

# **Integrating Hazard Mitigation into Comprehensive Planning**

## **St. Lucie County Profile**

**Florida Department of Community Affairs**



The experiences of the 2004 and 2005 hurricane seasons epitomize the importance of better integrating hazard mitigation activities into local comprehensive planning. In the fall of 2004, 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 St. Lucie 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 St. Lucie 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 St. Lucie 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.

### **ST. LUCIE COUNTY GENERAL RECOMMENDATIONS**

- The Comprehensive Plan can include criteria in the 5-year schedule of Capital Improvement Projects to prioritize projects that are hazard mitigation initiatives in the LMS.
- The County could include a policy in the Comprehensive Plan that supports the retrofit and/or relocation of public structures at risk from natural hazards, much like Objective 1.3 of the LMS.

- The County could create an LMS objective, similar to Policy 7.1.1.5 of the Coastal Management Element, that promotes coordination and cooperation with emergency management officials when making land use decisions, capital improvements, and creating other planning initiatives. Emergency managers could help planners incorporate hazard mitigation into planning programs and governing documents, ultimately which could be implemented prior to development. Such an objective would strengthen the LMS and support Objective 3.1 and 5.2.
- The County could strengthen Policy 7.2.4.9 of the Coastal Management Element, which states, "The Recovery Task Force shall review all interagency hazard mitigation reports as they are produced and make recommendations for amendments to the comprehensive plan accordingly." The policy can be strengthened by directly stating support for the maintenance of and adherence to the LMS and the CEMP.

### **Coastal Hazards**

- The Comprehensive Plan can include a goal that aims to promote hazard mitigation information to the public and to County personnel. There were no existing Comprehensive Plan goals, objectives, or policies found during this review that support the dissemination of hazard mitigation information about tropical storms or wildfires. However, LMS Objective 1.7 promotes public awareness of hazards and their impacts. Policies could promote the creation of a hazard awareness program that addresses evacuation, sheltering, building techniques to reduce hazards, wildfire safety information, and many other hazard mitigation issues that could help prevent loss of life and property. Also, the County could add a policy that promotes the education of county officials and supports the integration of hazard mitigation "culture" into the every-day jobs of county workers. Adding such a policy framework into the Comprehensive Plan can help keep hazard mitigation at the forefront of County efforts.
- While there are many strong hazard mitigation policies in the Comprehensive Plan that address intergovernmental issues, support the regional evacuation plan, and require development and redevelopment to address evacuations, the County could reanalyze and possibly amend Policy 7.2.3 of the Coastal Management Element. The policy currently reads, "The County shall maintain the worst case 22.5 hour hurricane evacuation time." This could be changed to, "The County shall continue to maintain or improve hurricane evacuation times, with a maximum allowable clearance time of 12 hours." Currently, the County has evacuation times of 9 hours for a Category 3 and higher hurricanes, which is good, and far below the 22.5 hours Policy 7.2.3 uses as a benchmark. Setting a maximum evacuation time to maintain is a strong mitigation policy especially as development occurs, but if the clearance time is set too high then it allows for more development to occur before safe evacuation has been provided. Maintaining evacuation times also supports Policy 7.4.1.6 of the Coastal Management Element, which requires structural transportation improvements to maintain sufficient evacuation routes.
- The Comprehensive Plan currently has strong goals that address emergency shelters. The Comprehensive Plan could include a policy that aims to meet shelter demand in accordance with State Shelter Plan or local projections. Also, the LMS could include a similar objective.

### **Wildfire Hazards**

- Currently, there are no policies that directly address wildfires in the Comprehensive Plan. The LMS states wildfires are of particular concern in the county, especially around Port St. Lucie. As development is likely to occur in St. Lucie County, it may encroach on

wildfire prone lands, as shown on the maps in **Attachment C**. The County could add policies in the Comprehensive Plan that address this hazard prior to development. For instance, development approval in high-risk wildfire areas could be contingent on the use of firewise design concepts such as defensible buffers and clustering of homes to distance them from neighboring wildfire fuels. Conservation easements can be required to have a wildfire fuel maintenance plan to make sure they don't become overgrown in the future and a hazard to nearby homes. Finally, the County could explore the adoption of a firewise building code for at-risk zones that may reduce wildfire risk to structures.

- The County could create an educational program that provides information about wildfire mitigation strategies and Firewise Communities to the public. They could also encourage the removal of wildfire fuel sources near structures by designating wildfire cleanup days before the start of the major wildfire season in spring. A special yard waste pickup could be scheduled, yard tools could be loaned, and volunteer groups could assist those who need help. This would also serve as preparation for the upcoming hurricane season.

### **Sinkhole Hazards**

- There are two relatively small areas at risk from sinkholes as shown in the maps in **Attachment D**. The County can restrict or regulate development through overlay zones or preservation districts in these high-risk, karst-sensitive areas. This is considered a best management practice from *Protecting Florida's Communities* (FDCA, 2005b). Since
- In karst-sensitive areas, the County could instead require a geotechnical evaluation be made prior to development approval so that appropriate mitigation techniques can be taken.



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**Geography and Jurisdictions**

St. Lucie County is located along the eastern coast of Central Florida. It covers a total of 572 square miles with an average population density of 336.6 people per square mile (U.S. Census, 2000).



There are three incorporated municipalities within the County, and these are listed in **Table 1.1**.

**Population and Demographics**

Official 2004 population estimates for all jurisdictions within St. Lucie 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 St. Lucie County is 226,216 people (University of Florida, Bureau of Economic and Business Research, 2004). The most populated city in St. Lucie County is Port St. Lucie and it contains 50.9% of the countywide population. Still, 31.6% of the countywide population lives in the unincorporated portion of the County. Between 1990 and 2000, St. Lucie County as a whole had a growth rate of 28.3%, which was greater than the statewide growth rate of 23.5% in those 10 years.

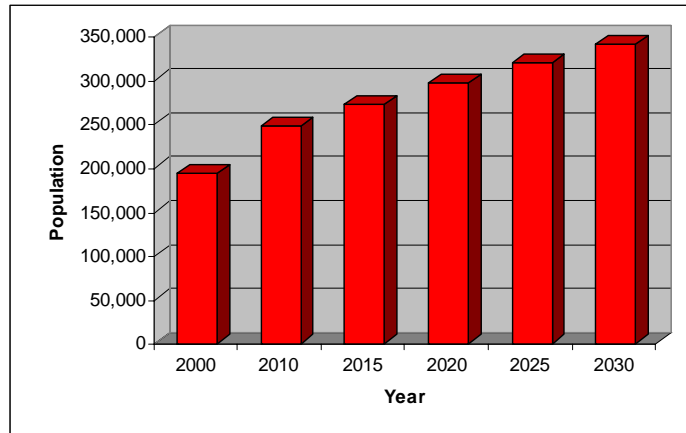
**Table 1.1 Population Estimates by Jurisdiction**

Jurisdiction	Population, Census 2000	Population Estimate, 2004	% Change, 2000-2004	% of Total Population (2004)
UNINCORPORATED	65,806	71,389	8.5%	31.6%
Ft. Pierce	37,516	39,044	4.1%	17.3%
Port St. Lucie	88,769	115,155	29.7%	50.9%
St. Lucie Village	604	628	4.0%	0.3%
<b>Countywide Total</b>	<b>192,695</b>	<b>226,216</b>	<b>17.4%</b>	<b>100.0%</b>

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

According to the University of Florida, Bureau of Economic and Business Research (2004), St. Lucie County’s population is projected to grow tremendously for the next 25 years, reaching 339,900 people by the year 2030. **Figure 1.1** illustrates medium population projections for St. Lucie County based on 2004 calculations.

**Figure 1.1 Medium Population Projections for St. Lucie County, 2010-2030**



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

Of particular concern within St. Lucie 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, 22.7% of St. Lucie County residents are listed as 65 years old or over, 23.4% are listed as having a disability, 13.4% are listed as below poverty, and 13.8% live in a home with a primary language other than English.



### Hazards Identification

The following are natural hazards that pose a risk to the County as identified in the County's Local Mitigation Strategy (LMS): floods, hurricanes/tropical storms, tornados, severe thunderstorms / lightning, drought, temperature extremes, muck fires, wildfires/urban interface fires, and erosion. The LMS prioritized these hazards and included a discussion of the probability of the hazard affecting the County. Hurricanes/ tropical storms and floods were given the highest priority with severe thunderstorms, drought, temperature extremes and erosion given moderate priority. Notably, the LMS does not identify sinkholes as a hazard the County faces.

