

Integrating Hazard Mitigation into Comprehensive Planning

Desoto County Profile

Florida Department of Community Affairs



The experiences of the 2004 hurricane season epitomize the importance of better integrating hazard mitigation activities into local comprehensive planning. Last fall, residents all over the state experienced significant damages from Hurricanes Charley, Frances, Jeanne, and Ivan as a result of winds, tornadoes, surge, and/or flooding. But this was not the only time we have experienced natural disasters, 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 firefighters' best efforts, 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 DeSoto County Profile has been prepared as part of a statewide effort by the Florida Department of Community Affairs to guide local governments in integrating hazard mitigation principles into local Comprehensive Plans. Information provided in this profile will enable planners to (1) convey DeSoto 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 be better integrated into the Comprehensive Plan; and (4) determine if any enhancements could be made to the Local Mitigation Strategy (LMS) to better support comprehensive planning. Best available statewide level data are provided to convey exposure and risk as well as illustrate the vulnerability assessment component of the integration process.

In this profile, we present an argument for why hazard mitigation needs to be a part of comprehensive planning through an examination of population growth, the hazards that put the County at risk, the special needs population and structures that could be affected by these hazards, and the distribution of existing and future land uses in different hazard areas. We hope that this analysis will serve as an example of the issues each jurisdiction should consider as they update their plans to include hazard mitigation. The profile also contains a review of the LMS and the Comprehensive Plan. Based on the analysis and review, we were able to develop specific options for the County on how to incorporate more hazard mitigation into the Comprehensive Plan and how to enhance the LMS so that it is also a better tool for local planners.

During our review, we found that DeSoto County had many strengths regarding hazard mitigation in both its LMS and Comprehensive Plan, and these are outlined in the profile. There are always ways to further strengthen such plans, however, and the following is a summary of some of the options that would enable the County to do so.

DESOTO COUNTY GENERAL RECOMMENDATIONS

- DeSoto County currently includes the following maps in their LMS: County 100-year floodplain base map, County Future Land Use Map, County Vegetation map and County wind zone map. It is suggested that this information also be included for the City of Arcadia. Furthermore, based upon completion of the state LMS objective to establish GIS/Mapping Capabilities, the county should overlay the hazard related layers with the FLUM in order to determine where growth management techniques are needed in order to minimize the vulnerability of hazard prone areas. This information could then be placed in the City and County Comprehensive plans as well as the LMS. Maps, such as

the ones in this profile, provide useful visual knowledge on the relationship between land uses and hazard zones that can be used for planning mitigation or changes in future land use map.

- The County LMS makes multiple references to the DeSoto County Comprehensive Plan and its intention of integrating hazard mitigation techniques into the comp planning process, however it doesn't mention the City of Arcadia Comprehensive Plan. Due to the fact that disasters know no boundaries and that it is requirements in Florida that all incorporated jurisdictions and counties have comprehensive plans, it is suggested that this information also be referenced in the LMS. .
- Several of the goals and objectives listed in the LMS indicate the County's intention to protect and conserve their coastal areas, marine resources and dune systems. These areas could be mapped and included in both the comprehensive plan as well as the LMS as it is unclear where these resources are located on the current maps.
- Both the LMS and the comprehensive plan make reference to many techniques used to protect natural resources, however only the LMS points out the hazard mitigation benefit gained when employing these techniques. This benefit could also be referenced in the comprehensive plan in order to provide further incentive for using such techniques.
- The County can use impact fees linked to the LOS standards or special assessment districts to finance maintenance and expansion of evacuation routes. The County can prioritize evacuation route improvements in the Capital Improvements Schedule and MPO Long-Range Transportation Plan. This is considered a best management practice from *Protecting Florida's Communities*. (FDCA, 2005b) The LMS can add an objective that supports maintaining or reducing evacuation clearance times by planning for population growth.
- The County can address redevelopment in the hazard area by only allowing redevelopment after a natural disaster to occur at the density/intensity of the land use designation currently in place. This is considered on of the best management practices from *Protecting Florida's Communities*. (FDCA, 2005b)
- The County comprehensive plan makes reference to minimizing the impacts to wetlands by using innovative design layouts (Policy 1.5.5). These innovative layouts could be described in detail and used for the purposes of hazard mitigation. Furthermore, incentives such as density bonuses could be granted to those who choose to use these innovative design techniques.

Wildfire Hazards

- The County can require management plans for conservation areas that address reduction of wildfire fuels. Forests that are maintained, through prescribed fire or other mechanical means, will not become a wildfire risk to the nearby community.
- As mentioned above, Policy 1.5.5 of the County comprehensive plan suggests using innovative design layouts for the purposes of minimizing the impacts to wetlands. Innovative design layouts, such as those advocated by the Firewise USA program . Furthermore, the county can require firewise neighborhood design as a condition of approval for subdivision or PUS in high risk areas.
- The County can adopt LDRs that limit residential development in high-risk fire areas, such as those adjacent to conservation lands. Limiting development near conservation

areas will assuage some of the liability and practical issues of using prescribed fire as a management practice.

NOTE: The recommendations set out in this section are only suggestions. Through the workshop process and contact with the local governments, the goal of this project is to result in specific recommendations tailored and acceptable to each county. While the profile addresses hurricanes, flooding, wildfire, and sinkholes, the County should consider other hazards, if appropriate, such as tornadoes and soil subsidence, during the update of the local Comprehensive Plan.



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 Attachment B: Maps of the Existing and Future Land Uses within Wildfire
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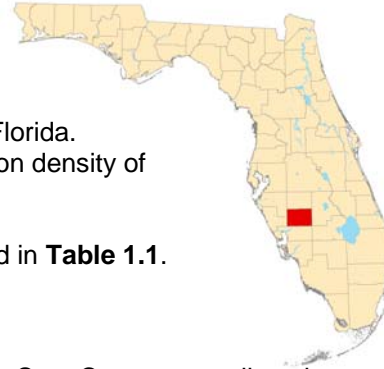
 Attachment C: DeSoto County Local Mitigation Strategy Goals and Objectives C-1

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Geography and Jurisdictions

DeSoto County is located along the southwestern portion of Florida. It covers a total of 637 square miles with an average population density of 50.5 people per square mile (U.S. Census, 2000).



There is one incorporated municipality within the County listed in **Table 1.1**.

Population and Demographics

Official 2004 population estimates for all jurisdictions within DeSoto County as well as the percent change in population from the 2000 U.S. Census are presented in **Table 1.1**. The most current estimated countywide population of DeSoto County is 34,105 people (University of Florida, Bureau of Economic and Business Research, 2004). Approximately 79.5% of the countywide population lives in the unincorporated portion of the County. Between 1990 and 2000, DeSoto County as a whole had a growth rate of 35%, which was greater than the statewide growth rate of 23.5% in those 10 years.

