



# **Integrating Hazard Mitigation into Comprehensive Planning**

## **Levy County Profile**

**Florida Department of Community Affairs**

## Executive Summary

The experiences of the 2004 Hurricane Season epitomize the importance of better integrating hazard mitigation activities into local comprehensive planning. Last fall, residents from all over the state experienced significant damages from Hurricanes Charley, Frances, Jeanne, and Ivan by either winds, tornadoes, surge, or flooding. But this wasn't the only time we've 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 fire fighters best efforts, the fires advanced through neighborhoods and homes were lost. Every year in Central Florida, new sinkholes emerge swallowing homes and damaging infrastructure. The cost of recovery for these various disasters ranges from hundreds of thousands to billions of dollars, significantly taxing local, state, and federal financial sources. Losses covered through federal funding as a result of the 2004 hurricanes alone could reach as high as \$7 billion. Worst of all, however, are the many lives that, directly or indirectly, are lost due to natural disasters. It is imperative that we reduce the human and financial costs of natural disasters. Through better integration of natural hazard considerations into local comprehensive planning, we can build safer communities.

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

### General Recommendations

- The LMS is a strong hazard mitigation tool and can be utilized when analyzing Comprehensive Plan amendments and land use decisions. Currently, the Comprehensive Plan does reference the CEMP and the LMS but does not refer to their use in Comprehensive Planning. Better integration of LMS and Comprehensive Plan policies can improve the County's overall hazard mitigation strategy.
- The Levy County Comprehensive Plan can prioritize hazard mitigation initiatives found in the LMS through the 5-year Capital Improvements Schedule. Criteria used to prioritize

projects in the Capital Improvement Schedule can include dimensions that involve hazard mitigation. By prioritizing hazard mitigation initiatives in the Capital Improvements Schedule, the LMS goals may be reached by securing funds and provide a timeframe for actions.

- The County can support educational programs that provide hazard mitigation information to the public, the business community, and to government personnel. Programs and information on hurricane preparedness, evacuation routes and shelter locations, flood hazard mitigation, the retrofitting of reoccurring loss structures, and wildfire mitigation programs can promote the hazard mitigation strategy of the County. Education and outreach programs may help create a better informed community and reduce risk to life and property. The County can educate local site plan reviewers on the importance of flood, wildfire, and sinkhole mitigation as well as the strategies used to reduce the vulnerability. Plan reviewers could then promote these ideas to local developers and explain their importance during the site plan review process. County personnel can incorporate hazard mitigation issues into existing operations as well as develop new initiatives.
- The County can adopt a policy that creates a Hurricane Evacuation Clearance Time Level of Service standard. A Hurricane Evacuation Clearance Time Level of Service standard can act as a quantitative measurement of evacuation route capacity and be used as a goal for providing a safe evacuation. The County can also adopt a Comprehensive Plan policy that continues to support and coordinate evacuations with the Withlacoochee Regional Evacuation Plan. Evacuations often occur on regional levels and on routes shared by numerous jurisdictions. Coordination with the regional evacuation plan may ensure a safe and timely evacuation as well as address regional needs. Like the LMS, the Comprehensive Plan can adopt policies that support maintaining evacuation routes and address deficiencies of road conditions.
- Like most Counties in Florida, Levy County has a deficient amount of shelter capacity. Levy County can continue to cooperate with neighboring jurisdictions and the Withlacoochee Regional Planning Council to address local and regional evacuation shelter needs. The County could explore alternatives for evacuation shelters including the use or retrofit of existing public facilities as shelters or the promotion of safe rooms outside hazard areas. Also, the County may create an emergency shelter capacity Level of Service to measure improvements to capacity.
- The County has many existing measures that serve to mitigate the impacts of hazards, but they have not been identified as beneficial in this area. Current growth management techniques such as the land conservation, land acquisition, and the enforcement of land regulation through the Land Development Code are employed to protect natural resources but also mitigate the effects of natural disasters. The County can update these policies in the Comprehensive Plan and emphasize the benefits of hazard mitigation. Also, the County can explore the use of TDR to encourage development outside of high hazard areas and away from natural resources.

#### Sinkhole Hazards

- Karst sensitive areas are addressed in the Comprehensive Plan and identified before development. The County can continue supporting the collection of data used to identify these hazards and explore the use of overlay districts or preservation zones in karst sensitive areas.

Wildfire Hazards

- The County can explore the adoption of firewise building code requirements for defined high fire risk areas to reduce wildfire risk in the County. As population is expected to increase in the immediate future, there is opportunity to develop neighborhoods and commercial properties using a code that may reduce property loss due to wildfire.
- The County can promote native vegetation and defensible space in high fire risk areas. This can act as a natural buffer and reduce the spread of wildfire. Also, the County can encourage the removal of wildfire fuel sources near structures, especially in rural areas.

Coastal Hazards

- The County can explore the use of TDR of Environmentally Sensitive Lands and high-hazard areas in order to promote development away from natural hazard areas. This approach can also encourage a more compact and contiguous urban form as well as protect natural resources that may reduce the risk of natural disasters.

Flooding Hazards

- The County can encourage and or assist in retrofit, relocation, acquisition or demolition of repetitive loss structures.
- The County can provide information on retrofitting options and assistance programs for repetitive loss properties.

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## 1. County Overview

### Geography and Jurisdictions

Levy County is located along the western coast of North-Central Florida. It covers a total of 1,118 square miles with an average population density of 30.8 people per square mile (U.S. Census, 2000).



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

### Population and Demographics

Official 2004 population estimates for all jurisdictions within Levy County, as well as, the percent change from the 2000 U.S. Census are presented in **Table 1.1**. The most current estimated countywide population of Levy is 37,486 people (University of Florida, Bureau of Economic and Business Research, 2004). The most populated city in the County is Williston but 75.4% of the countywide population lives in the unincorporated portion of the County. Between 1990 and 2000, Levy County as a whole had a growth rate of 32.9%, which is greater than the statewide growth rate of 23.5% in those 10 years.

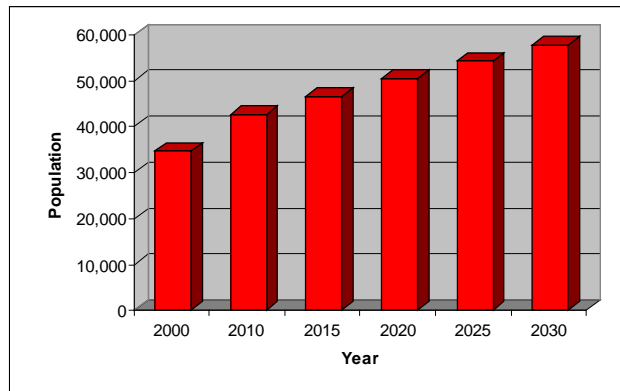
**Table 1.1 Population Estimates by Jurisdiction**

Jurisdiction	Population, Census 2000	Population Estimate, 2004	% Change, 2000-2004	% of Total Population (2004)
Unincorporated	25,701	28,263	10.0%	75.4%
Bronson	964	987	2.4%	2.6%
Cedar Key	790	849	7.5%	2.3%
Chiefland	1,993	2,031	1.9%	5.4%
Fanning Springs (part)	464	553	19.2%	1.5%
Inglis	1,491	1,637	9.8%	4.4%
Otter Creek	121	137	13.2%	0.4%
Williston	2,297	2,327	1.3%	6.2%
Yankeetown	629	702	11.6%	1.9%
<b>Countywide Total</b>	<b>34,450</b>	<b>37,486</b>	<b>8.8%</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), Levy County’s population is projected to grow steadily for the next 30 years, reaching 57,500 people by the year 2030. **Figure 1.1** illustrates medium population projections for Levy County based on 2004 calculations.

**Figure 1.1 Medium Population Projections for Levy County, 2010-2030**



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

Of particular concern within Levy 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, 17.9% of Levy County residents are listed as 65 years old or over, 26.0% are listed as having a disability, 18.6% are listed as below poverty, and 6.1% live in a home with a primary language other than English.

