Executive Summary

In the summer of 1997, the Florida Department of Community Affairs (DCA) provided pilot funding to thirteen counties for preparing a comprehensive Local Mitigation Strategy (LMS). The goal of the LMS was to help local officials identify and assess the various natural and technological disasters the county faced, and then identify locally developed strategies to reduce the impact of future disasters. In the summer of 1998, DCA extended this effort to every county and municipality in Florida.

Dixie County was one of the original thirteen pilot counties. An LMS steering committee was formed from local private citizens, business representatives, and county and city personnel. In 1997 the steering committee met numerous times and created the first Dixie County LMS. In 1999 the North Central Florida Regional Planning Council assisted the LMS steering committee in updating the plan.

On October 30, 2000, the President of the United States signed into law the Disaster Mitigation Act of 2000 (DMA2000) (Public Law 106-390) to amend the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988. This new legislation reinforces the importance of pre-disaster mitigation planning to reduce the Nation's disaster losses, and is aimed primarily to control and streamline the administration of federal disaster relief and mitigation programs. The LMS is now established by federal law, and is required for much of the mitigation funding that flows through federal sources for local government. The Federal Emergency Management Agency has established specific criteria that must be adhered to for approval of the LMS.

The Disaster Mitigation Act of 2000 requires that the LMS be submitted to the Dixie County Board of Commissioners, the City of Cross City Council and the Town of Horseshoe Beach Council for adoption. Adoption of the Dixie County Local Mitigation Strategy by the local governments will not have any legal effect on the County Comprehensive Plan; the mitigation projects in the strategy do not have to be included in the Capital Improvements Element of the comprehensive plans. However, adoption of the Local Mitigation Strategy will give the County and Municipalities priority for disaster recovery and mitigation funds from state and federal sources.

Introduction

The process of reviewing and revising the Dixie County LMS began in January 2004. A steering committee comprised of Dixie County residents and residents of the City of Cross City and the Town of Horseshoe Beach began a series of meetings. This steering committee was originally charged in 1997 by the Dixie

County Board of Commissioners to develop the Dixie County Local Mitigation Strategy. The main goal of the local mitigation strategy was to identify and assess the various natural and technological disasters the county and municipalities faced, and then develop local developed strategies to reduce the impact of future disasters. This plan includes the procedures the steering committee used to develop the local mitigation strategy and presents the mitigation initiatives identified by the committee.

Review and Revisions

The Dixie County LMS was originally developed in 1997 as part of the Florida pilot program for LMS. It has since then been updated as needed, specifically the potential project list. In 1999 the North Central Florida Regional Planning Council was hired to assist the steering committee in updating the plan.

1997 – Dixie County Local Mitigation Strategy; Original development & adoption
1999 – Dixie County LMS revised by the North Central Florida Regional Planning Council
2004 – Dixie County LMS revised and redeveloped according to the Disaster Mitigation Act of 2000; Adoption by the Dixie County Commission, City of Cross City Council and the Town of Horseshoe Beach Council.

Local Mitigation Strategy

The most obvious questions when developing a local mitigation strategy are "What is mitigation, what is the local mitigation strategy, and why should a local government develop a local mitigation strategy?"

Mitigation is any action taken to permanently reduce or eliminate long-term risk to people and their property from the effects of hazards. Some examples of mitigation include land use planning techniques that limit infrastructure in high hazard areas, programs for retrofitting existing structures to meet new building codes and standards and the acquisition of structures that are in a high hazard area. Ideally, a community can minimize the effects of future hazards through a mix of planning, code enforcement and responsible development.

The local mitigation strategy is a community-based plan to make the county and municipalities safer and more resistant to natural and technological hazards. Every community is exposed to some level of risk from hazards:

- Earthquakes
- Tsunamis
- Coastal & Riverine Erosion
- Landslides / Sinkholes

- Hurricanes & Coastal Storms
- Severe Thunderstorms & Tornadoes
- Floods
- Wildfires
- Dam/Levee Failure
- Drought/Heat Wave
- Winter Storms / Freezes
- Hazardous Materials
- Terrorism
- Nuclear / Biological Hazards

Hazards cannot be eliminated, but their impacts can be reduced through proper planning. The local mitigation strategy seeks to do the following:

- Identifying hazards to which the county is vulnerable
- Determining where the community is most vulnerable to these hazards
- Assess the facilities and structures that are most vulnerable to hazards
- Prioritize mitigation projects to take advantage of available funding
- Identifying funding sources and tie mitigation projects to these sources of funding
- Make hazard awareness and education a community goal

The local mitigation strategy benefits the community by seeking to reduce risk, and save community members and the local government valuable resources. Businesses in high hazard areas lose valuable revenue when damaged or isolated by storms. Residents, who build in high hazard areas, are subject to evacuation, damage to their homes and personal property, lower home values, and higher insurance premiums.

Disasters also cost the local government money. Community infrastructure such as roads, drainage systems, water systems, and wastewater treatment plants built in high hazard areas are subject to frequent damage and costly repairs. Federal post-disaster assistance does not cover all the costs of recovery. A local government is typically responsible a percentage of local public recovery costs in a federally declared disaster. In smaller events that are not federally declared, the local government is responsible for all of the local recovery costs. These costs can put a significant strain on the budget of a local government. Disruption of the community's infrastructure can also hamper the local economy, impacting the tax base and making recovery more difficult. But the public costs of a disaster are not related to infrastructure alone. Critical facilities such as hospitals, schools, airports, and major government buildings located in high hazard areas are often subject to damaging conditions just when they are needed the most. And of course, the cost to community health, safety and welfare can never be accurately calculated.

The Dixie County Local Mitigation Strategy will enable county and municipal officials, the business community and local citizens to reduce risks and costs by including mitigation as part of every day planning, rather than limiting it to the measures taken immediately before or after a disaster strikes.

Mitigation Planning, Organization, & Process

Coordination

The Dixie County Local Mitigation Strategy is truly a local community product. The strategy was developed by a steering committee formed from local private citizens, business persons, and county / city government personnel. Beginning in January 2004, the steering committee met numerous times to identify and evaluate the hazards facing Dixie County, the City of Cross City, and the Town of Horseshoe. For a complete list of meeting dates, and minutes please refer to the Implementation & Maintenance section of this document.

The steering committee members, listed below, have private sector interests, including real estate, construction, small business operation, and active involvement with local government and the Chamber of Commerce. By having such a well-rounded membership, the steering committee was able to ensure that all elements of the county were properly represented in the preparation of the local mitigation strategy.

LMS Committee

	Name	Community Role
1.	Arthur Bellot	County Coordinator
2.	Bud Brewer	Real Estate Broker
3.	Frank "Bump" Faircloth	Suwannee Lumber Company, Inc.
4.		Dixie County Chamber of Commerce
5.	Major Scott Harden	Dixie County Sheriff's Office
6.		Suwannee Water and Sewer Association
7.	Billy Keen	Dixie County Building Department
8.	Ron McQueen	Gilchrist County Building Department
9.	Tom Neiss	Florida Division of Forestry
10.	Mike Cassidy	City Manager
11.	Chad Reed	Director, Dixie County Emergency Services
12.	Howard Reed	Superintendent, Dixie County Road Department
13.	Jack Spivey	Building Inspector
14.		Chairman, Dixie County BOCC
15.	David Curtis	Steinhatchee Water
16.	Joe Spradley	Citizen
17.	Ross Rayborn	Citizen
18.	Carol West	Citizen

	Name	Community Role
19.		Town of Horseshoe Beach
20.		City of Cross City
21.		Levy County Emergency Management
22.		Taylor County Emergency Management
23.		Lafayette County Emergency Management

Public Participation

All meetings of the LMS Steering Committee are scheduled and advertised to the public. These meetings are open to the public and welcome any input from any attendee whether a committee member or not. The meeting minutes and advertisements are included in this document in the Implementation & Maintenance section.

A copy of the LMS is made available to the public at the local library in Dixie County. Any feedback from the public will be submitted to the Dixie EM office and reviewed by the LMS committee.

Plan Approval & Adoption

When the Federal Emergency Management Agency approves the Final LMS Plan, and it is adopted by all jurisdictions in Dixie County, the documentation for approval and adoption will be included in an appendix of the Final plan.

Local Mitigation Strategy Components

Mitigation Goals and Objectives

To assist them in analyzing regional, county and municipal policies, ordinances and programs that affect mitigation the steering committee developed the following mitigation goals, with supporting objectives, listed below. The list was developed from a review of County and City 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 was considered when prioritizing the individual mitigation initiatives.

Local Mitigation Strategy Goals and Objectives
Dixie County Florida

City of Cross City, Florida
Town of Horseshoe Beach, Florida

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: As part of the Local Mitigation Strategy Working Group Fiscal Year 1998-99 tasks, 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: As part of the Local Mitigation Strategy Working Group Fiscal Year 1998-99 tasks, prepare county wide critical/vital facility inventories, as well as a procedure to update periodically.

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

Objective 2.1: The Local Mitigation Strategy Working Group 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 Town 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 Working Group shall work closely with the Suwannee River Water Management District to identify needs identified by the riverain 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 surficial 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.

Dixie County Local Mitigation Strategy
Hazard Identification and Vulnerability Assessment 2004

Introduction

The first step in developing a county-wide mitigation strategy is to identify the various hazards the county faces and assess the potential vulnerability from each hazard. As part of developing the Dixie County Local Mitigation Strategy, the steering committee reviewed existing emergency management materials and conducted their own analysis based on recent disasters and their own detailed knowledge of the county, to determine which natural and manmade disasters presented the greatest threat to the county, and to assess the county's vulnerability to each of those threats. The Dixie County Hazard Identification and Vulnerability Assessment represents that effort.

Each hazard addressed in this assessment presents Dixie County with different challenges and opportunities. Some disasters are more likely than others, and some will impact certain residents more than others. However, one conclusion is clear; at some time, every resident in Dixie County will feel the impact of one or more of these disasters.

This Section of the Dixie County LMS is divided into four subsections; Hazard Identification, Vulnerabilities Assessment, Land Use and Development Trends, and Risk Assessment. The Hazard Identification & Vulnerabilities Assessment together cover the identification of hazards to Dixie County, the profile of these hazard events, the identification of county assets vulnerable to these hazards, the estimation of potential losses from these hazards, and a multi-jurisdictional risk assessment of these hazards. These two subsections are organized by hazard type and also include references to development trends affected by these hazards. The Land Use and Development Trends subsection reviews the affects of hazards on the land use and development in Dixie County. The final subsection, Risk Assessment, reviews a methodology that is used in planning Mitigation initiatives in Dixie County.

Hazard Identification

This information is identified by using both primary and secondary research materials which includes, but is not limited to reports from local, state, and national agencies, as well as, media accounts, state and local weather records and conversations with key personnel and residents in the Dixie County. This analysis will include the possible severity and magnitude as well as the potential

impact of damage within the County from future hazards. This is not meant to be a scientific process, but will serve as a way to prioritize mitigation measures based on the potential frequency and the likely extent of damage from hazards known to affect the county. This assessment will be considered when specific mitigation measures are prioritized for implementation, along with other factors, such as stated community goals, citizen concerns, on-going projects, and opportunities for funding.

The criteria provided by FEMA for the development of the Local Hazard Mitigation Plan identifies the following natural hazards and states that, at a minimum, Dixie County must address each of them: Earthquakes, Tsunamis, Coastal & Riverine Erosion, Landslides / Sinkholes, Hurricanes & Coastal Storms, Severe Thunderstorms & Tornadoes, Floods, Wildfires, Dam/Levee Failure, Drought/Heat Wave, and Winter Storms / Freezes. It should be noted that, several of the hazards established under the minimum criteria were not relevant to the community and received a low hazard index ranking as a result. However, there are other hazards that were identified which are not in the minimum criteria established by FEMA that were added to the discussion.

Disasters are classified by the magnitude of their effect. The recognized classification system is as follows:

Minor Disaster - Any disaster that is likely to be within the response capabilities of local government and results in only minimal need for state or federal assistance.

Major Disaster - Any disaster that will likely exceed local capabilities and require a broad range of state and federal assistance. The Federal Emergency Management Agency (FEMA) will be notified and potential federal assistance will be predominantly recovery-oriented.