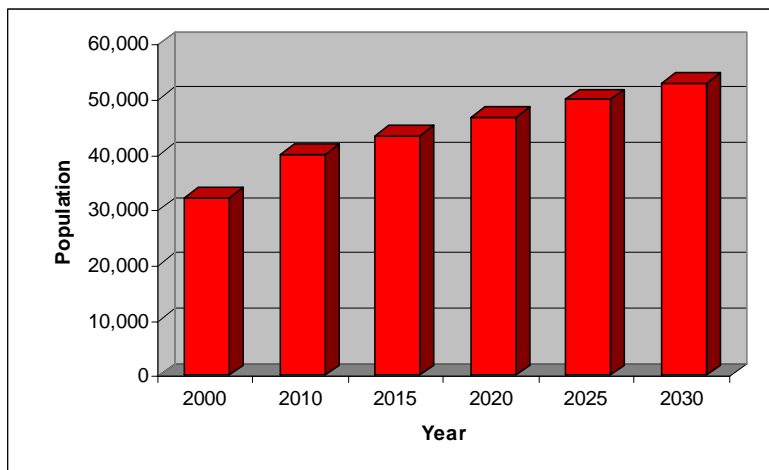
Table 1.1 Population Estimates by Jurisdiction

Jurisdiction	Population, Census 2000	Population Estimate, 2004	% Change, 2000-2004	% of Total Population (2004)
Unincorporated	25,605	27,251	6.4%	79.9%
Atlantis	6,604	6,854	3.8%	20.1%
Countywide Total	32,209	34,105	5.9%	100.0%

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

According to the University of Florida, Bureau of Economic and Business Research (2004), DeSoto County’s population is projected to grow steadily for the next 25 years, reaching 52,900 people by the year 2030. **Figure 1.1** illustrates medium population projections for DeSoto County based on 2004 calculations.

Figure 1.1 Medium Population Projections for DeSoto County, 2010-2030



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

Of particular concern within DeSoto County’s population are those persons with special needs and/or limited resources such as the elderly, disabled, low-income, or language-isolated residents. According to the 2000 U.S. Census, 19% of DeSoto County residents are listed as 65 years old or over, 20.5% are listed as having a disability, 23.6% are listed as below poverty, and 24.1% live in a home with a primary language other than English.



Hazards Identification

The following are natural hazards that pose a risk for the County as identified in the County’s Local Mitigation Strategy (LMS): hurricanes, floods, wildfires, tornadoes, freezes and sink holes. The LMS did not prioritize these hazards, however, the hazard profiles did include a discussion of the risk faced by the community concerning each of these hazards. Hurricanes, wildfires and floods were considered to have a high risk, whereas the risk to the community from tornadoes and freezes was determined to be medium and sinkholes low.

The county experiences flooding on a regular basis, especially during heavy rainfall events in low lying areas along the Peace River and Horse Creek. Wildfire also poses a high risk. In DeSoto County during 1998/1999 brush fire seasons the Florida Division of Forestry responded to a total of 48 wildfires totaling 278.8 acres. Between the year 1993 and 1999, the DeSoto County Department of Public Safety reported 1261 wildfire events. Although DeSoto County is not located along the coast, hurricanes pose a great threat to the area and can have both excessive wind and water impacts.

Hazards Analysis

The following analysis looks at two major hazard types: flooding and wildfire. All of the information in this section, except the evacuation and shelter estimates, 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 DMA2K revision project. It was created by Kinetic Analysis Corporation under contract with the Florida Department of Community Affairs (FDCA). Estimated exposure values were determined using the Category 3 Maxima Scenario for storm surge, the Federal Emergency Management Agency’s (FEMA’s) designated 100-year flood zones (A, AE, V, VE, AO, 100 IC, IN, AH) and levels of concern 5 through 9 for wildfire. 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>) or your countywide LMS.

Existing Population at Risk

Table 2.1 presents the estimated countywide population at risk from hazards, as well as a breakdown of the sensitive needs populations at risk. The first column in the table summarizes the residents of DeSoto County that live within FEMA Flood Insurance Rate Map zones that signify special flood hazard areas. According to these maps, 4.5% of the population, or 1,561 people, are within the 100-year flood zone. A majority of those at risk of flooding are either elderly and/or disabled. These special-needs citizens require extra planning by local governments to ensure their safety. Wildfire is also a hazard of concern to the County, with 74.3% of the population living in medium- to high-risk wildfire zones. Thirty-three percent of those at risk from wildfire are disabled, making a quick evacuation difficult.

Table 2.1 Estimated Number of Persons at Risk from Selected Hazards

Population	Flood	Sinkhole (high-adjacent risk)	Wildfire (medium-high risk)
Minority	61	0	6,535
Over 65	537	0	4,266
Disabled	693	0	8,376
Poverty	215	0	4,961
Language Isolated	0	0	0
Single Parent	55	0	1,187
Countywide Total	1,561	0	25,325

Source: Florida Department of Community Affairs, 2005a.

Evacuation and Shelters

As discussed in the previous sections, population growth in DeSoto County has been steady, and this trend is projected to continue. As the population increases in the future, the demand for shelter space and the length of time it takes to evacuate the County is only going to increase. Currently, evacuation clearance times for DeSoto County are estimated to be 18 hours for Category 3, 4 and 5 hurricanes, as shown in **Table 2.2**. These data were derived from 11 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 and are updated on a rotating basis. According to Rule 9J-5, counties must maintain or reduce hurricane evacuation times. Some experts have suggested that counties should try to achieve 12 hours or less clearance time for a Category 3 hurricane. This is due to the limited amount of time between the National Hurricane Center issuing a hurricane warning and when the tropical storm-force winds make landfall. DeSoto County is able to meet this recommendation for now, but with continued growth and the limited road network of the region, it will be difficult to maintain this evacuation time. Additionally, storm events requiring evacuation typically impact larger areas, often forcing multiple counties to issue evacuation orders and placing a greater number of evacuees on the major roadways, further hindering evacuation progress. Thus, it is important to not only consider evacuation times for DeSoto County, but also for other counties in the region as shown in **Table 2.2**.

**Table 2.2 County Evacuation Clearance Times in Hours
(High Tourist Occupancy, Medium Response)**

County	Hurricane Category				
	1	2	3	4	5
Desoto	18	18	18	18	18
Glades	3	3	3	9	9
Hardee	5	5	5	5	5
Hendry	6	6	6	6	6
Highlands	2	2	2	2	2
Polk	13	13	13	13	13

Note: Best available data as of 7/05

Source: State of Florida, 2005

(some counties may be in the process of determining new clearance times)

Coupled with evacuation is the need to provide shelters. If adequate space can be provided in safe shelters for DeSoto County residents, then this could be a partial solution to the ever-increasing clearance times for evacuation. Currently, the State Shelter Plan reports that there is space for 4,245 people in the County's shelters, and there are 2,171 more people that will need sheltering in the case of a Category 5 hurricane. It is projected that by 2009 the deficit will increase to 3,002 people in need of space (FDCA, 2004). The County will need to address this deficiency but might also try to decrease the demand for public shelters by encouraging new homes to be built with safe rooms if they are outside of flood and surge zones. Residents who

are further inland in the County and not in a flood zone could shelter in place if they had a safe room that could withstand hurricane-force winds. Safe rooms could at least be a last option for residents who cannot evacuate in time, especially in the case of a tornado.

Existing Built Environment

While the concern for human life is always of utmost importance in preparing for a natural disaster, there also are large 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 recover from a disaster. **Table 2.3** presents estimates of the number of buildings in DeSoto County by structure type that are at risk from each of the four hazards being analyzed.

Flooding presents a large risk to property in the County, with 12,141 structures within a flood zone. A majority of those structures are designated as single-family homes or agricultural uses. According to the latest National Flood Insurance Program Repetitive Loss Properties list, there are 21 homes in unincorporated DeSoto County that have had flood damage multiple times and received insurance payments but have not remedied the recurring problem.

Table 2.3 also shows 9,954 structures with a medium to high risk for wildfire, with 33.5% of those structures being single-family homes.