## 2. Hazard Vulnerability

### Hazards Identification

The highest risk natural hazards for Levy County are hurricanes, flooding, wildfires, and sinkholes. The Levy County LMS does not rank these natural hazards in priority order but does provide a qualitative assessment based on historical records. The LMS lists past hurricane events dating back to 1906. It also claims no hurricane winds over 100 mps has occurred in the County in recorded history. Storm surge associated with hurricanes and tropical storms threaten the County due to low-lying coastal areas. Hurricane force winds are also a concern due to the presence of mobile homes in vulnerable areas. Flooding occurs seasonally along the Suwannee, Waccasassa, and Withlacoochee Rivers. Much of Levy County was declared a federal disaster site due to flooding after the El Nino event in 1998. Wildfire also threatens much of the County. The LMS states the County is 2/3 forested lands and largely rural in form. It states that between 2003 and 2004 there were 85 fires that burned 411 acres in the County. Sinkholes are present in the County, primarily around the Chiefland area but pose little immediate danger.

### 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 (KAC) under contract with the Florida Department of Community Affairs (DCA). Estimated exposure values were determined using the Category 3 Maxima Scenario for storm surge, 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 zones for sinkholes. Storm surge exposure data is 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 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 Levy County that live within Federal Emergency Management Agency Flood Insurance Rate Map zones, which signify special flood hazard areas. According to these maps, 22.7% of the population, or 7,828 people, are within the 100-year flood zone. A majority of those at risk of flooding are either elderly and/or disabled. In Levy County, sinkholes are also a risk, with 7% of the population within a high- to adjacent-risk sinkhole zone. Wildfire is a major hazard of concern to the County, with 50% of the population living within medium- to high-risk wildfire zones. Thirty-six percent of those at risk from wildfire are disabled, making a quick evacuation difficult. The last column represents those people in the County at risk from hurricane-related surge. Only 3.9% of the countywide population would be at risk from surge due to a Category 3 hurricane. All of the residents at risk from surge, though, would be encouraged to 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	480	882	3,610	35
Over 65	1,517	454	2,865	359
Disabled	3,667	1,591	8,387	526
Poverty	1,105	889	3,619	167
Language Isolated	66	148	178	0
Single Parent	414	280	1,258	84
<b>Countywide Total</b>	<b>7,828</b>	<b>2,498</b>	<b>17,519</b>	<b>1,171</b>

*Source: Florida Department of Community Affairs, 2005a.*

*Evacuation and Shelters*

As discussed in the previous sections, population growth in Levy 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 Levy County are estimated to be 14.5 hours for Category 3 through 5 hurricanes, as shown in **Table 2.2**. This data was 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. Levy County is just a little above this recommendation for now, but with continued growth and the limited road network of the region, it will be difficult to maintain or decrease 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 Levy 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	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 4 Hurricane	Category 5 Hurricane
Citrus	9.75	12	12	19	19
Lake	NA	NA	NA	NA	NA
Levy	7.75	7.75	14.5	14.5	14.5
Marion	NA	NA	NA	NA	NA
Sumter	8	10	12	16	20

NA=Not Available

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 Levy 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 2,455 people in the County’s shelters, and there are 2,731 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 3,390 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 highest 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 Levy County by structure type that are at risk from each of the four hazards being analyzed.

Flooding is the largest risk to property in the County, with 18,971 structures within a flood zone. According to the latest National Flood Insurance Program Repetitive Loss Properties list, there are 13 homes in unincorporated Levy County that have had flood damage multiple times and received insurance payments. There also are 1,373 structures at risk from surge. A total of 47% of the structures at risk from surge are single-family homes. Typically, structures at risk from surge are high-value real estate due to their proximity to the ocean.

**Table 2.3** also shows 2,391 structures within high to adjacent-risk sinkhole areas. Another major risk for property in the County is wildfire. There are 15,839 structures within medium to high-risk wildfire zones with 31.5% 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)	Surge
Single-Family Homes	7,982	785	4,990	647
Mobile Homes	2,489	656	4,657	192
Multi-Family Homes	1,503	164	840	176
Commercial	1,636	356	952	99
Agriculture	4,240	121	2,223	152
Gov./Institutional	1,121	309	2,177	107
<b>Total</b>	<b>18,971</b>	<b>2,391</b>	<b>15,839</b>	<b>1,373</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 is used to demonstrate the County’s vulnerabilities to these hazards spatially and in relation to existing and future land uses. The FDCA has provided maps of existing land use within hazard areas based on the 2004 County Property Appraiser geographic information system (GIS) shapefiles. Maps of future land uses in hazard areas were developed using the Levy County future land use map dated March 1994.

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 affected area for the coastal hazard and hurricane vulnerability zones is mostly west of Highways 18 and 19. **Table 2.4** presents the acres of land in the coastal hazard zone and in the hurricane vulnerability zone. Eighty-nine percent of the land in the coastal hazard zone and 86.3% of the land in the hurricane vulnerability zone are either used for agriculture or parks and conservation. This is very positive for the County since a large portion of these hazard areas is being conserved or has not yet been developed, thereby giving the County opportunities to limit the amount of people needing evacuation or shelter and the amount of property damage that can occur from a hurricane. **Table 2.5** presents future land use estimates and a breakdown of how currently undeveloped land has been designated for future use. Of the 16,436 vacant acres in the coastal hazard zone, 89.2% are designated for agricultural purposes in the future. The same is true with the hurricane vulnerability zone acres- 86.6% of the 32,246 vacant acres in this zone are also designated for agriculture.

In **Attachment B**, two maps present the existing and future land uses within a 100-year flood zone. There are large swaths of flood-prone areas scattered across the County; however, a majority of them are west of Highway 27 where there are many wetlands. The total amount of land in these special flood hazard areas is 692,348 acres countywide. As shown in **Table 2.4**, only 11.7% of these acres are currently undeveloped, however, a majority of the flood prone land

is in parks and conservation or agricultural uses. **Table 2.5** shows that 76.4% of the undeveloped lands are designated for future agricultural use. Again it is good to keep these hazard acres as undeveloped as possible to keep the County's vulnerability low.

In **Attachment C**, maps present the land uses associated with high-risk wildfire zones. These wildfire risk areas are scattered across the County, although most of the larger swaths are on the western side of the County. A total of 31.6% of the land within these wildfire zones is currently vacant and another 42.3% is used for agriculture, as shown in **Table 2.4**. Of those 30,713 undeveloped acres, 66.3% is designated for agricultural uses in the future but 27.4% is also designated for use as estate (**Table 2.5**). If homes are built in these risk areas, Levy's vulnerability to wildfire hazards will greatly increase, especially since estate land uses will most likely involve large lots that will retain the vegetative fuels that make the area vulnerable to wildfire.

**Attachment D** includes maps of potential sinkhole areas in the County. Most of the areas at risk from sinkholes are around Chiefland and Fanning Springs due to the karst foundation of these areas. Again, though a large portion of the sinkhole hazard area is being used for agriculture, 71% is still vacant. (**Table 2.4**). Of the undeveloped land at risk, 57.6%, or 1,273 acres, are designated for future use as agriculture as shown in **Table 2.5**. If the County sticks to these plans for future land use then they will be doing well to keep people and property out of harms way.