The County experiences flooding on a regular basis from severe thunderstorms and tropical storms. Since 1886, 51 storms of hurricane intensity have passed within 125 miles of St. Lucie County. In 1999, Port St. Lucie was declared a federal disaster due to hurricane Irene, which caused more than \$100,000 in flood damages. Fort Pierce is especially prone to flooding due to the low-lying riverfront areas near the Fort Pierce Inlet. Inland areas around St. Lucie River face similar flooding concerns. The county is particularly prone to crop damage. Tropical storm Mitch caused \$200,000 in crop damage in the county. In 1999, wildfire destroyed 54 homes and damaged 74 others in Port St. Lucie, causing an estimated \$5,066,776 in damages. (St. Lucie County. 2004)

### Hazards Analysis

The following analysis looks at four major hazard types: hurricanes and tropical storms (specifically surge), flooding, sinkholes, 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), levels of concern 5 through 9 for wildfire, and high through adjacent risk zones for sinkholes. Storm surge exposure data are a subset of flood exposure, therefore the storm surge results are also included in the flood results. 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 St. Lucie County that live within FEMA Flood Insurance Rate Map zones that signify special flood hazard areas. According to these maps, 9.5% of the population, or 21,400 people, are within the 100-year flood zone. Also 12,997 people are at risk from coastal surge. 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. In St. Lucie County, sinkholes are a minor risk and only 1.3% of the population is within a high-adjacent risk sinkhole

zone. Wildfire is a major hazard of concern in the county, with 26.5% of the population living in medium to high-risk wildfire zones. Thirty-six percent of those at risk from wildfire are disabled, making a quick evacuation difficult. An estimated 12,997 people would be at risk from surge due to a Category 3 hurricane. Local emergency management officials likely would recommend that all of these residents at risk from surge evacuate or go to a County shelter.

**Table 2.1 Estimated Number of Persons at Risk from Selected Hazards**

Population	Flood	Sinkhole (high-adjacent risk)	Wildfire (medium-high risk)	Surge
Minority	1,990	209	8,328	715
Over 65	7,765	446	13,262	6,217
Disabled	8,237	778	21,665	4,808
Poverty	2,168	197	5,651	1,213
Language Isolated	0	0	0	0
Single Parent	979	185	2951	371
<b>Countywide Total</b>	<b>21,400</b>	<b>2,960</b>	<b>59,866</b>	<b>12,997</b>

Source: Florida Department of Community Affairs, 2005a.

*Evacuation and Shelters*

As discussed in the previous sections, population growth in St. Lucie County has been intense, 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 St. Lucie County are estimated to be 9 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. St. Lucie 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 St. Lucie 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
Indian River	5.5	5.5	12	12	12
Martin	7.5	12	12	12.75	12.75
Okeechobee	10	10	10	10	10
St. Lucie	8.75	8.75	9	9	9

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 St. Lucie 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 4,297 people in the County’s shelters, and there are 2,365 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 3,283 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, 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 St. Lucie County by structure type that are at risk from each of the four hazards being analyzed.

Flooding presents the largest risk to property in the County, with 48,872 structures within a flood zone. A majority of those structures are single-family and mobile homes. Mobile homes are at considerable risk from flooding since these structures often sustain irreversible damage when flooded. There are also 10,733 multi-family homes at risk from flooding. According to the latest National Flood Insurance Program Repetitive Loss Properties list, there are 54 homes in unincorporated St. Lucie County that have had flood damage multiple times and received insurance payments but have not remedied the recurring problem. There also are 11,256 structures at risk from surge, as shown in **Table 2.3**.

**Table 2.3** shows 849 structures within high to adjacent risk sinkhole areas. Of those, 832 are single-family homes. Single-family homes are most at risk from wildfire also, with 71% of the total 24,039 structures at risk being single-family units.

**Table 2.3 Estimated Number of Structures at Risk from Selected Hazards**

Structure Type	Flood	Sinkhole (high-adjacent risk)	Wildfire (medium-high risk)	Surge
Single-Family Homes	16,198	832	17,092	1,927
Mobile Homes	15,914	0	2,893	2,140
Multi-Family Homes	10,733	13	2,172	6,854
Commercial	3,005	3	702	235
Agriculture	2,787	0	513	7
Gov./Institutional	235	1	667	93
<b>Total</b>	<b>48,872</b>	<b>849</b>	<b>24,039</b>	<b>11,256</b>

*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, sinkholes, wildfire, and surge 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 2005 geographic information system (GIS) shapefiles from the County Property Appraiser's Office. Maps of future land uses in hazard areas were developed using the St. Lucie County future land use map obtained February 2005.

In **Attachment A**, four maps show the existing and future land uses within the coastal hazard zone (Category 1 storm surge zone) and the hurricane vulnerability zone (Category 1 evacuation zone). The CHZ is located along the entire coast of St. Lucie County, as well as all of the barrier islands and the Port St. Lucie inlet. This land is prime real estate and is largely developed. Out of the 11,836.9 acres classified as the CHZ, 4,349.1 acres are currently vacant, as shown in **Table 2.4**. All but 98.1 acres have designated future uses that allow development (**Table 2.5**). Approximately 3,277.3 vacant acres are designated as future residential uses, although some only allow low densities. Most of the remaining vacant acreage is designated as transportation and utility uses. **Table 2.4** shows there are currently 4,544.7 acres in the CHZ used as parks, conservation land, and golf courses. **Table 2.5** shows open space within the CHZ could be reduced to 3,628.1 acres while no land is designated for agricultural uses. The HVZ is only about 900 acres larger than the CHZ and, therefore, shows a similar conversion from existing to future land uses.

In **Attachment B**, two maps present the existing and future land uses within a 100-year flood zone. The flood zones generally are located in the same areas as the CHZ and the HVZ. More of the mainland between Fort Pierce and Port St. Lucie is within the flood zone, as is much of the land adjacent to the St. Lucie River and the estuaries in the developed area along Route 70. There is a strip of the 100-year flood zone parallel to Route 1 near St. Lucie Village. **Table 2.4** shows there are 20,703.1 flood-prone acres in the county. Currently, 7,726.8 acres are used as parks, conservation areas, and golf courses while 5,435.0 acres are vacant. Additionally, 4,415.1 acres are used for agricultural purposes. **Table 2.5** shows agricultural uses will be allowed on 3,767.3 acres of land while 6,574.2 acres are designated for conservation purposes. Together only 50.0% of the flood zone is designated for future uses that significantly limit development. Out of the existing 17,576.9 vacant acres, 72.2% is designated for future residential development.

In **Attachment C**, maps present the land uses associated with high-risk wildfire zones. Wildfire susceptible areas are located sporadically throughout the eastern half of the county, particularly in between I-95 and Florida's Turnpike around Port St. Lucie. This wildfire susceptible area is located within densely developed residential areas and surrounded by farmlands to the west and south. Much of the vacant land in the wildfire susceptible areas is located adjacent to existing development, and is designated residential for future land uses. Vacant residential lots cause a wildland urban intermix zone if the vegetative fuels on the lots are not maintained. This situation allowed the 1999 Port St. Lucie fire to burn so many houses. The current low density and sporadic development pattern in some portions of the wildfire hazard areas near Route 68, westward from Fort Pierce, should be addressed, since this type of development provides enormous amounts of wildfire fuel to burn very quickly, often overcoming residences with little defensible space. Finally, as **Table 2.4** and **2.5** show, much of the 13,682.8 acres of wildfire prone area that is currently vacant or in agricultural use is designated as future residential use. The County and municipalities can help reduce the loss of life and property by taking measures to address wildfire threats prior to development. Development patterns should be phased and firewise design such as clustering and defensible buffers can be utilized.

**Attachment D** includes maps of potential sinkhole areas in the County. Sinkhole areas are found on the northern county border near I-95 and St. James Drive. These susceptible areas are currently residential. The vacant land adjacent to the existing development in the hazard zone is designated for residential use, as shown in **Table 2.5**.

