

## **Executive Summary**

The experiences of the 2004 Hurricane Season epitomize the importance of better integrating hazard mitigation activities into local comprehensive planning. Residents from all over the state experienced significant damages from Hurricanes Charley, Frances, Jeanne, and Ivan by either winds, tornadoes, surge, or flooding. But this was not the only time that we have experienced natural disaster, nor will it be the last. In 1992, Hurricane Andrew devastated South Florida. In 1998 and 1999, most counties in Florida experienced wildfires. In some cases, despite fire fighters best efforts, the fires advanced through neighborhoods and homes were lost. Every year in Central Florida, new sinkholes emerge swallowing homes and damaging infrastructure. The cost of recovery for these various disasters ranges from hundreds of thousands to billions of dollars, significantly taxing local, state, and federal financial sources. Losses covered through federal funding as a result of the 2004 hurricanes alone could reach as high as \$7 billion. Worst of all, however, are the many lives that, directly or indirectly, are lost due to natural disasters. It is imperative that we reduce the human and financial costs of natural disasters. Through better integration of natural hazard considerations into local comprehensive planning, we can build safer communities.

This profile of Madison County has been prepared as part of a statewide effort by the Florida Department of Community Affairs (DCA) to guide local governments on integrating hazard mitigation principles into local comprehensive plans. Through the process outlined in this profile, planners will be able to (1) convey Madison County's existing and potential risk to identified hazards; (2) assess how well local hazard mitigation principles have been incorporated into the County's Comprehensive Plan; (3) provide recommendations on how hazard mitigation can better be integrated into the Comprehensive Plan; and (4) determine if any enhancements could be made to the LMS to better support comprehensive planning. Best available statewide level data is provided to convey exposure and risk as well as to illustrate the vulnerability assessment component of the integration process.

### **Summary of Recommendations**

Madison County's Comprehensive Plan has good integration of hazard mitigation principles and its LMS has adequate data and goals to support comprehensive planning. There are goals, objectives, and policies that support risk reduction from natural hazards in the LMS and Comprehensive Plan. However, there are always ways to strengthen such plans, and the following is a summary of options for the County to do so.

### **Comprehensive Plan Preliminary Recommendations**

The following recommendations include hazard mitigation measures through which Madison County can continue to reduce or eliminate risks to flood, wildfire, and sinkholes. These recommendations pertain to the use of vacant lands and/or redevelopment practices. Based on the land use tabulations, most of the vacant acreage is susceptible to flood, wildfire, and sinkholes. For more information about the methodology and data used for the land use tabulations, please refer to Section 2. Hazard Vulnerability in this hazards profile.

Of the vacant lands, 5,127 acres are susceptible to 100-year flood, 857 acres are susceptible to wildfire, and 128 acres are susceptible to sinkholes.

#### *Flood*

About 6% of the 5,127 vacant acres in the 100-year floodplain are to be developed for residential, commercial, industrial uses or public facilities, indicating that these risk reduction strategies should be considered prior to development of this vacant land.

- The Comprehensive Plan should continue the implementation of policies for preserving and enhancing the natural environment (i.e., 100-year floodplain) through the enforcement of land development regulations for floodplain management and stormwater management to maintain the natural functions.
- The County should continue to give a priority ranking to projects in the Capital Improvements Element that are needed to protect public health and safety.
- The County should continue to give priority to those projects listed on the LMS project list.
- The Comprehensive Plan should continue to require that the County maintain an inventory of environmentally sensitive areas which shall include 100-year floodplains.
- The Comprehensive Plan should continue to require that the Comprehensive Stormwater Management Plan identify projected future drainage needs based on the Future Land Use Map. Projects identified as required to maintain the adopted LOS shall be funded through a stormwater utility to be implemented within two years of adoption of the Comprehensive Stormwater Management Plan.
- The County should continue to identify floodplains for acquisition under existing programs.
- The County should continue to adopt or amend land development regulations, which limit the density of dwelling units within FEMA designated 100-year floodplains such that existing flood storage is maintained and allowable densities do not create potential flood hazards, or degrade the natural functions of the floodplain.
- The County should continue to require that all structures built in the 100-year floodplain include at least one foot freeboard. Many post-disaster building performance/damage assessments have shown that it is advisable to include freeboard to reduce future flood damages. Okaloosa and Brevard Counties, the City of Jacksonville and the Santa Rosa Island Authority are example communities that have adopted freeboard requirements.
- The County should continue preparation of a stormwater master plan to further mitigate the impacts of flooding in the community. This should be listed as a prioritized project on their LMS project list for possible funding sources such as FEMA's Hazard Mitigation Grant Program.
- The Comprehensive Plan should consider prohibiting septic tanks in flood hazard areas or wetlands.
- The County should consider including a policy to not approve variances to required flood elevations.
- The County should consider establishing an impact fee and/or other equitable user-oriented revenue sources for the construction of drainage facilities, either county-wide or in districts of high flooding potential.
- The County should consider requiring areas that have not established base flood elevations to be studied prior to development.
- The County should consider calling for compensating storage calculations in flood hazard areas.

### *Wildfire*

About 3% of the 857 vacant acres that are susceptible to wildfire are to be developed for residential, commercial, industrial uses or public facilities, indicating that these risk reduction strategies should be considered prior to development of this vacant land.

- The County should continue to coordinate with area volunteer fire departments to ensure fire protection is provided to all areas of the County.
- The County should consider participating in the Firewise Medal Community program to reduce risks within the wildland urban interface.
- Where reasonable, consideration should be made to design structures and sites within the County to minimize potential for loss of life and property (e.g., outdoor sprinkler systems, fire-resistant building materials or treatments, and landscaping and site design practices); review proposals for subdivisions, lot splits, and other developments for fire protection needs during site plan review process; coordinate with fire protection service or agencies to determine guidelines for use and development in wildfire-prone areas.
- The County should consider a requirement for all new development to include and implement a wildfire mitigation plan specific to that development, subject to review and approval by the County Fire Rescue Department.
- The County should consider increasing public awareness of prescribed burning and require management plans for conservation easements that address reduction in wildfire fuels.

### *Sinkholes*

About 56% of the 128 vacant acres that are susceptible to sinkholes are to be developed for residential, commercial, industrial uses or public facilities, indicating that these risk reduction strategies should be considered prior to development of this vacant land.

- The County should continue to designate appropriate setbacks from sinkholes.
- The County should consider promoting PDR and TDR in areas highly susceptible to sinkholes.
- Through the Comprehensive Plan and/or the overlay zones, promote the use of cluster development to mitigate sinkhole hazards. In this way, the areas highly susceptible to sinkholes could be preserved as open space, while allowing other areas to be developed at a higher density.

### *General*

- The Comprehensive Plan should consider including a policy to incorporate recommendations from existing and future interagency hazard mitigation reports into the Comprehensive Plan, and should consider including these recommendations during the Evaluation and Appraisal Report process as determined feasible and appropriate by the Board of County Commissioners.
- Include each hazard layer on the existing and future land use maps to determine where risks are possible to target hazard mitigation strategies.

- The Comprehensive Plan should consider including a policy to incorporate applicable provisions of the Comprehensive Plan into the Comprehensive Emergency Management Plan and the Local Mitigation Strategy.
- The County should determine whether or not the conserved areas in the County have lifetime designations. In North Florida, some areas that were formally designated as uses with low densities are being slated for rural and urban development. It is important to determine if and when, all of the conservation agreements end, in order to determine if additional actions can be taken in the Comprehensive Plan to ensure that the property is protected.
- Continue educating the public, especially those at high risk from floods, wildfires and sinkholes, and make them aware of proactive steps they can take to mitigate damage.
- Current growth management techniques such as firewise policies, clustering, conservation of floodplains and wetlands, elevating structures in special flood hazard areas and stormwater mitigation policies are employed by the community to protect natural features and to protect areas from natural hazards. Therefore, the County should update these policies in the Comprehensive Plan, emphasizing the benefits of hazard mitigation.

### **Local Mitigation Strategy Preliminary Recommendations**

The following data and information could be included in an update of the LMS. This information could help convey how and where disasters impact the population and the built environment to support comprehensive planning.

- Include hazard maps with data layers to illustrate population (i.e., density) or property (i.e., value) exposure.
- Include a future land use map with hazard data layers (i.e., one FLUM per hazard) to illustrate which future land use categories are susceptible to each hazard.
- Include loss estimates by land use.
- Reference or include a list and/or map of repetitive loss properties.
- Include a quantitative risk assessment for existing and future development (i.e., loss estimates by occupancy class and land use) or specific critical facilities.

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## 1. County Overview



### Geography and Jurisdictions

Madison County is located in north-central Florida. It covers a total of 715.8 square miles, of 691.8 square miles are land and 24 square miles are water. There are three incorporated municipalities within Madison County, as shown in **Table 1.1**. The City of Madison serves as the county seat.

### Population and Demographics

According to the April 1, 2004 population estimate by the University of Florida's Bureau of Economic and Business Research (BEBR), population estimates for all jurisdictions within Madison County and the percent change from the 2000 U.S. Census are presented in **Table 1.1**. Most residents live in unincorporated jurisdictions. Madison County has experienced significant population growth in recent years, a trend that is expected to continue. Between 1990 and 2000, Madison County had a growth rate of 13.1%, which is more than half the statewide average of 23.5% for the same time period.