**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	93,844.6	190,400.3	409,143.2	41,160.5	13,111.2
	%	44.3	55.7	59.1	42.3	71.0
Attractions, Stadiums, Lodging	Acres	0.5	118.4	223.2	59.5	103.4
	%	0.0	0.0	0.0	0.1	0.6
Places of Worship	Acres	7.1	61.1	228.5	128.0	16.1
	%	0.0	0.0	0.0	0.1	0.1
Commercial	Acres	20.1	125.3	313.4	158.7	112.6
	%	0.0	0.0	0.1	0.2	0.6
Government, Institutional, Hospitals, Education	Acres	2,896.5	3,234.7	7,891.5	670.6	116.6
	%	1.4	1.0	1.1	0.7	0.6
Industrial	Acres	173.4	235.2	412.0	108.8	68.0
	%	0.1	0.1	0.1	0.1	0.4
Parks, Conservation Areas, Golf Courses	Acres	93,864.7	104,451.6	161,260.7	8,562.3	934.3
	%	44.3	30.6	23.3	8.8	5.1
Residential Group Quarters, Nursing Homes	Acres	1.3	249.7	254.6	10.3	0.0
	%	0.0	0.1	0.0	0.0	0.0
Residential Multi-Family	Acres	0.0	0.0	10.0	9.4	0.0
	%	0.0	0.0	0.0	0.0	0.0
Residential Mobile Home, or Commercial Parking Lot	Acres	1,737.5	5,172.0	18,401.1	10,449.8	754.2
	%	0.8	1.5	2.7	10.7	4.1
Residential Single-Family	Acres	1,195.4	3,874.8	11,275.4	5,093.1	987.4
	%	0.6	1.1	1.6	5.2	5.3
Submerged Land (Water Bodies)	Acres	1,442.8	1,442.8	1,800.8	20.5	0.0
	%	0.7	0.4	0.3	0.0	0.0
Transportation, Communication, Rights-Of-Way	Acres	14.5	14.5	16.5	5.4	0.0
	%	0.0	0.0	0.0	0.0	0.0
Utility Plants and Lines, Solid Waste Disposal	Acres	154.5	190.6	379.2	132.6	44.6
	%	0.1	0.1	0.1	0.1	0.2
Vacant	Acres	16,435.7	32,246.4	80,738.3	30,712.6	2,209.0
	%	7.8	9.4	11.7	31.6	12.0
<b>Total Acres</b>	<b>Acres</b>	<b>211,788.6</b>	<b>341,817.2</b>	<b>692,348.4</b>	<b>97,282.0</b>	<b>18,457.4</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.
Agriculture	Acres	142,418.2	14,660.1	258,615.3	27,928.0	522,554.8	61,648.2	69,348.2	20,348.2	14,853.4	1,272.9
	%	67.3	89.2	75.7	86.6	75.5	76.4	71.3	66.3	80.5	57.6
Commercial	Acres	933.4	198.4	2,569.3	610.4	5,048.0	1,301.0	1,725.0	524.8	1,481.4	517.6
	%	0.4	1.2	0.8	1.9	0.7	1.6	1.8	1.7	8.0	23.4
Estate	Acres	31.9	0.0	4,885.3	1,317.5	28,045.7	11,659.9	16,098.4	8,400.0	311.4	154.0
	%	0.0	0.0	1.4	4.1	4.1	14.4	16.6	27.4	1.7	7.0
Industrial	Acres	0.0	0.0	451.4	8.3	803.4	69.3	273.1	26.8	288.2	4.7
	%	0.0	0.0	0.1	0.0	0.1	0.1	0.3	0.1	1.6	0.2
Preserve	Acres	67,663.3	1,443.9	70,606.6	1,583.3	122,710.5	3,086.0	6,216.9	104.3	412.2	4.9
	%	32.0	8.8	20.7	4.9	17.7	3.8	6.4	0.3	2.2	0.2
Public	Acres	491.8	0.0	491.8	0.0	757.5	8.7	152.0	9.4	0.0	0.0
	%	0.2	0.0	0.1	0.0	0.1	0.0	0.2	0.0	0.0	0.0
Single Family	Acres	250.1	133.3	4,197.6	799.0	12,428.4	2,965.2	3,468.3	1,299.2	1,110.6	254.8
	%	0.1	0.8	1.2	2.5	1.8	3.7	3.6	4.2	6.0	11.5
<b>Total Acres</b>	<b>Acres</b>	<b>211,788.6</b>	<b>16,435.7</b>	<b>341,817.2</b>	<b>32,246.4</b>	<b>692,348.4</b>	<b>80,738.3</b>	<b>97,282.0</b>	<b>30,712.6</b>	<b>18,457.3</b>	<b>2,209.0</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 Levy County's incorporated areas and how many of those acres are currently undeveloped. All of the municipalities in the County are at risk from flooding and wildfire. Fanning Springs and Inglis are the only municipalities that are affected by all four hazards. Yankeetown has the most acres in the coastal hazard zone, hurricane vulnerability zone, and in the 100-year floodplain, making it the most at risk out of all of the incorporated areas in the County. Williston has the most acres in wildfire susceptible areas, 1,491 acres, and Chiefland has the most acres in potential sinkhole areas, 1,608 acres. Bronson has the least amount of acres in hazards zones of all the incorporated areas.

Table 2.6 Total and Vacant Incorporated Acres in Hazard Areas

Jurisdiction		Coastal Hazard Zone		Hurricane Vulnerability Zone		Flood Zones		Wildfire Susceptible Areas		Potential Sinkhole Areas	
		Total	Vacant	Total	Vacant	Total	Vacant	Total	Vacant	Total	Vacant
Bronson	Acres	0.0	0.0	0.0	0.0	422.0	107.5	982.0	287.6	0.0	0.0
	%	0.0	0.0	0.0	0.0	4.1	25.5	22.3	29.3	0.0	0.0
Cedar Key	Acres	161.0	55.1	496.7	175.5	1,066.5	512.5	1.3	0.7	0.0	0.0
	%	3.1	34.2	6.7	35.3	10.3	48.1	0.0	50.0	0.0	0.0
Chiefland	Acres	0.0	0.0	687.7	155.6	1,936.8	317.5	743.7	124.4	1,607.5	233.6
	%	0.0	0.0	9.2	22.6	18.8	16.4	16.9	16.7	56.3	29.4
Fanning Springs	Acres	222.5	74.5	517.9	143.6	136.7	69.3	167.4	48.8	539.7	227.6
	%	4.3	33.5	6.9	27.7	1.3	50.7	3.8	29.2	18.9	28.6
Inglis	Acres	526.3	208.0	541.1	212.2	955.0	309.4	768.7	270.9	708.5	334.2
	%	10.1	39.5	7.3	39.2	9.2	32.4	17.5	35.2	24.8	42.0
Otter Creek	Acres	0.0	0.0	869.4	234.5	403.3	156.3	144.5	71.3	0.0	0.0
	%	0.0	0.0	11.7	27.0	3.9	38.8	3.3	49.4	0.0	0.0
Williston	Acres	0.0	0.0	0.0	0.0	1,320.4	399.5	1,490.7	169.9	0.0	0.0
	%	0.0	0.0	0.0	0.0	12.8	30.3	33.9	11.4	0.0	0.0
Yankeetown	Acres	4,328.0	1,394.4	4,348.7	1,409.8	4,091.2	1,186.4	104.3	25.0	0.0	0.0
	%	82.6	32.2	58.3	32.4	39.6	29.0	2.4	23.9	0.0	0.0
Total Acres	Acres	5,237.7	1,731.9	7,461.5	2,331.2	10,331.9	3,058.4	4,402.7	998.5	2,855.7	795.4
	%	100.0	33.1	100.0	31.2	100.0	29.6	100.0	22.7	100.0	100.0

### 3. Existing Mitigation Measures

#### 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 Levy County LMS (adopted in 2005) 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 reviewed for its ability to provide hazard data that can support comprehensive planning. The Levy County LMS is a strong hazard mitigation resource. General information in this section of the LMS gives a broad overview of potential hazards that face the County as well as the hazard mitigation process. The LMS includes an analysis of potential damages to structures, critical facilities, populations at risk for each type of natural disaster, infrastructure at risk, and mitigation initiatives. It does discuss future land uses in relation to population centers. The maps in the LMS show the hazard areas and correlate this with population centers. Land uses are not shown on the maps. There are maps and tables that showed the location of public facilities, critical facilities, and mobile home parks. 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. There is also a large section that lists potential funding sources and resources for hazard mitigation projects.

#### *Guiding Principles*

The LMS states that this section of the document can be used as a road map to assist Levy County and its municipalities in promoting hazard mitigation before and after a disaster. It refers to a 200 page index of goals and policies from existing studies and plans that relate to hazard mitigation including the Withlacoochee Regional Hurricane Evacuation Study, County Emergency Management Plan, and County and municipality comprehensive plans. The vision of for the County that is articulated in these documents serves as the basis for the formation of the guiding principles in the LMS.

#### *LMS Goals and Objectives*

The LMS Goals and Objectives can be found in **Attachment E**. 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.