Catastrophic Disaster - Any disaster that will require massive state and federal assistance, including immediate military involvement. Federal assistance will involve response as well as recovery needs.

Earthquakes

Although Florida is not usually considered to be a state subject to earthquakes, several minor shocks have occurred over time, but only one caused any damage.

In January 1879, a shock occurred near St. Augustine that is reported to have knocked plaster from walls and articles from shelves. Similar effects were reported in Daytona Beach. The shock was felt in Tampa, throughout central Florida, and in Savannah, Georgia as well (Zirbes, 1971).

In January 1880 another earthquake occurred, this time with Cuba as the focal point. Shock waves were sent as far north as the town of Key West (Zirbes, 1971).

In August 1886, Charleston, South Carolina was the center of a shock that was felt throughout northern Florida. It rang church bells in St. Augustine and severely jolted other towns along sections of Florida's east coast. Jacksonville residents felt many of the strong aftershocks that occurred in September, October, and November, 1886 (Zirbes, 1971).

In June 1893, Jacksonville experienced a minor shock that lasted about 10 seconds. Another earthquake occurred in October 1893, and did not cause any damage either (Zirbes, 1971).

In November 1948, doors and windows rattled in Captiva Island, west of Ft. Myers. It was reportedly accompanied by sounds like distant heavy explosions (Zirbes, 1971).

In November 1952, a slight tremor was felt in Quincy, a town located 20 miles northwest of Tallahassee. Windows and doors rattled, but no damage was reported (Zirbes, 1971).

Tsunamis

A tsunami is a wave train, or series of waves, generated in a body of water by an impulsive disturbance that vertically displaces the water column. Earthquakes, landslides, volcanic eruptions, explosions, and even the impact of cosmic bodies, such as meteorites, can generate tsunamis. Tsunamis can savagely attack coastlines, causing devastating property damage and loss of life.

Coastal & Riverine Erosion

Soil Erosion

Soil erosion is the deterioration of soil by the physical movement of soil particles from a given site. Wind, water, animals, and the use of tools by man may all be reasons for erosion. The two most powerful erosion agents are wind and water; but in most cases these are damaging only after man, animals, insects, diseases,

or fire have removed or depleted natural vegetation. Accelerated erosion caused by human activity is the most serious form of soil erosion because the rate is so rapid that surface soil may sometimes be blown or washed away right down to the bedrock.

Undisturbed by man, soil is usually covered by shrubs and trees, by dead and decaying leaves or by a thick mat of grass. Whatever the vegetation, it protects the soil when the rain falls or the wind blows. Root systems of plants hold the soil together. Even in drought, the roots of native grasses, which extend several feet into the ground, help tie down the soil and keep it from blowing away. With its covering of vegetation stripped away, soil is vulnerable to damage. Whether the plant cover is disturbed by cultivation, grazing, deforestation, burning, or bulldozing, once the soil is bare to the erosive action of wind and water, the slow rate of natural erosion is greatly increased. Losses of soil take place much faster than new soil can be created, and a kind of deficit spending of topsoil begins. With the destruction of soil structure, eroded land is even more susceptible to erosion.

The occurrence of erosion has greatly increased, usually at a rate at which soils cannot be sustained by natural soil regeneration. This is because of the activities of modern development and population growth, particularly agricultural intensification. It is also in the field of agriculture that most efforts have been made to conserve soils, with mixed success (Union of International Associations).

Beach Erosion

Wind, waves, and long shore currents are the driving forces behind coastal erosion. This removal and deposition of sand permanently changes beach shape and structure.

Beach erosion threatens the very resource that residents and visitors enjoy. Over 409 miles, or approximately 50% of the state'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. While some of this erosion is due to natural forces and imprudent coastal development, a significant amount of coastal erosion in Florida is directly attributable to the construction and maintenance of navigation inlets. Florida has over 60 inlets around the state, many have been artificially deepened to accommodate commercial and recreational vessels and employ jetties to prevent sand from filling in the channels. A by-product of this practice is that the jetties and the inlet channels have interrupted the natural flow of sand along the beach

causing an accumulation of sand in the inlet channel and at the jetty on one side of the inlet, and a loss of sand to the beaches on the other side of the inlet.

One way to restore eroded beaches is through beach nourishment. In a typical beach nourishment project, sand is collected from an offshore location by a dredge and is piped onto the beach. A slurry of sand and water exits the pipe on the beach and once the water drains away, only sand is left behind. Bulldozers move this new sand on the beach until the beach matches the design profile. Beach nourishment is a preferred way to add sand to a system which has been starved by the altered inlets because it provides a significant level of storm protection benefits for upland properties and is the least impacting to the coastal system. An additional benefit of beach restoration projects is that they quickly restore shorebird and marine turtle habitat.

Landslides / Sinkholes

Sinkholes are a common feature of Florida's landscape. They are only one of many kinds of Karst 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 erosional 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.

Lime stones in Florida are 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 erosional 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 is 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 a disappearing stream. Dry caves are parts of karst drainage systems that are above the water table, such as Marianna Caverns (Florida Geological Survey).

Hurricanes & Coastal Storms

For many years, the risk of significant loss of life and property due to hurricanes seemed small. Hurricanes that impacted Florida during the 1970s and 80s were infrequent and of relatively low intensity. Homeowners, business interests, and government officials grew to regard hurricane risk as manageable by private insurance supplemented occasionally by federal disaster funding and subsidized flood insurance. The hurricane risk did not seem sufficient to warrant increased investment in mitigation. Two major hurricanes, Hugo in 1989 and Andrew in 1992, forced a reevaluation of this risk assessment. While experts sometimes disagree on the annual cost of hurricane damage, all sources agree that hurricane Andrew was the most costly hurricane event ever to affect the U.S. Insured losses from hurricane Andrew topped $17 billion and most sources agree that the total cost of hurricane Andrew exceeded $25 billion.

Hurricanes are tropical cyclones with winds that exceed 74 mph and blow counter-clockwise about their centers in the Northern Hemisphere. They are essentially heat pumping mechanisms that transfer the sun's heat energy from the tropical to the temperate and polar regions. This helps to maintain the global heat budget and sustain life as we know it. Hurricanes are formed from thunderstorms that form over tropical oceans with surface temperatures warmer than 81E Fahrenheit (26.5E Celsius). The ambient heat in the sea's surface and moisture in the rising air column set up a low pressure center and convective conditions that allow formation of self sustaining circular wind patterns. Under the right conditions these winds may continue to intensify until they reach hurricane strength. This heat and moisture from the warm ocean water is the energy source of a hurricane. Hurricanes weaken rapidly when deprived of their energy source by traveling over land or entering cooler waters.

A storm surge is a large dome of water often 50 to 100 miles wide and rising anywhere from 4 to 5 ft in a category 1 hurricane up to 20 ft in a category 5 storm. The storm surge arrives ahead of the storm's actual landfall and the more intense the hurricane is, the sooner the surge arrives. Water rise can be very rapid, posing a serious treat to those who have waited to evacuate flood prone areas. A storm surge is a wave that has outrun its generating source and become a long period swell. The surge is always highest in the right-front quadrant of the direction the hurricane is moving in. As the storm approaches shore the greatest storm surge will be to the north of the hurricane eye.

Such a surge of high water topped by waves driven by hurricane force winds can be devastating to coastal regions. The stronger the hurricane and the shallower the offshore water, the higher the surge will be. In addition, if the storm surge arrives at the same time as the high tide, the water height will be

even greater. The storm tide is the combination of the storm surge and the normal astronomical tide.

Damage during hurricanes may also result from spawned tornadoes and inland flooding associated with heavy rainfall that usually accompanies these storms. Hurricane Andrew, a relatively "dry" hurricane, dumped 10 inches of rain on south Florida and left many buildings extensively water damaged. Rain water may seep into gaps in roof sheathing and saturate insulation and ceiling drywall, in some cases causing ceilings to collapse.

Aside from direct property damage, the potential for crop damage and economic disruption from hurricanes and tropical storms is significant.

Severe Thunderstorms & Tornadoes

Severe Thunderstorm/Lightning

A severe thunderstorm is defined as a thunderstorm containing one or more of the following phenomena: hail 3/4" or greater, winds gusting in excess of 57.5 mph, and/or a tornado. Severe weather can include lightning, tornadoes, damaging straight-line winds, and large hail. Most individual thunderstorms only last several minutes, however some can last several hours.

Long-lived thunderstorms are called supercell thunderstorms. A supercell is a thunderstorm that has a persistent rotating updraft. This rotation maintains the energy release of the thunderstorm over a much longer time than typical, pulse-type thunderstorms which occur in the summer months. Supercell thunderstorms are responsible for producing the majority of severe weather, such as large hail and tornadoes (National Oceanic and Atmospheric Administration). Downbursts are also occasionally associated with severe thunderstorms. A downburst is a strong downdraft resulting in an outward burst of damaging winds on or near the ground. Downburst winds can produce damage similar to a strong tornado. Although usually associated with thunderstorms, downbursts can even occur with showers too weak to produce thunder (National Oceanic and Atmospheric Administration). Strong squall lines can also produce widespread severe weather, primarily very strong winds and/or microbursts.

When a severe thunderstorm approaches, the National Weather Service will issue alerts. Two possible alerts are:

- *Severe Thunderstorm Watch* - Conditions are favorable for the development of severe thunderstorms.

- *Severe Thunderstorm Warning* - Severe weather is imminent or occurring in the area.

Perhaps the most dangerous and costly effect of thunderstorms is lightning. As a thunderstorm grows, electrical charges build up within the cloud. Oppositely charged particles gather at the ground below. The attraction between positive and negative charges quickly grows strong enough to overcome the air's resistance to electrical flow. Racing toward each other, they connect and complete the electrical circuit. Charge from the ground then surges upward at nearly one-third the speed of light and produces a bright flash of lightning.

On average, more people are killed by lightning than any other weather event. Florida leads in the nation in lightning related deaths and injuries (National Lightning Safety Institute). Florida also has the most strikes, about 12 strikes per square kilometer per year in some places (National Lightning Safety Institute). Nationwide, lightning related economic losses amount to over $5 billion dollars per year, and the airline industry alone loses approximately $2 billion a year in operating costs and passenger delays from lightning. The peak months for lightning strikes are June, July, and August, but no month is safe from lightning danger.

Tornadoes

Florida ranks third in the United States in the number of tornado strikes, and the first in the number of tornadoes per square mile. The odds of a tornado striking any specific point in Florida are 0.04, or once per 250 years.

Tornadoes are classified using the Fujita-Pearson scale as follows:

F = Intensity	P = Path Length	W = Mean Width
F0 = Light Damage	P0 = less than 1 mile	W0 = less than 0.01 mile
F1 = Moderate Damage	P1 = 1.0 to 3.1 miles	W1 = 0.01 to 0.03 mile
F2 = Considerable Damage	P2 = 3.2 to 9.9 miles	W2 = 0.04 to 0.09 mile
F3 = Severe Damage	P3 = 10.0 to 31.0 miles	W3 = 0.10 to 0.31 mile
F4 = Devastating Damage	P4 = 32.0 to 99.0 miles	W4 = 0.32 to 0.99 mile
F5 = Catastrophic Damage	P5 = 100 miles or greater	W5 = 1.00 miles or wider

A tornado is a violent windstorm characterized by a twisting, funnel-shaped cloud. It is generated by a thunderstorm (or sometimes as a result 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. The most common type of tornado, the relatively weak and short-lived type, occurs in the warm season with June being the peak month. The strongest, most deadly tornadoes occur in the cool season, from December through April. Occasional wind storms accompanied by tornadoes such as the winter storm of 1993 are also widespread and destructive.

When a tornado threatens, only a short amount of time is available for life-or-death decisions. The National Weather Service (NWS) issues two types of alerts:

- A *Tornado Watch* means that conditions are favorable for tornadoes to develop.
- A *Tornado Warning* means that a tornado has actually been sighted.

Floods

Floods are the most common and widespread of all natural disasters. Most communities in the United States can experience some kind of flooding after spring rains, heavy thunderstorms, or winter snow thaws. Floods can be slow, or fast rising but generally develop over a period of days.