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

Existing Land Use Category		Coastal Hazard Zone	Hurricane Vulnerability Zone	Flood Zones	Wildfire Susceptible Areas	Potential Sinkhole Areas
Agriculture	Acres	309.6	289.4	4,415.1	4,272.2	118.6
	%	2.6	2.3	21.3	31.2	23.8
Attractions, Stadiums, Lodging	Acres	17.2	17.2	12.9	10.0	0.0
	%	0.1	0.1	0.1	0.1	0.0
Places of Worship	Acres	25.9	27.4	17.6	12.3	0.0
	%	0.2	0.2	0.1	0.1	0.0
Commercial	Acres	79.8	89.6	26.8	66.7	0.0
	%	0.7	0.7	0.1	0.5	0.0
Government, Institutional, Hospitals, Education	Acres	506.9	504.7	700.2	742.4	0.0
	%	4.3	4.0	3.4	5.4	0.0
Industrial	Acres	51.1	49.9	30.1	29.6	0.0
	%	0.4	0.4	0.1	0.2	0.0
Parks, Conservation Areas, Golf Courses	Acres	4,544.7	4,930.3	7,726.8	2,571.9	0.0
	%	38.4	38.8	37.3	18.8	0.0
Residential Group Quarters, Nursing Homes	Acres	0.0	0.0	147.4	3.3	0.0
	%	0.0	0.0	0.7	0.0	0.0
Residential Multi-Family	Acres	51.3	53.5	46.1	21.8	0.0
	%	0.4	0.4	0.2	0.2	0.0
Residential Mobile Home, or Commercial Parking Lot	Acres	182.1	166.1	254.6	132.0	55.4
	%	1.5	1.3	1.2	1.0	11.1
Residential Single-Family	Acres	1,557.6	1,731.5	1,653.5	1,920.3	213.6
	%	13.2	13.6	8.0	14.0	42.9
Submerged Lands (Water Bodies)	Acres	0.0	0.0	18.3	0.0	0.0
	%	0.0	0.0	0.1	0.0	0.0
Transportation, Communication, Rights-of-Way	Acres	55.7	54.8	50.6	70.2	0.0
	%	0.5	0.4	0.2	0.5	0.0
Utility Plants and Lines, Solid Waste Disposal	Acres	105.9	111.5	168.1	63.1	0.0
	%	0.9	0.9	0.8	0.5	0.0
Vacant	Acres	4,349.1	4,687.1	5,435.0	3,766.8	110.7
	%	36.7	36.9	26.3	27.5	22.2
<b>Total Acres</b>	<b>Acres</b>	<b>11,836.9</b>	<b>12,713.0</b>	<b>20,703.1</b>	<b>13,682.6</b>	<b>498.3</b>
	<b>%</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

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

Future Land Use Category		Coastal Hazard Zone		Hurricane Vulnerability Zone		Flood Zones		Wildfire Susceptible Areas		Potential Sinkhole Areas	
		Total	Undev.	Total	Undev.	Total	Undev.	Total	Undev.	Total	Undev.
Agricultural - 2.5, 1:2.5 du/ac	Acres	0.0	0.0	0.0	0.0	937.9	186.1	439.6	104.8	0.0	0.0
	%	0.0	0.0	0.0	0.0	4.5	3.4	3.2	2.8	0.0	0.0
Agricultural - 5, 1:5 du/ac	Acres	0.0	0.0	0.0	0.0	2,829.4	49.9	3,885.7	591.2	0.0	0.0
	%	0.0	0.0	0.0	0.0	13.7	0.9	28.4	15.7	0.0	0.0
Commercial	Acres	210.7	79.4	206.2	74.9	145.1	69.8	143.6	86.7	0.0	0.0
	%	1.8	1.8	1.6	1.6	0.7	1.3	1.0	2.3	0.0	0.0
Conservation-Public	Acres	3,628.0	98.1	3,601.9	93.6	6,574.2	161.4	1,601.3	50.2	0.0	0.0
	%	30.6	2.3	28.3	2.0	31.8	3.0	11.7	1.3	0.0	0.0
Historic	Acres	0.0	0.0	0.0	0.0	0.0	0.0	5.8	0.0	0.0	0.0
	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Industrial	Acres	116.4	84.7	115.3	84.3	117.3	63.1	290.3	167.4	0.0	0.0
	%	1.0	1.9	0.9	1.8	0.6	1.2	2.1	4.4	0.0	0.0
Mixed Use, 1:5 to 15:1 du/ac	Acres	154.0	138.0	143.1	131.5	179.2	104.3	732.8	212.9	0.0	0.0
	%	1.3	3.2	1.1	2.8	0.9	1.9	5.4	5.7	0.0	0.0
Public Facilities	Acres	161.4	21.2	166.8	21.2	259.9	0.0	187.3	8.7	0.0	0.0
	%	1.4	0.5	1.3	0.5	1.3	0.0	1.4	0.2	0.0	0.0
Residential Conservation, 1:5 du/ac	Acres	1,449.9	998.9	1,433.0	998.7	2,261.8	1,355.9	195.5	70.9	0.0	0.0
	%	12.2	23.0	11.3	21.3	10.9	24.9	1.4	1.9	0.0	0.0
Residential Estate, 1:1 du/ac	Acres	226.9	84.5	1,254.4	445.4	616.0	298.3	899.7	282.9	0.0	0.0
	%	1.9	1.9	9.9	9.5	3.0	5.5	6.6	7.5	0.0	0.0
Residential High, 15:1 du/ac	Acres	164.5	85.2	170.5	85.2	138.2	52.6	47.0	6.2	0.0	0.0
	%	1.4	2.0	1.3	1.8	0.7	1.0	0.3	0.2	0.0	0.0
Residential Medium, 9:1 du/ac	Acres	619.3	532.4	619.3	532.4	983.8	474.8	151.8	116.8	0.0	0.0
	%	5.2	12.2	4.9	11.4	4.8	8.7	1.1	3.1	0.0	0.0
Residential Suburban, 2:1 du/ac	Acres	1,852.5	574.9	1,779.7	525.2	1,467.3	555.8	1,762.5	531.7	0.0	0.0
	%	15.7	13.2	14.0	11.2	7.1	10.2	12.9	14.1	0.0	0.0
Residential Urban, 5:1 du/ac	Acres	2,081.3	863.4	2,064.6	907.3	2,707.0	1,191.6	2,096.2	1,004.3	379.7	110.7
	%	17.6	19.9	16.2	19.4	13.1	21.9	15.3	26.7	76.2	100.0
Right-of-Way	Acres	319.2	303.0	319.0	303.2	426.9	389.5	517.6	473.1	0.0	0.0
	%	2.7	7.0	2.5	6.5	2.1	7.2	3.8	12.6	0.0	0.0
Special District, 1:5 to 15:1 du/ac	Acres	362.9	76.9	355.8	76.9	420.2	24.1	368.5	4.9	118.6	0.0
	%	3.1	1.8	2.8	1.6	2.0	0.4	2.7	0.1	23.8	0.0
Submerged Land	Acres	0.4	0.4	0.4	0.4	20.1	1.8	0.0	0.0	0.0	0.0
	%	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Transportation/Utilities	Acres	483.3	402.2	477.1	400.8	608.2	445.6	357.4	53.9	0.0	0.0
	%	4.1	9.2	3.8	8.6	2.9	8.2	2.6	1.4	0.0	0.0
Unknown	Acres	6.0	6.0	6.0	6.0	10.5	10.5	0.2	0.2	0.0	0.0
	%	0.1	0.1	0.0	0.1	0.1	0.2	0.0	0.0	0.0	0.0
<b>Total</b>	<b>Acres</b>	<b>11,836.9</b>	<b>4,349.1</b>	<b>12,713.0</b>	<b>4,687.1</b>	<b>20,703.1</b>	<b>5,435.0</b>	<b>13,682.8</b>	<b>3,766.8</b>	<b>498.3</b>	<b>110.7</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>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

**Table 2.6** presents the total numbers of acres in a hazard zone in St. Lucie County's incorporated areas and how many of those acres are currently undeveloped. All three municipalities are particularly subject to flood and hurricane hazards due to their proximity to the coast or to the St. Lucie River. None of the municipalities contain sinkhole susceptible areas. Port St. Lucie contains the majority of all municipal acres at risk with an exceptional amount of the wildfire susceptible acres. All of the municipalities have vacant land within each of the hazard zones, providing an opportunity to address mitigation issues prior to development.