Table 2.3 Estimated Number of Structures at Risk from Selected Hazards

Structure Type	Flood	Sinkhole (high-adjacent risk)	Wildfire (medium-high risk)
Single-Family Homes	3,423	0	3,339
Mobile Homes	1,495	0	2,018
Multi-Family Homes	913	0	722
Commercial	831	0	477
Agriculture	4,581	0	1,291
Gov./Institutional	898	0	2,107
Total	12,141	0	9,954

Source: Florida Department of Community Affairs, 2005a.

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 not only the people and property in a hazard area, but also the probability of occurrence that is necessary to understand the impacts to people and property. 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 in considering where to implement risk reducing comprehensive planning measures.

Analysis of Current and Future Vulnerability

The previous hazards analysis section discussed population and existing structures at risk from flooding and wildfire according to MEMPHIS estimates. This section demonstrates the County's vulnerabilities to these hazards spatially and in relation to existing and future land uses. The following maps of existing land use within hazard areas are based on the 1999 geographic information system (GIS) shapefiles from the Florida Department of Environmental Protection and the Southwest Florida Regional Planning Council. Maps of future land uses in hazard areas were developed using the DeSoto County future land use map obtained in 2005.

In **Attachment A**, two maps present the existing and future land uses within a 100-year flood zone. There are large swaths of flood-prone areas along the banks of water bodies located in the western and southeastern portions of the county. In addition to this, patches of flood-prone areas can be found throughout the county. The total amount of land in these special flood hazard areas is 98,096.5 acres for the unincorporated County. As shown in **Table 2.4**, only 47.3 acres are currently undeveloped, however, a majority of the flood prone land is mostly currently in agricultural uses with a smaller percentage in conservation/recreational uses. **Table 2.5** shows that 18.1% of the flood prone acres are designated for conservation overlay, with 12.5% designated for rural residential uses and 65.0% designated for rural agricultural uses.

In **Attachment B**, maps present the land uses associated with high-risk wildfire zones. The central area of the County, which includes the City of Arcadia contains much of the areas at risk from wildfire, in addition to a vulnerable large low density residential area located west of the City of Arcadia in the unincorporated county. A total of 1.8% of the land within these wildfire zones is currently vacant, as shown in **Table 2.4**. Of those 358 undeveloped acres the majority of the land is designated for urban/residential uses including, 60% is for suburban residential, 15.4% for town center uses and 10.2% designated for municipal uses in the future (**Table 2.5**). If homes are built in these risk areas, DeSoto County's vulnerability to wildfire hazards will greatly increase. Additionally, 32.7% of the wildfire susceptible areas already have low residential development (including high, medium and low density) present, as seen in **Table 2.4**. Large-lot residential development is the most at risk since these homes typically are surrounded by wooded lots and often do not have enough defensible space to stop a wildfire from spreading throughout the neighborhood.

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

Existing Land Use Category		Flood Zones	Wildfire Susceptible Areas
Agriculture	Acres	82,011.0	10,975.5
	%	83.6	55.8
Commercial	Acres	34.6	326.8
	%	0.0	1.7
Government, Institutional, Hospitals, Education	Acres	76.0	163.6
	%	0.1	0.8
Industrial	Acres	49.7	7.4
	%	0.1	0.0
Parks, Conservation Areas, Golf Courses	Acres	12,459.1	952.6
	%	12.7	4.8
Residential High-Density	Acres	49.0	113.2
	%	0.0	0.6
Residential Low-Density	Acres	1,089.2	3,879.0
	%	1.1	19.7
Residential-mh	Acres	250.1	2,427.3
	%	0.3	12.4
Submerged Lands (Water Bodies)	Acres	1,973.2	172.5
	%	2.0	0.9
Transportation, Communication, Rights-of-Way	Acres	13.8	229.6
	%	0.0	1.2
Utility Plants and Lines, Solid Waste Disposal	Acres	43.5	46.4
	%	0.0	0.2
Vacant	Acres	47.3	358.3
	%	0.0	1.8
Total Acres	Acres	98,096.5	19,652.2
	%	100.0	100.0

Table 2.5 Total and Undeveloped Acres in Hazard Areas by Future Land Use Category for the Unincorporated County

Future Land Use Category		Flood Zones		Wildfire Susceptible Areas	
		Total	Undev.	Total	Undev.
Conservation Overlay	Acres	17,748.3	12.7	1,698.3	3.3
	%	18.1	26.8	8.6	0.9
Mixed Use Corridor	Acres	38.3	0.0	208.7	0.0
	%	0.0	0.0	1.1	0.0
Municipality	Acres	188.2	3.1	1,163.5	36.6
	%	0.2	6.6	5.9	10.2
Preservation	Acres	797.0	0.0	191.1	0.0
	%	0.8	0.0	1.0	0.0
Public/Insitutional	Acres	432.5	0.0	229.4	0.0
	%	0.4	0.0	1.2	0.0
Recreation	Acres	257.0	0.0	50.6	0.0
	%	0.3	0.0	0.3	0.0
Rural Residential	Acres	12,231.7	21.0	6,243.8	47.9
	%	12.5	44.4	31.8	13.4
Rural/Agricultural	Acres	63,804.1	2.5	5,154.4	0.0
	%	65.0	5.3	26.2	0.0
Semi-Rural Residential	Acres	670.8	0.0	1,059.4	0.0
	%	0.7	0.0	5.4	0.0
Suburban Residential	Acres	1,356.1	8.0	2,203.4	214.9
	%	1.4	16.9	11.2	60.0
Town Center	Acres	572.5	0.0	1,420.1	55.3
	%	0.6	0.0	7.2	15.4
Urban Residential	Acres	0.0	0.0	29.6	0.2
	%	0.0	0.0	0.2	0.1
Total	Acres	98,096.6	47.3	19,652.2	358.3
	%	100.0	100.0	100.0	100.0

Table 2.6 presents the total numbers of acres in a hazard zone in DeSoto County's incorporated areas and how many of those acres are currently undeveloped. The City of Arcadia currently has 172.3 acres within the flood zone, with only 1.8% of this land vacant and 1,118.4 acres within wildfire susceptible areas with only 3.1% of this land vacant. Much of the land located within the hazard areas is considered to be developed or not vacant and therefore mitigation techniques must be appropriately applied to current development in order to reduce the vulnerability of these areas.

Table 2.6 Total and Vacant Incorporated Acres in Hazard Areas

Jurisdiction		Flood Zones		Wildfire Susceptible Areas	
		Total	Vacant	Total	Vacant
Arcadia	Acres	172.3	3.1	1,118.4	34.8
	%	100.0	1.8	100.0	3.1
Total Acres	Acres	172.3	3.1	1,118.4	34.8
	%	100.0	1.8	100.0	3.1



Local Mitigation Strategy

The LMS is an ideal repository for all hazard mitigation analyses, policies, programs, and projects for the County and its municipalities due to its multi-jurisdictional and intergovernmental nature. The LMS identifies hazard mitigation needs in a community and structural or non-structural initiatives that can be employed to reduce community vulnerability. Communities can further reduce their vulnerability to natural hazards by integrating the LMS analyses and mitigation objectives into their Comprehensive Plans.

An LMS prepared pursuant to the State’s 1998 guidelines has three substantive components (FDCA, 2005b):

Hazard Identification and Vulnerability Assessment (HIVA). 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 the community is susceptible to. According to FEMA, LMSs 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, 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 monetary 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. The Guiding Principles typically contain 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 Post-Disaster Redevelopment Plans (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 LMS Goals and Objectives will guide the priority of the mitigation initiatives.

The DeSoto County LMS (adopted in 2004) was used as a source of information in developing this profile and was also reviewed for any enhancements that could be made to allow better integration with other plans, particularly the local Comprehensive Plans.