Dam failures are potentially the worst flood events. A dam failure is usually the result of neglect, poor design, or structural damage caused by a major event such as an earthquake. When a dam fails, a gigantic quantity of water is suddenly let loose downstream, destroying anything in its path.

Flash floods usually result from intense storms dropping large amounts of rain within a brief period. Flash floods occur with little or no warning and can reach full peak in only a few minutes. (FEMA)

Sources of flood waters in Dixie County include the Gulf of Mexico, the Steinhatchee River, and the Suwannee River.

100 Year Flood Event

Unincorporated Area

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 mapped 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, stormwater volume. Vegetation and other natural or artificial forces which affect water flow.

The southeastern, southern, western and northwestern portions of the unincorporated areas are subject to flooding and many of the flood prone areas contain wetlands.

A portion of the platted undeveloped land within the unincorporated area of the County, which preceded entry into the National Flood Insurance Program is within flood prone areas. Some of these residential subdivisions are located adjacent to and within riverine areas which within recent history have been seasonally flooded. Based on data and analysis of the Comprehensive Plan, it is estimated that 1,350 acres of undeveloped platted land within the unincorporated area of the County, are within flood prone areas.

Areas along the Suwannee River and its tributaries had been under the greatest development pressure. Pursuant to Chapter 380, Florida Statutes, a resource planning and management committee composed of representatives appointed by the Governor from government, private industry and the public proposed a Model Floodplain Ordinance, which was adopted by the County. This ordinance was designed to protect the unique natural environment and property owners along the river. The Model Floodplain Ordinance contained five major elements. The ordinance required:

1. A building setback of 75 feet from the river bank with only limited clearing within the area of the 75 foot setback;

2. All Habitable structures, including mobile homes, to be elevated to one foot above the level of the 100-year flood without the use of fill;

3. An elevation survey to be made from the nearest benchmark to a point on the ground at each homesite. This was used to determine the height above ground at which a habitable structure must be built in order to be above the 100-year flood;

4. A determination by the County Health Department that a mounded septic tank system is necessary for proper sanitary functioning. The mound could not exceed four feet in height or contain more than 160 cubic yards of fill; and

5. Requires roads to be constructed at natural grades without the use of fill.

Town of Cross City

Some lands lying within flood prone areas were identified within the Town. Since the Town'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 Town, state and/or federal government to dredge and fill these lands.

Flood prone areas are scattered throughout the Town and some of these areas contain wetlands. The limits of the 100-year flood zones were delineated by the Federal Emergency Management Agency, primarily for the purpose of specifying safety criteria for building construction. The adherence to these safety control regulations is required as part of the flood hazard regulations. Regulations for flood prone areas require that the following general provisions are met:

1) Properly anchor any structures;
2) Use construction materials and methods that will minimize flood damage;
3) Provide adequate drainage for new subdivisions; and
4) Locate and design new or replacement utility systems to prevent flood loss.
5) All habitable structures must elevate the floor level to the height of the base flood (100 year flood) elevation or be flood-proofed with some other acceptable method.

Town of Horseshoe Beach

The Town, as a flood prone area, is subject to flooding. Since the Town'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 Town, state and/or federal government to dredge and fill these lands.

The limits of the 100-year flood zones were delineated by the Federal Emergency Management Agency, primarily for the purpose of specifying safety criteria for building construction. The adherence to those safety control regulations was required as part of the flood hazard regulations. Regulations for

flood prone areas require that the following general provisions are met:

1) Properly anchor any structures;
2) Use construction materials and methods that will minimize flood damage;
3) Provide adequate drainage for new subdivisions; and
4) Locate and design new or replacement utility systems to prevent flood loss.
5) All habitable structures must elevate the floor level to the height of the base flood (100 year flood) elevation or be flood-proofed with some other acceptable method.

Knowledge of flood hazard is important in land use planning. This section includes a history of floods affecting the Suwannee River basin which have caused damage within the area. Flood hazard information and recorded rainfall for the 1948, 1959, and 1973 floods is based on Special Flood Hazard Information Report: Suwannee River Floods, Florida and Georgia, prepared by the U.S. Army Corps of Engineers, 1974.

The most severe floods in the Suwannee River Basin are associated with storms, or sequences of storms, which produce widespread distribution of rainfall for several days duration. Flooding occurs in all seasons, but maximum annual stages occur most frequently from February through April as a result of a series of frontal-type rainfall events over the basin. The area is also subject to summer and fall tropical disturbances, occasionally of hurricanes intensity. Thunderstorms caused by summer air mass activity produce intense rainfall, but the duration is usually short and areal distribution is relatively small.

The average bottom slope of Suwannee River is less than those of the tributaries. Flooding in the lower reaches of the tributaries to Suwannee River is accentuated by channel control and backwater effect from the main river. Also, several highway and bridge structures intrude into the flood plain and aggravate flood conditions. Combinations of these above factors cause frequent and prolonged flooding in the basin after severe storms and extended rainfall periods.

Flood of 1948

The flood on March-April 1948 resulted from a sequence of storms during March and April which produced abnormally heavy and prolonged rainfall over most of the drainage area. Antecedent conditions were conductive to high surface runoff. Ground-water levels were high, sinks and depressions were saturated, and most river reaches were experiencing overbank flow.

During peak stages, the Suwannee River was out of its banks from the Gulf to north of the Georgia-Florida state line and its width varied from about 0.5 to 6 miles. The flooded area comprised more than 500 square miles along the major rivers. Floodwaters remained for about 30 days over the lowlands and for longer periods in depressions that drain by percolation and seepage. A number of residential and commercial establishments were flooded within the area. Major damaged was sustained by railroads, highways, bridges, culverts, drainage ditches, and from loss of fills. Three weeks of emergency work was required to restore minimum transportation and drainage facilities.

Flood of 1959

March 1959 was the fourth successive month during which rainfall was substantially above average over most of Florida and Southern Georgia. During the first and third weeks of March, intense frontal-type storms produced 6 to 8 inches of rainfall over most of the basin Floodwaters covered an estimated 350 square miles along the Suwannee River and its tributaries. Major damage was sustained by urban development. Inconvenience resulted from flooded roads in areas in and adjacent to the floodplain. Damage and loss of business were experienced by fishing camps, recreational developments, and tourist and service businesses near a number of natural springs along the floodplain. Principal agricultural damage was sustained by watermelons, corn and improved pasture.

Flood of 1973

The flood of April 1973 resulted from abnormally heavy and prolonged rainfall during March and April over most of the drainage area. Antecedent conditions were conductive to high surface runoff. The April 1973 flood was the maximum flood of record upstream of Mitchell Creek. Floodwaters remained for about 30 days over the lowlands and for longer periods in depressions that drain by percolation and seepage. It was reported that more than 900 persons moved out of houses along the 250-mile Suwannee River during the two weeks the flood crest moved down from the Okefenokee Swamp in Georgia. Highway and rail traffic was suspended a various locations along the Suwannee River during the flood crest. Following a report estimating damages at $8 million, flooded areas in the vicinity of the Suwannee River were declared a “major disaster area.”

Suwannee River Flood Stages
River Miles 30 to 63

	Recurrence Intervals							Actual Floods		
RIVER MILE	100 YEAR	50 YEAR	25 YEAR	10 YEAR	5 YEAR	2 YEAR	1 YEAR	1973	1959	1948
30.00	19.8	18.9	17.5	15.4	13	9.3	2.4	18.2	15.6	22.1
31.00	19.9	19.0	17.6	15.5	13.4	9.4	2.5	18.2	15.6	22.1
32.00	20.0	19.2	17.8	15.7	13.6	9.6	2.7	18.2	15.6	22.1
33.00	20.1	19.3	17.9	15.8	13.7	9.7	2.8	18.2	15.6	22.1
33.42	20.2	19.3	17.9	15.8	13.7	9.7	2.8	18.2	15.6	22.1
33.50	20.2	19.4	18.0	15.9	13.8	9.8	2.9	18.2	15.6	22.1
33.51	21.1	20.3	18.6	15.9	13.8	9.8	2.9	18.8	15.6	23.0
34.00	21.3	20.4	18.7	16.0	13.9	9.9	2.9	19.0	15.8	23.2
35.00	21.6	20.8	18.9	16.4	14.3	10.2	3.2	19.4	16.2	23.5
36.00	22.0	21.1	19.2	16.8	14.7	10.6	3.4	19.7	16.6	23.8
37.00	22.3	21.4	19.5	17.2	15.0	10.9	3.6	20.1	17.0	24.2
38.00	22.7	21.8	19.9	17.6	15.4	11.2	3.8	20.4	17.5	24.5
39.00	23.0	22.1	20.4	17.9	15.7	11.5	4.0	20.8	17.9	24.8
40.00	23.4	22.5	20.8	18.3	16.1	11.8	4.2	21.1	18.4	25.1
41.00	23.7	22.8	21.2	18.7	16.5	12.1	4.4	21.5	18.8	25.4
42.00	24.0	23.1	21.5	19.1	16.8	12.5	4.6	21.9	19.2	25.8
43.00	24.4	23.5	21.9	19.4	17.2	12.8	4.8	22.3	19.6	26.1
44.00	24.7	23.8	22.2	19.8	17.5	13.1	5.0	22.7	20.0	26.5
45.00	25.1	24.2	22.5	20.2	17.9	13.4	5.2	23.0	20.4	26.8
46.00	25.4	24.5	22.9	20.6	18.3	13.7	5.4	23.4	20.3	27.2
47.00	25.8	24.8	23.2	21.0	18.6	14.1	5.6	23.8	21.2	27.5
48.00	26.1	25.2	23.6	21.3	19.0	14.4	5.8	24.2	21.6	27.9
49.00	26.4	25.5	23.9	21.7	19.4	14.7	6.0	24.6	21.9	28.2
50.00	26.8	25.9	24.3	22.1	19.7	15.0	6.2	25.0	22.3	28.6
51.00	27.1	26.2	24.6	22.5	20.1	15.3	6.4	25.4	22.7	28.9
52.00	27.5	26.5	25.0	22.8	20.4	15.7	6.6	25.8	23.1	29.2
53.00	27.8	26.9	25.3	23.2	20.8	16.0	6.8	26.1	23.5	29.6
54.00	28.2	27.2	25.7	23.6	21.2	16.3	7.0	26.5	23.9	29.9
55.00	28.5	27.6	26.0	24.0	21.5	16.6	7.2	26.9	24.3	30.3
56.00	28.8	27.9	26.4	24.4	21.9	16.9	7.4	27.3	24.7	30.6
56.50	29.0	28.1	26.5	24.6	22.1	17.1	7.5	27.5	24.9	30.8
57.00	29.2	28.3	26.7	24.7	22.2	17.3	7.6	27.7	25.1	21.0
58.00	29.5	28.6	27.1	25.1	22.6	17.6	7.8	28.1	25.4	21.3
59.00	29.9	28.9	27.4	25.5	23.0	17.9	8.0	28.6	25.7	31.7
60.00	30.2	29.3	27.8	25.9	23.3	18.2	8.3	29.0	26.0	32.0
61.00	30.6	29.6	28.1	26.2	23.7	18.5	8.5	29.4	26.3	32.4
62.00	30.9	30.0	28.4	26.6	24.1	18.8	8.7	29.7	26.7	32.7
63.00	31.3	30.3	28.8	27.0	24.4	19.2	8.9	30.1	27.0	33.1

Source: Interim Suwannee River Flood Stages, Suwannee River Water Management District, based on data prepared by the U.S. Army Corps of Engineers and the U.S. Geological Survey, 1974.

Historical Crest Elevations

Stations Suwannee	Flood Stage	River Mile	Peak Elev.	Aug-28	Apr-48	Mar-59	Sep-64	Apr-73	Apr-84	Feb-86	Mar-91	Mar98
Rock Bluff	N/A	57	31.03	29.50 *	30.03	24.80 **	-	27.40 **	26.28	23.20	22.92	25.12
Halefield	N/A	38	-	-	24.50 **	17.50 **	-	20.50 **	-	-	-	19.46
Wilcox	14 Ft.	34	21.79	-	21.79	15.35	14.96	18.03	16.53	15.10	14.91	16.84
Manatee Springs	10 Ft.	24	16.00	-	16.00 *	11.40	-	13.00 *	12.65	11.00	10.91	12.41
Flowers Bluff	7 Ft.	15	-	-	10.80 **	-	-	8.80**	-	-	8.02	8.61

* Historical levels obtained from flood marks.
** Estimated peak stages obtained from U.S. Army Corps of Engineers.
Source: U.S. Army Corps of Engineers 1974 data and Suwannee River Water Management District 1999 data. Historical Crest Elevations obtained from flood marks and estimated peak stages based upon U.S. Army Corps of Engineers 1974 data and Water Management District 1999 data.