**Table 2.6 Total and Vacant Incorporated Acres in Hazard Areas**

Jurisdiction		Coastal Hazard Zone		Hurricane Vulnerability Zone		Flood Zones		Wildfire Susceptible Areas		Sinkhole Susceptible Areas	
		Total	Vacant	Total	Vacant	Total	Vacant	Total	Vacant	Total	Vacant
Fort Pierce	Acres	1,492.5	540.4	1,968.9	641.4	2,607.6	794.5	386.8	165.2	0.0	0.0
	%	100.0	36.2	100.0	32.6	100.0	30.5	100.0	42.7	0.0	0.0
Port St. Lucie	Acres	4,902.2	1,701.0	7,352.2	3,969.5	5,181.8	1,483.8	11,041.1	7,025.6	0.0	0.0
	%	100.0	34.7	100.0	54.0	100.0	28.6	100.0	63.6	0.0	0.0
St. Lucie Village	Acres	431.6	128.4	431.6	128.4	181.9	22.1	32.3	6.2	0.0	0.0
	%	100.0	29.8	100.0	29.8	100.0	12.1	100.0	19.3	0.0	0.0
<b>Total Acres</b>	<b>Acres</b>	<b>6,826.3</b>	<b>2,369.7</b>	<b>9,752.7</b>	<b>4,739.3</b>	<b>7,971.3</b>	<b>2,300.4</b>	<b>11,460.2</b>	<b>7,197.1</b>	<b>0.0</b>	<b>0.0</b>
	<b>%</b>	<b>100.0</b>	<b>34.7</b>	<b>100.0</b>	<b>48.6</b>	<b>100.0</b>	<b>28.9</b>	<b>100.0</b>	<b>62.8</b>	<b>0.0</b>	<b>0.0</b>



**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 St. Lucie 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 Hazard Identification, Vulnerability, and Risk section of the LMS includes a detailed definition, vulnerability assessment, historical account, and risk assessment for 13 natural hazards, 7 technological hazards, and 6 societal hazards. The vulnerability analysis includes several different levels or categories of disasters for each natural hazard as well as projections of potential losses that would result from each. Analysis is also provided for each of the cities in a similar fashion. Specific areas known to be flood prone are listed down to the road segment location. Also included are projections of the number of people that could be affected by each type and level of natural disaster. Although there is a brief discussion of nursing homes and critical facilities in Section 2.8, the LMS could include more analysis involving the risk of people with special needs, particularly in a spatial sense. Also, a detailed risk assessment of other critical facilities was not found in the LMS during this review.

#### *Guiding Principles*

The St. Lucie LMS lists policies from other plans that relate to hazard mitigation in its Appendix A. Section 3 of the LMS includes a discussion of the relevance of each of the County's Comprehensive Plan Elements in regards to hazard mitigation. Also, there is a long list of federal, state, and local government agencies and departments, as well as private sector organizations and non-profit organizations in this section. Also included is a discussion about the resources available through each organization and the organization's role in the LMS process and the hazard mitigation strategy. Finally, this section includes an intergovernmental coordination piece that integrates the governing plans and documents for each of the St. Lucie municipalities.

#### *LMS Goals and Objectives*

The LMS Goals and Objectives can be found in **Attachment E**. The following is a summary of how well the LMS has addressed mitigation issues that coincide with planning concerns.

The LMS contains 5 goals and 23 objectives. These goals and objectives employ a number of structural and nonstructural approaches to address hazard mitigation issues. Objective 1.2 promotes the retrofit of repetitive loss properties while Objective 1.3 promotes the retrofit of new critical facilities. Protecting structures prior to a disaster can help reduce loss of property and possibly the loss of life. Evacuation routes and shelters are also addressed.

A non-structural strategy to hazard mitigation is presented in several objectives. They promote the dissemination of public information about hazards but also about disaster-resistant communities. St. Lucie LMS objectives also show the connection between protecting the natural functions of the environment and mitigating natural hazards. Addressing the restoration and protection of the environment may help produce a more sustainable community and reduce irreversible damage.

The LMS goals and objectives also give guidance to planners and emergency managers. Objective 1.8 calls for the evaluation of codes and ordinances in respect to hazard mitigation policies. A post disaster redevelopment plan is mentioned in several objectives, as is an emergency management plan. Objective 3.5 promotes the use of GIS in hazard analysis. Finally, Objective 3.1 mandates “that local planning and development matters address hazard mitigation”. Addressing hazard mitigation prior to development is often the most cost-effective approach to hazard mitigation.

### **Comprehensive Emergency Management Plan**

The Mitigation Annex of the 2003 St. Lucie County CEMP was reviewed for consistency with the other plans and evaluated in its effectiveness as a tool for planners. The Annex does a fair job of summarizing the responsibilities of hazard mitigation among the different agencies and organizations within the County. It does not, however, give a list of pre-disaster mitigation responsibilities in which planners can participate. It does support the LMS and the Comprehensive Plan and point to the analysis and policies used to create the hazard mitigation strategy for the county. It also describes the functions of a post-disaster team.

### **Post-Disaster Redevelopment Plan**

A PDRP for St. Lucie County was not available for review at the time this profile was drafted. If St. Lucie 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**

St. Lucie County, Fort Pierce, Port St. Lucie, and St. Lucie Village are all participating communities in the National Flood Insurance Program. In addition, St. Lucie County, Fort Pierce, and Port St. Lucie participate in the Community Rating System and all have a current class of 8. St. Lucie Village is currently applying for CRS status.



St. Lucie County’s Comprehensive Plan (revised in 2004) 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 F**.

### **Coastal Hazards**

St. Lucie County's Comprehensive Plan has many policies considered to be best management practices for mitigating hurricane and coastal surge impacts. There are several policies that deal with evacuation needs, including road improvements and maintenance of evacuation routes. Coordination with the local and regional evacuation plans is also supported. The Comprehensive Plan also requires adequate space in public shelters and requires manufactured home parks to provide onsite shelter capable of holding all park residents. There are also several policies referring to the Coastal High Hazard Area (CHHA). The County must relocate or replace infrastructure in the CHHA, and all public expenditures in the CHHA are to be limited. The

County also employs many policies that address the natural environment and capitalize on the benefits provided by wetlands, vegetation, and beach and dune systems. Policies promote the strengthening of environmental laws that restrict development that causes adverse impacts to coastal resources. Also, the County requires abidance of the Coastal Construction Control Code that includes setbacks, structure elevations, and materials requirements.

### **Flooding Hazards**

Flooding was addressed in the Comprehensive Plan in multiple policies. There were many policies for protecting or limiting densities in floodplains and wetlands. The County has several policies that regulate new construction to be compliant with the County Floodplain Standards. Policies also require clustering of structures on parcels with land within the 100-year floodplain. The County promotes the acquisition of environmentally sensitive lands and gives priority to those lands with wetlands. Policies also mention the use of wetland restoration and mitigation to counter the effects of development. TDR, setbacks, NFIP standards, buffers, and conservation programs are also used to regulate areas subject to periodic or seasonal flooding. The comprehensive plan also maintains an inventory of flood-prone areas and flood complaints.

### **Wildfire Hazards**

There were no policies in the Comprehensive Plan that related to wildfire hazards. An objective to conserve fresh water supplies indirectly relates to having sufficient water to put out a wildfire. Several policies also promote the eradication of invasive and nuisance vegetation, which could reduce the amount of burnable fuel in the event of a wildfire.

### **Sinkhole Hazards**

No policies were found during this review that directly related to sinkhole hazards. There was a policy aimed at conserving land for groundwater recharge. This policy contributes to mitigating sinkholes by decreasing the probability of human-induced sinkholes, which can occur from changes in the water level of the aquifer in karst areas that are already susceptible to sinkhole activity. Other policies require soil analysis during site plan review.

### **Other Hazard Mitigation Policies**

There were several policies that referenced hazard mitigation in other plans, such as coordinating with the regional evacuation plan and the LMS. There was also one policy that referred to the need to educate the public on emergency preparedness. There were a few policies that referred to developing a post-disaster plan and redevelopment regulations.



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.



St. Lucie 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. In the final draft of this profile, **Table 5.1** will present options for further integration as well as the basis for the recommendations that are presented in the **Executive Summary**.

NOTE: The recommendations set out in this profile 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.

**6**

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## Attachment E

### **St. Lucie County Local Mitigation Strategy Goals and Objectives**

Goal 1. Reduce the loss of life and property and potential reoccurrence in areas vulnerable to the effects of natural, societal, and technological hazards.

