisions are made to this plan in the future, it is the county's decision if additional resolutions are required.

The LMS will formally meet at least annually during this five year cycle, but based on the past 5 year cycle, it will be more often, as the need arises. At the LMS Committee's discretion, more meetings and initiatives will be advanced to continue monitoring, evaluating and updating this plan.

It is mandatory that the LMS plan be updated in five years. This update process will be managed by Dixie County Emergency Management with significant effort and participation by the LMS Committee and the Town's of Cross City and Horseshoe Beach. All of the information from the meetings is incorporated into this update. As required, the County will modify the current LMS plan to address any changes in the community and to meet any new federal requirements. The process will consist of a review of the existing LMS, LMS Committee meetings, public participation and the actual plan writing. This five-year update will be similar to the annual LMS process but will be more extensive and will result in an updated printed document that will be considered and adopted by the County and Town Councils.

H. Plan Adoption Process

This adopted plan is now one of the primary county instruments along with the County Comprehensive Plan, the Comprehensive Emergency Management Plan, and the County Land Development Regulations. As enhancements and modifications are made to these various planning mechanisms in the future, the Local Mitigation Strategy will be consulted to be sure

that these changes consider the impacts of natural disasters and potential mitigation strategies.

The LMS Committee will continue as the lead agency for promotion of mitigation against natural disasters. This group will continually monitor the situation in the county and propose new initiatives as required. These new initiatives will be considered in conjunction with the other planning mechanisms and their subsequent goals. Capital improvement plans will need to incorporate a study of potential impacts from natural hazards and prioritize any projects that will reduce the vulnerability to these hazards.

I. Future Public Participation

The community is encouraged to participate in the on-going mitigation planning process in Dixie County. There will be three primary ways for the public to continue to participate in this LMS process.

- LMS Committee Meetings – All of the LMS Committee meetings will be open to the public. Each meeting will be publicly advertised and held in a public and easily accessible location. Public citizens and private organizations will be encouraged to attend these meetings and provide their comments and feedback.
- Internet Correspondence – The adopted plan will be continually posted on the Dixie County Emergency Management website for review and download. Comments and feedback and be emailed to the Emergency Management Agency who will convey the information to the LMS Committee.
- LMS Mailing List – The LMS Committee will maintain an on-going list of any interested citizens or organizations. Notifications will be sent to this list of people when any actions are taken regarding mitigation in Dixie County.

VIII. *References and Appendices*

Below are the primary sources of information used in the development of this plan. See a complete listing of all reference and appendix files on the accompanying CD-ROM.

1. Bureau of Economic and Business Research, University of Florida Population Statistics
2. FDER Sinkhole information -
<http://www.dep.state.fl.us/geology/geologictopics/sinkhole.htm>
3. FDOT 5 Year Transportation Plan, 2009 - 2014
4. Fire Risk Assessment System (FRAS) at <http://www.fl-dof.com/wildfire/index.html>
5. Florida Department of Revenue: 2004 and 2009 Florida Valuation and Tax Data
6. GIS shape file data and pdf maps from Dixie County Engineering Department
<http://www.ncdc.noaa.gov/cgi-bin/paleo/pd08plot.pl>
7. Hurricane Probability Statistics: Tropical Meteorology Research Project at Colorado State:
<http://landfalldisplay.geolabvirtualmaps.com/>
8. Local Multi-Hazard Mitigation Planning Guidance, July 1, 2008, FEMA
9. MEMPHIS risk assessment system at <http://lmsmaps.kinanco.com/>
10. National Flood Insurance Rate Maps for Dixie County:
<http://www.srwmdfloodreport.com/Welcome.htm>.
11. National Flood Insurance Repetitive Loss Structures Database, FEMA
12. North American Drought Atlas, PDSI Reconstruction, Version 2a (2008)
13. State of Florida Enhanced Hazard Mitigation Plan, February 2010
14. Dixie County Chamber of Commerce: <http://www.dixiecounty.org/>
15. Dixie County Land Development Regulations - 1994 at <http://dixie.fl.gov/building.html>
16. Dixie County COMP Plan – 2006 at <http://dixie.fl.gov/building.html>
17. Dixie County Comprehensive Emergency Management Plan
18. Dixie County Critical Infrastructure/Key Resources (CIKR)
19. Dixie County Housing Data: http://www.city-data.com/county/Dixie_County-FL.html
20. Dixie County Disaster Housing Strategy,
21. Dixie County Logistics Plan
22. Dixie County Debris Management Plan
23. Dixie County Terrorism Annex
24. Dixie County Tornado Data: <http://www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwevent~storms>
25. U.S. Census - 2009 Quickfacts for Dixie County at
<http://quickfacts.census.gov/qfd/states/12/12029.html>
26. Dixie County – Florida County Information at <http://www.epodunk.com/cgi-bin/genInfo.php?locIndex=8468>
27. NOAA Coastal Service Center – Historical Hurricane Track at <http://csc-s-maps-g.csc.noaa.gov/hurricanes/viewer.html>
28. Dixie County Economic & Demographic Research at
<http://edr.state.fl.us/county%20profiles/dixie.pdf>
29. Dixie County Future Land Use in Coastal Hazard Zones at
<http://www.dca.state.fl.us/fdcp/dcp/>

Appendix 1: Record of Changes

The 2010 Dixie County LMS was completely rewritten over the 2005 version. The following is a general comparison between the 2005 version and the updated 2010 LMS.