Wildfires (Urban Interface Zone)

The wildfires that burned throughout Florida in the last several years are examples of the increasing wildfire threat which results from the Wildland/Urban Interface. The Wildland/Urban interface is defined as the area where structures and other human development meet with undeveloped wildland or vegetative fuels (Federal Emergency Management Agency). As residential areas expand into relatively untouched wildlands, people living in these communities are increasingly threatened by forest fires.

There are three different classes of wildland fires. 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. Wildland fires are usually identified by dense smoke that fills the area for miles around.

Rural and large tracts of unimproved lands are susceptible to brush and forest fires capable of threatening life, safety and property loss in adjacent developed areas if not effectively controlled. Wildfires are caused by numerous sources ranging from arson, carelessness by smokers, individuals burning debris, random sparks from heavy equipment, to children playing with matches. The largest number of fires is caused by lightning strikes which coincide with the height of the thunderstorm season. A major wildland fire can leave a large amount of scorched and barren land, and these areas may not return to prefire conditions for decades. If the wildland fire destroys the ground cover, other potential hazards, such as erosion, may develop.

Structures in the wildland/urban interface zone are vulnerable to ignition by three different ways: radiation, convection, and firebrands (National Wildland/Urban Interface Fire Protection Program). Radiating heat from a wildfire can cause ignition by exposure to the structure. The chances of ignition increase as the size of the flames increases, surface area exposed to flames increases, length of exposure time increases, and distance between the structure and the flames decreases.

Another source of ignition by wildfire is convection. Ignition of a structure by convection requires the flame to come in contact with the structure. Contact with the convection column is generally not hot enough to ignite a structure. Clearing to prevent flame contact with the structure must include any materials capable of producing even small flames. Wind and steep slopes will tilt the flame and the convection column uphill increasing the chance of igniting a structure. Structures extending out over a slope have the greatest likelihood of ignition from convection.

Firebrands also pose a threat to structures in the wildland/urban interface. A firebrand is a piece of burning material that detaches from a fire due to strong convection drafts in the burning zone. They can be carried a long distance (around 1 mile) by fire drafts and winds. The chance of these firebrands igniting a structure depends on the size of the firebrand, how long it burns after contact, and the materials, design, and construction of the structure.

Unincorporated Area

The approximate total acreage within the unincorporated area of the County is 457,192 acres. There are proximately 383,122 acres of forest lands within the unincorporated area. Forest lands represent approximately 83.79 percent of the total unincorporated land area. Therefore, wild fire posses a threat to the County.

Town of Cross City

The approximate total acreage within the Town is 1,025 acres. There are proximately 127 acres of forest lands within the Town. Forest lands represent approximately 12.39 percent of the total land area. In addition, the Town is surrounded by forested land, making this municipality vulnerable to wild fires.

Town of Horseshoe Beach

There are no forest land uses within the Town. However, the Town is surrounded mostly by forested land, make this municipality vulnerable to wild fires.

Dam/Levee Failure

There are about 80,000 dams in the United States today, the majority of which are privately owned. Other owners are state and local authorities, public utilities, and federal agencies. The benefits of dams are numerous: they provide water for drinking, navigation, and agricultural irrigation. Dams also provide hydroelectric power and create lakes for fishing and recreation. Most important, dams save lives by preventing or reducing floods.

If dams have many benefits, they also can pose a risk to communities if not designed, operated, and maintained properly. In the event of a dam failure, the energy of the water stored behind even a small dam is capable of causing loss of life and great property damage if there are people downstream of the dam. (FEMA)

Drought/Heat Wave

Drought

Drought is a normal, recurrent feature of climate, although many perceive it as a rare and random event. In fact, each year some part of the U.S. has severe or extreme drought. Although it has many definitions, drought originates from a deficiency of precipitation over an extended period of time, usually a season or more (National Drought Mitigation Center). It produces a complex web of impacts that spans many sectors of the economy and reaches well beyond the area producing physical drought. This complexity exists because water is essential to our ability to produce goods and provide services.

A few examples of direct impacts of drought are: reduced crop, rangeland, and forest productivity; increased fire hazard; reduced water levels; increased livestock and wildlife mortality rates; and damage to wildlife and fish habitat. Social impacts include public safety; health; conflicts between water users; reduced quality of life; and inequities in the distribution of impacts and disaster relief. Income loss is another indicator used in assessing the impacts of drought; reduced income for farmers has a ripple effect throughout the region's economy (National Drought Mitigation Center).

The web of impacts is so diffuse that it is very difficult to come up with financial estimates of damages. However, the Federal Emergency Management Agency (FEMA) estimates $6-8 billion in losses as the annual average.

Heat Wave

Temperatures that remain 10 degrees or more above the average high temperature for a region and last for several weeks are defined as extreme heat (FEMA). Humid conditions, which add to the discomfort of high temperatures, occur when an area of high atmospheric pressure traps hazy, damp air near the ground. The highest temperature ever recorded in the state was on 29 June 1931 at 103EF in Monticello at an elevation of 207 ft. (National Climatic Data Center, 1996). In a normal year, approximately 175 Americans die from extreme heat. However, in 1995 the national death toll was 1,021 (National Weather Service).

Human bodies dissipate heat in one of three ways: by varying the rate and depth of blood circulation; by losing water through the skin and sweat glands; and by panting. As the blood is heated to above 98.6 degrees, the heart begins to pump more blood, blood vessels dilate to accommodate the increased flow, and the bundles of tiny capillaries penetrating through the upper layers of skin are put into operation. The body's blood is circulated closer to the surface, and excess heat is released into the cooler atmosphere. Water diffuses through the skin as perspiration. The skin handles about 90% of the body's heat dissipating function.

Heat disorders generally have to do with a reduction or collapse of the body's ability to cool itself by circulatory changes and sweating, or a chemical (salt) imbalance caused by too much sweating. When the body cannot cool itself, or when it cannot compensate for fluids and salt lost through perspiration, the temperature of the body's inner core begins to rise and heat-related illness may develop. Studies indicate that, other factors being equal, the severity of heat disorders tend to increase with age. Heat cramps in a 17-year-old may be heat exhaustion in someone 40, and heat stroke in a person over 60.

When the temperature gets extremely high, the NWS has increased its efforts to alert the general public as well as the appropriate authorities by issuing Special Weather Statements. Residents should heed these warnings to prevent heat related medical complications. As a result of the latest research findings, the NWS has devised the "Heat Index" (HI). The HI, given in degrees Fahrenheit, is an accurate measure of how hot it really feels when relative humidity is added to the actual air temperature. The NWS will initiate alert procedures when the HI is expected to exceed 105EF for at least two consecutive days. Possible heat disorders related to the corresponding HI are listed below.

Heat Index of 130 or Higher	Heatstroke/Sunstroke with exposure for people in higher risk groups
Heat Index of 105-130	Sunstroke, heat cramps, and heat exhaustion likely and heatstroke possible with prolonged physical activity
Heat Index of 90-105	Sunstroke, heat cramps with prolonged exposure
Heat Index of 80-90	Fatigue possible with prolonged exposure and physical activity

Winter Storms / Freezes

According to the Department of Agriculture and Consumer Services, a moderate freeze may be expected every one to two years. Severe freezes may be expected on an average of once every 15 to 20 years. Freezes pose a major hazard to the agriculture industry on a recurring basis, and are a significant threat to the economic vitality of the state's vital agriculture industry.

Florida has experienced a number of severe or disastrous freezes, when the majority of the winter crops are lost. The lowest temperature ever recorded in the state is !2EF (National Climatic Data Center). Since December 1889, there have been at least 22 recorded severe freezes; the most recent being in 1996, when a Presidential Disaster Declaration was issued for crop losses exceeding $90 billion.

Winter Storm Watches and Warnings

- A *winter storm watch* indicates that severe winter weather may affect your area.
- A *winter storm warning* indicates that severe winter weather conditions are definitely on the way.

A blizzard warning means that large amounts of falling or blowing snow and sustained winds of at least 35 miles per hour are expected for several hours.

Additional Hazards Identified

Hazardous Materials

Hazardous materials accidents can occur anywhere there is a road, rail line, pipeline, or fixed facility storing hazardous materials. Virtually the entire state is at risk to an unpredictable accident of some type. Most accidents are small spills

and leaks, but some result in injuries, property damage, environmental contamination, and other consequences. These materials can be poisonous, corrosive, flammable, radioactive, or pose other hazards and are regulated by the Department of Transportation.

Emergencies involving hazardous materials can be expected to range from a minor accident with no off-site effects to a major accident that may result in an off-site release of hazardous or toxic materials. The overall objective of chemical emergency response planning and preparedness is to minimize exposure for a wide range of accidents that could produce off-site levels of contamination in excess of Levels of Concern (LOC) established by the U.S. Environmental Protection Agency. Minimizing this exposure will reduce the consequences of an emergency to people in the area near to facilities which manufacture, store, or process hazardous materials.

A large volume of hazardous materials are transported to and through the county by railroad, highway, and water daily. Coordinating procedures for hazardous material response are found within the County Comprehensive Emergency Management Plan.

Power Failure (outages)

The major causes of a power failure are lightning and trees. Lightning strikes and trees falling onto power lines can shut down power for hundreds of people. Other factors that can cause a power failure may include the age of power facilities (transmission and distribution), community growth, and/or high winds.

The location of power lines underground or above ground also has significance. Lines underground have the advantage of being less vulnerable to tree foliage; however they are still at risk from other underground hazards such as tree roots.

Terrorism

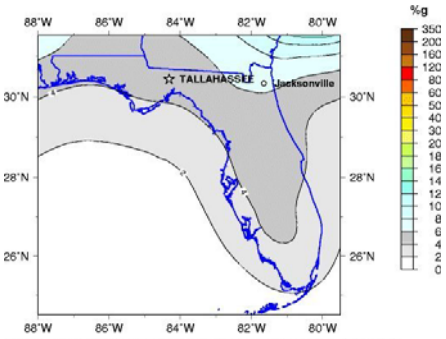
Since the attacks on the World Trade Center in 2001, a renewed awareness of terrorism in the United States has been prompted. Here in Florida, the trepidation of terrorism was fully realized by the recent Anthrax incidents. Acts of terrorism committed in Florida have historically been thought of as improbable. The state has many critical and high-profile facilities, high concentrations of population and other potentially attractive venues for terrorist activity that are inherently vulnerable to a variety of terrorist methods. Governmental/political, transportation, commercial, infrastructure, cultural,

academic, research, military, athletic, and other activities and facilities constitute ideal targets for terrorist attacks which may cause catastrophic levels of property and environmental damage, injury and loss of life. Furthermore, a variety of extremist groups are known to operate within Florida, and potential terrorist attacks have been investigated and averted in recent years. Terrorist attacks may take the form of the hazards described in this section when incidents of these types are executed for criminal purposes, such as induced dam or levee failures, the use of hazardous materials to injure or kill, or the use of biological weapons to create an epidemic. Acts of terrorism are capable of creating disasters which threaten the safety of a large number of citizens. Until 911, the United States was relatively untouched by the storm of terrorist activities experienced in other parts of the world. Because of so many uncertainties in identifying the numerous possibilities that terrorist could capitalize on, the true vulnerability of Dixie County to terrorism may be immeasurable.

Vulnerability Assessment

Earthquakes

There is no history of seismic activity in Dixie County. The threat of an earthquake is considered virtually nonexistent. See figure below.



Tsunamis

The coastline of Dixie County is the Gulf of Mexico. Since the occurrence of Tsunamis has never been recorded in the Gulf of Mexico and since they primarily occur in the Pacific Ocean, the threat from this hazard to Dixie County is non existent.