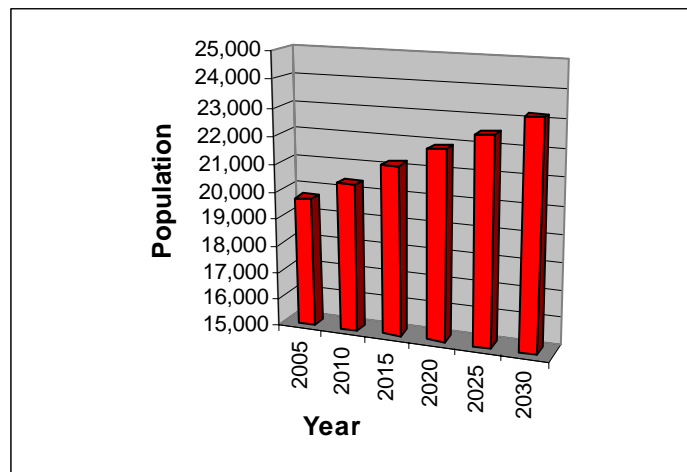
**Table 1.1 Population Estimates by Jurisdiction**

Jurisdiction	Population (Census 2000)	Population (Estimate 2004)	Percent Change 2000-2004	Percent of Total Population (2004)
Unincorporated	14,483	15,169	4.74%	77.80%
Greenville	837	847	1.19%	4.34%
Lee	352	387	9.94%	1.98%
Madison	3,061	3,095	1.11%	15.87%
<b>Total</b>	<b>18,733</b>	<b>19,498</b>	<b>4.08%</b>	<b>100.00%</b>

Source: University of Florida, Bureau of Economic and Business Research, 2004

According to BEBR (2004), Madison County's population is projected to grow steadily and reach an estimated 23,200 by the year 2030, increasing the average population density of 28 to 33 persons per square mile. **Figure 1.1** illustrates medium growth population projections for Madison County based on 2004 calculations.

**Figure 1.1 Population Projections for Madison County, 2005–2030**



Source: University of Florida, Bureau of Economic and Business Research, 2004

Of particular concern within Madison County’s population are those persons with special needs or perhaps limited resources such as the elderly, disabled, low-income or language isolated residents. According to the 2000 Census, of the 18,733 persons residing in Madison County 14.6% are listed as 65 years old or over, 24.6% are listed as having a disability, 23.1% are listed as below poverty, and 4.8% live in a home where the primary language is other than English.

## **2. Hazard Vulnerability**

### **Hazards Identification**

The highest risk hazards for Madison County as identified in the County’s Local Mitigation Strategy (LMS) are floods, wildfire, and sinkholes, which were considered to be a medium risk for the entire county.

### **Hazards Analysis**

The following analysis examines three hazard types: flood, wildfire, and sinkholes. All of the information in this section was obtained through the online Mapping for Emergency Management, Parallel Hazard Information System (MEMPHIS). MEMPHIS was designed to provide a variety of hazard related data in support of the Florida Local Mitigation Strategy DMA 2K project, and was created by Kinetic Analysis Corporation (KAC) under contract with the Florida Department of Community Affairs (DCA). Estimated exposure values were determined using the FEMA’s designated 100-year flood zones (A, AE, V, VE, AO, 100 IC, IN, AH) for flood; medium-to-high risk zones from MEMPHIS for wildfire (Level 5 through Level 9); and the combined high, very high, extreme and adjacent zones for sinkhole based on the KAC analysis. For more details on a particular hazard or an explanation of the MEMPHIS methodology, consult the MEMPHIS Web site (<http://lmsmaps.methaz.org/lmsmaps/index.html>).

#### *Existing Population Exposure*

**Table 2.1** presents the population currently exposed to wildfire in Madison County. Of the 18,733 (U.S. Census 2000) people that reside in Madison County 8.2% are exposed to wildfire. Of the 1,550 people exposed to wildfire, 65% are disabled. MEMPHIS results did not indicate any population exposure to 100-year flood or sinkhole.

**Table 2.1 Estimated Number of Persons Exposed to Selected Hazards**

<b>Segment of Population</b>	<b>Wildfire</b>
<b>Total (all persons)*</b>	1,550
Minority	533
Over 65	346
Disabled	1,009
Poverty	309
Language-Isolated	83
Single Parent	163

Source: Mapping for Emergency Management, Parallel Hazard Information System

\*Note: The “Total” amount does not equal the sum of all segments of the population, but indicates the total population at risk to the selected hazards.

#### *Evacuation and Shelters*

As discussed in the previous sections, population growth in Madison County has been steady, and the trend is projected to continue. Additionally, storm events requiring evacuation typically impact large areas, often forcing multiple counties to issue evacuation orders simultaneously and

placing a greater cumulative number of evacuees on the roadways which may slow evacuation time further. Evacuees from coastal counties will likely evacuate to inland areas, seeking shelter in host counties such as Madison County. Thus, it is important to consider evacuation times for all counties in the region as shown in **Table 2.2**. Also, it should be noted that population that will reside in new housing stock might not be required to evacuate as new construction will be built to higher codes and standards.

**Table 2.2 County Clearance Times per Hurricane Category (Hours)**  
**(High Tourist Occupancy, Medium Response)**

<b>County</b>	<b>Category 1 Hurricane</b>	<b>Category 2 Hurricane</b>	<b>Category 3 Hurricane</b>	<b>Category 4 Hurricane</b>	<b>Category 5 Hurricane</b>
Alachua	10.25	12	17.75	17.75	17.75
Bradford	18	18	18	18	18
Columbia	<i>Not Available</i>				
Gilchrist	6	6	8	8	10
Hamilton	<i>Not Available</i>				
Lafayette	<i>Not Available</i>				
<b>Madison</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>
Suwannee	<i>Not Available</i>				
Union	<i>Not Available</i>				

Source: DCA, DEM Hurricane Evacuation Study Database, 2005

Note: This is best available data in 2005, although data is not available for some counties.

As the population increases in the future, the demand for shelter space and the length of time to evacuate will increase, unless measures are taken now. Currently, it is expected to take between 8 hours to safely evacuate Madison County for each corresponding magnitude of the storm, as shown in **Table 2.2**. This data was derived from eleven regional Hurricane Evacuation Studies that have been produced by FEMA, the U.S. Army Corps of Engineers, and Florida Regional Planning Councils. The study dates range from 1995 to 2004. These regional studies are updated on a rotating basis with Northeast Florida region scheduled for completion in the fall of 2005.

Madison County currently has a significant shelter surplus. According to Florida's Statewide Emergency Shelter Plan, Madison County has an existing shelter capacity of 7,398 people. The 2004 shelter demand for a Category 4 or Category 5 hurricane is 1,660 people, leaving an existing shelter surplus of 5,738. In 2009, the projected shelter demand is 1,757, leaving an anticipated shelter surplus of 5,641. However, because Madison County is a host county there might not be enough shelter space for its own residents due to the influx of evacuees seeking shelter from nearby counties. Therefore, it is essential that Madison County continue to coordinate with nearby counties for evacuation and shelter planning. The opportunity also exists to construct new facilities to standards that will allow them to serve as shelters, and to construct future public facilities outside of floodplain areas.

It is important for counties to maintain or reduce hurricane evacuation times. This could be accomplished by using better data to determine the hazard risk to populations to evaluate which areas to evacuate, and increasing the ability to shelter in place to decrease the number of evacuees. Madison County could encourage new homes to be built with saferooms, or community centers in mobile home parks or developments to be built to shelter standards (outside of the hurricane vulnerability zones), or require that new schools be built or existing schools be retrofitted to shelter standards; which would be based on FEMA saferoom and American Red Cross shelter standards. Additionally, the county could establish level of service (LOS) standards that are tied to development.



*Existing Built Environment Exposure*

While the concern for human life is always highest in preparing for a natural disaster, there are also substantial economic impacts to local communities, regions, and even the state when property damages are incurred. To be truly sustainable in the face of natural hazards, we must work to protect the residents and also to limit, as much as possible, property losses that slow down a community's ability to bounce back from a disaster. **Table 2.3** presents estimates of the number of structures in Madison County by occupancy type that are exposed to each of the hazards being analyzed. Exposure refers to the number of people or structures that are susceptible to loss of life, property damage and economic impact due to a particular hazard. The estimated exposure of Madison County's existing structures to flood, wildfire, and sinkhole hazards was determined through MEMPHIS.

**Table 2.3 Estimated Number of Structures Exposed to Selected Hazards**

Occupancy Type	Flood	Wildfire	Sinkhole
Single Family	0	1,097	5
Mobile Home	0	324	3
Multi-Family	0	175	0
Commercial	0	294	7
Agriculture	4	2,565	2
Gov. / Institutional	0	738	14
<b>Total</b>	<b>4</b>	<b>5,193</b>	<b>31</b>

Source: Mapping for Emergency Management, Parallel Hazard Information System

There are 5,228 structures exposed to at least one of the three hazards, of which most are single-family homes in subdivisions. Of these structures, less than one percent (0.07%) are exposed to flood. There are four agricultural structures are located within the 100-year floodplain. According to the latest National Flood Insurance Program Repetitive Loss Properties list, as of March 2005, there are eight repetitive loss properties in the Madison County. Under the National Flood Insurance Program (NFIP), repetitive loss properties are defined as “any NFIP-insured property that, since 1978 and regardless of any change(s) of ownership during that period, has experienced: a) four or more paid flood losses; or b) two paid flood losses within a 10-year period that equal or exceed the current value of the insured property; or c) three or more paid losses that equal or exceed the current value of the insured property.”

About 99% or 5,193 structures are exposed to wildfire, of which 21% are single-family homes. The County is predominately rural, and the exposure to agriculture, people and property exist throughout the county. The vegetation that remains or grows back after these homes have been built could allow wildfires to spread from the rural parcels into neighborhoods. About 0.02% or 31 structures are located within sinkholes susceptible areas, of which 22.5% are commercial properties.