Section	Page # new	Page # Old	Description
Acknowledgment	iv	na	New. - Added for 2010 Update: Allows users to know who prepared the LMS in case there are questions to be answered by a user.
Executive Summary	v	1	Rewritten to reflect changes made to the 2010 LMS
I.A Purpose	1	2	Updated for 2010 Update: Identifies the purpose of the LMS and intended use. This was added to make the document NIMS compliant.
I.A.1-7	1-2	na	New – Added to 2010 Update: Provides 7 specific purposes of the Dixie County LMS. This was added to make this document NIMS compliant.
I.B Scope	3	na	New – Provides the overall scope of the LMS Plan. Allows this plan to be NIMS compliant.
II.A Planning Process	3-4	4	New – Replaces old language in the 2005 version and clarifies the planning process coordination within the LMS Committee.
II.B Public Involvement	4	4	Updates 2005 LMS by updating to the process used in order to update this 2010 LMS Update. Needed because 2005 process was outdated.
II.C.1-6 Others Participation	4-6	na	Added in total to the 2010 LMS update. The major participating parties are identified. These entities and authorities do not opt to develop a separate LMS for themselves, but desires to be incorporated into the County's LMS.
II.D Committee Membership	6	4	LMS Committee has been updated to reflect the current membership.
II.E LMS Committee Meetings	7-8	Apx C	This Section was added to summarize the 6 LMS meetings that occurred between the last update to now.
II.F Planning Process and Schedule	8-10	4-5	This Section was updated to reflect a more accurate account of the planning process, and provides new graphics to help explain the process better.
II.G Review of Existing Plans	11-13	na	New. Added to 2010 LMS to be compliant with State and Federal guidance.
II.H NFIP Rep. Loss	13-16	37-39	Entire section was updated to reflect listing and placement of RL and Severe RL properties on Dixie County map.
II.I Community Rating System	16	na	This section was added to comply with State and Federal guidance.
II.J FMA Assistance	16	na	This section was added to clarify the various flood related programs Dixie County has access to.
III.A Spatial Profile	17	na	Added to 2010 LMS. Spatial profile describes the physical site of Dixie County.
III.B Population and Business Profile	18	na	New. Population and Business Profile was updated with current information from the 2008 CEMP. The CENSUS Block Population map was not upgraded, as the current version available from the Dixie County GIS shop is predicated on the last official census data,

Section	Page # new	Page # Old	Description
			which remains 2000, until the 2010 data is available sometimes in 2012.
III.C Housing Profile	21	na	The housing data was all updated using 2008 estimates from the QuickFacts version of the US Census website pertaining to Dixie County.
III.D Critical Facilities	22	45-48	This is the latest version of the current critical facilities provided by Dixie County Emergency Management, and is virtually entirely different from the 2005 LMS. This is based on the changing priorities of the County. A new map basically locating the general location of each critical facility, or group of critical facilities is provided on page 23.
IV.A Hazard Identification	24	10-49	The list of hazards and their rankings were reviewed several times by the LMS Committee, but no changes were made. They remain valid.
IV.B Vulnerability Analysis	25	Apx D	A new explanation of the methodology used to update the MEMPHIS and ELVIS data is provided. Such data was not available for this update for Dixie County, but the LMS Committee developed a methodology to apply a simple update strategy to the 2005 data in the LMS. This is explained in this new section of the 2010 LMS Update.
IV.C Vul. To Future Infrastr.	27	52-53	Section C was updated to reflect current growth rates experienced in the County since 2005. It discusses the Future Land Use Map.
IV.D Estimating Loss Potential	29--32	Apx C	New. Discussion of how MEMPHIS and ELVIS data is derived and used in the 2010 LMS.
V.A.1 Hurricanes	32	13, 31	A great deal of new data added, old data was updated.
V.B Tornadoes and Severe Storms	47-52	14, 34	A great deal of new data added, old data was updated.
V.C Forest Fires	52-58	22, 40	A great deal of new data added, and old data updated.
V.D Floods	58-68	19, 35	A great deal of new data added, old data was updated.
V.E Drought and Heat Wave	68-71	24, 42	All data updated from the 2005 version
V.F Freeze and Winter Storm	71	26, 43	Completely updated and new data added.
V.G Sinkholes	72	na	This hazard was added. It was not included in the 2005 version.
V.H Coastal and Riverine Erosion	77-78	11, 29	This hazard was updated with new data.
V.I Earthquake	78	10, 29	New graphics (2) denoting the earthquake zones in Florida is added to clarify the County's vulnerability, however slight, to an earthquake.
V.J. Town of Cross City Risk Ass'mt	81	10-49	Old LMS included individual town in each hazard. New LMS puts them all in one Section V.J.
V.K Horseshoe Bch Risk Asmt.	88-96	10-49	Old LMS included individual town in each hazard. New LMS puts them all in one Section V.K
VI.A Future Growth Patterns	96	52	This was a small section in the 2005 LMS, and is now its own major section.
VI.B Transportation Improvements	98	na	This section has been updated with current 2009-2014 data pulled from the 5 Year FDOT Work plan. This is another proxy indicator for where growth can occur in the County.
VII Mitigation Strategy	99	55-58	This initial opening section was slightly edited to reflect the sources used to extract data from out of the 2009 Dixie County COMP, and