Coastal & Riverine Erosion

Natural drainage features or man-made swales, ditches or retention ponds collect, direct or release stormwater gradually. These features decrease the potential for pollution of surface waters, property flood damage, soil erosion and road wash out.

Unincorporated Area

Publicly maintained drainage facilities, within the unincorporated area, are limited to swale systems along roadways and were designed to serve the roadways along which they were constructed. Although the County and Water Management District require stormwater control measures on private property, these measures are site specific and are not analyzed as part of this hazard identification. Therefore, the analysis of drainage facilities within the area and the availability of these facilities to serve existing land uses is limited to public facilities.

Town of Cross City

Publicly maintained drainage facilities within the Town consist of swale systems and closed-pipe systems along municipal roadways and were designed to serve the roadways along which they were constructed.

Although the Town and Water Management District require stormwater control measures on private property, these measures are site specific and are not analyzed as part of this hazard identification. Therefore, the analysis of drainage facilities within the area and the availability of these facilities to serve existing land uses is limited to public facilities.

Town of Horseshoe Beach

Publicly maintained drainage facilities within the Town consist of swale systems along municipal roadways and were designed to serve the roadways along which they were constructed.

Although the Town and Water Management Districts require stormwater control measures on private property, these measures are site specific and are not analyzed as part of this hazard identification. Therefore, the analysis of drainage facilities within the area and the availability of these facilities to serve existing land uses is limited to public facilities.

Drainage Mitigation Initiatives
Certain drainage facilities within the unincorporated and incorporated areas of the County have been affected during the 1997-1998 El Nino related floods. The Mitigation Projects and Initiative section of this document lists those public drainage facilities.

The predominant types of existing land uses served by potable water and sanitary sewer facilities within the County are residential, commercial and industrial land uses. As is the case with sanitary sewer facilities, the geographic service areas of the public potable water facilities are the area within the municipal corporate limits. The majority of the unincorporated area uses individual wells of their potable water needs and septic tanks for their sanitary sewer needs.

Residential land uses are located throughout the unincorporated area of the County. Commercial and industrial land uses are located primarily within the urban development areas.

The impact on the soil collapse of river banks and inland bodies is moderate except during high river cresting and floods. The vulnerabilities from this form of erosion from flooding are covered in the Floods hazard vulnerability assessment.

Landslides / Sinkholes

Sinkholes are a common feature of Florida's landscape. They are only one of many kinds of karst 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 erosional 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.

Limestones in Florida are 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 erosional 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 is 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 a disappearing stream. Dry caves are parts of karst drainage systems that are above the water table, such as Marianna Caverns.

Hurricanes & Coastal Storms

Dixie County has been impacted by a number of disasters, many of the most significant being hurricanes or tropical storms and associated flooding. Many of these events have resulted in levels of damage that qualified for federal assistance. A list of federally declared disasters since 1985 is contained in this table.

Declared Disasters in Dixie County (since 1985)

Declaration	Year	Event	Primary Damage

Source: Dixie County Emergency Management

It is difficult to analyze Dixie County's vulnerability to hurricanes, tropical storms and floods as separate events. In particular, it is unlikely the county will experience a hurricane or tropical storm without also experiencing flooding. Nor must a hurricane or tropical storm pass directly through Dixie County to result in flooding.

Tropical storms are highly organized tropical systems with sustained winds between 38 and 74 miles per hour. Although wind damage to structures is possible, 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 doesn't even have to "hit" Dixie to cause flooding.

Hurricanes are major organized tropical storm events with sustained winds in excess of 74 miles per hour. Damage can be expected from both wind and, for those properties located in the floodplain or low lying areas, flood waters. The Saffir-Simpson Hurricane Scale in the table below describes tropical storms, the various types of hurricanes and the level of damage they may cause. The following table lists all tropical storms and hurricanes that have passed within 60 nautical miles of Dixie County over the last over the last fifty years.

Saffir-Simpson Hurricane Scale

Storm	Sustained Winds	Level of	Examples

Category	(MPH)	Damage	
Tropical Storm	Less than 74	Not Rated	Tropical Storms Alberto (1994) and Georges (1998)
1	74 to 95	Minimal	Florence (1988) LA, Charley (1988) NC
2	96 to 110	Moderate	Kate (1985), Bob (1991)
3	111 to 130	Extensive	Opal (1995), Alicia (1983) TX
4	131 to 155	Extreme	Andrew (1992), Hugo (1989) NC
5	Greater than 155	Catastrophic	Labor Day (1935) FL Keys, Camille (1969) MS,

Source: National Oceanic and Atmospheric Administration (NOAA)

Often, the major impact of a hurricane is felt along the coast; however, the damage can extend far inland.

The battering effects of the wind from a major hurricane would likely cause significant damage throughout the county, damaging buildings and destroying vegetation.

Hurricane Evacuation Shelter Analysis

Shelter Name	Shelter Address	City	Shelter Capacity
Old Town School	U.S. Highway 19, West	Cross City	384
Anderson Elementary School	County Road 349, South	Old Town	1,505
Dixie County High School	Horseshoe Road, County Road 351, South	Cross City	2,164
TOTAL			4,053

Source: Cedar Key Basin, Hurricane Evaluation Study Final Technical Data Report, U.S. Army Corps of Engineers, April 1996.

Evacuation Routes; Constraints

The major hurricane evacuation routes:

- County Road 340
- County Road 349
- County Road 351
- County Road 357
- County Road 358
- County Road 361
- U.S. Highway 19

The following evacuation routes have possible constraints:

- 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 – located before the bridge over the Suwannee River.

High Winds Impact

The maps included in Appendix ?? depict the wind patterns predicted by TAOS for Category 1 through 5 hurricanes, respectively.
Maps in development

The locations of the County's critical facilities are depicted on each map. The vulnerability of each structure varies depending on the hurricane category.

Estimated Storm Damage by Parcel Type

Parcel Type	Tropical Storm	Cat 1 Hurricane	Cat 2 Hurricane	Cat 3 Hurricane	Cat 4 Hurricane	Cat 5 Hurricane
Single-Family (# damaged)						
Man. Homes (# damaged)						
Multi-Family (# damaged)						
Other Res. (# damaged)						
Commercial (# damaged)						
Industrial (# damaged)						
Agriculture (# damaged)						
Institutional (# damaged)						
Government (# damaged)						
Miscellaneous (# damaged)						

Source: DCA, TAOS model

Storm Debris Estimates

Storm Category	Amount of Debris (Cubic Yards)	Storm Category	Amount of Debris (Cubic Yards)
Tropical Storm		Category 3 Hurricane	
Category 1 Hurricane		Category 4 Hurricane	
Category 2 Hurricane		Category 5 Hurricane	

Source: DCA, TAOS model

Severe Thunderstorms & Tornadoes

Nationally, Florida ranks fourth in the annual occurrence of tornadoes. Due to favorable weather conditions along the Gulf Coast, tornadoes are a common occurrence throughout the Panhandle. The most active season is May through August, with June being the peak month. During this season, warm, humid air from the Gulf moves inland and mixes with cooler air from squall lines. This allows the humid air to rise, resulting in an intense upper level disturbance. This upper-level disturbance provides a strong vertical wind shear, which can result in a twisting updraft or super cell. The final result can be a tornado.

Tornado strength is measured using the Fujita (or F) scale, which describes the estimated damage caused by the tornado as it passes over man-made structures. Under the Fujita scale, F-0 and F-1 tornadoes are considered "weak," F-2 and F-3 are "strong," and F-4 and F-5 are "violent" (USA Today Weather Almanac). Most tornadoes in Florida are either F-0 or F-1; very few exceed F-2. The estimated damages and wind speeds for each category of tornado are described in this table.

Description of Tornado Ratings

F-scale	Estimated Damage	Wind Speed
F-0	Light damage	Wind up to 72 mph
F-1	Moderate damage	Wind 73 to 112 mph
F-2	Considerable damage	Wind 113 to 157 mph
F-3	Severe damage	Wind 158 to 206 mph
F-4	Devastating damage	Wind 207 to 260 mph
F-5	Incredible damage	Wind above 261 mph

Source: NOAA

The following table provides a summary of reported tornadoes within Dixie County, including magnitude, deaths/injuries, and property/crop damage, between 1990 and 2004.

Dixie County Tornado History (1990 - 2004)

Date	Time	Magnitude	Deaths	Injuries	Property Damage	Crop Damage

Source: National Data Climatic Center, NOAA

The unpredictability and sheer strength of tornadoes presents a unique challenge to community readiness. Tornado preparation is largely dependent on the effectiveness of the local warning system and an understanding by local residents of how they should respond during an actual tornado or a tornado warning. In Dixie County, tornado watches / warnings are issued by the National Weather Service through the local television and radio networks. County emergency management has provided may public and private facilities (such as schools, day care centers, community center, the Senior Center, health facilities, nursing homes, etc.) with National Oceanographic and Atmospheric Administration (NOAA) weather radios that provide automatic severe weather warnings. Early warning is especially important for residents of manufactured homes who may need to seek shelter at an alternate location. In addition to advanced warning, mitigation may also be achieved through building reinforcement and the construction of safe rooms.

Floods

An important consideration is the number of hazardous materials facilities and critical facilities located in the floodplain. Hazardous materials facilities (a detailed description of each facility is contained in the Hazardous Materials Analysis section) located in Dixie County.

In addition to hazardous materials facilities, there are a number of critical facilities also located in the floodplain.

Critical facilities are facilities the County has determined are critical to the maintenance of the health, safety and welfare of its residents, and are necessary to help the County respond to and recover from a disaster. The County has identified ?? critical facilities outlined in the following table, covering a wide range of structures and uses, including water wells, wastewater treatment plants, medical facilities, elder care facilities, airstrips, and law enforcement.

Although flooding is a serious hazard facing the county, it does not have to be a 100-year flood event to cause serious damage and disruption to everyday activities. There has not been a 100-year flood in the county this century.
In response to mounting losses from flooding nationwide, the United States

Congress initiated the National Flood Insurance Program in 1968. The program is administered through FEMA. Under this program, FEMA produces maps, which show areas subject to various levels of flooding under different conditions. This flood risk information is based on historic, meteorological, hydrologic, and hydraulic data, as well as open-space conditions, flood control works, and development. This information can be used to identify structures subject to repetitive flood losses. The Federal Emergency Management Agency defines repetitive loss as any insured loss, or combination of insured losses, of $1,000.00 or more within 10 years of the most recent flood event. Repetitive flood loss data is useful in not only identifying specific structures at risk, but for identifying areas at risk of flood damage and for developing local policies to limit flood-related damage in the future. The following table lists all structures listed by the National Flood Insurance Program (NFIP) as repetitively damaged. See attached tables in Appendix??

Mitigation efforts directed by County and Municipal officials at development in and/or near the floodplain offer a nearly immediate reduction in risk for residents and business owners located throughout the county.

Wildfires

Due to Dixie's rural nature, fires represent a major hazard, particularly for persons living outside municipal boundaries; wildfires, and structural fires with the potential to turn into wildfires, are of significant concern.

Florida's vulnerability to wildfire was revealed during the summer of 1998. According to the Governor's Wildfire Response and Mitigation Review Committee, nearly 2,300 wildfires burned over 500,000 acres, damaged over 300 homes, destroyed more than $300 million worth of timber resources, and forced the evacuation of one entire county. The damage was concentrated in areas where homes were scattered on the outskirts of existing urban areas—the rural/urban interface. Over 230,000 additional acres have burned uncontrollably through the first six months of 1999.

In order to mitigate the effects of future wildfires the Florida Division of Forestry (DOF) has embarked on a statewide fire mitigation program. Private land throughout the state is undergoing a rigorous fire risk analysis, which focuses on vulnerable populations in the rural/urban interface. The analysis identifies areas that require mitigation, including prescribed burns, mowing and clearing of dense undergrowth. Florida law (Chapter 590.125, F.S.) provides statutory authority for the identification of fire risk areas and the use of fire mitigation

techniques to reduce the threat of wildfire on private lands. The legislation allows private landowners to stop the State from conducting prescribed burns on their (property owner's) land; however, landowners have a strong incentive to participate in the program since they can be held liable for damages to property due to wildfire originating on their land.

The Division of Forestry also assists firefighting efforts in the county by responding to fires that threaten forest land and select non-forest fires.