- Objective 1.1 Reduce flooding and/or wind damage.
- Objective 1.2 Eliminate or retrofit repetitive loss properties.
- Objective 1.3 Retrofit and/or construct new critical facilities.
- Objective 1.4 Protect and restore areas susceptible to erosion.
- Objective 1.5 Improve local roadways to ensure safe, efficient, evacuation.
- Objective 1.6 Reduce the potential threat of fires, wildland and structural.
- Objective 1.7 Increase public awareness of hazards and their impacts.
- Objective 1.8 Evaluate codes, policies, ordinances, and regulations dealing with natural hazards.
- Objective 1.9 Reduce exposure to potential environmental hazards.

Goal 2. Minimize public and private exposure and economic disruption resulting from natural or technological disasters.

- Objective 2.1 Prepare a post-disaster redevelopment plan.
- Objective 2.2 Create disaster-resistant businesses.
- Objective 2.3 Ensure the economic viability of the local business community following a disaster event.

Goal 3. Achieve safe and fiscally sound, sustainable communities.

- Objective 3.1 Ensure that local planning and development matters address hazard mitigation.
- Objective 3.2 Enhance environmental quality and/or function of natural resource.
- Objective 3.3 Prepare informational materials explaining the positive relationship between sustainable communities and disaster-resistant communities.
- Objective 3.4 Create and maintain current an all-hazards database.
- Objective 3.5 Enhance GIS capabilities for use in hazard analysis.

Goal 4. Ensure orderly, effective short-term post-disaster recovery and redevelopment by establishing a program that provides adequate provision of shelters, community health services, food and water, debris removal, and promotes rapid economic recovery following a disaster.

Objective 4.1 Ensure continuity of government.

Objective 4.2 Develop a post-disaster redevelopment plan to ensure orderly recovery and redevelopment from a disaster event.

Objective 4.3 Expand existing shelter inventory and manpower to operate such facilities during disaster events.

Objective 4.4 Test and modify as needed the city and County comprehensive emergency management plans through the use of mock drills.

Goal 5. Optimize the effective use of all available resources.

Objective 5.1 Establish public/private partnerships.

Objective 5.2 Establish procedures that strengthen intergovernmental coordination and cooperation.



## Attachment F

### St. Lucie County Comprehensive Plan Excerpts Related to Hazard Mitigation

#### Future Land Use Element

- Policy 1.1.3.1 Adopt and/or amend existing land development regulations to ensure that they contain the specific and detailed provisions necessary to implement the adopted Comprehensive Plan, and which as a minimum include the following: a. Regulate the subdivision of land; b. Regulate the use of land, air, and water consistent with all elements of the St. Lucie County Comprehensive Plan, to ensure the compatibility of adjacent land uses and provide for adequate open space; c. Protect those areas designated for conservation purposes or that contain other special environmental habitat as identified in the Future Land Use and other elements of the St. Lucie County Comprehensive Plan; d. Regulate areas subject to seasonal and periodic flooding and provide for drainage and stormwater management; e. Protect potable water well fields and aquifer recharge areas; f. Regulate signage; g. Provide minimum landscaping standards for all development that encourages the use and protection of native and drought tolerant species in lieu of exotic and water consumptive plants; h. Ensure safe and convenient on-site traffic flow and vehicle parking needs; Provide that development orders and development permits shall not be issued which result in a reduction of the levels of service for the affected public facilities below the level of service standards adopted in this and other elements of the St. Lucie County Comprehensive Plan; j. Provide for procedures and time schedules for acceptance of amendments to the St. Lucie County Comprehensive Plan in accordance with the provisions of Chapter 163.31 87, FS.; and k. Minimize noise and light pollution.
- Policy 1.1.4.3 Continue to encourage the use of cluster housing and planned unit development techniques to conserve open space and environmentally sensitive areas, through the County's Land Development Regulations which include: a. minimum acreage requirements necessary to support a viable mixed use community providing sufficient design flexibility to allow innovation and creativity in all forms of planned unit developments; b. minimum open space ratios of 35% in all planned unit developments and including within the PUD documents assurances that such areas will remain as open space to protect existing native habitat, to provide for minimum setback needs from adjacent uses, and to provide active and passive recreational as well as visual amenities. c. minimum open space standards; d. provisions ensuring the long

term preservation of remaining open spaces; e. a mixed use district combining residential, commercial, recreational, educational, and other income producing uses providing significant functional and physical integration among uses; f. minimum standards for the provision of on-site shopping, job opportunities and internal trip capture; and, g. specific requirements to provide efficient, centralized infrastructure (potable water and sanitary sewer). Include specific restrictions on the use of septic tanks, individual wells, and package plants in planned unit developments.

Objective 1.1.6

St. Lucie County shall require, through the County's Land Development Regulations, the protection of historically significant structures, facilities and locations within the unincorporated areas of the County, as identified by the State of Florida or the Federal Register of Historic Places.

Policy 1.1 .6.1

St. Lucie County shall continue, with the assistance of the State of Florida and the St. Lucie County Historical Commission, to identify significant historic resources within the unincorporated areas which are in need of protection and develop management and restoration plans as appropriate.

Policy 1.1.9.1

St. Lucie County shall include within its Land Development Regulations criteria and standards for the protection and preservation of both wetland and upland habitat. The criteria to be included within the County's Land Development Regulations shall be based upon, but not limited to, the following.

Policy 1.1.9.3

All development applications that include wetland habitat shall be consistent with all applicable Federal, State and County regulations and the goals, objectives and policies of the County's Comprehensive Plan. The most restrictive of these regulations shall be enforced.

Policy 1.1.9.7

Enforce Section 6.02.02 of the land development regulations to protect the water courses identified below: North Fork of the St. Lucie River - from the Martin County line to the confluence with Five & Ten Mile Creeks Five Mile Creek - from the confluence of the North Fork of the St. Lucie River to the Florida East Coast Railroad, Glades Cut-Off Branch Line. Ten Mile Creek - from the confluence of North Fork of the St. Lucie River to McCarty Road.

Policy 1.1.9.13

Enforce Section 6.05.00 of the County's land development regulations, which require that all new construction, reconstruction or additions to existing facilities, regardless of type, that is permitted within the identified 100 year flood zones is subject to the County's Flood Damage Protection regulations.

Policy 1.1.9.14 Continue to require new development activities to be consistent with the soil conditions in the area in which the activity is proposed. In those instances where soil modifications are necessary, all activities should utilize best management practices as identified by the Soil Conservation Service.

Objective 1.1.10 St. Lucie County shall continue to protect and manage the unique coastal resources of the County, balancing the need to provide reasonable private property use while assuring a full range of public beach access and recreational facilities for the residents of and visitors to the County.

Policy 1.1.10.3 Future land development activities within the identified Hurricane Vulnerability Zone, shall be consistent with Goal 7.2, its Objectives and Policies, as identified in the Coastal Management Element of the St. Lucie County Comprehensive Plan.

**Transportation Element**

Policy 2.7.4.1 To the maximum extent feasible, aviation facilities or airport related activities shall not be located in areas which would result in alteration, degradation or destruction of wetlands, coastal scrub habitat, the historic coastal ridge or other unique or special habitat protected by the State agencies such as the Florida Department of Environmental Protection (DEP), South Florida Water Management District (SFWMD), and Florida Fish and Wildlife Commission.

Policy 2.7.4.2 In the event that, any wetland, coastal scrub habitat the historic coastal ridge or other unique or special habitat is degraded or destroyed, St. Lucie County shall ensure that mitigation will occur on the airport property to the maximum extent technically feasible through the restoration of degraded habitat or enhancement of functions and values provided by existing habitat consistent with requirements of State agencies such as Florida Department of Environmental Protection (FDEP), South Florida Water Management District (SFWMD), and Florida Fish and Wildlife Commission.

**Potable Water Sub Element**

Objective 6A.2.2 The County shall continue to develop a comprehensive water conservation program incorporating, at a minimum, the following policies.

Policy 6A.2.2.1 The County shall continue to require water saving devices in new construction, consistent with the requirements of the Florida Building Code.

Policy 6A.2.3,2 Water use, allocation, and management plans for emergency drought and flood situations shall avoid

irreversible impacts on ecological systems and minimize long term adverse impacts.

**Drainage Sub Element**

Policy 6C.1.1.2 To ensure that St. Lucie County maintains sufficient stormwater runoff, the following level-of-service standard shall be utilized in determining the appropriate amount of runoff for a project: Stormwater Master Plan: 1 Peak flood stages less than first (finished) floor elevation based on available data. 2 Evacuation routes as defined by the County and the Treasure Coast Regional Planning Council  
 3 Flooding limited to each side of the road such that ½ of the roadway width (W) or one travel lane is not flooded.  
 4 Roads with four or more travel lanes, or roads that are only access to a respective area/development (secondary evacuation routes).