Section	Page # new	Page # Old	Description
			other sources.
VII.A Ongoing Provisions in Current Plans, Codes, Ordinances	99-105	na	This entire section has been added. 2010 LMS provides detailed sites from the Dixie County COMP, and the Dixie County Land Development Plan that provide mitigation provisions.
VII.B Goals and Objectives	105	5	The LMS Committee reviewed and updated these goals and objectives.
VII.C Mitigation Projects and Action Plan	107	Apx B	The status of each mitigation project has been updated by the LMS Committee.
VII.D Funding Sources	108	na	The funding sources list was added. Also, explanations of several of the federal programs was added based on them being a prime source of mitigation funding for mitigation projects.
VII.E Cross City Projects	109	Apx B	These were originally listed and group with the entire list. This new section segregates them out.
VII.F Horse-shoe Bch Projects	110	Apx B	These were originally listed and group with the entire list. This new section segregates them out.
VII.G Monitoring Eval. And Update	110	58-59	Updated to better reflect current strategies of the LMS Committee
VII.H Plan Adoption Process	110	na	Added to identify how the plan adoption process does and will work in the future.
VII.I Public Participation	111	5	Updated to better reflect current strategies of the LMS Committee
VIII. References and Authorities	112	61	Updated to identify current sources of data.
Appendix 1 Record of Changes	113-115	na	New – Record of Changes added to 2010 Update to fulfill new requirements for LMS Updates.
Appendix 2 Project Prioritization Methodology	116-118	Apx B	New-Project Prioritization Methodology added to 2010 Update. The LMS Committee used the STAPLEE process this time.
Appendix 3 LMS Project Lists	119-126	Apx B	Updated to reflect current status of projects
Appendix 4 Agendas and Notes	127 - 136	Apx E	Agendas and notes from LMS meetings held between 2005 and 2010. This is new information for the 2010 Updated LMS.
Appendix 5 Adoption Resolutions	137	Apx c	Dixie County, Town of Horseshoe Beach, Cross City Adoption Resolutions.

Appendix 2: Project Prioritization Methodology

The Dixie County LMS Committee uses the **STAPLEE** methodology to score each project. There are seven categories in the STAPLEE criteria, and 23 criterion. Each of the 23 criterion is given a weighted score between 0-10, with 0 meaning not beneficial or unproductive, to 10 meaning very beneficial or excellent.

A very basic description of the **STAPLEE** methodology is provided below. The scoring sheet of the Dixie County mitigation projects follows on the next sheet.

Social – Is the mitigation strategy socially acceptable?

Technical – Is the proposed action technically feasible, cost effective, and does it provide the appropriate level of protection?

Administrative – Does the community have the capability to implement the action and is the lead agency capable of carrying out oversight of the project?

Political – Is the mitigation action politically acceptable?

Legal – Does the community have the authority to implement the proposed action?

Economic – Do the economic base, projected growth, and opportunity costs justify the mitigation project?

- Benefit cost-analysis is a mathematical method for comparing costs to the benefits to the community of a mitigation action
- If the benefits are greater than the costs, the project is cost-effective
- Comparing the ratios of benefits to costs for several mitigation projects helps to identify those that offer the greatest bang for the community's buck
- Benefit-cost analysis gives decision-makers an understandable way to explain and defend their decisions
- For many grant programs, FEMA and the State will use benefit-cost analysis to determine whether a project is eligible
- The community can save time and energy by limiting planning activities to projects that will be more likely to receive funding.

Environmental – Does the proposed action meet statutory considerations and public desire for sustainable and environmentally healthy communities?

Ranking and Prioritization Table – Dixie County LMS Projects 2010

STAPLEE Criteria <div style="display: flex; justify-content: space-between; align-items: center;"> Considerations (0-10 Ranking) → Prioritized Projects # ↓ </div>	S (Social)		T (Technical)			A (Administrative)			P (Political)			L (Legal)			E (Economic)				E (Environmental)				TOTAL SCORE	
	Community Acceptance	Effects on Segment of Population	Technical Feasibility	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance / Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land/Water	Effect on Endangered Species	Effect on HazMat/Waste Sites	Consistent with Community Envir. goals		Consistent with Federal Laws
1: SWA pump elevation																								Complete
2: Horseshoe Bch Sewer System																								Complete
3: Cross City Hall Shutters																								Complete
4: Elev. + Gen Co Com Tower																								Complete
5: Old Town RL property buyouts																								Complete
6: Co Health Unit Shutters + gen																								Complete
7: Cross City Airport generator																								Complete
8: EMS/Ambulance Rescue gen																								Complete
9: County Courthouse shutters																								Complete
10: Old Town EMS shutter + gen																								Complete
11: Courthouse gen + switching																								Complete
12: Hor Bch Road Improvements																								Complete
13: Timber Road improvements																								
14: HorseBch City Hall Improve'ts																								
15: Siren Sys + AM broadcast																								Complete
16: WMD drainage study																								
17: Co Jail/911 gen+switching																								
18: County Reverse 911 System																								
19: School Shelter Study																								
20: Secure EOC + Com Center																								Complete
21: Secure Staging Area/Facility																								Complete
22: Horseshoe Bch Water Line																								Complete
23: Phs 1 Countywide Com Syst																								
24: Phs 2 Countywide Com Syst																								
25: Coastal Elev. + buyouts																								
26: Anderson El. Shutter + gen																								
27: Dixie HS shutter + generator																								