Hazard Identification and Vulnerability Assessment

This section of the LMS was briefly reviewed for its ability to provide hazard data that can support comprehensive planning. The LMS uses detailed data on structures at risk for all of the major hazards discussed in this profile. It does not, however, discuss populations at risk or future land use issues. The maps included in the appendix of the LMS show the hazard areas. Future land use maps have also been included. While these two layers have not been overlain, if used together it can provide valuable information. 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

While there is a guiding principles section in the LMS, it doesn't directly fits the above-described Guiding Principles section. The DeSoto LMS does not list policies from other plans that relate to hazard mitigation. It does, however, have a section that lists the plans and studies that were used in updating the LMS (Section D: Governmental Hazard Mitigation Functions, p. 1-3). It lists the DeSoto county Flood Damage Prevention Ordinance, Peace River Comprehensive Water Management, Open Use Floodplain Districts, Flood Standard Building Code of 2001, DeSoto County Comprehensive Plan, Public Information/Educational Program on Emergency Preparedness and the Comprehensive Emergency Management Plan. It would be much more useful if a list of the hazard-related policies from each jurisdiction's Comprehensive Plan were included in the LMS for reference. This would allow all jurisdictions and County departments access to this information that can be used to judge whether more integration is needed.

LMS Goals and Objectives

The LMS Goals and Objectives can be found in **Attachment C**. The goals and objectives are also summarized in **Section 5** as part of the recommendations analysis. The following is a summary of how well the LMS has addressed mitigation issues that coincide with planning concerns.

DeSoto County has many objectives that tie mitigation through the LMS to programs and regulations that are found in other plans. The plan does a great job of linking hazard mitigation to growth management and land use planning by the way of the Goals and Objectives. The DeSoto County Comprehensive Plan and Land Development Regulations are mentioned quite a few times throughout this section of the LMS. One objective advocates the promotion and coordination of appropriate regional and local planning studies which includes local comprehensive plans, Local Mitigation Strategies and Redevelopment Plans. Another objective states that planning capabilities in all levels of government will be integrated for the purposes of maximizing citizen awareness. One of the goals of the LMS specifically addresses land use issues (Goal 2). Modifications to the Future Land Use Map as well as growth management strategies are included in the detailed objectives that further this goal.

Other policies that have a dual purpose in both the comprehensive plan and Local Mitigation Strategy include the protection of natural resources, provision of guidance and adoption of local Post Disaster Redevelopment Plan, the promotion of state programs, investments, development and re-development activities which encourage efficient development, the provision of educational programs and research to meet growth management and hazard mitigation planning needs for state, regional and local planning and the promotion of agricultural uses to protect

natural systems. Furthermore the plan contains an objective to establish a relationship with an agency that has the GIS/Mapping capabilities. The plan also states the county's intention to join the Community Rating System Program and develop or make required changes to both the city and county ordinances to address post disaster recovery operations. Additionally the plan states that landscaping and detailed site planning (development orders) as well as screening and buffering (planned development rezoning and development orders) need to be considered in planning for both residential and commercial developments. While the intent of these provisions is not clear, it would be an appropriate growth management technique to mitigate wildfires. Referencing other plans and programs in the goals and objectives of the LMS lays a clear foundation for this plan to be integrated with other plans and for its committee to oversee programs that may involve many different departments of the County and municipalities.

There is no section in this LMS, however, that lists existing policies or guiding principles from other plans within the County or its municipalities. This component is found in most counties' LMSs 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.

Comprehensive Emergency Management Plan

The Mitigation Annex of the 2002 DeSoto County CEMP was reviewed for consistency with the other plans and evaluated in its effectiveness as a tool for planners. The Annex does a good job of summarizing the responsibilities of hazard mitigation among the different agencies and organizations within the County. There is no paid employee directly responsible for mitigation, however the primary responsibility for the program is designated to the Emergency Management Specialist. While it is good that this responsibility has been allocated to a certain individual, it would be great to include more linkages to the development services and/or planning department. The CEMP states that DeSoto County and the City of Arcadia work together on policies concerning development to ensure continuity, which is very important. It would provide an added benefit to both the city and the county if hazard vulnerabilities were also included in this joint effort. The CEMP states that the county is not a member of the NFIP program, however according to FEMA records, both the county and City of Arcadia are participants. There is talk about the role of mitigation planning following a disaster as well as the funding opportunities that are available post-catastrophic event. Specific disaster-scenario mitigation functions are listed as well as both the departments that will have the primary as well as secondary role in the execution of the function.

Post-Disaster Redevelopment Plan

A PDRP for DeSoto County was not available for review at the time this profile was drafted. If DeSoto County has a current PDRP, this will be obtained and reviewed for the final version of this document.

National Flood Insurance Program/Community Rating System

DeSoto County, and the City of Arcadia are both participating communities in the National Flood Insurance Program, however neither jurisdiction currently participates in the Community Rating System program.



DeSoto County's Comprehensive Plan (adopted in 2005) was reviewed in order to see what the County has already done to integrate their LMS policies, and hazard mitigation in general, into their planning process. A list of the goals, objectives, and policies currently in the plan that contribute to hazard mitigation is found in **Attachment D**. These policies are also presented in

Section 5. The following is a summary of how well the plan addressed the four hazards of this analysis.

Flooding Hazards

Flooding was addressed in the Comprehensive Plan in multiple policies. There were many policies for protecting natural resources such as environmental sensitive lands and endangered species habitat, for environmental purposes. Wetlands protection is addressed in the Objective 1.5 for the purposes of flood control. The policies that correlate with this objective include the use of the following growth management tools for the preservation of wetlands: buffers, acquisition and innovative design layouts. Objective 1.6 of the DeSoto County Comprehensive Plan concerns floodplains and floodways and includes a policy to address the protection, restoration, and acquisition of the natural and hydraulic functions of the 100-year floodplain. The plan also contains an objective (1.2) that proposes to create a Stormwater Master Plan. It states that the county intends to pursue funding for the preparation of a Stormwater Master Plan which would establish high water elevations, address existing deficiencies, and coordinate the construction of new and replacement facilities.

Wildfire Hazards

There were no policies in the Comprehensive Plan that related to wildfire hazards. An objective to conserve fresh water supplies by the way of adopting specific Land Development Regulations indirectly relates to having sufficient water to put out a wildfire.

Other Hazard Mitigation Policies

There were other policies that furthered hazard mitigation efforts in spite of the fact that their intended purpose was not hazard mitigation related. These include the preservation of open space as well as planning coordination. The plan states its intention to encourage mixed use and cluster development that could also be used to reduce the vulnerability of developments to hazards such as wildfire and inland flooding.



For the LMS to be effective in the decision-making process of growth management, its objectives and policies must be integrated into the Comprehensive Plan. The Plan is the legal basis for all local land use decisions made. If hazard mitigation is to be accomplished beyond the occasional drainage project, these hazards must be addressed in comprehensive planning, where development can be limited or regulated in high-risk hazard areas just as sensitive environments are routinely protected through growth management policies. Mitigation of hazards is considerably easier and less expensive if done when raw land is being converted into development. Retrofitting structure and public facilities after they have been built is significantly more expensive. However, if older neighborhoods or communities are scheduled to be revitalized or redeveloped, hazard mitigation needs to be an aspect considered and integrated into the project prior to the time of development approval.