The figures below are for fires in which the Division of Forestry provided assistance, and do not include fires handled by the volunteer departments if the Division of Forestry did not provide assistance.

Rainfall amounts are provided from data recorded by the Southeast Regional Climate Center.

Reported Incidents of Wildfires

Year	1996	1997	1998	1999	2000	2001	2002	2003	2004
Number of Fires									
Acres Burned									
Annual Rainfall									

Source: Florida Department of Agriculture, Division of Forestry

The major components of the economic base of the Coastal Management Area id the fishing industry and associated support services, general services such as restaurants and retailers, silviculture, and water-related and water-dependent recreational facilities. A vulnerable coastal area translates to a vulnerable economy. Therefore, identification of projects and initiatives conductive to the building of a disaster-resistant coastal area is a crucial component of the Mitigation Strategy, as economic resilience of the Coastal Management Area is highly dependent on the coastal community sustainability.

Economic activity significant to the Coastal Management Area includes recreation related businesses and commercial fishing. Along with motels, the principal types of recreational businesses consist of fish camps and marinas.

Lodging facilities within the coastal area include three motels in Suwannee and two recreational vehicle parks in Jena. The major economic activity within the County, as a whole, is tied to timber resources. As a result, large portions of land area within the unincorporated area contain pine plantations, which makes the area highly vulnerable to wildfires.

Dam/Levee Failure

Drought/Heat Wave

Temperature extremes, both freezes and periods of excessive heat, impact communities with a larger senior population to a greater extent than those with younger populations. Inland communities away from the moderating influence of the ocean or the estuary are more vulnerable to temperature extremes, as are areas with significant agricultural assets. Dixie County overall has a minimal vulnerability to the impacts from drought.
Even though the potential for a drought exists every year, droughts pose a minimal threat to Dixie. The last recorded droughts occurred in 1982 and more recently 2001. However, even then there was sufficient water to meet residential, commercial, industrial and agricultural needs. The county's source of water is …

With so many county residents on private wells (essentially any resident located in the unincorporated areas, the most significant impact of a drought might be the draw down of the aquifer below the reach of many resident's water wells.

Winter Storms / Freezes

The Climate in North / Central Florida is mild. Dixie County has limited vulnerability to moderate freezes every one to two years and severe freezes possibly once every 15 to 20 years. The unlikelihood of this hazard could be a basis for unpreparedness.

During the winter Florida has approximately double the amount of hours of sunlight than the states in the northeastern quadrant of the nation, and far milder temperatures. Mild and sunny winters are Florida's norm.

Florida lies within the extreme southern portion of the Northern Hemisphere humid subtropical climate zone, noted for its long hot and humid summers and mild and wet winters. Mean average temperatures during Florida's coldest

month (January) range from the lower 50s to high 60s in the Northern region where Dixie County is located.

Although Dixie County doesn't experience the severe winter weather that occurs in other areas of the nation, we are still at risk of winter-related hazards. Some of the possible severe weather includes freezing rain & subfreezing wind chill. 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.

Some Characteristics of Winter Storms include:
Strong Winds: Sometimes winter storms are accompanied by strong winds creating dangerous wind chill. Strong winds with intense storms and cold fronts can knock down trees, utility poles, and power lines.

Extreme Cold: Extreme cold often accompanies a winter storm or is left in its wake. Prolonged exposure to the cold can cause frostbite or hypothermia and become life-threatening. Infants and elderly people are most susceptible. Because of the mild climate in Florida, "extreme cold", relative to what Floridians are unaccustomed to, can be near freezing temperatures. Freezing temperatures can cause severe damage to vegetation. Pipes may freeze and burst in homes that are poorly insulated or without heat.

Ice Storms: Heavy accumulations of ice can bring down trees, electrical wires, telephone poles and lines, and communication towers. Communications and power can be disrupted for days while utility companies work to repair the extensive damage. Even small accumulations of ice may cause extreme hazards to motorists and pedestrians.

Besides rain, precipitation from winter storms may include:

Sleet: Sleet forms when snow falls through a layer of warm air and then refreezes in a layer of cold air just above the surface. The ice pellets formed can accumulate and cause problems for drivers. Many times, depending upon the temperature, sleet falls during a transition period before changing to snow or a cold rain.

Freezing Rain: Freezing Rain forms when snow falls in a pocket of warm air and melts. The rain droplets are then collect near freezing in a layer of cold air just above the surface and freeze as ice on contact.

Additional Hazard Vulnerabilities

Hazardous Materials

Hazardous materials in the form of natural and man-made chemicals are located throughout Dixie County. In addition to materials stored in the county, numerous hazardous materials are transferred through the county on a daily basis by road. This section provides a general analysis of the hazardous materials that are either located in, or transferred through, Dixie County.

A community's vulnerability to hazardous materials accidents depends on three factors. These are:

- The major transportation routes that pass through the community;
- The hazardous material generators located in or near the community; and
- The resources in terms of people and property that are in an area of possible impact from a hazardous materials release.

Overall, unincorporated Dixie County has a significant vulnerability to impacts from hazardous materials releases.

Critical Facilities

Department of Corrections - Cross City Correctional Institution

The facility is located at the Airport Industrial Park, Cross City. According to the hazards analysis based on Computer Aided Management Emergency Operations data, the facility utilizes chlorine and propane. Shipment of these chemicals utilizes the following transportation routes: U.S. Highway 19 and Industrial Park Road. The vulnerable zone radius for chlorine is 0.5 mile. According to historical accident records, no accident has been reported in the last five years.

Vulnerable Zone Evacuation Routes:

Wind from NE to SE:	East on U.S. Highway 19
Wind from SE to SW:	East on U.S. Highway 19
Wind from SW to NW:	West on U.S. Highway 19

Wind from NW to NE: West on U.S. Highway 19

Horseshoe Beach Water Association

The facility is located on State Road 351, 2.4 miles east of Town of Horseshoe Beach. According to the hazards analysis based on Computer Aided Management of Emergency Operations data, the facility utilizes chlorine. Shipment of this chemical utilize the following transportation routes: U.S. Highway 19 and State Road 351. The vulnerable zone radius is 0.5 mile. According to historical accident records. No accident has been reported in the last five years.

Vulnerable Zone Evacuation Routes:

Wind from NE to SE:	North on State Road 351
Wind from SE to SW:	South on State Road 351
Wind from SW to NW:	South on State Road 351
Wind from NW to NE:	North on State Road 351

Town of Cross City Water Treatment Plant

The facility is located on Franklin Street, Cross City. According to the hazards analysis based on Computer Aided Management of Emergency Operations data, the facility utilizes chlorine. Shipment of this chemical utilizes the following transportation routes: U.S. Highway 19, Barber Street, Boundary Street, Camp Street and Franklin Street. The chlorine vulnerable zone radius is 0.5 mile. According to historical accident records, no accident has been reported in the last five years.

Vulnerable Zone Evacuation Routes:

Wind from NE to SE:	East on U.S. Highway 19
Wind from SE to SW:	East on U.S. Highway 19
Wind from SW to NW:	West on U.S. Highway 19
Wind from NW to NE:	North on State Road 351

Town of Cross City Waste Water Treatment Plant

The facility is located on Boundary Street, Cross City. According to the hazards analysis based on Computer Aided Management of Emergency Operations data, the facility utilizes chlorine and sulfur dioxide. Shipment of these chemicals utilizes the following transportation routes: U.S. Highway 19, Barber Avenue, Boundary Street, Hill Street and Camp Street. The vulnerable

zone radius for chlorine is 0.5 mile. The vulnerable zone radius for sulfur dioxide is 0.2 mile. According to historical accident records, no accident has been reported in the last five years.

Vulnerable Zone Evacuation Routes:

Wind from NE to SE:	East on Chevous
Wind from SE to SW:	South on State Road 351
Wind from SW to NW:	South or North on State Road 351
Wind from NW to NE:	South on State Road 351

Suwannee Water Association

The facility is located at 1200 Oak Street, Suwannee. According to the hazards analysis based on Computer Aided Management of Emergency Operations data, the facility utilizes chlorine and sulfuric acid. Shipment of these chemicals utilizes the following transportation routes: U.S. Highway 19, State Road 349 and Oak Street. The vulnerable zone radius for chlorine is 0.5 mile. The vulnerable zone radius for sulfuric acid is <0.1 mile. According to historical accident records, no accidents have been reported in the last five years.

Vulnerable Zone Evacuation Routes:

Wind from NE to SE:	North on State Road 349
Wind from SE to SW:	South on State Road 349
Wind from SW to NW:	South on State Road 349
Wind from NW to NE:	North on State Road 349

Critical Facilities

FACILITY NAME/LOCATION	LATITUDE	LONGITUDE	PUBLIC /PRIVATE
Dixie County Emergency Management Office	29.63166	-83.12444	Public
Emergency Rescue and Ambulance Service	29.63166	-83.12444	Public
Old Town Elementary School U.S. Highway 55A South	29.5923	-82.9785	Public
Dixie County High School P.O. Box 890/ U.S. Highway 19	29.63714	-83.13309	Public
County School Support Services U.S. Highway 19/98	29.63714	-83.13309	Public
Anderson Elementary School U.S. Highway 351 South	29.62482	-83.13061	Public
Ruth Raines Middle School U.S. Highway 351 South	29.6212	-83.13048	Public

FACILITY NAME/LOCATION	LATITUDE	LONGITUDE	PUBLIC /PRIVATE
Cross City Correctional Institute P.O. Box 1500/ Veterans Road	29.6345	-83.1014	Public
Florida Highway Patrol Station U.S. Highway 19 North	29.6366	-83.1335	Public
Old Town Fire Station George Chewning Road	29.64074	-83.01227	Public
Old Town Emergency Medical Station State Road 349 North	29.6089	-82.9872	Public
Cross City Fire Department Barber Ave	29.6359	-83.1249	Public
Cross City Police Department 740 Barber Ave	29.6365	-83.1261	Public
Suwannee Water Association Water Treatment Plant U.S. Highway 349 South	29.33888	-83.13666	Public
County Public Health Unit Airport Drive	29.62643	-83.10889	Public
County Jail Veteran Road	29.6320	-83.0978	Public
911 Dispatch Veteran Road	29.6320	-83.0978	Public
City Hall – Horseshoe Beach 5th Avenue East	29.441	-83.2873	Public
County Maintenance Garage Stockade Road	29.62781	-83.118	Public
City Hall – Cross City 740 barber Avenue	29.6365	-83.1261	Public
County Emergency Operations Center	29.6365	-83.1261	Public
County Court Annex Cedar Street and King Street	29.63681	-83.12344	Public
County Courthouse Cedar Creek and King Street	29.63681	-83.12344	Public
Cross City Water Plant Franklin Street	29.64638	-83.12750	Public
Cross City Sewer Plant Hill Street	29.63022	-83.1329	Public
Dixie County Communications Tower U.S. Highway 19/98 North	29.64805	-83.15111	Public
Radio Station WDFL U.S. Highway 351 South	29.60943	-83.13545	Public
Cross City Airport P.O. Box 1109	29.6346	-83.1074	Public
Cross City Correctional Water Treatment Plant P.O. Box 1500/ Veterans Road	29.6345	-83.1014	Public

FACILITY NAME/LOCATION	LATITUDE	LONGITUDE	PUBLIC /PRIVATE
Old Town School Water treatment Plant/ Adult Education Highway 55A South	29.5884	-82.9789	Public
Horseshoe Beach Water Treatment Plant 5th Avenue East	29.4475	-83.2859	Public
County Voting Precinct State Road 349	29.7296	-82.9894	Public
Old Town Emergency Medical Station Helistop State Road 349	29.60316	-82.9804	Public
Dixie County Construction and Debris Landfill 2 miles South of Cross City, Roscoe Swaff	29.62777	-83.08750	Public
Suwannee Water and Sewer District Waste Water Treatment Plant State Road 349	29.35388	-83.10750	Public
Horseshoe Beach Volunteer Fire Department 5th Avenue East	29.4413	-83.2861	Public

Road Transportation

Although most residents tend to concentrate on hazardous materials facilities that are located near where they live, generally far more hazardous materials are shipped through an area by road. According to data supplied by the Florida Department of Community Affairs (DCA), nearly 75 percent of all hazardous materials incidents between 1992 and 1996 in North Central Florida (Dixie, Franklin, Gadsden, Gulf, Jackson, Jefferson, Leon, Liberty, and Wakulla) were transportation related. There have been ?? reported hazardous material releases in Dixie County... additional info needed.