STAPLEE Criteria	S (Social)		T (Technical)			A (Administrative)			P (Political)			L (Legal)		E (Economic)				E (Environmental)				TOTAL SCORE		
	Community Acceptance	Effects on Segment of Population	Technical Feasibility	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance / Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contributes to Economic Goals	Outside Funding Required	Effect on Land/Water	Effect on Endangered Species	Effect on HazMat/ Waste Sites		Consistent with Community Envir. goals	Consistent with Federal Laws
Considerations (0-10 Ranking) →																								
Prioritized Projects # ↓																								
28: Old Town Elem shut + gen																								
29: R.Raines MS shutter + gen																								
30: Barber Ave drainage impvmts																								
31: Barber Ave drainage impvmts																								
32: CR 351 Road Elevation																								
33: CCity Aport drainage canal																								
34: St. Regis Canal improvement																								
35: WMD Stormwater Study																								
36: HorseBch Sewer Imprvmts																								
37: Old Town culvert replacemnt																								
38: Co EOC shutters																								
39: Lower Hammock canal invpts																								
40: CCity Sewer plant generator																								
41: CCity Water Plant generator																								
42: Courthouse shutters																								
43: Em Ser Station shutters																								
44: Courthouse Anx roof impvts																								
45: Barber Ave culverts																								
46: Corbin Bridge Improvements																								

Appendix 3: Current LMS Project List and Status

2010 Rank	2004 Rank	Project/Program Name	Project/Program Description	Location	Project/Program Category	Potential Funding Source(s)	Estimated Cost
Legend: C= Completed; OG = Ongoing; D= Deleted; NB = Not Begun, but still viable							
0	1	Suwannee Water Association Water Treatment Plant	Critical Facility Retrofitting – elevation of pumps.	Suwannee Water Association Water Treatment Plan	Critical Facility Retrofitting	EMPATF; DEP	\$100,000
C	2010 Status: This project has been completed.						
0	2	Horseshoe Beach Water Treatment Plant	Critical Facility Retrofitting – generator; development of a new water system currently planned: Contact Jim Livingston	Horseshoe Beach Water Treatment Plant	Critical Facility Retrofitting	EMPATF; HMGP; PDM	\$20,000
C	2010 Status: This project has been completed.						
0	3	Cross City - City Hall	Critical Facility Retrofitting – shutters; generator	Cross City, City Hall	Critical Facility Retrofitting	EMPATF; HMGP; PDM	\$175,000
C	2010 Status: This project has been completed.						
0	4	County Communication Tower	Critical Facility Retrofitting – elevation and generator	County Communication Tower	Critical Facility Retrofitting	EMPATF; HMGP; PDM	\$40,000
C	2010 Status: This project has been completed.						
0	5	Old Town Hammock Area	Repetitive Loss within flood prone area; Buyouts and elevations; Contact: Dick Edwards (8 Projects)	Old Town Hammock Area	Repetitive Loss	Federal Emergency Management Agency	\$500,000
C	2010 Status: This project has been completed.						
0	6	County Public Health Unit	Critical Facility Retrofitting – shutters and generator	County Public Health Unit	Critical Facility Retrofitting	EMPATF; HMGP; PDM	\$80,000
C	2010 Status: This project has been completed.						
0	7	Cross City Airport	Critical Facility Retrofitting – generator	Cross City Airport	Critical Facility Retrofitting	EMPATF; HMGP; PDM	\$80,000
C	2010 Status: This project has been completed.						
0	8	Emergency Services Station 221 SW Chavous Ave	Emergency Rescue and Ambulance Service - Generator	2211 SW Chavous Ave	Critical Facility Retrofitting	EMPATF; HMGP; PDM	\$20,000
C	2010 Status: This project has been completed.						
0	9	County Court Annex	Critical Facility Retrofitting – shutters	County Court House	Critical Facility Retrofitting	EMPATF; HMGP; PDM	\$15,000
C	2010 Status: This project has been completed.						
0	10	Old Town Emergency Medical Station	Critical Facility Retrofitting – shutters and generator	Old Town Emergency Medical Station	Critical Facility Retrofitting	EMPATF; HMGP; PDM	\$30,000