In addition to understanding exposure, risk assessment results must also be considered for prioritizing and implementing hazard mitigation measures. The risk assessment takes into account the probability (how often) and severity (e.g., flood depth, wildfire duration) of the hazard as it impacts people and property. Risk can be described qualitatively, using terms like high, medium or low; or quantitatively by estimating the losses to be expected from a specific hazard event expressed in dollars of future expected losses. Although people and property are exposed to hazards, losses can be greatly reduced through building practices, land use, and structural hazard mitigation measures. The next section of this report examines the existing and future land use acreage in hazard areas. This information can be useful to consider where to implement risk reducing comprehensive planning measures.

### **Analysis of Current and Future Vulnerability Based on Land Use**

The previous hazards analysis section discussed population and existing structures exposed to flood, sinkholes, and wildfire according to MEMPHIS estimates. This section is used to demonstrate the County's vulnerabilities to these hazards in both tabular format and spatially, in relation to existing and future land uses. DCA tabulated the total amount of acres and percentage of land in identified hazard exposure areas, sorted by existing land use category for the unincorporated areas. Existing land use data was acquired from County Property Appraisers and the Florida Department of Revenue in 2004. DCA also tabulated the total amount of acres and percentage of land in the identified hazards areas sorted by their future land use category according to the local Future Land Use Map (FLUM), as well as the amount of these lands listed as vacant according to existing land use. Madison County future land use data was acquired in July 2005 and might not reflect changes per recent future land use amendments.

DCA has provided maps of existing land use within hazard areas based on the 2004 County Property Appraiser geographic information system (GIS) shapefiles. Maps of future land uses in hazard areas were developed using the Madison County future land use map dated July 2005. A series of maps were created as part of the analysis and are available as attachments to the county profile. All maps are for general planning purposes only.

For the purposes of this profile, the identified hazard areas include flood zones in relation to the 100-year flood, wildfire susceptible areas, and sinkhole susceptible areas.

In **Attachment A**, two maps present the existing and future land uses within a 100-year flood zone. Floodprone areas are located in the western and southern portions of the counties, along the Suwannee, Withlacoochee and Aucilla Rivers (Madison County LMS 2005). The total amount of land in the special flood hazard area is 200,226 acres. As shown in **Table 2.4**, 90.9% are used for agriculture; 4.8% are used for parks, conservation areas, and golf courses; and 2.6% is undeveloped. **Table 2.5** shows that of the 5,126 undeveloped acres, 91% are designated for agriculture with low density development. The County has taken favorable action in designating 91% for agricultural use. As noted in the Madison County LMS, the county as a whole is very vulnerable to flooding. Therefore, the County prohibits or limits development in flood prone areas to reduce flood vulnerability, through their FLUM.

In **Attachment B**, two maps present the existing and future land uses within wildfire susceptible areas. These areas are scattered across the County. Half of the county is planted in pine and much of the county is vulnerable to wildfires. (Madison County LMS, 2005). The total amount of land in the wildfire susceptible areas is 13,073.3 acres. As shown in **Table 2.4**, 82.3% are used for agriculture; 5.6% are used for parks, conservation areas, and golf courses; and 6.6% is undeveloped. **Table 2.5** shows that of the 857.2 undeveloped acres, 93.3% are designated for agriculture. The County should continue to take measures to reduce wildfire risk within the urban/rural interface.

In **Attachment C**, two maps present the existing and future land uses within sinkhole susceptible areas. Though areas in the Cities of Madison and Lee are identified as being susceptible to sinkholes, the LMS Risk Assessment (i.e., KAC analysis) indicated the risk to be low because most of these areas are rural, sinkhole occurrence has been infrequent, and costs have been minimal. The total amount of land in the sinkhole susceptible areas is 2,555.5 acres. As shown in **Table 2.4**, 80% are used for agriculture; 5.3% are used for parks, conservation areas, and golf courses; and 5% is undeveloped. **Table 2.5** shows that of the 128.4 undeveloped acres, 55.9% are designated for low density residential and 44% are designated for agriculture. The County has the opportunity to further research sinkhole vulnerability to determine if mitigation measures are necessary.

**Table 2.4 Total Unincorporated Acres in Hazard Areas by Existing Land Use Category**

Existing Land Use Category		Flood Zones	Wildfire Susceptible Areas	Sinkhole Susceptible Areas
Agriculture	Acres	181,970.8	10,762.8	2,063.0
	%	90.9	82.3	80.7
Attractions, Stadiums, Lodging	Acres	16.9	0.0	0.0
	%	0.0	0.0	0.0
Places of Worship	Acres	48.8	2.7	5.3
	%	0.0	0.0	0.2
Commercial	Acres	37.2	3.3	2.9
	%	0.0	0.0	0.1
Government, Institutional, Hospitals, Education	Acres	828.6	126.2	60.4
	%	0.4	1.0	2.4
Industrial	Acres	10.3	5.6	0.0
	%	0.0	0.0	0.0
Parks, Conservation Areas, Golf Courses	Acres	9,626.8	727.4	135.8
	%	4.8	5.6	5.3
Residential Group Quarters, Nursing Homes	Acres	1.1	0.0	0.0
	%	0.0	0.0	0.0
Residential Multi-Family	Acres	181.9	20.1	6.5
	%	0.1	0.2	0.3
Residential Mobile Home, or Commercial Parking Lot	Acres	832.4	385.2	70.9
	%	0.4	2.9	2.8
Residential Single-Family	Acres	981.3	166.3	75.8
	%	0.5	1.3	3.0
Submerged Land (Water Bodies)	Acres	489.8	0.0	0.0
	%	0.2	0.0	0.0
Transportation, Communication, Rights-Of-Way	Acres	61.5	15.4	6.5
	%	0.0	0.1	0.3
Utility Plants and Lines, Solid Waste Disposal	Acres	12.0	1.1	0.0
	%	0.0	0.0	0.0
Vacant	Acres	5,126.9	857.2	128.4
	%	2.6	6.6	5.0
<b>Total</b>	<b>Acres</b>	<b>200,226.3</b>	<b>13,073.3</b>	<b>2,555.5</b>
	<b>%</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Source: Department of Community Affairs

**Table 2.5 Total Unincorporated Acres in Hazard Areas by Future Land Use Category**

Future Land Use Category		Flood Zones		Wildfire Susceptible Areas		Sinkhole Susceptible Areas	
		Total	Vacant	Total	Vacant	Total	Vacant
Agriculture-1	Acres	101,147.8	1,928.6	4,135.8	157.8	7.1	0.0
	%	50.5	37.6	31.6	18.4	0.3	0.0
Agriculture-2	Acres	74,245.3	2,743.8	7,001.3	643.2	1,679.6	56.6
	%	37.1	53.5	53.6	75.0	65.7	44.1
Conservation	Acres	8,932.1	40.8	731.0	3.6	128.9	0.0
	%	4.5	0.8	5.6	0.4	5.0	0.0
Highway Interchange	Acres	724.1	3.8	31.7	0.0	0.0	0.0
	%	0.4	0.1	0.2	0.0	0.0	0.0
Incorporated Areas	Acres	15.2	0.0	75.3	3.3	0.0	0.0
	%	0.0	0.0	0.6	0.4	0.0	0.0
Industrial	Acres	741.7	133.8	28.3	0.0	0.0	0.0
	%	0.4	2.6	0.2	0.0	0.0	0.0
Public	Acres	23.0	0.0	0.0	0.0	0.0	0.0
	%	0.0	0.0	0.0	0.0	0.0	0.0
Residential Low Density	Acres	5,326.7	142.5	793.0	25.6	714.0	71.8
	%	2.7	2.8	6.1	3.0	27.9	55.9
Rural Development	Acres	234.1	0.0	234.7	23.2	0.0	0.0
	%	0.1	0.0	1.8	2.7	0.0	0.0
Water/No Data	Acres	8,836.7	133.8	42.1	0.4	25.9	0.0
	%	4.4	2.6	0.3	0.0	1.0	0.0
<b>Total</b>	<b>Acres</b>	<b>200,226.6</b>	<b>5,126.9</b>	<b>13,073.3</b>	<b>857.2</b>	<b>2,555.4</b>	<b>128.4</b>
	<b>%</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Source: Department of Community Affairs

The amount of total land and existing vacant land in identified hazard areas was also tabulated for each of Madison County’s three incorporated municipalities. These amounts are listed in **Table 2.6**. The intent of this table is to show the vacant acreage in hazard zones in each municipality, and to show the percentage of vacant acreage in each hazard zone for each municipality. In the total column for each hazard, the percentage for each municipality is the hazard zone acreage as a percent of total hazard acreage for all municipalities. In the vacant column for each hazard, the percentage for each municipality is the percent of area in the hazard zone for the respective municipality. The total municipal percent of vacant acreage is the percent of acreage in the hazard zones for all municipalities.

Flood zone shapefiles were not available to perform calculations of acreage in the flood zone for the municipalities. The City of Lee has the most acres in the wildfire susceptible areas, but the City of Greenville has the largest proportion of the wildfire susceptible acres out of its vacant land area. No sinkhole susceptibility was identified for the municipalities in Madison County.

Vacant land is often destined to be developed. It is prudent to conduct further analyses of what the vacant lands will be used for, to determine whether they will be populated, and at what level of intensity/density, to ensure that hazard risks are minimized or eliminated. Each of the municipalities in Madison County has vacant lands that are in hazard areas. Since hazards cross jurisdictional boundaries, it is important to consider all hazard areas to collaboratively formulate hazard mitigation strategies and policies throughout the county.