The LMS includes 12 goals and 66 objectives that were drafted after the study of numerous existing documents including the Withlacoochee Region Hurricane Evacuation Study, Bureau of Business and Economic Research (BEBR) Economic Outlook, Levy County CEMP, Hazardous Materials Emergency Plan for the Withlacoochee Region, and County and municipality comprehensive plans. Most of these goals and objectives are reflected in the Comprehensive Plan. There are objectives that promote public education about potential hazards including flood prone areas, disaster preparedness, evacuation procedures and shelter availability. These objectives are general in nature but can be strengthened by creating policies in the Comprehensive Plan that address specific mitigation initiatives and hazard programs. Objectives also reference other hazard mitigation resources such as the Floodplains Management Plan, CEMP, and local ordinances.

Objectives address evacuation routes and shelters. The LMS also has many strong policies that aim to protect natural resources such as wetlands, coastal lands, open space, native vegetation, drainage features, and environmentally sensitive areas. Other objectives call for regulation of public and private structures in hazardous areas by limiting public expenditures, increasing building code requirements, and promoting involvement in the NFIP and CRS. Objectives in the LMS involving cultural and historic resources are mirrored in the Comprehensive Plan.

Overall, the goals and objectives in the LMS are thorough; however there is some disconnection between the LMS and the Comprehensive Plan. The LMS does not refer to the Comprehensive Plan as a mechanism to reach the listed goals and objectives.

### **Comprehensive Emergency Management Plan**

The CEMP Annex II outlines the pre and post-disaster roles and responsibilities for the Mitigation Task Force. This task force assists in pre-disaster mitigation efforts such as improving the Local Mitigation Strategy by providing all the information used for updating the Hazard Identification and Vulnerability Assessment and sharing information to all applicable agencies. Members assist the Local Mitigation Strategy Task Force in developing appropriate initiatives. The task force is also responsible for the education of the public and government about the value of mitigation. Members participate in the Recovery Task Force and help with recovery activities while assessing future mitigation initiatives. Opportunity to evaluate the existing mitigation policies and initiatives first hand is a strong approach to hazard mitigation. Such an advantage may help strengthen hazard mitigations policies and initiatives by better identifying the County's needs in a time of crisis and responding to those needs in future mitigation efforts.

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

A Post-Disaster Redevelopment Plan (PDRP) for Levy County was not available for review at the time this profile was drafted. If Levy 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**

Levy County and all of its jurisdictions, except Chiefland, are participating communities in the National Flood Insurance Program. In addition, Levy County, Fanning Springs, and Yankeetown participate in the Community Rating System and have current classes of 8, 9, and 7 respectively.



#### 4. Comprehensive Plan Review

Levy County's Comprehensive Plan (adopted in ?) 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**. The following is a summary of how well the plan addressed the four hazards of this analysis.

The Levy County Comprehensive Plan has many policies that relate to hazard mitigation. There are policies that support the protection of natural resources including coastal resources, water bodies, wetlands, forested areas, soils, barrier and offshore islands, vegetation, open space, steep slopes, beaches and dunes, and environmentally sensitive areas. Cultural and historic resources are adequately addressed in several policies. Policies also address evacuation clearance times and show the County's commitment to providing a safe and timely evacuation. Evacuation shelters were not addressed in the Comprehensive Plan. Policies encourage development outside the CHHA and limit public expenditure in hazard areas.

##### Flood and Coastal Hazards

There are also policies that limit or regulate development near natural resources, which can protect the environment as well as reduce potential property losses due to flooding and other natural disasters. The protection of public and private property is addressed in many policies by enforcing numerous building codes, limiting public subsidy in hazard areas, promoting the clustering of development, and regulating development in hazardous areas.

##### Wildfire Hazards

Policies that addressed wildfires are present in the Comprehensive Plan and do foster the ongoing relationship with the Department of Forestry. The conservation of potable water to reduce hazards associated with drought is also mentioned.

##### Sinkhole Hazards

Sinkholes were not directly addressed in the plan, although soil conditions and steep slopes are considered during the development review process.

## 5. Recommendations

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.

Levy 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. **Table 5.1** presents options for further integration as well as the basis for these recommendations.

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 end up with specific recommendations tailored and acceptable to each county. While the Profile addresses hurricanes, flooding, wildfire and sinkholes, during the update of the local comprehensive plan, the county should consider other hazards if appropriate, such as tornadoes and soil subsidence.

**Table 5.1 Options for Integrating LMS Hazard Mitigation Principles into Levy County's Comprehensive Plan**

Strategies & Integration Topics	LMS	Comp Plan	Current LMS Information, Goals & Objectives	Current Comprehensive Plan Policies	Options for Further Integration into the Comprehensive Plan	Options for Enhancement of the LMS	Basis For Suggested Options
<b>Strategy 1 - Collaboration, coordination, and education</b>							
<b>a) Is there information sharing and/or involvement in plan development between planners and emergency managers?</b>	Yes	Yes	<b>G 4.</b> Ensure intergovernmental coordination in disaster preparedness, response, recovery and mitigation between all applicable local governments.	<b>FLUE P. 4.1</b> LMS and evacuation plans shall be updated by EM Director <b>ICE P. 1.1</b> Intergovernmental issues and procedures addressed by CTAC, including land use plans, emergency planning, natural resource protection.			
<b>b) Do the Comp Plan, LMS, CEMP, and other local and regional plans cross-reference each other and include consistent data on hazardous locations?</b>	Yes	Yes	<b>O4.1</b> Maintain and update (as necessary) the Comprehensive Emergency Management Plan. <b>O4.3</b> Coordinate inter-jurisdictional resources during recovery efforts. <b>O4.4</b> Conduct annual updates and revisions (as necessary) to the Local Mitigation Strategy. <b>O4.5</b> Coordinate and prioritize applications for hazard mitigation grants. <b>O5.1</b> Expedite post-disaster recovery through the development of a Post-disaster Recovery Ordinance. <b>O8.1</b> Develop or maintain a Stormwater Management Plan that identifies and recommends solutions to stormwater problems. <b>O9.8</b> Continue compliance with Floodplain Management Plans.	<b>CME P. 7.3</b> The County shall consult federal and state agencies in developing and implementing Comp Plans. <b>CME P 12.1</b> The County adopts the (CEMP) and shall prepare LDRs to implement Coastal Hazard Mit. Plans. <b>CME P. 14.4</b> Any inter-agency or (CEMP) report shall be incorporated in CME. <b>FLUE P. 4.1</b> LMS and evacuation plans shall be updated by EM Director. <b>FLUE P. 8.1</b> The County will prepare int. gov. agreements to coordinate plans and protect resources with SRWMD and SWWMD. <b>ICE P. 2.5</b> Proposed dev. Within the CHHA will be coordinated with Cedar Key, Inglis, Yankeetown, Citrus County and Dixie County.	Support the LMS and use it as mitigation tool to identify hazard areas and to identify potential hazard mitigation projects.	LMS can reference Comprehensive Plan as a mechanism to reach mitigation goals.	The Comprehensive Plan does reference the CEMP and the LMS but does not refer to their use in Comprehensive Planning. Analysis of hazards and the County's vulnerability found in the LMS can be used by planners to make Comprehensive Plan amendments and future land use decisions. Better integration of LMS and Comp Plan policies can improve the County's overall hazard mitigation strategy.