DeSoto County has begun this process of integrating hazard mitigation throughout its Plan's elements. The prior section summarized how the major hazards for the County have been for the most part well-addressed. There is, however, still some disconnection between the LMS objectives and initiatives, and the policies in the Comprehensive Plan. By tightening the connection between these documents, the County will find it easier to implement hazard mitigation, and there will be higher awareness of these issues within more departments of the County government. .

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Attachment C**DeSoto County Local Mitigation Strategy Goals and Objectives**

- GOAL 1: Florida shall reduce the vulnerability and exposure of the public by protecting lives and property from losses by natural disasters.
- Objective 1.1: Maximize the protection of the public's health, safety and welfare as they are related to natural disasters.
- Objective 1.2: Reduce the loss of personal and public property due to natural disasters.
- Objective 1.3: Require the protection of natural resources (such as environmentally sensitive lands and endangered species habitat) in order to maximize their mitigation benefits and to safeguard them from damage caused by natural disasters.
- Objective 1.4: Ensure that Florida's codes and standards are sufficient to protect public safety and property.
- Objective 1.5: Require local governments in cooperation with regional and state agencies, to prepare advance plans for the safe evacuation of coastal residents.
- Objective 1.6: Require local governments, in cooperation with regional and state agencies, to adopt plans and policies to protect public and private property and human lives from the effects of natural disasters.
- Objective 1.7: Avoid expenditure of state funds that subsidize development in high-hazard coastal areas.
- Objective 1.8: Protect coastal resources, marine resources, and dune systems from the adverse effects of development.
- Objective 1.9: Ensure mitigation measures are effectively incorporated in a comprehensive system of coordinated planning, management, and land acquisition.
- Objective 1.10: Encourage land and water uses which are compatible with the protection of sensitive coastal resources having value and benefits as mitigation measures.
- Objective 1.11: Prohibit development and other activities, which disturb coastal dune systems, and ensure and promote the restoration of coastal dune systems that are damaged.
- GOAL 2: In order to enhance hazard mitigation planning and subsequent mitigation actions, the Florida Division of Emergency Management will take a proactive lead to ensure intergovernmental coordination (before, during and after a natural disaster) among municipal, county, regional, state, federal agencies and public services groups.
- Objective 2.1: Implement a series of regularly scheduled on-going interagency disaster training programs and exercises.

- Objective 2.2: Pre-establish and regularly update a network of state interagency contacts to coordinate intergovernmental needs.
- Objective 2.3: Computerize information systems between state agencies and within the state emergency operations center to speed response, recovery, and mitigation decisions.
- Objective 2.4: Increase the availability of computerized information to all counties to speed response, recovery and mitigation decisions.
- Objective 2.5: Promote the coordination of appropriate regional and local plans and studies (i.e., Comprehensive Plans, Local Mitigation Plans and Redevelopment Plan).
- Objective 2.6: Establish and protect the essential flow of information before, during and after a natural or manmade disaster.
- Objective 2.7: Encourage greater cooperation between, among and within all levels of Florida government through the use of appropriate interlocal agreements and mutual participation for mutual benefit.
- Objective 2.8: Ensure that the State Hazard Mitigation Plan incorporates appropriate hazard mitigation measures as reflected in each agency’s functional plan.
- Objective 2.9: Ensure the development of comprehensive regional policy plans and local plans that implement and accurately reflect state goals and objectives reflected in Florida’s Section 409 Hazard Mitigation Plan that addresses hazard-related problems, issues and conditions that are of particular concern in each region.
- GOAL 3:** Reduce the vulnerability of critical public facilities from natural and manmade disasters.
- Objective 3.1: Establish uniform criteria for identifying and rating the at-risk potential of critical facilities for the purpose of protection in the event of a natural disaster.
- Objective 3.2: Disaster-proof existing and proposed critical facilities, in regards to location and construction.
- Objective 3.3: Promote the development and application of solar energy technologies and passive solar design techniques.
- Objective 3.4: Develop and maintain energy preparedness plans that will be both practical and effective under circumstances of disrupted energy supplies.
- Objective 3.5: Incorporate hazard mitigation measures in any rehabilitation or reuse of existing public facilities, structures and buildings.
- GOAL 4:** Strengthen plans for post-disaster recovery and mitigation.
- Objective 4.1: Ensure the implementation and maintenance of this statewide comprehensive hazard mitigation plan.

- Objective 4.2: Provide incentives and guidance for responsible post-disaster redevelopment.
- Objective 4.3: Encourage the adoption of local post-disaster redevelopment plans, which specifically identify potential hazard mitigation projects in advance of disaster events.
- Objective 4.4: Promote state programs, investments, development and redevelopment activities, which encourage efficient development and occur in areas which will have the capacity to service new population and commerce.
- GOAL 5: Improve coordination of emergency management information through the media in order to increase public awareness and participation in preparedness, response, mitigation and recovery.
- Objective 5.1: Develop and implement a comprehensive, multi-media/multi-lingual public education campaign on emergency preparedness, response, recovery and hazard mitigation.
- Objective 5.2: Provide educational programs and research to meet state, regional and local planning, growth management and hazard mitigation needs.
- Objective 5.3: Integrate planning capabilities into all levels of government in Florida with particular emphasis on maximizing citizen awareness and involvement.
- Objective 5.4: Establish a standardized format for use in the dissemination of information to the media following a disaster.
- Objective 5.5: Establish coordinated information and procedures for public involvement to the media during a disaster.
- GOAL 6: Florida shall protect and acquire unique natural habitats and ecological systems (such as: wetlands, tropical hard wood hammocks, palm hammocks and virgin longleaf pine forests) and restore degraded natural systems to a functional condition in order to maximize hazard mitigation values.
- Objective 6.1: Conserve forests, wetlands and coastal natural features to maintain their economic, aesthetic, and recreational values.
- Objective 6.2: Acquire, retain, manage and inventory public lands to provide conservation and related public benefits including hazard mitigation.
- Objective 6.3: Promote the use of agricultural practices, which are compatible with the protection of natural systems.
- Objective 6.4: Encourage multiple use of forest resources, where appropriate, to provide for watershed protection and erosion control and maintenance of water quality.
- Objective 6.5: Protect and restore the ecological functions of wetland systems to ensure their long-term environmental, economic and recreational values including hazard mitigation values.

- Objectives 6.6: Promote restoration of the Everglades systems and of the hydrological and ecological functions of all degraded or substantially disrupted surface waters.
- Objective 6.7: Develop and implement a comprehensive planning management and acquisition program to ensure the integrity of all Florida River Systems.
- Objective 6.8: Emphasize the acquisition and maintenance of ecologically intact systems in all land and water planning, management and regulation.
- GOAL 7:** Improve communication capabilities among states, regional, local and Federal governments and public service groups.
- Objective 7.1: Encourage greater efficiency and economy at all levels of government through adoption and implementation of effective record management, information management and evaluation procedures.
- Objective 7.2: Improve disaster related communications throughout Florida, with regard to adequate and compatible equipment and training.