**Table 2.6 Total Land and Existing Vacant Land in Hazard Areas by Municipal Jurisdiction**

Jurisdiction		Wildfire Susceptible Areas	
		Total	Vacant
Greenville	Acres	7.8	2.9
	%	15.1	87.9
Lee	Acres	28.5	0.4
	%	55.3	12.1
Madison	Acres	15.2	0.0
	%	29.5	0.0
<b>Total Acres</b>	<b>Acres</b>	<b>51.5</b>	<b>3.3</b>
	<b>%</b>	<b>100.0</b>	<b>100.0</b>

Source: Department of Community Affairs

### 3. Existing Mitigation Measures

#### Local Mitigation Strategy (LMS) Assessment

The Local Mitigation Strategy is suited to be a repository for all hazard mitigation analyses (i.e., vulnerability and risk assessment), programs, policies and projects for the county and municipalities. The LMS identifies hazard mitigation needs in a community and alternative structural and nonstructural initiatives that can be employed to reduce community vulnerability to natural hazards. The LMS is multi-jurisdictional and intergovernmental in nature. Communities can reduce their vulnerability to natural hazards by integrating the LMS analyses and mitigation priorities into the local government comprehensive plan.

As noted in DCA’s *Protecting Florida’s Communities* Guide, one significant strategy for reducing community vulnerability is to manage the development and redevelopment of land exposed to natural hazards. Where vacant land is exposed to hazard forces, local government decisions about allowable land uses, and the provision of public facilities and infrastructure to support those uses, can have major impacts on the extent to which the community makes itself vulnerable to natural hazards. Where communities are already established and land is predominately “built out,” local governments can take initiatives to reduce existing levels of vulnerability by altering current land uses both in the aftermath of disasters, when opportunities for redevelopment may arise, and under “blue sky” conditions as part of planned redevelopment initiatives.

Per the DCA’s *Protecting Florida’s Communities* Guide, LMSes prepared pursuant to the state’s guidelines (Florida Department of Community Affairs, 1998) have three substantive components:

Hazard Identification and Vulnerability Assessment. This section identifies a community’s vulnerability to natural hazards. Under Florida rules, the HIVA is required to include, at a minimum, an evaluation of the vulnerability of structures, infrastructure, special risk populations, environmental resources, and the economy to any hazard to which the community is susceptible. According to FEMA, LMSes revised pursuant to the Disaster Mitigation Act of 2000 (DMA 2000) criteria must include maps and descriptions of the areas that would be affected by each hazard to which the jurisdiction is exposed, information on previous events, and estimates of future probabilities. Vulnerability should be assessed for the types and numbers of exposed buildings, infrastructure, and critical facilities with estimates of potential dollar losses. Plan updates will be required to assess the vulnerability of future growth and development.

Guiding Principles. This section lists and assesses the community’s existing hazard mitigation policies and programs and their impacts on community vulnerability. This section typically contains a list of existing policies from the community’s Comprehensive

Plan and local ordinances that govern or are related to hazard mitigation. Coastal counties frequently include policies from their PDRPs.

Mitigation Initiatives. This component identifies and prioritizes structural and non-structural initiatives that can reduce hazards vulnerability. Proposals for amendments to Comprehensive Plans, land development regulations, and building codes are often included. Structural projects typically address public facilities and infrastructure, and buy-outs of private structures that are repetitively damaged by flood. Many of these qualify as capital improvement projects based on the magnitude of their costs and may also be included in the capital improvements elements of the counties' and cities' Comprehensive Plans.

The Madison County LMS (adopted in 2004) was assessed to determine if the hazard analysis and vulnerability assessment (i.e., flood, wildfire, and sinkhole) data can support comprehensive planning, whether the guiding principles include a comprehensive list of policies for the county and municipalities, and whether the LMS goals and objectives support comprehensive planning goals, objectives, and policies (GOP). Future updates to the assessment will include working with Madison County to determine if the capital improvement projects are included in the LMS hazard mitigation project list.

*Hazard Analysis and Vulnerability Assessment (Section 2. pp 1-131)*

The strengths and weaknesses of the Hazard Analysis and Vulnerability Assessment are as follows:

Strengths:

- Provides a hazards analysis, a qualitative vulnerability assessment, and a quantitative risk assessment for each hazard.
- Provides a clear description of geographic areas exposed to each of the hazards.
- Includes maps for each of the hazards.
- Provides information about demographic, income, and special needs population
- Provides population exposure to multi-hazards.
- Provides property exposure (building count and dollar value) by occupancy classes to each hazard.
- Provides loss estimates by occupancy class for each hazard.
- Includes a future land use map for the county and each municipality.
- Includes a list of critical facilities that will be used for a vulnerability analysis.
- Provides a list of repetitive losses.

Weaknesses:

- Hazard maps do not include data layers to illustrate population (i.e., density) or property (i.e., value) exposure.
- Does not include a future land use maps that include hazard data layers to illustrate which future land use categories are susceptible to each hazard.
- Does not include loss estimates by land use.

Incorporating land use and population data into the risk assessment of the LMS provides a better source of data for planners to use in policy making and policy evaluation of the local comprehensive plan. The LMS also sets a standard for the quality of data that should be used in determining risk and thereby used to determine mitigation policies.

*Guiding Principles*

The Madison County LMS Guiding Principles section contains a list of policies for the county and each municipality. Guiding Principles have been identified in existing County ordinances and

existing Plans to reduce the risk of property damage and loss of life; provide safe and sanitary housing in suitable environments; maintain the integrity of natural functions; protect floodplains and wetlands; and coordinate planning with municipalities, other counties and regional, state and federal entities. The Guiding Principles section is found in most counties' LMSes and is useful in providing the different jurisdictions ideas for enhancing their own plans or providing the LMS committee an analysis of where there may be weaknesses in implementing mitigation strategies.

#### *LMS Goals and Objectives*

The Madison County LMS has goals that support mitigation principles that are found in the comprehensive plan. A list of the LMS goals pertaining to comprehensive planning can be found in **Attachment D**. An assessment of whether the LMS goals and objectives are reflected in the comprehensive plan (and vice versa) is provided in **Table 5.1** as part of the preliminary recommendations. Final recommendations will result from a collaborative process between DCA, Madison County, and PBS&J. The following is a summary of the LMS goals that support comprehensive plan GOPs.

Goal 1 refers to enhancing and maintaining county capability to implement a Comprehensive countywide hazard loss reduction strategy. Objectives include the review of existing county agency programs, plans and policies to determine their effectiveness and efficiency in reducing risk and vulnerabilities to natural and manmade hazards, on annual basis; the enhancement of intra and inter-governmental coordination via the establishment and support of an on-going liaison between Federal, State, Regional and Local Governments as well as the private sector and general public through the LMS Working Group; the integration of pre and post disaster mitigation functions with the response and recovery functions detailed in the Madison County Comprehensive Emergency Management Plan (CEMP); and the design of a process for prioritizing the local projects for mitigation related funding programs. Objectives also include the establishment of a mediation process to resolve conflicts between County Agencies' existing plans, programs and mitigation related policies and integrate them into the Madison County Local Mitigation Strategy; annual updates of the county's risk and vulnerability assessments; the coordination of funding resources and opportunities among county agencies; and the support of disaster loss reduction through building codes and standards designed to reduce vulnerability and risk to all hazards.

Goal 2 emphasizes the need to increase public and private sectors awareness and support for disaster loss education practices as a means of developing a culture of hazard mitigation in Florida. Objectives include the creation of an Education and Outreach Committee of the LMS Working Group to organize and develop a comprehensive countywide mitigation education and outreach strategy; conducting a summit for education stakeholders to present and promote mitigation education programs; the development of a business continuity awareness program designed to educate the business community on the benefits of mitigation in reducing their vulnerabilities and risk to natural and man-made hazards; and the development and promotion of outreach strategies designed to educate residents and visitors of Madison County's endemic hazards, their associated risk and vulnerabilities, and the applicable mitigation actions; the incorporation of available hazard mitigation education and outreach programs/products into local public school education programs. Objectives also include the establishment of an ongoing education and outreach effort to educate elected officials on the importance of hazard mitigation to include annual report to the Madison County commissioners and other appropriate officials; the development of a public awareness campaign on the benefits of pre and post disaster mitigation through the dissemination of mitigation success stories; and the development of a strategy for working with the print, electronic and broadcast media on the dissemination of mitigation education and outreach material.

Goal 3 supports the reduction of Madison County's hazard vulnerability through the application of scientific research and development. One objective includes the establishment of partnerships with public and private research universities and Madison County educational facilities. This scientific partnership will assist in assessing Madison County's vulnerability to natural and

anthropogenic hazards in order to develop the means to reduce the potential for damage from their impacts on society.

Goal 4 supports the protection of the County's cultural, economic and natural resources. Objectives include the support mitigation initiatives that are compatible with the protection of county's cultural, economic and natural resources; the promotion of land acquisition programs that support mitigation opportunities compatible with the protection of natural and cultural resources; and the encouragement of the development of drainage improvement systems based on their compatibility with the natural environmental system functions

Goal 5 supports the reduction of the vulnerabilities of county and city owned facilities and infrastructure to natural and man-made hazards. Objectives include the establishment of hazard mitigation priorities for retrofitting of existing county and city critical facilities and infrastructure based upon risk and vulnerability assessment; and ensuring that county and city facilities and infrastructure are located, designed and constructed to complement/support local priorities as defined in the Local Mitigation Strategies.

### **Comprehensive Emergency Operations Plan (CEMP)**

The Madison County CEMP references the LMS in Annex III and outlines how the LMS is developed and used to prioritize pre- and post-disaster mitigation strategies and projects to reduce risk. The CEMP notes that all mitigation strategies, guiding principles, hazard identification and vulnerability assessment are generated by the LMS Committee, which involves participation by all county and municipal agencies including the Building Department and the Property Appraiser.