**Table 5.1 Options for Integrating LMS Hazard Mitigation Principles into Levy County's Comprehensive Plan**

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<p><b>c) Are hazard mitigation projects addressed in the 5-year schedule of Capital Improvement Projects?</b></p>	<p>Yes</p>	<p>Yes</p>	<p><b>O12.2</b> Encourage capital improvement expenditures for critical evacuation routes.  <b>O12.4</b> Utilize project evaluation criteria developed in the Local Mitigation Strategy for prioritizing mitigation initiatives.</p>	<p><b>CIE P. 1.2</b> Capital Improvements needs will be evaluated base on the following criteria; (a) elimination of a public hazard, (k.) Respond to unseen opportunity, situations, and disasters.</p>	<p>Prioritize hazard mitigation initiatives found in the LMS in the 5-year Capital Improvements Schedule..</p>		<p>The County can Criteria to prioritize projects in the Capital Improvement Schedule can include dimensions that involve hazard mitigation. By prioritizing mitigation initiatives in the Comp Plan, the LMS goals may be realized.</p>

**Table 5.1 Options for Integrating LMS Hazard Mitigation Principles into Levy County's Comprehensive Plan**

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<p><b>d) Are there measures to educate residents, homeowner/property associations, and the business community of ways they can mitigate against hazards?</b></p>	<p>Yes</p>	<p>Yes</p>	<p><b>O1.1</b> Inform and educate the public about potential hazards.  <b>O1.2</b> Encourage home buyers to research and determine if a property is within a flood prone area.  <b>G 2.</b> Promote hazard awareness and education.  <b>O2.1</b> Notify homeowners of property located within a flood-prone area.  <b>O2.2</b> Inform and educate the public about potential hazards.  <b>O2.3</b> Prioritize and develop a hazard information program.  <b>O2.4</b> Educate the public about disaster preparedness, evacuation procedures and shelter availability.  <b>O2.5</b> Coordinate to provide public information regarding commercial hazardous materials and educate the public to safely store and dispose of household hazardous materials.  <b>O3.1</b> Minimize business interruptions through disaster preparedness and education.  <b>O3.2</b> Assist business and industry in the preparation of emergency operations plans.</p>	<p><b>CME P. 12.2</b> County will provide existing developments along the coast a disaster preparedness plan.</p>	<p>Promote educational programs to the public, local businesses, and County personnel about flood prone areas, hurricane preparedness, wildfire hazards, hazardous materials, evacuation routes and shelters, and business emergency plans.</p> <p>Promote existing and future neighborhoods to become Firewise USA Communities.</p>	<p>Include objective that addresses wildfire hazards.</p>	<p>Educational programs may help create an informed public and decrease loss of property and life in the event of a natural disaster. Further education of county officials and employees may promote hazard mitigation initiatives before development occurs.</p> <p>The County can educate local site plan reviewers on the importance of flood, wildfire, and sinkhole mitigation as well as the strategies used to reduce the vulnerability. Plan reviewers could then promote these ideas to local developers and explain their importance during the site plan review process.</p>

**Table 5.1 Options for Integrating LMS Hazard Mitigation Principles into Levy County's Comprehensive Plan**

Strategies & Integration Topics	LMS	Comp Plan	Current LMS Information, Goals & Objectives	Current Comprehensive Plan Policies	Options for Further Integration into the Comprehensive Plan	Options for Enhancement of the LMS	Basis For Suggested Options
<b>Strategy 2 - Get out of the way: provide evacuation and sheltering services</b>							
<p>a) Are there measures to provide adequate evacuation clearance time to support current population and population growth?</p>	Yes	Yes	<p><b>O11.1</b> Maintain or improve critical evacuation routes.  <b>O12.2</b> Encourage capital improvement expenditures for critical evacuation routes.  <b>O4.2</b> Coordinate emergency evacuation procedures.</p>	<p><b>CME O 13:</b> Maintain or reduce hurricane evacuation times in the Coastal Zone.  <b>FLUE P. 4.1</b> LMS and evacuation plans shall be updated by EM Director to identify needs of population densities proposed on FLUM.  <b>FLUE P. 4.2</b> LDRs shall provide well planned development of hurricane evacuation corridors.  <b>FLUE P. 4.3</b> The County shall coordinate the review of proposed dev. within CHHA and consider dev and redev along hurricane evacuation routes.</p>	<p>Create an evacuation clearance time Level of Service.</p> <p>Continue to identify deficiencies on evacuation routes and create initiatives to improve overall road condition and clearance times.</p> <p>Continue cooperation with the WRPC to address regional evacuation issues.</p>	<p>Create an evacuation clearance time Level of Service.</p> <p>Coordinate evacuation routes and plans with WRPC.</p>	<p>Evacuations often occur on regional levels and on routes shared by numerous jurisdictions. Coordination with the regional evacuation plan may ensure a safe and timely evacuation as well as address regional needs. A Hurricane Evacuation Clearance Time Level of Service standard can act as a quantitative measurement to evaluate evacuation route capacity and be used as a goal to improve evacuation clearance times and routes.</p>

**Table 5.1 Options for Integrating LMS Hazard Mitigation Principles into Levy County's Comprehensive Plan**

Strategies & Integration Topics	LMS	Comp Plan	Current LMS Information, Goals & Objectives	Current Comprehensive Plan Policies	Options for Further Integration into the Comprehensive Plan	Options for Enhancement of the LMS	Basis For Suggested Options
<p><b>b) Are there measures to provide adequate shelter space to meet population growth and special needs?</b></p>	<p>Yes</p>	<p>No</p>	<p><b>O1.4</b> Provide adequate shelter for the population at risk.  <b>O5.6</b> Establish and implement a plan for long-term temporary housing.  <b>O12.5</b> Provide sufficient shelter space to satisfy in-County demand.</p>		<p>Create evacuation shelter capacity Level of Service.</p> <p>Study alternatives to evacuation shelters including the use of existing public facilities.</p> <p>Cooperate with neighboring counties, municipalities, and the WRPC to address local and regional evacuation shelter needs.</p>		<p>Level of Service standards give a quantitative goal for providing adequate evacuation shelter. Deficit or surplus capacity can be measured and goals, policies, and initiatives can address capacity. The County may also explore alternative means to provide adequate evacuation shelters, including the use of safe rooms outside flood hazard areas. The County may explore cost-effective solutions to the evacuation shelter deficit through cooperation with neighboring governments and sharing resources.</p>

**Table 5.1 Options for Integrating LMS Hazard Mitigation Principles into Levy County's Comprehensive Plan**

Strategies & Integration Topics	LMS	Comp Plan	Current LMS Information, Goals & Objectives	Current Comprehensive Plan Policies	Options for Further Integration into the Comprehensive Plan	Options for Enhancement of the LMS	Basis For Suggested Options
<b>Strategy 3 - Make the environment less hazardous: Protect and enhance natural protective features</b>							
<p><b>a) Are there measures to protect and/or restore natural resources that might in turn decrease the risk from natural disasters?</b></p>	Yes	Yes	<p><b>G 6.</b> Encourage the protection of natural resources.  <b>O6.1</b> Participate with the state in the acquisition of lands for environmental protection.  <b>O6.2</b> Conserve and improve wetlands.  <b>O6.4</b> Protect the functions of natural drainage areas and surface aquifer recharge areas.  <b>O6.6</b> Minimize the impacts of public facilities and utilities on the natural environment.</p>	<p><b>Natural Resources</b></p> <p><b>CME P 8.3</b> The County will support the preservation, continued maintenance and additional acquisition of park and recreational lands.  <b>CME P 9.13</b> Marina plans shall address erosion control.  <b>CE P 2.1</b> ESLs shall be shown on the FLUM series as an overlay zone based on the following criteria. (b). Historic and archaeological sites.(d.) Freshwater and coastal springs, swamps, marshes, wetlands as defined by the DEP. (h). The 10 and 100-year floodplain (i) . Coastal and Riverine Flooding Areas as defined in FLUE, (j). CHHA.  <b>FLUE P. 1.1</b> The FLUM shall identify Overlay Zones which will identify ESLs.  <b>CE P. 2.8</b> Regulation of density , buffering, setback and open space requirements shall be used to protect existing natural reservations.  <b>IE / ARSE O1</b> Protect the natural ground water recharge and discharge areas.  <b>CE P 6.13</b> Preservation of open space lands_  <b>CE P. 3.11</b> Protect excavated slopes through preservation of vegetative cover.  <b>CE P. 3.1</b> Review dev. proposals to address soil conditions, floodplain assessment, and drainage features.</p>	<p>Encourage the removal of wildfire fuel sources near structures, especially in rural areas, to reduce risk to homes and businesses in the event of a wildfire.</p> <p>The County can also protection future development from sinkhole erosion through the use of overlay districts or preservation zones in karst sensitive areas.</p> <p>Update existing polices that protect natural resources to include hazard mitigation as a benefit.</p> <p>Determine whether or not the conserved areas in the County have lifetime designations.</p>	<p>Integrate wildfire mitigation practices into LMS objectives including the promotion of Firewise Communities, identifying wildfire safe zones, and public education programs.</p> <p>Continue to identify sinkhole locations.</p>	<p>Currently, the LMS identifies wildfire as a high priority threat but does not directly address mitigation. Removing wildfire fuels near structures can reduce risk of structure loss. Education of wildfire issues may reduce risks to life and property. Karst sensitive areas pose the greatest risk for new sinkholes and mitigation efforts may prevent a loss of property in the event of a collapse.</p> <p>The County has many existing policies that mitigate the impacts of hazards, however they have not been identified as beneficial in this area. Current growth management techniques such as land conservation, buffering, and the clustering of development to protect and conserve natural resources but also provide the major benefit of protecting development from natural disasters. The County could update these policies in the Comprehensive Plan and emphasize the benefits of hazard mitigation.</p>