Objective 6C.1.2 The County will maintain an inventory of flood prone areas located within its jurisdiction.

Policy 6C.1 .2.1 The County shall maintain an inventory of flooding complaints

Objective 6C.1.3 The County shall enforce existing Land Development Regulations which support the protection and maintenance of the natural functions (flow and storage) of the 100-year floodplain and other natural drainage features.

Policy 6C.1.3.1 The County shall continue to enforce the Land Development Regulations regulating construction standards within the 100 year flood plain.

Policy 6C.1.3.2 The County shall provide direction and guidance to the general public on stormwater and floodplain management issues.

**Coastal Management Element**

**GOAL 7.1** BALANCING GROWTH AND COASTAL RESOURCES. ALL DEVELOPMENT PROPOSED IN THE FUTURE LAND USE ELEMENT IN THE COASTAL AREA SHALL OCCUR IN A MANNER WHICH PROTECTS, CONSERVES, AND ENHANCES THE NATURAL RESOURCES OF THE COASTAL AREA AND THE ENVIRONMENTAL, SOCIAL AND ECONOMIC BENEFITS ATTRIBUTED TO THEM.

Objective 7.1.1 Future Development in the Coastal Area. St. Lucie County shall continue to protect the natural resources of the coastal area from adverse impacts: caused by future development through the implementation and strengthening of existing environmentally related laws and the assignment of appropriate Future Land Use designations.

Policy 7.1.1.1 Future development in the coastal area shall be limited to those land uses which are resource dependent or

compatible with the physical and environmental characteristics of the coastal area, or to those uses which, can occur without degradation of important environmental values or interference with legally used public access to coastal area shorelines.

Policy 7.1.1.4: Future development or redevelopment within the coastal area shall provide infrastructure to service the development or redevelopment at the Level of Service standards adopted in the appropriate elements of this Comprehensive Plan, and which is consistent with the coastal resource protection, access, and safe evacuation requirements of this Comprehensive Plan and as further provided for in the Capital Improvements Element.

Policy 7.1.1.5 The County shall continue to coordinate with appropriate state agencies in meeting the goals and policies of the Indian River Lagoon Aquatic Preserves: Management Plan, the North Fork of the St. Lucie River Aquatic Preserve Management Plan, the Indian River Lagoon Surface Water Improvement and St. Lucie County Coastal Management-

Objective 7.1.2: Protecting Wetlands and Wildlife Habitat. The County shall support the protection, conservation, or enhancement of coastal uplands and wetlands. The County shall include within its Land Development Regulations criteria and standards for the protection and enhancement of the remaining native plant communities in the County. There shall be no net loss of existing wetland functions and values which are regulated by federal and state agencies. The land development regulations shall include open space requirements, upland buffers and clustering of units as means to protect existing wetlands.

Policy 7.1.2.1: The County shall continue to implement and enforce land development regulations that require the use of native or drought tolerant vegetation adapted to existing soil and climatic conditions in landscaping in the coastal area.

Policy 7.1.2.2: The County shall require the removal and eradication of all nuisance and exotic vegetation such as Australian pine, Brazilian pepper, and Melaleuca during construction of new development and replacement with plant species that are consistent with Policy 7.1.2.1.

Policy 7.1.2.3: The County shall continue to implement and enforce land development regulations which require a minimum fifty (50) foot buffer zone of native upland and transitional vegetation along rivers, creeks, and estuaries, to be maintained from the landward extent of state waters or from mean high water of the rivers, creeks, and estuaries, whichever is greater. However, setbacks for the North Fork of the St. Lucie River shall be governed by those set out in the Land Use Element to the extent that those requirements may be more restrictive.

- Policy 7.1.2.4: A buffer zone of native upland edge (i.e., transitional) vegetation shall be provided and maintained around isolated wetlands and deepwater habitats which are constructed or preserved on new development sites. The buffer zone may consist of preserve or planted vegetation but shall include canopy, under story, and ground cover of native species only. The edge habitat shall begin at the upland limit of any wetland or deepwater habitat. As a minimum, ten (10) square feet of such buffer shall be provided for each linear foot of wetland or deepwater habitat perimeter that lies adjacent to uplands. This upland edge habitat shall be located such that no less than fifty (50) percent of the total shoreline is buffered by a minimum width of ten (10) feet of upland habitat.
- Policy 7.1.2.6: The County shall, through the development review process, in cooperation with the appropriate wetland regulatory agencies, continue to conserve and protect coastal wetlands from detrimental physical and hydrological alteration and prohibit unmitigated encroachment into coastal wetlands. The regulation of activities in, on or over wetlands or other surface waters and the management and storage of all surface waters shall be pursuant to applicable Local, State and Federal requirements. The most restrictive of these shall be enforced. County regulations shall include criteria to evaluate and preserve wetlands, based upon their functional characteristics including types, size, values, functions, conditions and location.
- Policy 7.1.2.9: The County shall support and implement programs, in line with the administrative and fiscal constraints of the County, to restore, enhance, and maintain the functions and values of natural waterways and adjacent upland habitats within the coastal area. Through state and local programs, St. Lucie County will continue to encourage the preservation and enhancement of floodplain wetland functions through public purchase and restoration of the floodplain wetlands and adjacent upland buffers along the North Fork of the St. Lucie River and the Indian River Lagoon, including their natural tributaries.
- Policy 7.1 .2.10 Management and recreation development plans for lands purchased through state and local natural resource protection programs (Environmentally Significant: Lands, Save Our Coasts, Preservation 2000) shall only allow for development that minimizes impacts to natural resources and does not degrade the long-term viability of existing natural resources on the site. Where possible all plans should assist to restore the biodiversity of plant and animal species in the coastal area while providing reasonable public access.

- Policy 7.1.3.9: Alternative sources for borrow material for the Ft. Pierce Feeder Beach Restoration Project shall be evaluated, to eliminate the degradation of near shore and offshore natural reefs.
- Policy 7.1.3.10: The County shall discourage development activities on submerged lands.
- Policy 7.1.3.11: The County shall continue efforts to reconnect all impounded marshes to the Indian River Lagoon.

Objective 7.1.5: Beaches and Dunes. St. Lucie County shall provide for the protection and restoration of beaches and dunes. A comprehensive beach and dune management program shall be adopted by 2003 which enhances the natural functioning of the beach-dune system while reducing unnatural disturbances of the primary dune.

- Policy 7.1.5.1: The County shall prohibit construction seaward of the Coastal Construction Control Line including construction of coastal or shore protection structures, except where the Florida Department of Environmental Protection has issued the applicable permit authorizing that construction.
- Policy 7.1.5.2: Techniques for inlet maintenance which provide for long-term beach stability through facilitation of normal littoral processes shall be supported.
- Policy 7.1.5.5: Access to the beach for new development will be confined to elevated walkways that protect dune systems, subject to the Florida Department of Environmental Protection approval.
- Policy 7.1.5.6: The County shall enforce regulations which prohibit motor vehicles on public lands within the coastal strand and scrub upland habitats that lie east of the Coastal Construction Control Line, unless authorized by the appropriate Federal, State, or local agency.

Objective 7.1.6: The County shall implement and strengthen regulations that provide for the protection, preservation, or sensitive reuse of historic resources in the coastal area, including the adoption of a historic preservation ordinance by 2002.

- Policy 7.1.6.1: As an alternative to preserving historic or archaeological sites, excavation of a site conducted by the Florida Division of Historic Resources or their approved alternate prior to development shall be allowed. Should a site be scientifically excavated then development may proceed without preserving the site unless found to be of great significance.
- Policy 7.1.6.2: In the case of historic or archaeological sites, vegetation removal shall be prohibited unless the vegetation to be

removed is a part of a bona fide scientific excavation or is a part of an approved development plan.

Policy 7.1.6.7: Historic resources and their environments should be included and protected in public acquisition programs for recreation, open space and conservation.

Policy 7.1.6.8: By December 31, 2002, the County shall enact regulations that will further protect the integrity of sites identified by St. Lucie County as significant historic resources. At a minimum the regulations shall provide that: a. No existing archaeological sites shall be excavated, scraped, leveled, or altered without supervision of a professional archaeologist utilizing acceptable techniques; b. An archaeological survey may be required as part of development reviews; c. If evidence of historical or archaeological value is exposed through construction or site preparation, work on that location will be temporarily suspended until evaluated by the County or their designees.