The CEMP discusses hazard mitigation in the context of standard operating procedures, activities, responsibilities and available programs. This includes post-disaster implementation of the Hazard Mitigation Grant Program and related disaster mitigation, response and recovery assistance programs, as well as pre-disaster mitigation programs such as the National Flood Insurance Program.

Though the identification of mitigation opportunities lies predominately with the County Emergency Management Director and the LMS working group, the document lists numerous activities and supporting agencies to assist in supporting mitigation in the County. All municipal planning departments are responsible to support pre- and post-disaster mitigation. Following a disaster, the County Building Department and Appraisers Office participate in post-disaster mitigation assessments.

As such, the CEMP is a good tool for planners, which includes collaborative procedures for working with emergency managers to reduce vulnerability from hazards.

### **Post-Disaster Redevelopment Plan (PDRP)**

Madison County is not required to develop a PDRP, but it is recommended.

### **National Flood Insurance Program/Community Rating System**

Madison County, the Town of Lee, and the City of Madison participate in the National Flood Insurance Program (NFIP), and the County participates in the NFIP Community Rating System (CRS) with a rating of 8.

## **4. Comprehensive Plan Review**

### **Purpose and Intent**

The Madison County Comprehensive Plan (Adopted December 2000) was reviewed for the purpose of developing this profile. This review was undertaken in order to assess what steps



Madison County has taken to integrate hazard mitigation initiatives from their Local Mitigation Strategy (LMS), and hazard mitigation initiatives in general, into the local planning process. Each Element of the Plan was evaluated to establish the extent to which the principles from the LMS were incorporated into the objectives and policies of the existing Comprehensive Plan.

### **Approach**

This review includes an assessment of the following hazards: flooding, wildfire and sinkholes. A preliminary list of objectives and policies currently contained in the Plan that pertain to hazard mitigation and any policies related to these hazards is found in **Attachment D**. The following is a discussion of the extent to which the Plan appears to address each of the hazards. Recent policy amendments may not have been available for review, or proposed policies might be in the process of creation, which address these hazards. As a result, this assessment is considered preliminary and subject to input from the local government.

### **Summary of Findings**

The highest risk hazards for Madison County as identified in the County's Local Mitigation Strategy (LMS) are floods, wildfires and sinkholes, which were considered to be a medium risk for the entire county. The Madison County Comprehensive Plan primarily focuses on the protection of environmentally sensitive areas and natural drainage features such as wetlands, floodplains, aquifer recharge areas and wellfields. Policies focus on close monitoring of these environmentally sensitive areas and on the implementation of strong development controls for development and stormwater management. Specific emergency management references related to the three hazards discussed are limited in the Plan.

Madison County is not a coastal county, so policies are not geared toward coastal management and coastal resource protection. There is an intergovernmental coordination component integrated into the Plan. This element primarily focuses on resource and infrastructure related coordination with surrounding agencies and jurisdictions and with the Suwannee River Water Management District.

### **Flooding**

Flooding is addressed from two vantage points, the protection and restoration of natural resources, and protection of vulnerable populations and properties. There are several policies directed at minimizing flooding and stormwater runoff. Suwannee River System 100-year Floodplain Special Planning Area policies are incorporated as a section of the Future Land Use Element. This section of the plan includes policies geared toward the relationship between development and re-development and the protection of the Suwannee River System. Policies also center on locating development outside of the 100-year floodplain, in order to protect life and property from the flood hazard.

Stormwater concurrency requirements are discussed extensively in the Sanitary Sewer, Solid Waste, Drainage, Potable Water and Natural Groundwater Aquifer Recharge Element. There are detailed policies to prevent the exacerbation of stormwater issues brought on by new development. For example, there is a policy in place to ensure that post-development stormwater runoff is no greater than pre-development stormwater runoff. There are additional buffering and filtering requirements for existing and proposed developments aimed at mitigating for and preventing stormwater runoff.

### **Sheltering**

As with many inland counties in Florida, in the event of a hurricane, Madison County may receive evacuees from coastal counties. The County is currently in a favorable position to shelter storm evacuees, with a significant shelter surplus. According to Florida's Statewide Emergency Shelter

Plan, Madison County has an existing shelter capacity of 7,398 people. The 2004 shelter demand for a Category 4 or Category 5 hurricane is 1,660 people, leaving an existing shelter surplus of 5,738. In 2009, the projected shelter demand is 1,757, leaving an anticipated shelter surplus of 5,641. However, because Madison County is a host county there might not be enough shelter space for its own residents due to the influx of evacuees seeking shelter from nearby counties. Therefore, it is essential that Madison County continue to coordinate with nearby counties for evacuation and shelter planning. The opportunity also exists to construct new facilities to standards that will allow them to serve as shelters, and to construct future public facilities outside of floodplain areas.

### **Sinkholes**

The Future Land Use Element, Conservation Element, and Sanitary Sewer, Solid Waste, Drainage, Potable Water and Natural Groundwater Aquifer Recharge Elements contain numerous policies that directly relate to sinkhole hazards, karst features, groundwater recharge and aquifer protection. Policies contain language to protect groundwater aquifer recharge areas by preventing drainage wells and sinkholes from use for stormwater disposal. In addition, all development near a known sinkhole is required to maintain a minimum fifty (50) foot buffer from such formations.

### **Wildfire**

Policies directly relating to the wildfire hazard were not found during this review.

## 5. Data Sources

### County Overview:

Florida Statistical Abstract – 2004 (38<sup>th</sup> Edition). Bureau of Economic and Business Research, Warrington College of Business, University of Florida. Gainesville, Florida.

State and County QuickFacts. U.S. Census Bureau. Data derived from 2000 Census of Population and Housing.

### Hazard Vulnerability:

Florida Repetitive Loss List March 05. Florida Department of Community Affairs, Division of Emergency Management, Flood Mitigation Assistance Office. March 2005.

Mapping for Emergency Management, Parallel Hazard Information System (MEMPHIS). Florida Department of Community Affairs, Division of Emergency Management.  
<http://lmsmaps.methaz.org/lmsmaps/>

Protecting Florida's Communities – Land Use Planning Strategies and Best Development Practices for Minimizing Vulnerability to Flooding and Coastal Storms. Florida Department of Community Affairs, Division of Community Planning and Division of Emergency Management. September 2004.

State of Florida 2004 Statewide Emergency Shelter Plan. Florida Department of Community Affairs, Division of Emergency Management.

State of Florida. 2005 Hurricane Evacuation Study Database. Florida Department of Community Affairs, Division of Emergency Management.

### GIS Data:

#### Flood Zone

Source: FEMA FIRM maps, digitized by FDCA/DCP.

- Areas with an "A\_", "V\_", "FPQ", "D", "100IC", or "FWIC" value in the "Zone" field in these coverages were considered to be in the 100-year flood zone, and were used in the mapping/analysis.

#### Sinkhole Hazard GIS Data

Source: Kinetic Analysis Corporation (2005)

- Areas shown/analyzed are those areas in the "Rawsink1.shp" GIS coverage supplied by KAC, where the value in the field "Gridcode" is 3 to 6, representing "High", or Very High, "Extremely High", or "Adjacent", based on the classification system used in the sinkhole hazard maps available at:

[http://lmsmaps.methaz.org/lmsmaps/final\\_cty/](http://lmsmaps.methaz.org/lmsmaps/final_cty/)

#### Wildfire Susceptibility GIS Data

Source: Florida Department of Agriculture and Consumer Services/Division of Forestry, Florida Fire Risk Assessment System (FRAS) data, 2004.

- Areas shown as "wildfire susceptible areas" and that were analyzed are those areas with a "Wildfire Susceptibility Index" value of greater than 10,000 (in north Florida counties) or greater than 0.1 (in south Florida counties)\*, based on the FRAS model, and that are also within areas of forest or shrub vegetation or "low

impact urban” land cover, based on the Florida Fish and Wildlife Conservation Commission “Florida Vegetation and Land Cover - 2003” GIS data.

\* The rating scale in the “Wildfire Susceptibility Index” GIS coverages has a range of 0 to 100,000 in north Florida counties, and a range of 0 to 1.0 in south Florida counties.

Municipal Boundaries

Source: Boundaries of municipalities were extracted from the U.S. Census 2000 “Places” GIS coverage for the State of Florida.

**ATTACHMENT A  
Maps of the Existing and Future Land Uses within the 100-year Floodplain**

**ATTACHMENT B  
Maps of the Existing and Future Land Uses within Wildfire Susceptible Areas**

**ATTACHMENT C  
Maps of the Existing and Future Land Uses within the Sinkhole Susceptible Areas**

**ATTACHMENT D**  
**Local Mitigation Strategy**  
**Goals and Objectives Pertaining to Comprehensive Planning**

Madison County's LMS includes the following goals and objectives that are directly related to local comprehensive planning and growth management:

**Goal 1: Enhance and maintain county capability to implement a Comprehensive countywide hazard loss reduction strategy**

Objective 1.1: Review existing county agency programs, plans and policies to determine their effectiveness and efficiency in reducing risk and vulnerabilities to natural and manmade hazards, on annual basis.

Objective 1.2: As a means of enhancing intra and inter-governmental coordination, establish and support an on-going liaison between Federal, State, Regional and Local Governments as well as the private sector and general public through the LMS Working Group.

Objective 1.3: Integrate the pre and post disaster mitigation functions with the response and recovery functions detailed in the Madison County Comprehensive Emergency Management Plan (CEMP)

Objective 1.4: Design a process for prioritizing the local projects for mitigation related funding programs.

Objective 1.5: Establish a mediation process to resolve conflicts between County Agencies' existing plans, programs and mitigation related policies and integrate them into the Madison County Local Mitigation Strategy.