**Table 5.1 Options for Integrating LMS Hazard Mitigation Principles into Levy County's Comprehensive Plan**

Strategies & Integration Topics	LMS	Comp Plan	Current LMS Information, Goals & Objectives	Current Comprehensive Plan Policies	Options for Further Integration into the Comprehensive Plan	Options for Enhancement of the LMS	Basis For Suggested Options
			<p><b>09.2</b> Protect and preserve wetlands floodplains and coastal lands.</p> <p><b>06.7</b> Mitigate wetland losses to establish an overall net benefit.</p> <p><b>08.5</b> Protect the function of natural drainage features and surface aquifer recharge areas.</p>	<p><b>Floodplains / Wetlands</b></p> <p><b>CME O 5</b> LDRs will be adopted to limit development or redevelopment upon wetlands, water quality, water quantity, wildlife habitat, living marine resources and beach and dune systems</p> <p><b>CME P 13.1</b> Allow development in the hurricane flood zone to occur only if human welfare and the quality of life are not jeopardized, and natural floodplain functions are protected.</p> <p><b>CE P 2.2</b> ESLs shall be protected by (c). Limiting development land uses in floodprone areas.</p> <p><b>CE P 2.3</b> Areas within the 100 year floodplain adjacent to the Suwannee River system shall be identified and protected.</p> <p><b>CE P. 2.6</b> LDRs shall minimize impacts of dev on natural resources using buffers.</p> <p><b>ROS P 3.7</b> Identify flood-prone areas on public and private lands and reserve those areas for open space, and/or appropriate recreational activities (ball fields, picnic areas, nature trails, open space, etc.)</p> <p><b>IE / ARSE Goal:</b> Protect the quality and supply of ground water through the proper management of development activities in aquifer recharge/discharge and floodprone areas.</p> <p><b>IE / SSE P 1.3</b> Wetlands shall be protected and preserved. Protect the natural drainage features of the land.</p> <p><b>Sinkholes</b></p> <p><b>IE / ARSE P 1.1</b> Identify karst sensitive areas during development review.</p>			<p>Future land development and regulation can address hazard mitigation issues on land with expiring conservation designations.</p>

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				<p><b>CE O 3</b> Conserve and protect native vegetative communities, forest lands, and preserve the natural drainage functions of the soils.</p> <p><b>CE P 3.4</b> Identified soil suitability and limitations will be used to support land use decisions.</p>			

**Table 5.1 Options for Integrating LMS Hazard Mitigation Principles into Levy County's Comprehensive Plan**

Strategies & Integration Topics	LMS	Comp Plan	Current LMS Information, Goals & Objectives	Current Comprehensive Plan Policies	Options for Further Integration into the Comprehensive Plan	Options for Enhancement of the LMS	Basis For Suggested Options
			<p><b>O10.4</b> Provide and protect open space.  <b>O10.5</b> Preserve natural vegetation.</p>	<p><b>Forests / Wildfire Areas</b></p> <p><b>CE P 4.1</b> Protect, conserve and encourage the continued productivity of forestry activities, <b>b.</b> Providing Subdivisions standards including, but not limited to, buffering, setback and clustering requirements.  <b>CE P 4.6</b> Silvicultural Best Management Practices guideline and standards shall be followed in all forest management activities.  <b>CE P 4.7</b> Protect lives and property from wildfires on unmanaged lands.  <b>CE P. 6.10</b> Water conservation during drought.  <b>IE / PWSE O5</b> Promote water conservation measures.  <b>IE / PWSE P 5.2</b> Encourage the use of water conservation techniques in the design of new developments.  <b>IE / PWSE P 5.3</b> Cooperate with the water management districts in instituting water conservation measures to address drought conditions.</p>			

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				<p><b><u>Coastal Resources</u></b></p> <p><b>CME G 1</b> Manage growth in coastal areas to protect natural function and env. of existing coastal and estuarine resources and mitigate hazards.</p> <p><b>CME P. 1.3</b> Coastal marshes and wetlands shall be restored.</p> <p><b>CME P 2.2</b> The County shall prepare and consider for adoption a barrier island hazard mitigation plan to address the special needs and consideration for these area.</p> <p><b>CME P 3.2</b> Development plans shall show the exact locations of beaches or dunes and the coastal construction setback. The developer will document proposed measures to protect these resources.</p> <p><b>CME O. 3</b> Adopt LDRs that protect beaches and dunes.</p> <p><b>CME P 3.4</b> Beaches and dunes will be preserved and/or protected from development through the provision in the LDRs for open space and recreation lands.</p> <p><b>CME O 7</b> Minimize adverse impacts of shoreline modification structures on existing shorelines.</p> <p><b>CME P 8.6</b> Seventy-five [75] feet will be maintained on any land adjoining surface water.</p> <p><b>CME P 14.8</b> Local ordinances will be adopted which require the retention of coastal vegetation as an integral part of all development proposals.</p> <p><b>CE P 7.1</b> The County will regulate dredging and waterfront development by enforcing LDRs.</p>			

**Table 5.1 Options for Integrating LMS Hazard Mitigation Principles into Levy County's Comprehensive Plan**

Strategies & Integration Topics	LMS	Comp Plan	Current LMS Information, Goals & Objectives	Current Comprehensive Plan Policies	Options for Further Integration into the Comprehensive Plan	Options for Enhancement of the LMS	Basis For Suggested Options
<b>Strategy 4- Make structures more resistant to natural hazard forces</b>							
<p><b>a) Are there measures that support retrofitting or relocating private and/or public structures in hazard areas?</b></p>	Yes	Yes	<p><b>G 11.</b> Regulate, limit and prioritize the construction of critical facilities.  <b>O11.2</b> Prioritize and retrofit existing critical facilities.  <b>O5.3</b> Advocate property acquisition in repetitive loss areas.  <b>O10.9</b> Encourage mitigation for repetitive loss properties.</p>	<p><b>CME P. 14.2</b> Only roads, infrastructure, and water dependent pub. fac. may be modified in the "V-Zone"  <b>CME O 14:</b> Restrict post-disaster redevelopment to activities that reduce or eliminate repetitive loss and future risk to human life and property from natural disaster.</p>	<p>Adopt policies that support retrofitting or relocating private and public structures in hazard areas.</p> <p>Encourage programs that facilitate retrofitting structures to comply or exceed building codes through grant or loan programs.</p> <p>Encourage and or assist in retrofit, relocation, or demolition of repetitive loss structures.</p> <p>Provide information on retrofitting options and assistance programs for repetitive loss properties.</p>		<p>The removal or retrofit of repetitive loss structures and public facilities can reduce risk of additional property damage and potential risk to residents, as well as relocate population outside hazard zones.</p>