2010 Rank	2004 Rank	Project/Program Name	Project/Program Description	Location	Project/Program Category	Potential Funding Source(s)	Estimated Cost
Legend: C= Completed; OG = Ongoing; D= Deleted; NB = Not Begun, but still viable							
C	2010 Status: This project has been completed.						
O	11	County Court House	Critical Facility Retrofitting – Generator, switch box	County Court House	Critical Facility Retrofitting	EMPATF; HMGP; PDM	\$60,000
C	2010 Status: This project has been completed.						
O	12	Horseshoe Beach Road	Drainage revitalization; Drainage canal (Timbers to Belly Deep); Steel Bridge Curve; Contact Dick Edwards	Timbers to Belly Deep	Stormwater Drainage	FMA; HMGP; PDM	\$120,000
C	2010 Status: This project has been completed.						
—	13	Timber Road	Storm water drainage – entrance to Timber Apartments; Road elevation, culverts	Cross City / County	Stormwater Drainage	FMA; HMGP; PDM	\$80,000
?	2010 Status: ?						
	14	Horseshoe Beach City Hall	Critical Facility Retrofitting – Shutters; Relocation and Elevation	Horseshoe Beach City Hall	Critical Facility Retrofitting	EMPATF; HMGP; PDM	\$300,000
?	2010 Status: ?						
O	15	Countywide; Old Town, Cross City & County	<p>Improve Siren Warning System/AM Broadcasting;</p> <p>Siren Warning System:</p> <ul style="list-style-type: none"> -Suwannee (installing siren system) - Jena (installing siren system) - Rocky Creek (installing siren system) -Horseshoe Beach – (installing siren system) - Coastal and Community Schools <p>AM Broadcasting:</p> <ul style="list-style-type: none"> -Suwannee (installing siren system) - Jena (installing siren system) - Rocky Creek (installing siren system) -Horseshoe Beach <p>Message for Alerts Mobile AM Station</p>	Countywide	Warning Systems	EMPATF; HMGP; PDM	\$350,000
C	2010 Status: This project is completed.						

2010 Rank	2004 Rank	Project/Program Name	Project/Program Description	Location	Project/Program Category	Potential Funding Source(s)	Estimated Cost
Legend: C= Completed; OG = Ongoing; D= Deleted; NB = Not Begun, but still viable							
—	16	Drainage Basins Storm water Management Study; in progress	Water Management District is currently conducting a study of drainage basins with the County to develop alternative solutions within flood prone areas. It is anticipated that additional projects and initiatives will be identified as a result of this study; FIRM Maps need updating	Countywide	Study	Florida Department of Community Affairs Water Management District	\$150,000
?	2010 Status: ?						
	17	County Jail 911 Center	Critical Facility Retrofitting – Generator and Switch Panel.	Dixie County Jail	Critical Facility Retrofitting	EMPATF; HMGP; PDM	\$250,000
OG	2010 Status: Work has begun on this project, and is underway.						
—	18	Countywide Reverse 911 System	Install countywide reverse 911 system	Countywide	Warning Systems	FEMA, Homeland Security; EMPATF	\$70,000
?	2010 Status: ?						
—	19	Countywide Initiative (On going Project) Dixie County High School, Ruth Rains Middle School, Old Town Elementary School, Anderson Elementary School	Although the County is not reported within the 1999 Shelter Retrofit Report Project Priority List, prepared by the Florida Department of Community Affairs, the County needs to conduct a study to identify shelter retrofitting needs and cost estimates for the acquisition of: generators, shuttering, pre-wiring.	Countywide	Shelter Retrofit	EMPATF; HMGP; PDM	Estimate will be provided once results of the Shelter Retrofit Study are available
OG	2010 Status: Part of this project is completed. Still needs to secure generator set.						
0	20	Secure EOC & Communications Center	Dixie County needs an upgraded EOC and Communications Center.	Countywide	Critical Facility	EMPATF; PDM; Federal Funding	TBD
C	2010 Status: EOC has been built. This project is completed						
0	21	Secure Staging Area/ Facility	TBD	Countywide	Critical Facility	EMPATF; PDM	TBD
C	2010 Status: This project is completed. The Cross City Airport has been upgraded to serve as the County Staging area/facility						
0	22	Horseshoe Beach New Water-Line	Water Storage tank in HB has an asbestos waterline currently in place; needs a new line for environmental and health reasons.	Horseshoe Beach	Critical Facility Retrofitting		TBD
C	2010 Status: The project has been completed.						

2010 Rank	2004 Rank	Project/Program Name	Project/Program Description	Location	Project/Program Category	Potential Funding Source(s)	Estimated Cost
Legend: C= Completed; OG = Ongoing; D= Deleted; NB = Not Begun, but still viable							
	23	Phase 1-Countywide Communications Systems	Phase 1 – Study to be completed by the Division of Communications	Countywide	Critical Facility Retrofitting	FEMA, Homeland Security; EMPATF	
?	2010 Status:						
	24	Phase 2-Countywide Communications Systems	Phase 2 – Equipment and Infrastructure upgrades and implementation	Horseshoe Beach	Critical Facility Retrofitting	FEMA, Homeland Security; EMPATF	
?	2010 Status:						
—	25	Countywide Initiative; Determined by Disaster Events	Elevations on buyouts: Coastal, Inland It is anticipated that Water Management District Drainage Basin study will identify specific projects and initiatives; Contact Dick Edwards for successes of buyouts.	Countywide	Elevations/Buyouts	FMA, Water Management District, CDBG	
NB	2010 Status: This is an issue that will be addressed if Dixie County receives future disaster declarations, generating HMGP funding. County will also continue to pursue FMA funds for this effort, but have been unsuccessful to date in receiving grant funds for this project.						
—	26	Anderson Elementary School	Critical Facility Retrofitting – shutters, generator	Anderson Elementary School	Shelter Retrofit	EMPATF; HMGP; PDM	
OG	2010 Status: This project is ongoing.						
—	27	Dixie County High School	Critical Facility Retrofitting – shutters, generator	Dixie County High School	Shelter Retrofit	EMPATF; HMGP; PDM	
OG	2010 Status: This project is ongoing.						
—	28	Old Town Elementary School	Critical Facility Retrofitting – shutters, generator	Old Town Elementary School	Shelter Retrofit	EMPATF; HMGP; PDM	
OG	2010 Status:						
—	29	Ruth Rains Middle School	Critical Facility Retrofitting – shutters, generator	Ruth Rains Middle School	Shelter Retrofit	EMPATF; HMGP; PDM	
	2010 Status:						
—	30	Barber Avenue (1)	Storm water drainage – additional drainage issues are still affecting Barber Ave; proper drainage facilities and elevation is needed. (Courthouse to North of US19; Business District); Dependant on Drainage Study.	Barber Avenue	Stormwater Drainage	FMA; HMGP; PDM	
NB	2010 Status: This is still a viable project that needs funding.						