Objective 1.6: Review and recommend at least annual updates of the county's risk and vulnerability assessments; including updates and/or changes to the inventory of critical facilities and infrastructure.

Objective 1.7: Coordinate funding resources and opportunities among county agencies.

Objective 1.8: Support the development and use of disaster loss reduction related to building codes and standards designed to reduce vulnerability and risk to all hazards.

**Goal 2: Increase public and private sectors awareness and support for disaster loss education practices as a means of developing a culture of hazard mitigation in Florida.**

Objective 2.1: Create an Education and Outreach Committee of the LMS Working Group to organize and develop a comprehensive countywide mitigation education and outreach strategy.

Objective 2.2: Conduct a summit for education stakeholders to present and promote mitigation education programs.

Objective 2.3: Develop a business continuity awareness program designed to educate the business community on the benefits of mitigation in reducing their vulnerabilities and risk to natural and man made hazards.

Objective 2.4: Develop, and promote outreach strategies designed to educate residents and visitors of Madison County's endemic hazards, their associated risk and vulnerabilities, and the applicable mitigation actions.

Objective 2.5: Identify and incorporate available hazard mitigation education and outreach programs/products into local public school education programs.



Objective 2.6: Establish an ongoing education and outreach effort to educate elected officials on the importance of hazard mitigation to include annual report to the Madison County commissioners and other appropriate officials.

Objective 2.7: Develop a public awareness campaign on the benefits of pre and post disaster mitigation through the dissemination of mitigation success stories.

Objective 2.8: Develop a strategy for working with the print, electronic and broadcast media on the dissemination of mitigation education and outreach material.

**Goal 3: Reduce Madison County's hazard vulnerability through the application of scientific research and development.**

Objective 3.1: Establish partnerships with public and private research universities and Madison County educational facilities. This scientific partnership will assist in assessing Madison County's vulnerability to natural and anthropogenic hazards in order to develop the means to reduce the potential for damage from their impacts on society.

**Goal 4: Protect the County's cultural, economic and natural resources.**

Objective 4.1: Support mitigation initiatives that are compatible with the protection of county's cultural, economic and natural resources.

Objective 4.2: Promote land acquisition programs that support mitigation opportunities compatible with the protection of natural and cultural resources

Objective 4.3: Encourage the development of drainage improvement systems based on their compatibility with the natural environmental system functions

**Goal 5: Reduce the vulnerabilities of county and city owned facilities and infrastructure to natural and man-made hazards**

Objective 5.1: Establish hazard mitigation priorities for retrofitting of existing county and city critical facilities and infrastructure based upon risk and vulnerability assessment.

Objective 5.2: Ensure that county and city facilities and infrastructure are located, designed and constructed to complement/support local priorities as defined in the Local Mitigation Strategies.

**ATTACHMENT E**  
**Madison County Comprehensive Plan Excerpts Pertaining to Hazard Mitigation**

**FUTURE LAND USE ELEMENT**

**OBJECTIVE I.1** In order to discourage the proliferation of urban sprawl and to coordinate future land uses with the availability of facilities and services, the County shall establish “urban development areas” on the Future Land Use Map. These urban development areas shall be the focal points for the provision of urban-type facilities and service, such as central potable water and sanitary sewer facilities, and the location of urban-type uses such as commercial, industrial, and residential low density (up to 2 units/acre) uses.

**Policy I.1.4** The County shall enforce standards contained within this Plan for the coordination and siting of proposed urban development near agricultural or forested areas, or environmentally sensitive areas (including but not limited to wetlands and floodplain areas) to avoid adverse impact upon existing land uses.

**OBJECTIVE I.3** The County shall protect existing developments from the potentially adverse impacts of adjacent land uses. Protective measures such as site plan review shall be required upon plan adoption as well as landscape buffer requirements when certain land uses are adjacent to or directly across from each other in order to protect uses from traffic noise, glare, etc. that would be associated with a more intensive land use. Determinants of landscape buffer requirements will include the following:

1. Identification of the land use district of the proposed use.
2. Identification whether the proposed and adjacent uses are high impact, medium impact, low impact, or residential uses.
3. Utilization of proper plant materials in landscape buffers emphasizing existing native species of plant materials.

**Policy I.3.6** The County's land development regulations shall include provisions for drainage, stormwater management, open space, convenient on site traffic flow and needed vehicle parking for all development.

**Policy I.3.8** The County shall participate in the National Flood Insurance Program and regulate development and the installation of utilities in flood hazard areas in conformance with the program's requirements.

**OBJECTIVE I.7** The County shall protect natural resources and environmentally sensitive lands (including but not limited to wetlands and floodplains).

**Policy I.7.4** Environmentally sensitive land shall be identified for protection. Floodprone area mapping, U.S. Geological Survey topographic mapping, soils maps, and the resources of the North Central Florida Regional Planning Council, Suwannee River Water Management District, and affected State agencies shall be used as resources for environmentally sensitive lands identification. These environmentally sensitive lands shall include, but not be limited to, wetlands, floodprone areas, areas designated as prime groundwater aquifer recharge areas and critical habitat areas for designated rare, threatened, endangered, or species of special concern.

**Policy I.7.5** The County shall protect groundwater aquifer recharge areas by: preventing drainage wells and sinkholes to be used for stormwater disposal, including well construction, modification and closure regulations; and by establishing regulations which prohibit the discharge and protect against accidental releases of hazardous or toxic materials to the soils or groundwater. These provisions will be applied to all Prime Natural Groundwater Aquifer Recharge Areas, Blue Spring, Campbell Sink, Johnson Sink, Madison Stream/Sink Recharge Area, Patterson Sink, Indian Lake Sink and Rogers Sink.

**Policy I.7.6** The County shall minimize the direct surface run-off into Blue Spring by employing stormwater management and land use design controls.

**OBJECTIVE I.10** The County shall coordinate the location of land uses with local soil conditions and topography as shown on maps of the United States Department of Interior Geological Survey topographic information and soil conditions as identified within the United States Department of Agriculture Soil Conservation Service Soil Survey for the County.

**Policy I.10.1** The County shall restrict development within unsuitable areas due to flooding, improper drainage, steep slopes, rock formations and adverse earth formations, unless acceptable methods are formulated by the developer and approved by the County to solve the problems created by the unsuitable land conditions.

**OBJECTIVE I.12** The County shall review innovative land development regulatory techniques for applicability to County growth management. These techniques shall include Planned Unit Development and mixed use.

**Policy I.12.1** The County shall manage future growth and development to implement the Comprehensive Plan by taking action to:

- (a) Regulate the subdivision of land;
- (b) Regulate the use of land and water consistent with this Element and ensure the compatibility of adjacent land uses and provide for open space;
- (c) Protect environmentally sensitive lands identified within the Conservation Element;
- (d) Regulate areas subject to seasonal and periodic flooding and provide for drainage and stormwater management;
- (e) Protect potable water wellfields and aquifer recharge areas;
- (f) Regulate signage;
- (g) Ensure safe and convenient on-site traffic flow and vehicle parking needs; and
- (h) Provide that development orders and permits shall not be issued which result in a reduction of the level of service standards adopted in this Comprehensive Plan.

**OBJECTIVE I.13** The County shall ensure the availability of suitable land for essential services necessary to support proposed development including potable water, natural gas, sanitary sewer, solid waste disposal, telephone, television, radio, electrical substations and telecommunications towers.

**Policy I.13.1** The County shall implement criteria for the siting of essential services. These criteria shall provide exclusionary or protective measures for land areas designated for conservation, wellfield protection and other environmentally sensitive lands such as floodplains, wetlands and critical habitat areas. Approval for essential services shall be by special exception and for essential services to be approved within wetlands and environmentally sensitive areas, it must be shown:

1. That they cannot be reasonably located out of these environmentally sensitive areas.
2. Once such facilities are in place, i.e. underground transmission lines, any disturbed wetlands must be restored.
3. No such development can be permitted within wetlands unless the applicant has secured the necessary proper state and federal approvals.
4. No such development can be approved which disrupts, alters, or destroys the functioning of a major natural or pre-existing man-made drainage feature or facility.

#### **SUWANNEE RIVER SYSTEM 100-YEAR FLOODPLAIN SPECIAL PLANNING AREA**

**OBJECTIVE S.1** To help ensure that development proposals and activities wholly or partially within the 100-year floodplain of the Suwannee River system are conducted in accordance with the physical limitations of this environmentally sensitive area, the County shall coordinate with all agencies with jurisdiction within the 100-year floodplain of the

**Suwannee River system to provide for affected agency review prior to the issuance of a County development permit. Further, the use of septic tanks shall be regulated in accordance with the provisions of Chapter 10D-6, FA.C.**

**Policy S.1.1** The County shall request the Suwannee River Water Management District to provide a complete set of topographic maps delineating the 100-year and 10-year flood elevations within the County's jurisdiction along the Suwannee River system.

**Policy S.1.2** The County shall notify the Suwannee River Water Management District of preliminary subdivision plats, site and development plans, rezoning or reclassification of lands, and special exception hearings within the 100-year floodplain of the Suwannee River system. The purpose of such notification is to provide opportunity for the District to coordinate, among appropriate agencies, the review and commenting on the potential impact of such plans or proposals on the natural resources of the Suwannee River system. The review and comment period shall be within the development review time frames established in the County's Land Development Regulations.

**Policy S.1.3** The review of preliminary subdivision plats and site and development plans within the 100-year floodplain of the Suwannee River system shall be based on the best available information regarding the physical characteristics of the site, including floodplain and wetlands delineation, soil conditions, vegetative cover, and critical wildlife habitat areas.