**Table 5.1 Options for Integrating LMS Hazard Mitigation Principles into Levy County's Comprehensive Plan**

Strategies & Integration Topics	LMS	Comp Plan	Current LMS Information, Goals & Objectives	Current Comprehensive Plan Policies	Options for Further Integration into the Comprehensive Plan	Options for Enhancement of the LMS	Basis For Suggested Options
<p><b>b) Are there measures to require compliance with or exceed building codes and/or design standards for certain hazard areas?</b></p>	<p>Yes</p>	<p>Yes</p>	<p><b>G 9.</b> Reduce property damage caused by flooding.  <b>O9.1</b> Elevate new construction above the base flood elevation.  <b>O9.4</b> Ensure compliance with the National Flood Insurance Program.  <b>O9.5</b> Participate in or improve ratings under the Community Rating System.  <b>O9.6</b> Control development in the 100-year floodplain.  <b>O10.1</b> Prohibit new development of mobile home parks in flood zones.  <b>O10.3</b> Ensure compliance with the Coastal Construction Code for all construction.  <b>O10.6</b> Ensure new development and redevelopment complies with Federal Flood Insurance regulations.  <b>O10.7</b> Encourage the inclusion of window and door protection standards in the Building Codes.</p>	<p><b>CME P. 3.1</b> LDRs will provide coastal construction setbacks.  <b>CME P. 7.1</b> Shoreline modification shall be set at or landward of the mean high water line except where provided by state law and/or the adopted coastal construction setback line.  <b>CME P. 7.2</b> Shoreline modification regulated through county ordinances and regulations.  <b>CME P. 13.7</b> Standard Building Code augmented by more restrictive standards near coast.  <b>CME P. 13.8</b> Enforce Floodplain Ordinance.  <b>CME P. 14.5</b> Use floodplain mgt. ordinance and construction codes to mitigate hazards.  <b>CME P. 6.12</b> Retain soil permeability through innovative site design and materials.  <b>CE P.</b> Improve zoning and subdivision regulations to protect natural resources and ESLs.  <b>IE / SSE P. 1.1</b> LDRs provide onsite water retention for flood prone and wetland areas.  <b>FLUE P. 2.6</b> Regulate all development subject to flooding through Floodplain Ordinance.</p>	<p>Adopt firewise building code requirements for defined high fire risk areas.</p> <p>Encourage safe rooms outside of flood zones or structures able to withstand 130 mph winds.</p>	<p>Include objectives that address site plan design and building practices that mitigate wildfire hazards.</p>	<p>Enforcement of a firewise building code may reduce the number of structures and people at risk from wildfires. The promotion of safe rooms in new structures outside hazard zones may provide a safe alternative to evacuation shelters in the event of an emergency.</p>

**Table 5.1 Options for Integrating LMS Hazard Mitigation Principles into Levy County's Comprehensive Plan**

Strategies & Integration Topics	LMS	Comp Plan	Current LMS Information, Goals & Objectives	Current Comprehensive Plan Policies	Options for Further Integration into the Comprehensive Plan	Options for Enhancement of the LMS	Basis For Suggested Options
<p><b>c) Are there measures to protect cultural resources from natural hazards?</b></p>	<p>Yes</p>	<p>Yes</p>	<p><b>G 7.</b> Encourage the conservation of historic and cultural resources.  <b>O7.1</b> Identify and document historic and cultural resources.  <b>O7.2</b> Prioritize funding for post-disaster redevelopment.</p>	<p><b>HE P. 6.2</b> Historical sites identified as ESLs and protected through LDRs.  <b>HE P. 6.3</b> Promote preservation of historic structures through housing rehab.  <b>HE P. 6.4</b> The County will pursue funding to survey and assess historical and archeological resources.  <b>CME O. 4</b> Protect historic resources in in Coastal Zone.  <b>CME P. 4.1</b> Identify historic sites and secure access to sites.  <b>CME P. 4.2</b> Consider historic sites when proposing new development.  <b>CME P. 4.3</b> Incorporate known sites into greenbelt open space.</p>			

**Table 5.1 Options for Integrating LMS Hazard Mitigation Principles into Levy County's Comprehensive Plan**

Strategies & Integration Topics	LMS	Comp Plan	Current LMS Information, Goals & Objectives	Current Comprehensive Plan Policies	Options for Further Integration into the Comprehensive Plan	Options for Enhancement of the LMS	Basis For Suggested Options
<b>Strategy 5- Manage the development and redevelopment in hazardous areas</b>							
<p><b>a) Are there measures to limit population densities in high-hazard areas?</b></p>	<p>Yes</p>	<p>Yes</p>	<p><b>O6.5</b> Restrict infrastructure supporting expansion to offshore islands, coastal swamps, marshlands and beaches.  <b>O10.2</b> Prohibit development of critical care facilities in the Coastal High Hazard Area.  <b>O11.3</b> Control the siting and development of new critical facilities within the Coastal High Hazard Area.</p>	<p><b>CME P. 1.1</b> Limit development of ESLs.  <b>CME P. 2.5</b> Limit density on barrier islands.  <b>CME P. 13.2</b> Limit density and intensity within 100 yr flood elevations and areas.  <b>CME P. 13.3</b> Limit development in CHHA and relocate infra away from area.  <b>CME P. 13.5</b> Use FLUE guidelines to manage growth and direct pop away from CHHA.  <b>CME P. 13.6</b> LDRs regulate development in coastal zone and hurricane flood zone.  <b>FLUE O. 4</b> Pop concentrations directed away from CHHA and wetland system using conservation areas.</p>			



**Table 5.1 Options for Integrating LMS Hazard Mitigation Principles into Levy County's Comprehensive Plan**

Strategies & Integration Topics	LMS	Comp Plan	Current LMS Information, Goals & Objectives	Current Comprehensive Plan Policies	Options for Further Integration into the Comprehensive Plan	Options for Enhancement of the LMS	Basis For Suggested Options
<p><b>b) Are there measures to limit public expenditures that subsidize development in high-hazard areas?</b></p>	Yes	Yes	<p><b>O5.5</b> Consider options to mitigation initiatives that may result in substantial reduction of the local tax base.  <b>O12.1</b> Limit public expenditures that support new development in the Coastal High Hazard Area.  <b>O11.3</b> Control the siting and development of new critical facilities within the Coastal High Hazard Area.  <b>O6.5</b> Restrict infrastructure supporting expansion to offshore islands, coastal swamps, marshlands and beaches.</p>	<p><b>CME P. 2.4</b> Will not encourage or support development of barrier islands.  <b>CIE O. 2</b> Limit public expenditures in CHHA.  <b>CME P. 13.3</b> Relocate non-essential infrastructure in CHHA.  <b>CME P. 13.4</b> Limit public expenditures that subsidize dev in CHHA.  <b>CIE P. 2.2</b> Use criteria for infrastructure improvement projects in CHHA.  <b>CIE P. 2.3</b> Criteria for public expenditures within high hazard areas including mitigation initiatives.</p>			
<p><b>c) Are there creative neighborhood design solutions or development regulations that mitigate hazards, such as clustering or transfer of development rights?</b></p>	No	Yes		<p><b>CME P. 1.5</b> Protect and conserve coastal zone through LDRs, clustering, conservation and open space.</p>	<p>The County can explore using TDR for high hazard areas in order to steer development away from natural hazard areas.</p>	<p>Support the use of creative neighborhood designs and development regulations.</p>	<p>The use of TDR could limit development in high hazard areas by transferring development rights to land more suitable for development. Also, TDR may promote development near existing development and infrastructure.</p>

**Table 5.1 Options for Integrating LMS Hazard Mitigation Principles into Levy County's Comprehensive Plan**

Strategies & Integration Topics	LMS	Comp Plan	Current LMS Information, Goals & Objectives	Current Comprehensive Plan Policies	Options for Further Integration into the Comprehensive Plan	Options for Enhancement of the LMS	Basis For Suggested Options
<p><b>d) Are there measures to limit redevelopment in hazard areas and procedures for post-disaster recovery that will lead to a more disaster-resistant community?</b></p>	Yes	Yes	<p><b>G 5.</b> Develop and implement guidelines for post-disaster redevelopment.  <b>O5.4</b> Encourage mitigation initiatives in the Coastal High Hazard Area.</p>	<p><b>HE P. 4.6</b> Provide relocation assistance for displaced residents.  <b>HE P. 4.7</b> LDRs establish relocation requirements.  <b>CME O. 12</b> Prepare and adopt PDRP.  <b>CME O. 14</b> Restrict post-disaster redevelopment.  <b>CME P. 14.3</b> In areas of repeated damage, redevelopment shall conform to F.E.M.A., Coastal Construction Setback and other adopted County construction standards.</p>			

Abbreviations: G= Goal; O= Objective; P=Policy; PDRP= Post-Disaster Redevelopment Plan; HVZ= Hurricane vulnerability zone; CHHA= Coastal High Hazard Area  
 CE= Conservation Element; HE= Housing Element; FLUE= Future Land Use Element; UE= Utilities Element; CIE= Capital Improvements Element; IE= Infrastructure Element; CME= Coastal Management Element