2010 Rank	2004 Rank	Project/Program Name	Project/Program Description	Location	Project/Program Category	Potential Funding Source(s)	Estimated Cost
Legend: C= Completed; OG = Ongoing; D= Deleted; NB = Not Begun, but still viable							
—	31	Barber Avenue (2)	Storm water drainage – additional drainage issues are still affecting Barber Ave; proper drainage facilities and elevation is needed. (EOC to Courthouse); Dependant on Drainage Study	Barber Avenue	Stormwater Drainage	FMA; HMGP; PDM	
NB	2010 Status: This is still a viable project that needs funding.						
—	32	CR 351	Road Elevation	Horseshoe Beach	Stormwater Drainage	FMA; HMGP; PDM	TBD
?	2010 Status:						
	33	Cross City Airport	Drainage Canal; Contact Dick Edwards	Cross City Airport	Stormwater Drainage	FMA, HMGP; PDM	TBD
OG	2010 Status: This project is ongoing . Work is being done on the drainage canal.						
	34	Saint Regis Canal	Drainage Canal; Contact Dick Edwards	1 st District	Stormwater Drainage	FMA; HMGP; PDM	TBD
?	2010 Status:						
	35	Storm Water Study	Being completed by the Water Management District	Countywide	Study	Water Management District	TBD
?	2010 Status:						
	36	Sewer Systems	Replace septic systems in use with a sewer system	Horseshoe Beach	Critical Facility Retrofitting	FMA; HMGP, PDM	TBD
?	2010 Status:						
	37	Old Town Hammock Area	Box culverts to replace existing, undersized culverts	Old Town Hammock Area	Stormwater drainage	Federal Emergency Management Agency	\$475,000
?	2010 Status:						
	38	County Emergency Operations Centers	Critical Facility Retrofitting – shutters, generator	County Emergency Operations Center	Critical Facility Retrofitting	EMPATF	\$120,000
?	2010 Status:						
	39	Lower Hammock Canal	Stormwater drainage	Lower Hammer Canal	Stormwater Drainage	FMA; HMGP; PDM	\$85,000
?	2010 Status:						
	40	Cross City Sewer Plant	Critical facility retrofitting - generator	Cross City Sewer Plant	Critical Facility Retrofitting	EMPATF	\$80,000
?	2010 Status:						

2010 Rank	2004 Rank	Project/Program Name	Project/Program Description	Location	Project/Program Category	Potential Funding Source(s)	Estimated Cost
Legend: C= Completed; OG = Ongoing; D= Deleted; NB = Not Begun, but still viable							
	41	Cross City Water Plant	Critical facility retrofitting - generator	Cross City	Critical Facility Retrofitting	EMPATF	\$80,000
?	2010 Status:						
	42	County Court House	Critical facility retrofitting - shutters	Cross City	Critical Facility Retrofitting	EMPATF	\$70,000
?	2010 Status:						
	43	Emergency Services Station 221 SW Chavous Ave	Emergency Rescue and Ambulance Service- Shutters	221 SW Chavous Ave	Critical Facility Retrofitting	EMPATF	\$40,000
?							
	44	County Court Annex	Critical Facility Retrofitting – Roof Improvements	County Court Annex	Critical Facility Retrofitting	EMPATF	\$30,000
?							
	45	Barber Avenue	Storm water drainage – installation of culverts from Barber Ave to Hwy US 19	Barber Street	Stormwater Drainage	FMA; HMGP; PDM	\$20,000
?							
	46	Corbin Bridge	Contact: Frank Darabi				
?							

Appendix 4: Agendas and Notes from LMS Meetings

The LMS Committee met six times between July 2004 when the 2004 LMS was adopted by the Town of Cross City, Town of Horseshoe Beach, and Dixie County in 2010. The meeting agendas and list of attendees are provided in this Appendix. This information has been scanned from the originals, which are maintained by Dixie County Emergency Management.



DIXIE COUNTY EMERGENCY SERVICES

56 NORTHEAST 210th AVENUE
P.O. BOX 2009
CROSS CITY, FLORIDA 32628
(352) 498-1240 FAX (352)498-1244
www.dixieemergency.com

“One Team, One Mission”



ANNOUNCEMENT

Dixie County LMS Working Committee Meeting
10:00 am – 12:00 pm
March 14, 2005

You are invited to a meeting of the Dixie County Local Mitigation Strategy Working Group at the date and time above at City Hall, Cross City. The purpose of the meeting is to discuss the 2004 hurricane season, and the availability of mitigation funding for local mitigation projects. It is important that you attend this critical meeting. The public is welcome and invited to attend.