**OBJECTIVE S.2: The County shall protect unique natural areas within the Suwannee River system, including but not limited to springs and spring runs, critical habitat areas for fish and wildlife, unique vegetative communities, and public recreation areas.**

**Policy S.2.1** The County shall provide for the evaluation of unique natural areas within the 100-year floodplain of the Suwannee River system during the development review process. The identification of such areas shall be based on the best available information provided by the Suwannee River Water Management District or other appropriate sources, including but not limited to land cover and vegetative mapping, resource investigations, and special site investigations. Strategies for protecting unique natural areas shall be coordinated with state and regional resource management agencies.

**Policy S.2.2** The County shall require an undisturbed regulated buffer along the property lines of public lands within the 100-year floodplain of the Suwannee River system for the purposes of visual screening, stormwater runoff and erosion control, public safety, and buffering potentially incompatible land uses. The width of such buffering shall be established as a cooperative effort with the Suwannee River Water Management District. Variations in the width of this buffer shall be made only for cases of undue hardship and on a site-specific review.

**Policy S.2.3** The County shall participate in the acquisition planning process of state and regional agencies for lands and unique natural areas located within the 100-year floodplain of the Suwannee River system.

**Policy S.2.4** The County shall monthly monitor the use of County-owned facilities on or within the 100-year floodplain of the Suwannee River system to ensure that the public use of these facilities does not threaten the facility or adjacent natural resources. Such facilities shall be maintained in order to prevent any potential adverse impacts to the Suwannee River system such as erosion, release of inadequately treated stormwater or wastewater, or the accumulation of trash and debris.

**OBJECTIVE S.3: The County shall protect the 100-year floodplain of the Suwannee River system by regulating land use types, densities and intensities for all lands within it.**

**Policy S.3.1** The County hereby recognizes those lands within the County's jurisdiction lying within the 100-year floodplain of the Suwannee River system as environmentally sensitive.

**Policy S.3.2** The lands within the 100-year floodplain, as designated by the Federal Emergency Management Agency, Flood Insurance Rate Map, as amended, of the Suwannee River System, which are located outside of the designated urban development areas shall maintain an average lot size of 10 acres. This designated corridor area shall conform with the following densities: dwelling units may be clustered on smaller lots with no lot being less than 5 acres, if the site is developed as a Planned Residential Development and a density of 1 dwelling unit per IC acres be maintained on site. All lots within this designated corridor shall have a length to width ratio no greater than 3 to 1. In addition, the County's land development regulations shall allow normal silvicultural and non-intensive agricultural activities which are suited to soil conditions, but shall prohibit the location of intensive agricultural uses (the term intensive agriculture means all areas of concentrated animal density generally associated with dairy cattle operations) and non-residential uses such as industrial activities and commercial uses within these areas, although resource-based activities, such as campgrounds of less than 100 campsites, may be allowed as special exceptions).

**Policy S.3.3** The County shall require the vacating or replacing of those portions of unimproved, undeveloped, and unrecorded subdivisions containing lots of record within the 100-year floodplain of the Suwannee River system which do not meet the minimum lot area requirements based upon density standards established in the County's Comprehensive Plan.

**Policy S.3.4** The County shall, inside designated urban development areas within the 100-year floodplain of the Suwannee River system, limit dwelling unit density of residential uses to no greater than one (1) dwelling unit per acre, and each individual parcel conforms to all applicable state and County regulations. Further, septic tanks shall be prohibited in the 100-year flood plain unless it can be shown that there is no negative environmental impact to the Suwannee River due to the allowance of said septic tank.

**Policy S.3.5** The County shall require that a minimum undisturbed, vegetated buffer of seventy-five (75) feet measured from the generally recognized river bank of the Suwannee River be maintained for all single-family residential uses. Other land uses shall conform with the variable buffer requirements contained in Rule 40BA.3030(4), F.A.C., as administered by the Suwannee River Water Management District. Exception may be made for the provision of reasonable access to the river. A minimum undisturbed, vegetated buffer of fifty (50) feet shall be required around all other streams tributary to the Suwannee River system. Agricultural and silvicultural operations shall at a minimum adhere to the buffer standards of established Best Management Practices.

**OBJECTIVE S.4 All development and redevelopment occurring in the 100-year floodplain of the Suwannee River system shall meet the building and design standards of the National Flood Insurance Program, the County, and the Suwannee River Water Management District.**

**Policy S.4.1** The County shall conform to the National Flood Insurance Program requirements for construction activities undertaken in the 100-year floodplain of the Suwannee River system.

**Policy S.4.2** The County shall require that all habitable structures be elevated no less than one foot above the 100-year flood elevation, without the use of fill materials in the regulatory floodway of the Suwannee River system.

**Policy S.4.3** The County shall require that all road construction and improvement projects within the 100-year floodplain of the Suwannee River system be designed in such a manner as to avoid any increase in floodway obstruction, any increase in floodway obstruction, any increase in the peak rate or volume of stormwater runoff, and any increase in pollutant loading to the receiving waters.

## **HOUSING ELEMENT**

**OBJECTIVE III.1** The County shall adopt standards and shall provide for the allocation of residential usage which can be reasonably expected to developed by 2010.

**Policy III.1.2** No development will be allowed within 100 year floodplain as designated by the Federal Emergency Management Agency, Flood Insurance Rate Map, unless such development adheres to all FEMA building regulations and restrictions.

## **SANITARY SEWER, SOLID WASTE, DRAINAGE, POTABLE WATER AND NATURAL GROUNDWATER AQUIFER RECHARGE ELEMENT**

**OBJECTIVE IV.2** Although sewer and water line extensions are under the jurisdiction of municipalities and other public facility providers, the County shall coordinate with the municipalities and other public facility providers to ensure that extensions are made in the areas of greatest growth a and in areas with poor soils and/or other conditions least capable of supporting septic tanks and private water wells. This Coordination shall include, but not be limited to, initiatives made by the County to share land use information with the municipalities, review of soils data in areas adjacent to municipalities and interlocal agreements providing for sewer and water line extensions by the municipalities into adjacent unincorporated areas in conjunction with grants and other similar activities mutually agreed upon by the municipalities and the County.

**Policy IV.2.2** The County shall prohibit the installation of septic tanks in locations with unsuitable soils, as determined by the permitting standards of the DHRS, Madison County Health Unit, and shall prohibit septic tanks and other on-site sewage disposal systems in the 10-year floodplain of the Suwannee River System, unless it can be shown that there is no negative impact upon Suwannee River.

## **POLICIES FOR DRAINAGE**

**Policy IV.2.8** The County hereby establishes the following level of service standards for drainage facilities:

### **Level Of Service Standard**

For all projects not exempted from Chapter 40B-4 and 17-25, Florida Administrative Code within the County, stormwater management systems must be installed such that the peak rate of post-development runoff will not exceed the peak-rate of pre-development runoff for storm events up through and including either.

1. A design storm with a 10-year, 24-hour rainfall depth with Soil Conservation Service Type II distribution falling on average antecedent moisture condition for projects serving exclusively agricultural, forest, conservation, or recreational uses; or
2. A design storm with 100-year critical duration rainfall depth for projects serving any land use other than agricultural, silvicultural, conservation, or recreational uses.
3. Facilities which directly discharge into an Outstanding Florida Water shall include an additional level of treatment equal to the runoff of the first 105 inches of rainfall from the design storm consistent with Chapter 17-25.025(9), Florida Administrative Code, in order to meet the receiving water quality standards of Chapter 17-302, Florida Administrative Code. Stormwater discharge facilities shall be designed so as not to lower the receiving water quality below the minimum conditions necessary to assure the suitability of water for the designated use of its classification as established in Chapter 17-302, Florida Administrative Code.

Any development exempt from Chapter 17-25 or 40-B-4 as cited above and which is adjacent to or drains into a surface water, canal or stream, or which enters a ditch which empties into a sinkhole, shall first allow the runoff to enter a grassed swale or other conveyance designed to percolate 80 percent of the runoff from a three year, one hour

design storm within 72 hours after a storm event. In addition, any development exempt from Chapter 17-25 or 40B-4, as cited above, which is directly discharged into an Outstanding Florida Water shall include an additional level of treatment equal to the runoff of the first 1.5 inches of rainfall from the design storm consistent with Chapter 17-25.025(9), Florida Administrative Code, in order to meet the receiving water quality standards of Chapter 17-302, F. A. C Stormwater discharge facilities shall be designed so as not to lower the receiving water quality below the minimum condition necessary to assure the suitability of water for the designated use of its classification as established in Chapter 17-302, Florida Administrative Code.

**Policy IV.2.9** The County's land development regulations shall include provisions which prohibit the construction of structures or landscape alterations which would interrupt natural drainage flows, including sheet flow and flow to isolated wetland systems.

**Policy IV.2.10** The County's land development regulations shall include a provision which requires a certification, by the preparer of the permit plans, that all construction activity undertaken shall incorporate erosion and sediment controls during construction.

**OBJECTIVE IV.5** The County shall coordinate with the Water Management District to protect the functions natural groundwater recharge areas and natural drainage features, by requiring that all developments requiring subdivision approval be reviewed by the Water Management District prior to final approval of the plat.

**Policy IV.5.1** The County's land development regulations shall provide for the limitation of development adjacent to natural drainage features to protect the functions of the feature. Such provisions shall include, but are not limited to, requirements that urban development be designed to maintain predevelopment flow characteristics, retention and/or detention as necessary to maintain/improve water quality and flow. These requirements shall be coordinated with the water management district to ensure consistency.

**Policy IV.5.2** The County shall provide for the limitation of development and associated impervious surfaces in prime groundwater recharge areas designated by the Water Management District to protect the functions of the recharge area, by limiting impervious of development to 30% of ground coverage

### **CONSERVATION ELEMENT**

**OBJECTIVE V.2** The County shall implement land development regulations. For the conservation, appropriate use and protection of the quality and quantity of current and projected water sources, water recharge areas and potable water wells.