The DeSoto County Local Mitigation Working Group adopted the following Goals and Objectives to be reviewed annually by the LMS:

GOAL 1:

- Objective 1.1: Within Year 1 (2005):
- Submit to the County Commission and the City Council the Local Mitigation Strategy for adoption as required by the Florida Department of Community Affairs (DCA) 9G-22.
 - Complete a list of facilities at risk from hazards and identify the high hazard area to provide a basis for the county and city to develop plans for mitigation activities.
 - Establish a relationship with an agency that has the capability to perform the required GIS/Mapping data.
 - By using mitigation worksheets, develop a list showing the Top 10 projects to be targeted for mitigation.
 - Update the list of Critical Facilities located within the County.
 - Develop a county reserve for both pre and post mitigation activities which would be required by both the Federal Government and State of Florida. Examples of projects that require matching funds under both state and federal grants are:
 - Buy out and retrofitting projects of structures along the Peace River and Horse Creek.
 - Critical Facility Improvements (public shelters and command and control facilities).
 - Public Works Projects (roads, water and sewer)
 - Development of early warning system
- Objective 1.2: Within Year 2 (2006):
- DeSoto County to join the Community Rating System under the National Flood Insurance Program. Mitigation programs undertaken by the county can reduce the number of points and can help lower flood policy rates.
 - Develop a list of all properties that have had a repetitive flooding since 1960 and seek funding for either buyouts or mitigation of

the properties. The properties will be identified and a mitigation worksheet will be completed showing the following information:

- Parcel number
- Physical address
- Dates damage occurred
- Type of structure
- Value of property
- Develop public education programs to assist both home and business owners on hazard reduction methods.
- Develop or make required changes to both county and city ordinances to address post disaster recovery operations (emergency permitting for: repairs and demolition of structures and debris removal and burning).
- Develop a list of structures that if mitigation was performed could add needed shelter spaces to house the communities at risk population from the affects of hurricanes.
- Provide information to builders and developers on the new statewide building code (pending approval by state in 2000).

Objective 1.3:

Within Year 3 (2008):

- Establish a county wide GIS system to support county agencies (Emergency Management, Public Works, Development and Tax Collector).
- Provide protection for city and county facilities from the effects of hazard identified within the strategy.

Objective 1.4:

Within Year 4 (2008):

- Increase the number of affordable housing units within the county to reduce the number of sub-standard housing units.

GOAL 2:

Addressing Land Use Issues

Objective 2.1

Future Land Use Maps:

The use of Future Land Use Maps would allow elected officials with planning agencies to see the layout of the county to assist in growth management issues.

- To maintain and enforce a Future Land Use Map showing the proposed distribution, location, and extent of land uses by type, and density in order to protect natural and man-made resources, provide essential services in a cost effective manner, and discourage urban sprawl.
- Designate on the Future Land Use Map the categories of varying intensities to provide for a full range of urban activities. These designations should be based upon soil conditions, historic and developing growth patterns, and existing or future availability of public facilities and services.
- Designate on the Future Land Use Map categories for those areas not anticipated for urban development.
- Designate on the Future Land Use Map those lands that are identified as wetlands in accordance with F.S. 373.019 through the use of the Unified State Delineation Methodology, which is described and ratified and amended in F.S. 373.4211

Objective 2.2:

Growth Management:

To provide for an economically feasible plan which coordinates the location and timing of new development with provision of infrastructure by government agencies, private utilities, and other sources.

- Future Land Use Map Amendments allows local government to regularly examine the Future Land Use Map in light of new information and changing conditions, making necessary modifications.
- To provide sufficient land for residential use in appropriate locations to accommodate the projected population of DeSoto County to the year 2020. The overall concern in dealing in identifying residential land uses is to have attractive and safe neighborhoods with a variety of price ranges and housing types.
- To provide orderly and well-planned commercial development at appropriate locations within DeSoto County including the City of Arcadia.

The following factors need to be considered in planning for both residential and commercial development:

- Traffic and access impacts (rezoning and development orders)
- Landscaping and detailed site planning (development orders)
- Screening and buffering (planned development rezoning and development orders)
- Availability and adequacy of services and facilities (Fire, Law Enforcement, schools, and Emergency Shelters).
- Impact on adjacent land uses and surrounding neighborhoods
- Proximity to other similar centers
- Environmental Considerations.

To promote opportunities for well-planned industrial development zones at suitable locations within the county and city:

- The development shall comply with local, state and federal air, water and noise pollution standards
- If located near residential areas, industry shall not generate noise levels incompatible with residential development.
- Bulk storage or production of toxic, explosive, or hazardous materials shall not be permitted near residential areas. The S.Q.G. Coordinator will perform inspections as required by Florida Statute.
- Contamination of ground or surface water shall not be permitted.

Applications for all development within DeSoto County shall be reviewed and evaluated as to how the project would affect the following concerns:

- Air emissions (Rezoning and Development Orders)
- Impact and effects on environmental and natural resources
- Effects on neighbors and surrounding land uses
- Drainage systems
- Public Safety Issues (Fire/EMS protection, Emergency Shelters)
- Impacts on transportation systems
- Water and sewer systems
- Noise and odor control

The responsible party building the project should pay any mitigation cost due to the new development.

Attachment D

DeSoto County Comprehensive Plan Excerpts Related to Hazard Mitigation

Desoto Comprehensive Plan Excerpts, November 2005

Future Land Use Element

POLICY 1.2.1: *Preservation Category Location.* The following criteria shall be used for assigning new areas for the Preservation land use category on the Future Land Use Map:

- Land already legally protected
- Publicly owned jurisdictional wetlands, floodplains and other owned public environmentally sensitive lands
- Land that has been planned for acquisition through purchase, by easement, or through the transfer of development rights
- When privately owned lands are permanently deeded or purchased for preservation purposes, the County should amend the Future Land Use Plan Map at the next available plan amendment cycle to change the land use to the Preservation designation

POLICY 1.2.2: *Uses in Preservation Category.* Only limited passive recreation facilities that enhance enjoyment of natural resources and unenclosed structures shall be allowed in Preservation areas.

Objective 1.6: **Conservation Overlay Category Defined.** The Conservation Overlay category consists of open space that is not currently protected by legal means but that may possess environmental limitations (sloping topography subject to soil erosion, wildlife habitat areas, hydric soils/wetlands, special vegetative communities, 100 year floodplain areas) but have not been confirmed as such.

POLICY 1.6.1: *Conservation Overlay Category Location.* The Conservation Overlay area on the Future Land Use Map consists of those lands potentially within environmentally sensitive areas. The lines shall **not** be considered the exact boundary of an area to be designated for preservation, but to act as an indicator of a potential preservation area. The Conservation Overlay area is not all-inclusive; other areas that do not show up on the map within the overlay boundaries but are environmentally sensitive are also subject to the applicable Land Development Regulations.

POLICY 1.6.2: *Conservation Overlay Category Uses.* This designation is not intended to prevent development, but rather to identify sensitive areas that need to be reviewed carefully during the site plan review process to

determine whether mitigation or conservation protection are needed. If the areas are determined not to be environmentally sensitive, then the underlying land use category is applicable.

POLICY 1.6.3:

Conservation Overlay Category Use Development Standards. The Land Development Regulations shall provide standards for determining whether a Conservation Overlay area is developable as follows:

- A final determination of the suitability for development of any individual parcel, as it relates to a Conservation Overlay area on the Future Land Use Map, shall be determined prior to issuance of any development approval.
- The Conservation Overlay area on the Future Land Use Map is not to be considered the exact boundary of the conservation area, but to act as an indicator of a potential conservation area. The exact boundary shall be determined by a qualified professional at the expense of the Developer.
- The Conservation Overlay area is not all inclusive and other areas that do not fall within the boundaries that meet the definition of conservation areas are also subject to the regulations affecting them.
- Development approval will be subject to an Environmental Impact Study as to the extent of the impact of development or redevelopment for any lands within Conservation Overlay areas.
- Natural resources discovered as a result of the required Environmental Impact Study will be protected to the maximum extent feasible. The Environmental Impact Study will require that a qualified professional analyze the natural functions of ecosystems and connectivity of resource corridors. A conservation land use designation or a conservation easement will be required to protect the functions of natural resources. Mitigation may be allowed on a case by case basis through the appropriate reviewing agencies.
- If an area within the Conservation Overlay area is determined to be developable and all mitigation requirements have been met, then the underlying land use on the Future Land Use Map will apply.
- Any property in a Conservation Overlay area is encouraged to undergo the planned development zoning procedure which includes site specific plan approval and the clustering of density to protect these areas.