AGENDA

Call to Order

Overview of the 2004 Hurricane Season for Dixie County

Impact of Presidential Disaster Declarations

Availability of Hazard Mitigation Grant Program Funding

LMS Project List Review and Update

General Discussion

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Local Mitigation Strategy
March 14, 2005
10:00 am
City Hall, Cross City, FL

Purpose: Regular meeting of the LMS Working Group

Attendees:

Joe Myers, DSI – Facilitator
Chad Reed, Dixie County Emergency Services Director
Scott Gantt, Property Appraiser
Arthur Bellot, County Coordinator
Buddy Lamb, Chairman, Dixie County BOCC
Tom Neiss, Florida Division of Forestry
Joe Spradley, Horseshoe Beach
Sylvia Ruth, Dixie County Road Department
Maj. Scott Harden, Dixie County Sheriff's Office
Mike Cassidy, Cross City Manager

The meeting was called to order at 10:10am by Chad Reed, EMS Coordinator. Joe Myers, representing DSI, LLC was asked to facilitate the meeting. The purpose of the meeting was to discuss the availability of 2004 Hazard Mitigation Grant Program funding based on the 2004 hurricanes. Dixie County was declared several times in 2004 based on hurricane impacts.

The committee reviewed the list of projects identified in the 2004 LMS, and validated they were still viable projects. Several new projects were added to the projects list.

A general discussion about how the Hazard Mitigation Grant Program funding works was conducted. Key application dates were identified, and assigned to Emergency Management to oversee.

The meeting concluded at 11:30 am

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ANNOUNCEMENT

Dixie County LMS Working Committee Meeting
10:00 am – 12:00 pm
February 13, 2006

You are invited to a meeting of the Dixie County Local Mitigation Strategy Working Group at the date and time above at City Hall, Cross City. The purpose of the meeting is to discuss the 2005 hurricane season, and the availability of mitigation funding for local mitigation projects. It is important that you attend this important meeting. The public is welcome and invited to attend.

AGENDA

Call to Order

Overview of the 2005 Hurricane Season for Dixie County

Status Report on the 2004 funded HMGP projects

Availability of Hazard Mitigation Grant Program Funding from 2005 Declaration

LMS Project List Review and Update

General Discussion

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“One Team, One Mission”

Local Mitigation Strategy Meeting

February 13, 2006, 10:00 am
City Hall, Cross City, FL

Purpose: Meeting of the LMS Working Group

Attendees:

Joe Myers, DSI – Facilitator
Chad Reed, Dixie County Emergency Services Director
Arthur Bellot, County Coordinator
Rex Dunn, Suwannee River Water Management District
Tom Neiss, Florida Division of Forestry
Joe Spradley, Horseshoe Beach
Mike Cassidy, Cross City Manager
Scott Gantt, Property Appraiser
Scott Harden, Dixie County Sheriff's Office
Sylvia Ruth, Dixie County Road Department

Discussion:

The meeting was called to order at 10:00am by Chad Reed, EMS Director. Joe Myers, representing DSI, LLC was present to facilitate the meeting. The purpose of the meeting was to discuss the availability of 2005 Hazard Mitigation Grant Program funding based on the Presidential Disaster Declarations for Dixie County for the 2005 hurricane season, and to get a status update on the ongoing projects funded from the 2004 hurricane declarations for Dixie County.

A discussion was held concerning the amount of HMGP funding to expect based on the allocations presented by the Florida Division of Emergency Management. The Committee validated the ongoing projects, and determined the need for any new projects to be added to the project list.

The Committee also received a report from the FDEM Area Coordinator on the overall status of the 2004-2005 hurricanes, and the ongoing efforts of the Joint Field Office, which is where the State recovery operations are based

The meeting concluded at 11:45am.

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ANNOUNCEMENT

Dixie County LMS Working Committee Meeting
Cross City, City Hall
10:00 am – 12:00 pm
May 1, 2007

You are invited to a meeting of the Dixie County Local Mitigation Strategy Working Group at the date and time above at City Hall, Cross City. The purpose of the meeting review the progress of the hazard mitigation projects in Dixie County, and review alternate sources of mitigation funding. Please plan to attend this important meeting. The public is welcome and invited to attend.

AGENDA

Call to Order

Status Report on the ongoing Hazard Mitigation Grant Program Projects

Letter of Support for Construction of New Dixie County Emergency Operation Center

General Discussion

Concluding Remarks

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Local Mitigation Strategy Meeting

May 1, 2007, 10:00 am
City Hall, Cross City, FL

Purpose: Meeting of the LMS Working Group

Attendees:

Linda Erdmann, DSI, LLS
Joe Myers, DSI – Facilitator
Tim Alexander, Dixie County Emergency Services Director
Sylvia Ruth, Dixie County Road Department
Charlotte Land, Dixie County School Board
Jack Erikson – Steinhatchee Water Authority
Arthur Bellot, County Coordinator
Jack Spivey, Building Inspector
Scott Harden, Dixie County Sheriff's Office

Discussion:

The meeting was called to order at 10:15 am by Tim Alexander, EMS Director. Joe Myers and Linda Erdmann DSI, LLC was present to help facilitate the meeting.