**Policy V.2.5** The County shall, through the development review process, require that post-development runoff rates and pollutant loads do not exceed pre-development conditions.

**Policy V.2.6** The County's land development, regulations shall require all new development to maintain the natural functions of environmentally sensitive areas, including but not limited to wetlands and 100-year floodplains so that the long term environmental integrity and economic and recreational value of these areas is maintained.

**Policy V.2.7** The County's land development regulations shall provide for the regulation of development within 100-year floodplains in order to maintain the flood-carrying and flood storage capacities of the floodplains and reduce the risk of property damage and loss of life.

**Policy V.2.11** The County shall, as part of the developmental review process, limit development to low density and non-intensive uses in prime groundwater aquifer recharge areas designated by the Water Management District, in order to maintain the natural features of these areas.

**Policy V.2.12** The County as part of the development review process shall require the maintenance of the quantity and quality of surface water runoff within freshwater stream to sink watersheds by prohibiting any development which may diminish or degrade the quality and quantity of surface water runoff within the County.

**Policy V.2.A** Development of Industrial areas located in fracture zones, areas of known/sinkhole formation, and Karst topography features will be required (at the Developer's expense) to be checked by ground penetrating radar to identify underground cavities and areas of potential sinkholes, will be so identified from the data gathered by Department of Environmental Protection, or the Suwannee River Water Management District.

**Policy V.2.B** Industries and businesses using hazardous materials shall avoid using sites with known underground Cavities and sites with potential for sinkhole formation (RPC, LGV, DER).

**Policy V.2.C** There shall be no septic tanks placed within the 10-year floodplain of the Suwannee River System unless there is no negative environmental impact to the Suwannee River.

**Policy V.2.D** No hazardous materials or hazardous waste shall be stored within the floodplain.

**OBJECTIVE V.2.1: Floodplains in Madison County will be protected by requiring development to be conducted within the physical limits of this environmentally sensitive resource in accordance with the following policies:**

**Policy V.2.1.1** "Floodplain" shall be defined as the one-hundred (100) year floodplains shown on the Flood Insurance Rate Maps (FIRM) published by the Federal Emergency Management Agency, effective July 16, 1991.

**Policy V.2.1.2** Development on sites which include areas within the one-hundred (100) year floodplain shall be required to be located outside of the floodplain wherever possible.

**Policy V.2.1.3** Subdivisions shall be required to include buildable area outside of the floodplain on each lot, wherever possible.

**Policy V.2.1.4** Fill within floodplains shall be limited to the minimum which is necessary for development and access.

**Policy V.2.1.5** Fill shall be placed and designed so as to minimize interference with natural water flows.

**OBJECTIVE V.4 The County land development regulations shall include best management practices for the conservation, appropriate use and protection of fisheries, wildlife and wildlife habitats.**

**Policy V.4.7** A Natural Resource Management Area means an area located within Madison County which area is characterized by one or more of the following:

1. A wetland (connected) and including wetland fringe areas which are essential for maintaining the hydro-period of the wetland. For the purposes of this definition, wetlands mean lands that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands include swamps, marshes, bogs, sloughs, wet prairies, bay heads, cypress domes and strands, riverine swamps and marshes, hydric, seepage slopes, and similar areas.
2. A wetland or upland habitat for a species listed as either "threatened" or "endangered" by the Florida Game and Freshwater Fish Commission. For the purposes of this Chapter, the location of habitat areas shall be as established by the Game and Freshwater Fish Commission based on area-wide studies of individual sites; OR
3. An area within five hundred (500) feet of a potable water wellfield; OR



4. An area within two hundred (200) feet of a historic structure or site or known or suspected archaeological site which is eligible for listing on the National Register of Historic Places. For the purposes of this Chapter, a site will be considered eligible if it is listed on the National Register of if it is included on the Master Archaeological Site File maintained by the Bureau of Historic Preservation, Florida Secretary of State.
5. Specific designated areas within the one hundred (100) year floodplain.

**Policy V.4.8** In order to adequately protect within natural resource management areas from development, the following standards will be applied:

1. Within areas designated “highway Interchange”, on the Future Land Use Map, and for uses within areas designated as floodprone. High aquifer recharge, or wetlands on the Future Land Use Map Series and for which a site plan is required,, all development proposals shall be accompanied by evidence that an inventory of wetlands; soils posing severe limitation to construction; unique habitat; endangered species of wildlife and plant; and areas prone to periodic flooding has been conducted. Where development is determined to encroach upon a resource, in order to ensure the protection preservation, or natural functions of the resource, a specific management plan shall be prepared by the developer, which includes necessary modifications to the development, specific setbacks and buffers, and clustering of development away from site resources. In order to assure that the improvements necessary for environmental mitigation are constructed as approved by Madison County, the developer shall post to the County, a bond at least equal to the cost of the improvements.

**Policy V.4.14** All new development and redevelopment within a “high recharge area” shall not reduce the aquifer recharge quality or quantify (volumes and rates). Subsurface storage and flow shall stimulate pre development natural conditions.

**Policy V.4.15** Hazardous waste handling and storage within “high recharge areas” shall meet all applicable federal and state requirements prior to issuance of any development orders.

**OBJECTIVE V.5** The County shall require a special development review of all development that impacts upon forest land, vegetative communities, limestone or limestone/dolomite.

**Policy V.5.1** Development that impacts upon forest and vegetative communities, limestone or limestone dolomite in all land use areas shall be subject to special review requirements:

1. Development of industrial areas located in fracture zones, areas of known sinkhole formation, and Karst topography features will be required (at the developer’s expense) to be checked by ground penetrating radar to identify underground cavities and areas of potential sinkhole formation. Areas containing potential fracture zones and/or areas of potential sinkholes, will be identified from the data gathered by Department of Environmental Regulation, of the Suwannee River Water Management District.

All development near a known sinkhole will maintain a least a fifty (50) foot buffer from such formations. Additionally, no sink formation shall be filled or excavated, and no debris placed adjacent to the sink, until a professional investigation has been conducted to determine what actions are necessary to protect adjacent property and ground water quality.

2. Industries and businesses using hazardous materials shall avoid using sites with known underground cavities and sites with potential for sinkhole formation.
3. There shall be no septic tanks placed within the 10-year flood plain of rivers, streams, and other bodies of flowing water except in accordance with Chapter 10D-6 F.A.C.
4. No hazardous materials or hazardous waste shall be used, generated, or stored within the flood plain.
5. The County shall require that the multiple use of forest resources be included in development plans, to provide for timber production, recreation, wildlife habitat, watershed protection, erosion control, and maintenance of water quality.

**OBJECTIVE V.6:** “Flood plains” in Madison County will be protected.

**Policy V.6.1** "Flood plain" shall be defined as the one-hundred (100) year flood plains shown on the Flood Insurance Rate Maps (FIRM) published by the Federal Emergency Management Agency, effective July 16, 1991.

**Policy V.6.2** Development on sites which include areas within the one-hundred (100) year flood plain shall be required to be located outside of the flood plain wherever possible.

**Policy V.6.3** Subdivisions shall be required to include buildable area outside of the flood plain on each lot, wherever possible.

**Policy V.6.4** Fill within flood plains shall be limited to the minimum which is necessary for development and access.

**Policy V.6.5** Fill shall be placed and designed so as to minimize interference with natural water flows.

**Policy V.6.6** No hazardous materials or hazardous waste shall be used, generated or stored within the flood plain.

### **CAPITAL IMPROVEMENTS PLAN ELEMENT**

#### **Drainage Level Of Service Standards** **Level Of Service Standard**

For all projects not exempted from Chapter 40B-4 and 17-25, Florida Administrative Code within the County, stormwater management systems must be installed such that the peak rate of post-development runoff will not exceed the peak-rate of pre-development runoff for storm events up through and including either:

1. A design storm with a 10-year rainfall depth with Soil Conservation Service Type II distribution falling on average antecedent moisture conditions for projects serving exclusively agricultural, forest, conservation, or recreational uses; or
2. A design storm with 100-year critical duration rainfall depth for projects serving any land use other than agricultural, silvicultural, conservation, or recreational uses.
3. Facilities which directly discharge into an Outstanding Florida Water shall include an additional level of treatment equal to the runoff of the first 1.5 inches of rainfall from the design storm consistent with Chapter 17-25.025(9), Florida Administrative Code, in order to meet the receiving water quality standards of Chapter 17-302, Florida Administrative Code. Stormwater discharge facilities shall be designed so as not to lower the receiving water quality below the minimum conditions necessary to assure the suitability of water for the designated use of its classification as established in Chapter 17-302, Florida Administrative Code.

Any development exempt from Chapter 17-25 or 40B-4 as cited above and which is adjacent to or drains into a surface water, canal, or stream, or which enters a ditch which empties into a sinkhole, shall first allow the runoff to enter a grassed swale or other conveyance designed to percolate 80 percent of the runoff from a three year, one hour design storm within 72 hours after a storm event. In addition, any development exempt from Chapter 17-25 or 40B-4 as cited above, which is directly discharged in to an Outstanding Florida Water shall include an additional level of treatment equal to the runoff of the first 1.5 inches of rainfall from the design storm consistent with Chapter 17-25.025(9), Florida Administrative Code, in order to meet the receiving water quality standards of Chapter 17-302, F. A. C. Stormwater discharge facilities shall be designed so as not to lower the receiving water quality below the minimum condition necessary to assure the suitability of water for the designated use of its classification as established in Chapter 17-302, Florida Administrative Code.