Policy 7.1.7.3: New marina facilities shall be located in areas that minimize adverse environmental impacts.

**GOAL 7.2:** REDUCING VULNERABILITY TO HURRICANES. ST. LUCIE COUNTY SHALL STRIVE TO PROTECT THE PEOPLE AND PROPERTY IN ST. LUCIE COUNTY FROM THE EFFECTS OF HURRICANE STORM DAMAGE. ST. LUCIE COUNTY SHALL WEIGH FUTURE DEVELOPMENT AS TO THE IMPACT IT WOULD HAVE ON THE COUNTY'S ABILITY TO PROTECT THE PEOPLE AND PROPERTY IN ST. LUCIE COUNTY FROM THE EFFECTS OF HURRICANE STORM DAMAGE.

Objective 7.2.1: The County shall address development and redevelopment in the coastal area in the County's Hurricane Evacuation Plan.

Policy 7.2.1.3: The construction of County-funded public facilities in the coastal high hazard area shall be prohibited, unless the facility is necessary for public access, natural resource restoration or enhancement, or to provide for recreational facilities and other appropriate water dependent facilities.

Policy 7.2.1.4: New development and redevelopment within V or A flood zones as designated by the Federal Emergency Management Agency shall employ building construction techniques which are consistent with the requirements of the Federal Emergency Management Agency Flood Insurance Program and the County's Coastal Construction Code.

Policy 7.2.1.5: The County shall prohibit the use of public funds for infrastructure expansion or improvements in coastal high hazard areas unless such funds are necessary to: a. Provide services to existing development (structures approved for development prior to the adoption of this



Comprehensive Plan); b. Provide adequate evacuation in the event of emergency; or c. Provide for appropriate water dependent uses including the restoration or enhancement of natural resources within the coastal area.

Policy 7.2.2.1 County-funded buildings shall include the function of public hurricane shelter in their design. Some of the elements to be considered in the design are: :a. Flooding potential; b. Accessibility; c. Rain surcharge on roofs; d. Window/door glass exposures; e. The use of dedicated roll up/down hurricane shutters; f. Adequate sanitary facilities; g. Emergency power supply; and h. Emergency water supply.

Policy 7.2.2.2: Request in writing that other governmental entities in the County design new buildings consistent with Policy 7.2.2.1 when practicable and ask the County's Emergency Management Director to review and comment on proposals for new public buildings.

Policy 7.2.2.3: Structural and functional designs of County buildings shall be reviewed and retrofitted for public shelters where it is cost effective and/or practical.

Policy 7.2.2.4 All new residential development in excess of fifty units in areas subject to coastal flooding shall provide shelter space for twenty percent of the residents at a: spacing requirement of forty square feet per person, or demonstrate the availability of the shelter space.

Objective 7.2.3 The County shall maintain the worst case 22.5 hour hurricane evacuation time.

Policy 7.2.3.3: St. Lucie County shall continue to implement the Treasure Coast Hurricane Evacuation Plan.

Policy 7.2.3.4 Capital projects within the coastal area. Lucie County shall require environmental impact studies and appropriate mitigation for any:

Policy 7.2.3.5: All hurricane evacuation studies and plans conducted by or for the County shall be provided to the Treasure Coast Regional Planning Council, nearby counties, and all municipalities within St. Lucie County for review for consistency with regional and local plans. Conversely, St. Lucie County shall request for purposes of review, all hurricane evacuation studies and plans for nearby counties, municipalities within St. Lucie County, and the Treasure Coast Regional Planning Council.

Policy 7.2.3.6: If the Florida Department of Transportation, in conjunction with Martin County, decides to widen the Jensen Beach Bridge to South Hutchinson Island, discuss possible St. Lucie County participation in the project with the appropriate parties.

- Objective 7.2.4 The County shall provide immediate response to post-hurricane situations through the implementation of post-disaster response and redevelopment: plans as set forth in the Treasure Coast Hurricane Evacuation Plan.
- Policy 7.2.4. After a hurricane, but prior to re-entry of the population into evacuated areas, a special meeting of the Board of County Commissioners shall be convened to 1 hear preliminary damage assessments, appoint a Recovery Task Force, and consider a temporary moratorium on building activities not necessary for the public health, safety, and general welfare.
- Policy 7.2.4.2 A Recovery Task Force shall be named to include the Community Development Director, Emergency Management Director, County Engineer, and Sheriff, and other members as directed by the Chairman of the County Commission. Staff shall be provided by the departments whose directors sit on the Task Force. The Task Force shall be disbanded after implementing its responsibility.
- Policy 7.2.4.4: The following post-emergency activities shall be pursued: immediate repairs to potable water, wastewater, and power facilities; removal of debris; stabilization or removal of structures about to collapse; and minimal repairs to make dwellings habitable. These actions shall receive first priority in permitting decisions. Long-term redevelopment activities shall be postponed until the Recovery Task Force has completed its tasks.
- Policy 7.2.4.5 If appropriate to rebuild structures which suffer damage in excess of fifty (50) percent of their appraised value, current requirements shall be met including those: enacted since construction of the structure including the Coastal Construction Control Line.
- Policy 7.2.4.6 Structures which suffer repeated damage to pilings, foundations, or load bearing walls and are proposed to be rebuilt shall be required to rebuild landward of their current location or modify the structure to delete the areas most prone to damage.
- Policy 7.2.4.7: Repair or reconstruction of seawalls shall be accompanied by beach fill or other appropriate material authorized by the appropriate Federal or State permitting agencies.
- Policy 7.2.4.8: The County shall assess the value of all structures in the coastal high hazard area and the utility of the land for public assess, and evaluate the potential for acquisition, relocation, or other appropriate measures in line with fiscal constraints when post disaster opportunities arise.

Policy 7.2.4.9: The Recovery Task Force shall review all interagency hazard mitigation reports as they are produced and make recommendations for amendments to the comprehensive plan accordingly.

**GOAL 7.4:** PUBLIC FACILITIES SHALL BE ADEQUATE AND AVAILABLE TO SERVE THE RESIDENTS OF AND VISITORS TO THE COUNTY’S COASTAL AREA.

Objective 7.4.1 The appropriate Level of Service standards within this Comprehensive Plan (including those in the Capital Improvement Element and Traffic Circulation Element) and the standards under this objective shall be applied to infrastructure facilities during the development approval process. The service area and phasing of such facilities shall be consistent with the goals, objectives, and policies of this and all other elements of this Comprehensive Plan.

Policy 7.4.1.1: The County shall prohibit the use of public funds for infrastructure expansion or improvements in coastal high hazard areas unless such funds are necessary to: a. Provide services to existing development (structures approved for development prior to the adoption of this Comprehensive Plan); b. Provide adequate evacuation in the event of emergency; or c. Provide for appropriate water dependent uses including the restoration or enhancement of natural resources within the coastal area.

Policy 7.4.1.2 The County shall develop criteria for use in the implementation of the regulations required in Policy 7.4.1.1 above.

Policy 7.4.1.3 The County shall cooperate with State and Federal guidelines for all beach renourishment projects which are consistent with the St. Lucie County Comprehensive: Plan. Beach renourishment projects shall have a design life of at least five years.

Policy 7.4.1.4: The County shall prohibit development proposals that would reduce the level of service provided by an adjacent renourished beach below locally determined criteria.

Policy 7.4.1.6: The County shall require turn lanes, parking lanes, or other paved areas, particularly at appropriate intersections, for new or improved roads, which can be used to increase the number of traffic lanes for hurricane evacuation.

**Conservation Element**

**GOAL 8.1** THE NATURAL RESOURCES OF ST. LUCIE COUNTY SHALL BE PROTECTED, APPROPRIATELY USED, OR CONSERVED IN A MANNER WHICH MAXIMIZES THEIR FUNCTIONS, AND VALUES.

Objective 8.1.2 The County shall continue to enforce land development regulations which require the conservation, appropriate use, and protection of surface waters.

Objective 8.1.3 The County shall continue to enforce land development regulations which require the protection and maintenance of the natural functions (flow and storage) of the 100-year floodplain.

Policy 8.1.3.1 The County's land development regulations shall include the use of programs to protect or maintain floodplain, such as reduced parking, conservation easements, cluster site planning and micro-siting of buildings. The County shall continue to strictly enforce regulations that direct development away from floodplains and provide upland buffers along the floodplain.