The purpose of the meeting was to review the status of the LMS mitigation projects. A status of each project was presented. A letter of support for the construction of the new Dixie County Emergency Operations Center was presented by Mr. Tim Alexander, Chairman of the LMS Committee.

Also, the amount of HMGP funding allocated to the County to date was discussed.

Although the general public was invited, but no one from the public attended the meeting.

The meeting concluded at 11:00 am.

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ANNOUNCEMENT

Dixie County LMS Working Committee Meeting
Cross City, City Hall
10:00 am – 12:00 pm
February 27, 2008

You are invited to a meeting of the Dixie County Local Mitigation Strategy Working Group at the date and time above at City Hall, Cross City. The purpose of the meeting discussing the funding of the new Dixie County Emergency Operations Center, and additional funding for facility enhancements. Also, an update of the ongoing mitigation projects will be provided. Please plan to attend this important meeting. The public is welcome and invited to attend.

AGENDA

- Call to Order
- Status Report on the ongoing Hazard Mitigation Grant Program Projects
- Construction of the New Dixie County Emergency Operations Center Complex
- Discussion of Code-Plus Mitigation Enhancements for the Dixie County EOC
- General Discussion
- Concluding Remarks

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“One Team, One Mission”

Local Mitigation Strategy Meeting

February 27, 2008

10:00 am – 12:00 pm

City Hall, Cross City, FL

Purpose: Meeting of the LMS Working Group

Attendees:

Scott Garner, Dixie County Emergency Management

Tim Alexander, Dixie County Emergency Services Director

Joe Myers, DSI – Facilitator

Mike Cassidy, Town of Cross City

George Knight, Town of Horseshoe Beach

Arthur Bellot, County Coordinator

Discussion:

The meeting was called to order at 10:00 am by Tim Alexander, EMS Director. Joe Myers DSI, LLC was present to help facilitate the meeting.

The purpose of the meeting was to get a status update of the ongoing EMS projects, which was given by Dixie County Emergency Management.

A presentation of the new Dixie County Emergency Operations Center/Facilities was given by Tim Alexander. The State of Florida has allocated funds for EOC construction, of which Dixie is a recipient. Discussion was centered on adding code plus provision to the EOC with any available mitigation funding available, e.g. roofing system, window/shutter systems, acoustical sound abatement systems, and more.

There was a general question and answer period provided for the attendees.

Although the general public was invited to attend, none were present for the meeting.

The meeting was ended at 11:25 am.

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DIXIE COUNTY EMERGENCY SERVICES

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ANNOUNCEMENT

Dixie County LMS Working Committee Meeting
Dixie County Emergency Operation Center
10:00 am – 11:00 pm
March 16, 2010

You are invited to a meeting of the Dixie County Local Mitigation Strategy Working Group at the date and time above at the Dixie County Emergency Operations Center, 17600 SE Highway US-19, Cross City. The purpose of the meeting is to discuss the initiation of the updating of the 2004 Dixie County Local Mitigation Strategy. If you cannot attend, please feel free to forward any comments or concerns you may have to Tim Alexander, EMS Director, at the address above. The public is invited and welcome to attend this meeting.

AGENDA

- Call to Order
- Review of the 2004 LMS-List of Hazards, Project Lists, and Other Items
- General Discussion on Plan Update Timeframes
- Concluding Remarks

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DIXIE COUNTY EMERGENCY SERVICES

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Local Mitigation Strategy Meeting

March 16, 2010

10:00 am – 12:00 pm

Dixie County Emergency Operations Center
Cross City, Florida 32628

Purpose: Meeting of the LMS Working Group, Initiation of 2010 LMS Plan Update

Attendees:

Scott Garner, Dixie County Emergency Management

Tim Alexander, Dixie County Emergency Services Director, LMS Working Group Chair

Frank Koutnik DSI – Plan Update

Chuck Elton, Dixie County 911 Coordinator

Discussion:

The initiation of the LMS update was begun. Frank Koutnik, DSI, LLC is the principal contractor asked to update the 2004 Dixie County LMS. Dixie County expiration date for the current plan is February 7, 2011, but based on the length of time needed to get a plan approved through the State and FEMA, the process has been initiated early.

Prior to this meeting, the LMS Committee was polled as to any needed changes to be made in the hazards analysis and project list. A complete update of all the ongoing or currently listed LMS projects was provided to Mr. Koutnik.

In addition, the changes needed to be made in the plan per the recent federal requirements was discussed as to how they would need to be met. A draft of the LMS will be posted on the Dixie County Emergency Management website, and a public announcement will be made giving the public and others, the opportunity to provide comments on the plan update.

Future meeting will be scheduled to engage the LMS Working Group.

The meeting was ended at 10:45 am.

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Appendix 5: Adoption Resolutions – Dixie County, Cross City, Town of Horseshoe Beach

Resolutions will be forthcoming from the Dixie County Board of County Commissioners, and the town commissioners of Cross City and Horseshoe Beach upon FEMA approval of the Dixie County Local Mitigation Strategy.