Companies that ship hazardous material by road are generally not required to report what types of materials they are shipping. This makes information on the types and amounts of hazardous materials shipments through an area difficult to determine. However, vehicles carrying hazardous materials are required by the US Department of Transportation to have placards on the truck / trailer identifying the material being transported.

Power Failure

Power failures have the same potential impacts in all of Dixie County. The vulnerabilities of all communities to power failures is considered moderate. Given the heavy tree cover and rural nature of the county, a power failure is a constant possibility.
Need History...

Terrorism (and Civil Disturbance)

To a certain extent the possibilities for terrorism and sabotage in Dixie County are immeasurable. Although the county's susceptibility to terrorism is thought of by the general population as minimal, there are vulnerabilities that exist. The most obvious and straight forward comes from a nearby possible nuclear hazard.

The accidental or purposeful release of radioactive material in a populated area would result in a significant number of casualties, immediate injuries and long-term health considerations. The impact on the environment would also be significant. Although most radioactive release discussions and analysis deal with the accidental release from a nuclear power plant, recent national discussion regarding domestic terrorism have raised concerns regarding the potential use of nuclear weapons and/or materials by terrorist groups.

There are two nuclear power plants in Florida…

The potential use of nuclear weapons and/or materials by a terrorist group is very difficult to assess. The scenario generally depicted for this type of incident involves large, heavily populated urban areas with major government operations, and this does not fit with the county's general profile. Weapons of mass destruction are horrifying from the perspective of a possible target; however it is the vast surrounding zone of impact that is affected, simply because of its proximity to a target that creates uncertain trepidation. Dixie County may not necessarily be a target, but it could easily be impacted due to proximity to the many surrounding targets.

Civil Disturbances

There is no history of civil disturbances within the county, and under normal circumstances civil disturbances are considered very unlikely. However, there is always the possibility of disturbances in response to adverse social and/or economic conditions. A devastating disaster, such as a major hurricane, that displaces numerous residents and disrupts the provision of public services, could result in a civil disturbance. However, the conditions under which a civil disturbance may occur make it difficult to conduct a reasonable vulnerability assessment. A disturbance at the State Prison is a possibility, but the Florida Department of Corrections has developed procedures, including notification of local officials, to deal with such an incident. Prison officials conduct periodic exercises to test those procedures.

Repetitive Loss Information

INSURED	COMPLETE ADDRESS	LONGITUDE	LATITUDE	HOUSING TYPE	REPEATED PRPERTY LOSS	TOTAL PAID	AVERAGE PAID
No	Route 1Box 25, Old Town, FL, 32680	-83.104300	29.492300	Single Family	2	28,292.47	14,146.24
No	9th Avenue West, Horseshoe Beach, FL, 32628	-83.104000	29.625300	Single Family	2	36,016.32	18,008.16
Yes	County Route 349, Suwannee, FL, 32692	-83.160000	29.309700	Single Family	2	15,547.12	7,773.56
No	Bay Street, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	2	46,507.19	23,253.60
No	Lots 56 and 57, Beverly Street, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	2	7,888.32	3,944.16
Yes	Big Bradford Subdivision, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	2	49,779.23	24,889.62
Yes	Big Bradford Road, Suwannee, FL, 32692	-83.160200	29.309500	Multi Family	2	68,071.22	34,035.61
Yes	Barbee Circle, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	2	169,635.79	84,817.90
Yes	10 Block Big Bradford Lot 9, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	2	49,558.22	24,779.11
Yes	County Road 349 South, Suwannee, FL, 32692	-83.160200	29.309700	Non Resident	2	23,254.77	11,627.39
Yes	1201 County Road 349, Suwannee, FL, 32692	-83.160200	29.309500	Multi Family	3	47,140.26	15,713.42
No	County Road 349, 19 Miles West of U.S. Highway 19, Suwannee, FL 32601	-83.160200	29.309500	Non Resident	2	128,152.43	64,076.22
No	Lots 50 & 51, Cabbage road, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	2	17,237.44	8,618.72
No	53 Cabbage Road, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	3	63,316.55	21,772.18
Yes	57, Cabbage Road, Lot 56, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	4	110,853.76	27,713.44
No	Copeland Street, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	2	3,793.26	1,896.63
Yes	Canal Street, Suwannee, FL, 32692	-83.160200	29.309500	Multi Family	3	162,364.18	54,121.39
Yes	W S Canal Street near CY Park, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	2	12,156.41	6,078.21
Yes	581 Carol Avenue, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	2	56,678.02	28,339.01
Yes	Lot 1 Dixie Street, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	2	27,942.76	13,971.38
No	State Road, Suwannee, FL 32692	-83.160200	29.309500	Single Family	3	55,744.00	18,581.33
No	E/S State Road 349, Next to Suwannee Marina, Suwannee, FL, 32692	-83.160000	29.309700	Single Family	4	48,572.24	12,143.06
Yes	336 Eloise Avenue, Suwannee, FL 32692	-83.160200	29.309500	Single Family	2	36,352.17	18,176.09
No	Ent Jena Route on P Johnson Road/Ent, Jena, FL, 32359	-83.343300	29.619100	Single Family	2	13,885.31	6,942.66
Yes	Garden Isle, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	2	8,836.42	4,418.21

INSURED	COMPLETE ADDRESS	LONGITUDE	LATITUDE	HOUSING TYPE	REPEATED PRPERTY LOSS	TOTAL PAID	AVERAGE PAID
Yes	Garden Island Replat Lot 41, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	4	76,052.71	19,013.18
No	Lots 380 & 381, Lee Street, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	2	11,163.15	5,581.58
No	200 Leon Drive, Suwannee, FL 32692	-83.160200	29.309500	Single Family	2	40,096.86	20,048.43
Yes	197 Leon Street, Suwannee, FL 32692	-83.160200	29.309500	Single Family	2	18,035.35	9,017.68
Yes	Leon Street Lot 128, Suwannee, FL, 32629	-83.160200	29.309500	Single Family	2	6,361.01	3,180.51
Yes	Last House on Right on Mullet Lane, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	2	53,633.51	26,816.76
Yes	285 McKinney Drive, Suwannee, FL, 32692	-83.160200	29.309500	Non Resident	2	52,205.31	26,102.66
Yes	399 McCoyer Lane, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	2	50,427.27	25,213.64
Yes	Mullet Road, Suwannee, FL, 32692	-83.160200	29.309500	Multi Family	3	23,591.29	7,863.76
No	Mullet Road S/S State Route 349, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	2	96,351.95	48,175.98
Yes	Munden Creek Road, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	2	12,448.62	6,224.31
Yes	Norris Street Yellow House, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	2	46,450.76	23,225.38
Yes	Off County Road 349 South S, Suwannee, FL, 32692	-83.160000	29.309700	Single Family	2	36,066.86	18,033.43
No	Off Bay Street, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	2	16,354.99	8,177.50
Yes	P.O. Box 101, Steinhatchee, FL, 32359	-83.343100	29.619400	Single Family	2	6,515,.28	3,257.64
No	P.O. Box 89, Suwannee, FL, 32692	-83.160000	29.309700	Single Family	2	11,493.83	5,746.92
Yes	3493 Parker Estates. Suwannee, FL, 32692	-83.160200	29.309500	Single Family	2	3,760.67	1,880.34
No	Spring Drive, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	2	22,780.04	11,390.02
Yes	Stewart City Subdivision Circle 385, Blocks 12 & 13, Jena, FL, 32359	-83.343300	29.619100	Single Family	2	13,773.31	6,886.66
Yes	450 Suwannee Lot 449, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	2	40,653.68	20,326.84
Yes	Suwannee Shores Subdivision Lot 62, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	2	28,548.41	14,274.21
No	Suwannee Shores Subdivision Lots 320 & 321- Leon Street, Suwannee, FL, 32692	-83.104500	29.492100	Single Family	2	57,764.38	19,254.79
Yes	Suwannee Shores Subdivision Lot 243, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	3	30,163.89	15,081.95
Yes	Suwannee River Park Section 30 S – Lot 23, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	2	7,497.65	3,748.83

INSURED	COMPLETE ADDRESS	LONGITUDE	LATITUDE	HOUSING TYPE	REPEATED PRPERTY LOSS	TOTAL PAID	AVERAGE PAID
No	County Road 349 West, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	2	16,140.50	8,070.25
Yes	½ mile West of State Route 349, Suwannee, FL, 32692	-83.160000	29.309700	Single Family	2	14,600.00	7,300.00
Yes	Suwannee Shores Subdivision Lots 284 & 285, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	3	9,586.47	3,195.49
Yes	Lot 474 & East ½ of Lot 475, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	2	29,371.37	14,685.69
Yes	8th Avenue East, Horseshoe Beach, FL, 32648	-83.284400	29.439450	Single Family	2	52,743.68	26,371.84
Yes	9th Avenue West, Horseshoe Beach, FL, 32648	-83.292750	29.439800	Single Family	2	39,961.45	19,980.73
Yes	8th Avenue West, Horseshoe Beach, FL, 32648	-83.289700	29.439800	Single Family	3	31,139.77	10,379.92
Yes	9th Avenue & 3rd Street Southwest Corner, Horseshoe Beach, FL, 32648	-83.243000	29.545100	Single Family	2	16,045.19	8,022.60
No	3536 2nd Avenue – Whales Landing, Horseshoe Beach, FL, 32648	-83.243000	29.545100	Single Family	2	36,409.25	18,204.63

Source: Repetitive Damage Records, Federal Emergency Management Agency

Land Use and Development Trends

Dixie County is located in rural, north Florida ...

Currently reviewing the Dixie County Comp Plan...

Land Uses in Dixie County

					Unincorporated Areas		Dixie County Total	
Existing Use	**Acres**	**%**	**Acres**	**%**	**Acres**	**%**	**Acres**	**%**
Residential								
Industrial								
Commercial								
Agricultural								
Rec/Open Space								
Conservation								
Public								
Historic								
Water/Other								
TOTALS								

Parcel Descriptions

Parcel Use	Number	Percentage
Residential (Manufactured Homes)		
Commercial		
Industrial		
Agriculture		
Institutional		
Government		
Miscellaneous		
TOTAL		

Source: Florida Department of Community Affairs (DCA), The Arbiter of Storms (TAOS) model

Beyond land use descriptions, the physical geographic characteristics of the county are also important in preparing a vulnerability assessment. As a result of the differing physical geographic characteristics of the county, the impacts from a natural disaster (such as a hurricane) are likely to differ throughout the county.

Looking into the future for Dixie County, mitigation must remain on our minds, in our philosophies, in our daily practices, and in our hearts. Not only do we want to look at how we are developing into the future, but also how development affects our risks. Wherever possible, we want to try and develop in ways that will at a minimum, not increase our risks to hazards, and wherever possible, try and reduce the overall risks.

Risk Assessment

In order to effectively plan hazard mitigation projects and allocate scarce financial resources, a community's vulnerability to a specific hazard must be coupled with other critical factors to perform a risk assessment.

Risk, or the probability of loss, depends on three elements:

Frequency - How frequently does a known hazard produce an impact within the community?

Vulnerability - How vulnerable is a community is to the impacts produced by a known hazard?

Exposure - What is the community's exposure in terms of life and property to the impacts produced by a specific hazard?

Once these three factors are established, the risk level faced by a community with regard to any specific hazard can be calculated using the "Risk Triangle" approach (Crichton, 1999).

In this approach, these three factors become the sides of a triangle, and the risk or "probability of loss" is represented by the triangle's area (see figure below). The larger the triangle's area, the higher the community's risk with respect to a given hazard. If a community wishes to reduce its potential for loss or risk of impacts from any given hazard, it can attack the problem by reducing any one of the three elements forming the sides of this triangle; the frequency of a hazard's occurrence, the vulnerability of the community, or the exposure of the community.