Objective 1.9: **Sprawl and Redevelopment.** The County shall maintain regulations and procedures to limit the proliferation of urban sprawl and encourage redevelopment and revitalization of blighted areas.

POLICY 1.9.1: The County shall encourage infill and higher density and intensity development within the Urban Center areas of the County.

POLICY 1.9.3: If necessary, the County may reduce limitations on infill and redevelopment activities consistent with the land uses and densities indicated in this plan in situations that will not jeopardize public health, safety or welfare.

POLICY 1.11.2: The land development regulations shall limit the amount of required open space that can be comprised of wetlands or water bodies, rather than uplands.

POLICY 1.12.3: In order to facilitate hurricane evacuation requirements, mobile home developments at a net density of one (1) unit per acre or greater shall have direct access to arterials or major collector roads.

POLICY 1.14.5: New school sites should be well drained and education buildings should be located away from floodplains, wetlands, and other environmentally sensitive lands.

POLICY 1.14.6: Education facilities should not have an adverse impact on historic or archaeological resources.

POLICY 1.14.10: Portions of new schools should be constructed to serve adequately as emergency shelters in case of natural disasters.

GOAL 2: **RESOURCE PROTECTION.** The County shall seek to maintain and manage the County’s natural resources and significant historic resources by establishing a pattern of development that is harmonious with the County’s natural environment and quality of life.

Objective 2.1: **Natural Resource Protection.** The County shall maintain land development regulations that protect natural resources (such as, groundwater, surface water, floodplains, wildlife habitat, wetlands and other vegetative communities) from the impact of development. Additionally, the County will limit development in areas that have inadequate soils, topography or other constraints to protect public health and welfare.

POLICY 2.1.3: *Water.* The Land Development Regulations shall include standards for the protection and conservation of water resources (quality and quantity).

POLICY 2.1.5: *Floodplains.* The County shall maintain a floodplain management ordinance, which includes the development standards required for participation in the National Flood Insurance Program. Furthermore, the ordinance shall require that new construction or substantial improvement of any structure have the lowest floor elevated to eighteen (18) inches above the established 100-year flood elevation without the use of fill.

POLICY 2.1.7: *Wetlands.* Wetlands shall be delineated on the site plan according to Florida Department of Environmental Protection and the Southwest Florida Water Management District definitions, whichever standard is more restrictive. Wetlands shall mean those areas established as jurisdictional by the above agencies.

POLICY 2.1.8: *Wetland Buffers.* The minimum vegetative cover buffer required upland from a wetland is twenty-five (25) feet.

Objective 2.2: **Historic Resource Protection.** The County shall continue enforcing the historic preservation standards and criteria contained in the Land Development Regulations in order to protect the historic resources in the County.

POLICY 2.2.3: The County shall evaluate incentives for property owners to restore properties through tax incentives, special zoning allowances, and other incentives.

POLICY 2.2.4: The County shall apply for grants to conduct and update surveys of historic properties.

Traffic Circulation Element

POLICY 1.2.5: DeSoto County emergency management officials shall update their disaster preparedness plan by addressing evacuation procedures, the need for signage, and the availability and need of shelters.

POLICY 1.2.6: DeSoto County emergency management officials shall work with the Florida Department of Transportation and the Florida Department of Community Affairs to ensure that emergency evacuation routes into and through the County are maintained and are not assigned unmanageable numbers of vehicles and evacuees in times of natural or man-made disaster.

POLICY 1.1.5: DeSoto County shall continue to encourage the expansion of the private sector housing industry to meet the housing needs of the future population growth in DeSoto County by permitting mixed-use and cluster development.

Housing Element

Objective 1.7: **Historic Preservation.** The County shall preserve and protect historically and archeologically significant structures and sites.

POLICY 1.7.1: By 2010, the County shall investigate the possibility to apply for a grant to conduct a survey of historic structures.

POLICY 1.7.2: The County shall continue to encourage property owners to rehabilitate and renovate their historically significant structures by supplying them with technical assistance and information regarding any available state and federal grants.

POLICY 1.12.2: The County shall continue coordination with appropriate public and private organizations for the use of facilities, such as schools and churches, to increase the number of adequate primary public shelter spaces for residents of DeSoto County in preparation for a hurricane or other disaster involving evacuation.

Potable Water Element

Objective 1.4: **Water Conservation.** The County shall maintain initiatives to conserve potable water resources, which ensure that existing level of service standards for potable water, do not fluctuate higher than twenty (20) gallons per person per day.

POLICY 1.4.5: The County shall adhere to SWFWMD emergency water shortage restrictions when mandated by the District.

Objective 2.1: **Fire Protection Capabilities.** The County shall continue to monitor, evaluate, repair and replace the existing water delivery and distribution system facilities to ensure the system can deliver needed gallon per minute flows to meet fire protection demands.

POLICY 2.1.1: The County shall maintain an active water system and fire hydrant mapping and numbering program.

POLICY 2.1.2: The County shall establish and maintain a hydraulic model of the County’s water distribution network such that the County’s water distribution system can be routinely analyzed with respect to fire flow delivery capabilities.

POLICY 2.1.3: The County shall extend water distribution mains to areas within the County’s service area and provide adequate fire protection service to residents and non-residential establishments located within the service area provided the residents/developers participate in the costs.

Drainage Element

GOAL 1: Provide a stormwater management system of appropriate capacity to protect public health, safety and welfare of the citizens of DeSoto

County, and to meet current and future stormwater management demand, as well as decreasing inadequacies in the stormwater drainage system and water quality conditions.

Objective 1.1: **Development Impacts.** The County shall strive to protect natural drainage features and the existing stormwater network from the impacts of development and construction.

POLICY 1.1.1: The County shall require development applicants to submit detailed calculations, prepared by a registered professional engineer, showing how retention and detention will be accomplished to meet the adopted level of service, and demonstrating that there will be no negative impacts to downstream water quality or quantity.

POLICY 1.1.2: The County shall review the characteristics and limitations of soil types for new projects with regard to percolation and infiltration.

POLICY 1.1.3: The County shall review the impact proposed stormwater systems will have on adjacent native vegetation and/or wetlands.

POLICY 1.1.4: The County shall require that Best Management Practices erosion and sediment control practices be utilized to protect water bodies, wetlands, and watercourses from siltation contamination during and after construction activities.

POLICY 1.1.7: The cumulative effects of drainage from small developments, as it affects the overall drainage system, will be addressed during the site plan approval phase.

POLICY 1.1.8: Drainage from new developments shall not adversely impact the natural drainage features within the County.

Objective 1.2: **Stormwater Master Plan.** The County shall pursue funding for the preparation of prepare a Stormwater Master Plan which establishes high water elevations, addresses existing deficiencies, and coordinates the construction of new and replacement facilities.

Objective 1.3: **Correcting Facility Deficiencies.** The County shall ensure that surface water management system deficiencies are corrected and that natural drainage features are protected.

Objective 1.4: **Flood Control.** The County shall achieve and maintain the following adopted stormwater management level of service standards that shall meet or exceed state and federal regulations for stormwater quality and quantity.