Policy 8.1.3.2 The County shall continue to acquire floodplain through the Environmentally Significant Lands Program and cooperative agreements with state and federal acquisition programs.

Policy 8.1.3.3 Appropriate floodplain management initiatives for unincorporated areas which may impact or be beneficial to other areas within the watersheds shall be developed.

Objective 8.1.4 The County shall continue to enforce Wetland Protection Standards within the land development regulations which require the preservation, creation and restoration of wetlands in a manner that results in no net loss of function and value within the County's jurisdiction.

Policy 8.1.4.1 The land development regulations shall require the following information on site plans for new development: a. The location and extent of wetlands located on the property; b. Measures to assure that normal flows and quality of water will be provided to maintain wetlands after development; and c. Measures to mitigate for any unavoidable wetland impacts proposed as part of the development.

Policy 8.1.4.2 The land development regulations shall provide criteria for: a. Project modification measures to reduce wetland loss and degradation. All projects shall be required to maximize design modifications to ensure wetland impacts are avoided or minimized; b. The evaluation of proposed wetland alteration for permitted uses; c. The mitigation of wetlands alteration which include, but are not limited to, the restoration of disturbed wetlands, creation of additional wetlands, or enhancement of functions and values provided by existing habitats.

Policy 8.1 .4 The County shall continue to require a minimum fifty (50) foot buffer zone of native upland and transitional vegetation along rivers, creeks, and estuaries, to be 3 maintained from the landward extent of state waters or from Mean High Water of the rivers, creeks, and

estuaries; whichever is greater. However, setbacks for the North Fork of the St. Lucie River shall be governed by those set out in the Land Use Element.

- Policy 8.1 .4.4                      The land development regulations shall require a buffer zone of native upland edge (i.e., transitional) vegetation to be planted or maintained around wetland and deepwater habitats which are constructed or preserved on new development sites. The buffer zone may consist of preserved or planted vegetation but shall include canopy, under story, and ground cover of native species only. The edge habitat shall begin at the upland limit of any wetland or deepwater habitat. As a minimum ten square feet of such buffer shall be provided for each linear foot of wetland or deepwater habitat perimeter that lies adjacent to uplands. This upland edge habitat shall be located such that no less than 50 percent of the total shoreline is buffered by a minimum width of ten feet of upland habitat.
  
- Policy 8.1 .4.5                      The County shall cooperate with the Florida Department of Environmental Protection, South Florida Water Management District (SFWMD), and the U.S. Army Corps of Engineers on their dredge and fill permitting responsibilities by providing comments where appropriate on any applicable County wetland regulation.
  
- Policy 8.1.4.6                      The land development regulations shall include the use of programs to protect or maintain wetlands, such as reduced paving, conservation easements, cluster site planning and micro-siting of buildings.
  
- Policy 8.1.4.7                      The County shall provide appropriate administrative support in the acquisition of additional wetlands and uplands as part of the Savannas State Reserve.
  
- Policy 8.1.4.8                      The County shall support wetland mitigation programs by federal and state agencies that will not weaken local regulatory authority and will ensure no net loss of wetland functions and provide for a measured increase in restored wetland function and acreage. Any wetland impact occurring within St. Lucie County shall be mitigated within St. Lucie County, unless waived by the Board of County Commissioners.
  
- Policy 8.1.4.9                      The County shall continue to identify and analyze wetland areas which should be considered environmentally sensitive. The County shall provide for the protection, appropriate use and conservation of these areas based on criteria which consider the administrative and fiscal constraints of the County. Potential mechanisms shall include acquisition, restriction or prohibition of activities, and incentives to protect and maintain wetlands.

- Policy 8.1.4.11            The County shall require that setback requirements from open bodies of water are maintained by continued implementation of the Land Development Regulations.
- Policy 8.1.4.12            The County shall require the identification of on site wetlands for all new applications for development or construction. Protection of wetlands and other surface waters is preferred to destruction and mitigation due to the temporal loss of ecological value and uncertainty regarding the ability to recreate certain functions associated with these features. Mitigation will be considered only after the applicant has complied with the land development code requirements regarding the avoidance and minimization of wetland impacts. In certain cases, mitigation cannot offset impacts sufficiently to approve a project. Such cases may include activities which degrade Outstanding Florida Waters, adversely impact habitat for listed species, or impact wetlands or other surface waters not likely to be successfully recreated. The current condition and value of wetlands functions will be considered in determining if proposed adverse impacts and mitigation measures to off-set wetland impacts are reasonable.
- Policy 8.1.8.1             The County shall require all nuisance and invasive exotic vegetation (e.g. Brazilian pepper, Australian pine and Melaleuca) be removed and eradicated at the time of development or redevelopment of a non-residential use and residential site plan projects and, where appropriate, replaced with native or drought tolerant species that are adapted to existing soil and climatic conditions.
- Policy 8.1.8.3             Lands acquired through the County's Environmentally Significant Lands Program for preservation shall be preserved and managed for the long term viability of the listed species
- Policy 8.1.8.4             The land development regulations shall include criteria which allow utilization of Transfer of Development Rights (TDR5) or other flexible methods of land development transfer that would direct development from unsuitable lands to those most suitable for active use.
- Policy 8.1.8.16            The County shall require clustering of dwelling units and/or open space for land development projects which contain environmentally sensitive lands and critical habitats within its project boundaries, in order to preserve these resources.
- Policy 8.1.12.2            All appropriate land development regulations required by this Comprehensive Plan shall include the protection of environmentally sensitive upland and wetland areas.
- Policy 8.1.13.1            The County shall coordinate with the state and federal land acquisition programs to encourage connectivity

between privately and publicly owned recreational and conservation lands.

Objective 8.1.14 St. Lucie County shall, by December 2004, amend its land development regulations to include a locally developed and regulated wetland classification system for purposes of protecting wetland functions and values within the unincorporated areas of St. Lucie County based upon a wetland classification survey of all areas in the unincorporated areas of St. Lucie County to be completed by July 2004, consistent with the Policies cited below. St. Lucie County shall, by December 2004, amend its land development regulations to provide for the implementation of standards and regulations to enforce this policy.

Policy 8.1.14.2 The County shall not permit development in a Category I or II wetland or any wetland buffer associated with these wetlands, except as follows.

Policy 8.1.14.3 In addition to the alteration provisions of Policy 8.1.14.3(c), alteration of a Category I or II wetland may be allowed when no other reasonable alternative exists and avoidance and minimization of impacts cannot otherwise be achieved. Any provision of this Comprehensive Plan or the land development code related to the preservation of a Category I or II wetland that precludes all reasonable economically viable use of the property or would prohibit a reasonable public use of the property and which if applied would result in a compensable taking of the property may be waived to the extent necessary to provide the minimum reasonable use, public or private, of the property. These provisions shall only be waived following the review and approval of the Board of County Commissioners, or their designee, in a manner set forth in the Land Development Code. The standards for the granting of any waiver shall be set forth in the Land Development Code and shall be consistent with the general standards and intent of the Comprehensive Plan

Policy 8.1.14.5 The County shall require a minimum 50-foot buffer between Category I or II wetlands and new development activity in order to protect water quality, preserve natural functions, and preserve wildlife habitat. The buffer, as measured landward from the approved jurisdictional line, shall be maintained in a natural vegetative state and be free of exotic and nuisance species as defined by the Florida Pest Council.

Policy 8.1.14.6 All new development on lots less than 5 acres and not containing a Category I or II wetland shall provide a minimum 25-foot buffer between the wetland jurisdictional line and the area of development. The buffer, as measured landward from the approved jurisdictional line, shall be maintained in a natural vegetative state and be free of exotic and nuisance

species as defined by the Florida Pest Council. No development shall occur within the wetland buffer except as identified in 8.1.14.2.

Policy 8.1.14.7

St. Lucie County shall assess the specific and cumulative impacts of all proposed new development or redevelopment activities, including single family building permits, on all wetlands that may be located on the property in order to ensure that the natural functions of the wetlands are protected and conserved through the implementation of wetland protection standards which shall include consideration of the types, values, functions, sizes, conditions, and locations of wetlands.

**Recreation and Open Space Element**

Objective 9.1.6

Develop and implement strategies to adequately manage Environmentally Sensitive Lands in St. Lucie County.

Policy 9.1.6.1

Encourage the State of Florida to provide future funding for management of Environmentally Sensitive Lands.

Policy 9.1.6.2

Seek funding from outside sources for improvement and management of Environmentally Sensitive Lands.