In terms of natural hazards, there is very little, if anything that can be done to change the frequency with which they produce impacts in a community. Mitigation planning relative to those hazards must therefore focus on reducing the community's vulnerability or exposure. In terms of technological and societal hazards, the most cost-effective type of mitigation is to limit or reduce the frequency with which such hazards actually occur.

Conclusion

Different areas of the county are susceptible to different disasters. Natural disasters, primarily tropical storms, hurricanes, tornadoes, and wildfires pose the greatest threat to residents. There is a threat from manmade disasters is less in this area, but it appears to be low.

The final conclusion is that every area of the county is susceptible to one or more disasters. However, through proper planning and preparation, the impacts of these disasters can be reduced. The Dixie County Local Mitigation Strategy represents a commitment by the community to identify and evaluate the various hazards the county faces and to develop the process and procedures to mitigate the impact from those hazards.

DIXIE COUNTY REPETITIVE DAMAGE

INSURED	COMPLETE ADDRESS	LONGITUDE	LATITUDE	HOUSING TYPE	REPEATED PRPERTY LOSS	
No	Route 1 Box 25, Old Town, FL 32680	-83.104300	29.492300	Single Family	2	2
No	9th Avenue West, Horseshoe Beach, FL 32628	-83.104000	29.625300	Single Family	2	3
Yes	County Route 349, Suwannee, FL, 32692	-83.160000	29.309700	Single Family	2	1
No	Bay Street, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	2	4
No	Lots 56 and 57, Beverly Street, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	2	7
Yes	Big Bradford Subdivision, Suwannee, FL 32692	-83.160200	29.309500	Single Family	2	4
Yes	Big Bradford Road, Suwannee, FL, 32692	-83.160200	29.309500	Multi Family	2	6
Yes	Barbee Circle, Suwannee, FL #2692	-83.160200	29.309500	Single Family	2	1
Yes	10 Block Big Bradford Lot 9, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	2	4
Yes	County Road 349 South, Suwannee, FL 32692	-83.160000	29.309700	Non Resident	2	2
Yes	1201 County Road 349, Suwannee, FL, 32692	-83.160200	29.309500	Multi Family	3	4
No	County Road 349, 19 Miles West of U.S. Highway 19, Suwannee, FL 32601	-83.160200	29.309500	Non Resident	2	1
No	Lots 50 and 51, Cabbage Road, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	2	1
No	Lots 380 and 381, Lee Street, Suwannee, FL 32692	-83.160200	29.309500	Single Family	2	1
No	200 Leon Drive, Suwannee, FL 32692	-83.160200	29.309500	Single Family	2	4
Yes	197 Leon Street, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	2	1
Yes	Leon Street Lot 218, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	2	6
Yes	Last House on Right on Mullet Lane, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	2	5
Yes	285 McKinney Drive, Suwannee, FL, 32692	-83.160200	29.309500	Non Resident	2	5

INSURED	COMPLETE ADDRESS	LONGITUDE	LATITUDE	HOUSING TYPE	REPEATED PRPERTY LOSS	
Yes	399 McCoyer Lane, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	2	5
Yes	Mullet Road, Suwannee, FL, 32692	-83.160200	29.309500	Multi Family	3	2
No	Mullet Road S/S State Route 349, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	2	9
Yes	Munden Creek Road, Suwannee, FL 32692	-83.160200	29.309500	Single Family	2	1
Yes	Norris Street Yellow House, Suwannee, FL 32692	-83.160200	29.309500	Single Family	2	4
Yes	Off County Road 349 South S, Suwannee, FL, 32692	-83.160000	29.309700	Single Family	2	3
No	Off Bay Street, Suwannee, FL 32692	-83.160200	29.309500	Single Family	2	1
Yes	Suwannee Shores Subdivision Lots 284 and 285, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	3	9
Yes	Lot 474 and East ½ of Lot 475, Suwannee, FL, 32692	-83.160200	29.309500	Single Family	2	2
Yes	8th Avenue East, Horseshoe Beach, FL 32648	-83.284400	29.439450	Single Family	2	5
Yes	9th Avenue West, Horseshoe Beach, FL 32648	-83.292750	29.439300	Single Family	2	3
Yes	8th Avenue West, Horseshoe Beach, FL 32648	-83.289700	29.439800	Single Family	3	3
Yes	9th Avenue and 3rd Street Southwest Corner, Horseshoe Beach, FL 32648	-83.243000	29.454100	Single Family	2	1
No	3536 2nd Avenue – Whales Landing, Horseshoe Beach, FL, 32648	-83.243000	29.454100	Single Family	2	3

Source: Repetitive Damage Records, Federal Emergency Management Agency, 1999

Mitigation Responsibilities

The following is a list of national, state, regional, local government agencies/entities and community organizations who are involved in some way with hazard mitigation.

The list identifies the government entity and role that is plays in relation to hazard mitigation.

National

Federal Emergency Management Agency – Reports to the President regarding disaster/hazardous situations. Goal is to reduce loss of life and property and to protect infrastructure from hazards.

American Red Cross – Provides medical care and disaster relief functions.

United States Department of Military Affairs – Commands the Florida Army National Guard. Provides military support in times of major disaster or civil unrest.

National Oceanographic Atmospheric Association – Describes and predicts changes in earth's environment. Help conserve and manage coastal and marine resources.

United States Coast Guard – Patrols the United States shoreline. Helps victims of floods and storms near the coast. Provides guidance for boat owners and coastal property owners on storm preparation.

United States Army Corps of Engineers – Constructs and maintains various major civil engineering projects, such as drainage control and other devices like dams, weirs, and waterways.

United State Department of Interior – Protects and provides access to our nation's natural and cultural heritage.

State/Regional

Florida Department of Community Affairs – Oversees the development of state planning activities, state's energy resources and building construction standards.

Florida Department of Community Affairs/Division of Emergency Management – Helps local governments respond and recover from natural disasters.

Florida Department of Environmental Protection – Manages coastal building zone and protects Florida's environment.

Florida Department of Transportation – Maintains federal and state roads as well as airport construction and zoning and various other types of transportation administration.

Florida Department of Environmental Protection/Florida Marine Patrol – Protects, conserves, and manages Florida's natural aquatic resources.

Suwannee River Water Management District – Conducts water resources planning that affects aquifer recharges and water quality.

North Central Florida Regional Planning Council – Coordinates and reviews of various federal, state, and local government and private sector planning and activities.

Building Officials Association of Florida – Coordinates building code enforcement among local building officials.

Florida Department of Insurance – Helps finance the reconstruction of communities following a disaster.

Agency for Health Care Administration – Oversees hospital construction and oversees various health testing services.

Florida Department of Business and Professional Regulation – Oversees elevator maintenance and safety, building inspection, engineering, architecture, and construction contractors.

Florida Department of Corrections – Builds prisons, local detention facilities, and private contract facilities.

Florida Department of Education – Oversees school construction and maintenance.

Florida Department of Management Services – Manages state public buildings and personal services.

County/Local

County Emergency Management – Oversees local emergency management planning and disaster relief.

Mitigation Initiatives

While developing the list of Mitigation initiatives, the steering committee recognized the need to prioritize the initiatives so that those initiatives with the greatest mitigation benefits were ranked over initiatives with less mitigation benefits.

The main emphasis of the prioritization procedures is to promote initiatives that support public health and safety, protect people and protect real property in the most vulnerable areas. Points are also provided for initiatives that supported essential or critical public and private services. As noted earlier, the number of mitigation goals supported by an initiative is another priority consideration. Finally, consideration is provided to those initiatives with regional benefits.

The Dixie LMS Committee continues to emphasize the mitigation process in all areas of government and community development. The integration of the LMS into the local Comprehensive Plan has been discussed by the committee. It has been recommended that the Comprehensive Plan include the primary elements of the LMS and that mitigation be considered in every developmental issue.

In developing these procedures, it is not the intent of the steering committee to direct that the initiatives be accomplished in their prioritized order. The purpose of the ranking is to indicate the overall importance of the project to local mitigation efforts. The accomplishment of an initiative will usually depend more on the availability of funds, than on how high or low it ranked compared to other initiatives.

Based on the Hazard Identification and Vulnerability Assessment the steering committee identified mitigation programs and projects that may help reduce the county's disaster profile. Using a prioritization method included in this document, the steering committee ranked each initiative.

The mitigation programs identified by the steering committee are generally non-capital efforts, such as new ordinances, changes to current ordinances and updates to existing codes and plans. These are initiatives the local governments can usually start and complete without outside assistance and/or funding. In many instances, the County and Municipalities already have the information they need to begin the programs, and simply need direction from local elected authorities to begin.

The Mitigation projects, on the other hand, are almost exclusively capital efforts, such as road paving, road elevations, building retrofits, and equipment purchases. For most of these efforts, the local governments will require outside

assistance, particularly funding assistance. The mitigation projects are ranked in order of priority but there are no recommended completion dates for them. Since many of the projects will depend on outside funding sources, each with their own eligibility criteria, it would be difficult to establish completion dates.

As noted earlier, simply because a project has a high ranking does not mean that project will be funded first. The ranking indicates the overall importance of the project to local mitigation efforts.

Obviously, Dixie County is a small community with little resources. *Infrastructure project responsibility??*

*See table of Project Initiatives

The project initiatives identified by the LMS Committee have been prioritized and will be analyzed for benefit cost based on the guidelines set forth by the state and FEMA. The Benefit Costs Ratio will be calculated on top tiered projects and/or projects which are included in any applications for funding.

Mitigation Programs

The following describes the mitigation programs developed by the steering committee. Included, as programs are ordinances, plans and other local program and policy actions designed to further promote effective Mitigation.

Implementation & Maintenance

The steering committee recognized that in order to be effective, the Dixie County Local Mitigation Strategy needed to be reviewed and updated on a regular basis. The following procedures are being outlined to fulfill this process.

1. The steering committee will meet on at least a semi-annual basis to review the local mitigation strategy and ensure it is current and reflects changing conditions within the community. This should provide adequate time to incorporate any needed revisions prior to the next grant cycle. The steering committee will meet more frequently if needed, such as in a post-disaster environment.

2. The review of the local mitigation strategy will include:

- The deletion of completed projects and/or programs

- The identification of new mitigation initiatives;
- An evaluation of the impact of recommended changes to city and/or county plans and ordinances identified during the local mitigation process; and
- An evaluation of any changes in the hazard identification and vulnerability assessment

3. As needed, additional public and private sector interests will also be invited to participate in the review. Changes recommended by the steering committee will be forwarded to Dixie County Emergency Management for consolidation. Dixie County Emergency Management will forward recommended revisions to the County Commission and City Councils for review and determination of action. Any changes to the LMS will be made available to the public for review and comment.

Time line for the 2003 / 2004 review and revision
January 2004 – LMS Committee meeting; officers elections; overview of the DMA2000

February 2004 – LMS Committee meeting; overview of the hazards & vulnerabilities assessment; discussion on the projects scoring methodology

March 2004 – LMS Committee meeting; benefit costs process and FEMA methodology; review of projects

May 2004 – LMS Committee meeting; review of the updated hazards & vulnerabilities assessment

June/July 2004 – Draft Plan

Meeting Minutes and approval / adoption documentation attached.

Future Maintenance

The Dixie LMS Committee is committed to continuing the LMS process in perpetuity. It is the intention of this committee to meet at least twice a year to discuss mitigation initiatives and review the LMS plan. A strong emphasis on project successes and the integration of the LMS into the Comprehensive plan will be the theme of the continued LMS development.

The Dixie County Emergency Management office will continue the lead in scheduling the LMS committee efforts. Each year, at the fall meeting, a new LMS Committee chairman will be elected. A notice to the public will be made before every meeting, and the results of the meetings will be submitted to the

public and to the County/City Commissions. Special meetings of the LMS committee will be called as needed. An example of this would be after a disaster event.

If possible the Dixie LMS committee will hire an outside consultant to assist in the evaluation of the LMS Plan. It will be the goal of the LMS committee to maintain a plan that has practical applications, is consistent with the guidelines set forth by the State and Federal mitigation authorities, and continues to support the mitigation goals and successes in Dixie County.

The LMS Plan will be updated in one of the following two ways.

1. The LMS committee will identify any required updates at the semi annual meeting.
2. The LMS Committee will identify any required updates any special meetings in the aftermath of a disaster event.

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