POLICY 1.4.3: All structures shall be constructed at, or above the 25-year, 24-hour storm event per SWFWMD.

POLICY 1.5.4: The County shall coordinate with the Southwest Florida Water Management District to identify areas that require

immediate flood protection and to investigate areas that lack water quality treatment.

Objective 1.6: **Floodplain.** The County shall restrict development within the 100-year floodplain as identified by the FEMA Floodplain Map to those uses which will not adversely affect the capacity of the floodplain to store water.

POLICY 1.6.1: The County's Land Development Regulations shall require compensating storage volumes for floodwater displaced by development. Compensating storage volumes shall be provided between the seasonal high water level and the 100-year flood level to allow storage function during all lesser flood events

POLICY 1.6.2: The County shall require the finished floor elevation of all structures to be a minimum of eighteen (18) inches above the 100-year flood elevation or eighteen (18) twelve inches above the crown of the adjacent street, which ever is higher.

POLICY 1.6.3: The County shall require the developer to identify and certify by a qualified professional the limits of the 100-year floodplain on the development plans.

POLICY 1.6.4: Where feasible, the floodplain shall be reserved for conservation, open space and recreational uses to preserve the natural flow of runoff.

POLICY 1.7.2: The County should request funding from the FDEP Florida Repetitive Flooding Grant.

Aquifer Protection Element

GOAL 1: **AQUIFER PROTECTION.** To provide, maintain, and protect, the surficial, intermediate, and Floridian aquifers to ensure that recharge of the aquifer occurs in a manner that maintains sufficient quality and quantity of the public water supply to meet current and future demands.

Objective 1.1: **Natural Recharge Protection and Conservation.** The County shall coordinate with other agencies and adopt measures in the Land Development Regulations that will ensure preservation of natural recharge to the County's groundwater resources, as well as conservation of potable water sources.

POLICY 1.1.5: The County shall continue to educate residents on the benefits of water conservation and shall expand water conservation efforts.

POLICY 1.2.1: The County should adopt a native plant landscaping regulation and promote, through educational programs and publications, the use of native plant landscaping practices, which include low or no water landscaping, the use of solid waste compost, efficient irrigation systems, and the prohibition of exotic plant species, which will result in the conservation of water.

Conservation Element

GOAL 1: To protect, maintain, restore, and enhance natural resources in order to maintain a living environment that supports a healthy, vibrant population and promotes the well being of all citizens.

POLICY 1.2.1: Through its growth management regulations, the County shall pursue identification conservation, management, protection, and restoration of environmentally sensitive areas, which shall include, but are not limited to, recharge areas and areas suitable for the water withdrawal.

POLICY 1.2.4: DeSoto County shall cooperate fully with emergency water conservation measures of the SWFWMD.

POLICY 1.2.9: DeSoto County shall promote the use of water conserving techniques when constructing, redeveloping, or expanding utility facilities.

Objective 1.5: **Wetland Protection.** Wetlands and the natural functions of wetlands shall be conserved, protected, and restored from activities which alter their physical and hydrological nature to ensure the filtration of water to enhance water quality, provide flood control, maintain wildlife habitat, and offer recreational opportunities, which enhance the quality of life in DeSoto County.

POLICY 1.5.1: A 25 foot wide undisturbed vegetative buffers for upland of all wetlands, as specified required by the Southwest Florida Water Management District, shall function to ensure the preservation of natural systems and minimize the negative impacts of development activities.

POLICY 1.5.2: The County shall consider developing a program to acquire wetlands for protection, flood storage, and implementation of the stormwater master plan and restore them, if necessary.

POLICY 1.5.3: Wetlands and respective upland buffer areas must be dedicated to the County via a conservation easement in conjunction with development.

POLICY 1.5.4: Existing isolated wetlands may be incorporated into development projects provided the wetlands, unless appropriately mitigated, remain undisturbed and their natural functions are not impaired.

POLICY 1.5.5: If direct impact upon wetlands by incompatible uses cannot be avoided, the following mitigation measures may be applied. However, no net loss of wetland functions shall be allowed.

- Comply with the wetland protection standards of federal, state, regional, and local agencies.

- Minimize impacts through innovative design layouts.
- Compensate for impact by enhancing or restoring other degraded wetlands on-site, restore natural functions of other wetlands on-site, create new wetlands on-site, preserve significant upland areas, or offsite mitigation.
- Mitigation through restoration of degraded wetlands on-site or preservation or restoration, if needed, of significant upland areas onsite will be encouraged rather than new wetland creation.

Objective 1.6: **Floodplains and Floodways.** DeSoto County shall ensure long-range protection and restoration of functions of the remaining floodplains.

POLICY 1.6.1: DeSoto County shall maintain rules and standards in its Land Development Regulations to address protection, restoration, and acquisition, of the natural and hydraulic functions of the 100-year floodplain.

POLICY 1.6.3: DeSoto County shall continue to participate in the National Flood Insurance Program administered by the Federal Emergency Management Administration (FEMA).

POLICY 1.6.4: The County shall consider the acquisition or establishing a conservation easement of floodplains adjacent to surface waters and restore them after acquisition, if necessary.

POLICY 1.6.5: DeSoto County shall continue to encourage flood control through non-structural means for surface water management

POLICY 1.9.12: The County shall coordinate with the City of Arcadia to ensure the protection of environmentally sensitive areas that cross jurisdictional boundaries.

POLICY 1.10.1: Agricultural activities are to be conducted in accordance with Best Management Practices, and in a manner compatible with the need to protect, conserve and appropriately use wetlands, uplands and natural resources adjacent to lakes and streams and to ensure the protection of water quality within water bodies.

Objective 1.11: **Public Education.** DeSoto County shall promote the education and environmental awareness of its citizens and visitors on issues relating to protection, conservation, restoration, and appropriate use of natural resources.

POLICY 1.11.1: The County shall endeavor to educate through the use of signage, brochures, press releases, and community meetings in order to educate the public on conservation issues.

POLICY 1.11.2: DeSoto County shall cooperate with SWFWMD and the U.S. Soil Conservation Service to implement water conservation programs and to provide citizen education.

Objective 1.12: **Historical, Archeological and Cultural.** The County shall conserve significant sites and protect existing historical structures.

POLICY 1.12.1: The County shall coordinate with the State Division of Historic Resources in continuing to identify, protect, analyze, and explain the County’s historical, archaeological, and cultural resources, (such efforts shall include determination of their worth and vulnerability, as well as determination of specific applicable preservation management policies).

Recreation and Open Space Element

POLICY 1.5.3: To relieve seasonal flooding of parkland, the County shall assess its existing undeveloped parcels in search for higher ground appropriate for trails and campsites.

Intergovernmental Coordination Element

Objective 1.2: **Informal Planning Coordination.** The County will appoint representatives to attend meetings regarding growth management, schools, parks, infrastructure, emergency management, and other related issues to coordinate on the County’s behalf and maintain records of correspondence at such meetings.

Capital Improvements Element

POLICY 1.3.2: *Inventory Hazards* The County shall continue to maintain an inventory of any existing hazards within the County by using the hazards analysis and hazards mitigation criteria established within the DeSoto County Local Hazard Mitigation Strategy and shall also identify any grant sources available to mitigate the hazards listed on the hazard inventory.

POLICY 1.3.4: *Compatibility.* All capital projects shall be reviewed as to their compatibility and timing in relation to capital projects being implemented or planned by DeSoto County, the Florida Department of Transportation, the Southwest Florida Water Management District, the DeSoto County School Board, the Florida Department of Environmental Protection, and/or any other government agency.