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**Attachment A**

**Maps of the Existing and Future Land Uses within the  
Coastal Hazard Zone and the Hurricane Vulnerability Zone**

**Attachment B**

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

**Attachment C**

**Maps of the Existing and Future Land Uses  
within the High-Risk Wildfire Zone**

**Attachment D**

**Maps of the Existing and Future Land Uses  
within Potential Sinkhole Hazard Areas**

## Attachment E

### **Levy County Local Mitigation Strategy Goals and Objectives**

- GOAL 1. Protect the health, safety and welfare of the public.
- Objective 1.1 Inform and educate the public about potential hazards.
  - Objective 1.2 Encourage home buyers to research and determine if a property is within a flood prone area.
  - Objective 1.3 Ensure new development and redevelopment complies with all applicable federal, state and local regulations.
  - Objective 1.4 Provide adequate shelter for the population at risk.
- GOAL 2. Promote hazard awareness and education.
- Objective 2.1 Notify homeowners of property located within a flood-prone area.
  - Objective 2.2 Inform and educate the public about potential hazards.
  - Objective 2.3 Prioritize and develop a hazard information program.
  - Objective 2.4 Educate the public about disaster preparedness, evacuation procedures and shelter availability.
  - Objective 2.5 Coordinate to provide public information regarding commercial hazardous materials and educate the public to safely store and dispose of household hazardous materials.
- GOAL 3. Develop mitigation initiatives that protect business and industry.
- Objective 3.1 Minimize business interruptions through disaster preparedness and education.
  - Objective 3.2 Assist business and industry in the preparation of emergency operations plans.
  - Objective 3.3 Encourage public-private partnerships.
- GOAL 4. Ensure intergovernmental coordination in disaster preparedness, response, recovery and mitigation between all applicable local governments.
- Objective 4.1 Maintain and update (as necessary) the Comprehensive Emergency Management Plan.
  - Objective 4.2 Coordinate emergency evacuation procedures.
  - Objective 4.3 Coordinate inter-jurisdictional resources during recovery efforts.
  - Objective 4.4 Conduct annual updates and revisions (as necessary) to the Local Mitigation Strategy.
  - Objective 4.5 Coordinate and prioritize applications for hazard mitigation grants.
- GOAL 5. Develop and implement guidelines for post-disaster redevelopment.
- Objective 5.1 Expedite post-disaster recovery through the development of a Post-disaster Recovery Ordinance.
  - Objective 5.2 Enable small businesses to utilize public property in the event of a disaster.
  - Objective 5.3 Advocate property acquisition in repetitive loss areas.
  - Objective 5.4 Encourage mitigation initiatives in the Coastal High Hazard Area.
  - Objective 5.5 Consider options to mitigation initiatives that may result in substantial reduction of the local tax base.
  - Objective 5.6 Establish and implement a plan for long-term temporary housing.
  - Objective 5.7 Encourage the diversion of Community Development Block Grant funds to disaster recovery.



GOAL 6. Encourage the protection of natural resources.

- Objective 6.1 Participate with the state in the acquisition of lands for environmental protection.
- Objective 6.2 Conserve and improve wetlands.
- Objective 6.3 Limit discharge and protect natural resources from toxic substances and harmful pollutants.
- Objective 6.4 Protect the functions of natural drainage areas and surficial aquifer recharge areas.
- Objective 6.5 Restrict infrastructure supporting expansion to offshore islands, coastal swamps, marshlands and beaches.
- Objective 6.6 Minimize the impacts of public facilities and utilities on the natural environment.
- Objective 6.7 Mitigate wetland losses to establish an overall net benefit.

GOAL 7. Encourage the conservation of historic and cultural resources.

- Objective 7.1 Identify and document historic and cultural resources.
- Objective 7.2 Prioritize funding for post-disaster redevelopment.

GOAL 8. Encourage the resolution of stormwater problems.

- Objective 8.1 Develop or maintain a Stormwater Management Plan that identifies and recommends solutions to stormwater problems.
- Objective 8.2 Encourage the creation of a stormwater utility where appropriate.
- Objective 8.3 Maintain and improve existing drainage systems.
- Objective 8.4 Require all new development and redevelopment to regulate the rate and volume of stormwater.
- Objective 8.5 Protect the function of natural drainage features and surficial aquifer recharge areas.

GOAL 9. Reduce property damage caused by flooding.

- Objective 9.1 Elevate new construction above the base flood elevation.
- Objective 9.2 Protect and preserve wetlands floodplains and coastal lands.
- Objective 9.3 Identify and correct local flooding conditions.
- Objective 9.4 Ensure compliance with the National Flood Insurance Program.
- Objective 9.5 Participate in or improve ratings under the Community Rating System.
- Objective 9.6 Control development in the 100-year floodplain.
- Objective 9.7 Implement substantial damage provisions.
- Objective 9.8 Continue compliance with Floodplain Management Plans.

GOAL 10. Regulate the impacts of development and redevelopment through code enforcement.

- Objective 10.1 Prohibit new development of mobile home parks in flood zones.
- Objective 10.2 Prohibit development of critical care facilities in the Coastal High Hazard Area.
- Objective 10.3 Ensure compliance with the Coastal Construction Code for all construction.
- Objective 10.4 Provide and protect open space.
- Objective 10.5 Preserve natural vegetation.
- Objective 10.6 Ensure newdevelopment and redevelopment complies with Federal Flood Insurance regulations.
- Objective 10.7 Encourage the inclusion of window and door protection standards in the Building Codes.
- Objective 10.8 Require lot grading plans addressing drainage with each building permit.

- Objective 10.9 Encourage mitigation for repetitive loss properties.
- Objective 10.10 Enforce wellhead protection ordinances.

GOAL 11. Regulate, limit and prioritize the construction of critical facilities.

- Objective 11.1 Maintain or improve critical evacuation routes.
- Objective 11.2 Prioritize and retrofit existing critical facilities.
- Objective 11.3 Control the siting and development of new critical facilities within the Coastal High Hazard Area.

GOAL 12. Establish pre- and post-disaster mitigation initiatives through the Local Mitigation Strategy.

- Objective 12.1 Limit public expenditures that support new development in the Coastal High Hazard Area.
- Objective 12.2 Encourage capital improvement expenditures for critical evacuation routes.
- Objective 12.3 Implement Stormwater Management programs.
- Objective 12.4 Utilize project evaluation criteria developed in the Local Mitigation Strategy for prioritizing mitigation initiatives.
- Objective 12.5 Provide sufficient shelter space to satisfy in-County demand.
- Objective 12.6 Identify and pursue available grant funds and other funding sources for hazard mitigation activities.
- Objective 12.7 Annually review and update projects identified in the Local Mitigation Strategy.

**Attachment F****Levy County Comprehensive Plan Excerpts Related to Hazard Mitigation****Housing Element**

- Policy 4.6** The County shall provide relocation assistance for residents displaced as a result of government activities and by natural events.
- Policy 4.7** Land Development Regulations shall establish relocation requirements and standards. Each household displaced by government action or by a natural event shall be provided with at least one relocation choice.
- Policy 6.2** Historic and archeological sites will be identified as Environmentally Sensitive Lands and will be protected from the adverse impact of development through provisions in the Land Development Regulations.
- Policy 6.3** The County will promote the preservation of historic structures through housing rehabilitation and Readaptive uses. Technical assistance and information will be provided for applications to use state and federal assistance programs. Alternative uses may include, but are not limited to, commercial, recreational, or tourism related activities.
- Policy 6.4** The County will pursue funding to survey and assess historical and archeological resources.

**Coastal Management Element**

**Goals:** Properly manage growth and development in coastal areas to: Protect, maintain and enhance the natural function and environmental quality of existing coastal and estuarine resources; Mitigate hazards and reduce the potential loss of life and property from natural disaster; and ensure adequate public access to the shoreline to provide economic, recreational and natural benefits from the County's coastal resources.

**Objective 1:** Coastal Resource Protection [9J-5.012(3)(b)11]  
Recognize and conserve the unique environmental characteristics of the Levy County Coastal Zone through land use planning and the implementation of Land Development Regulations that protect marine life and coastal habitats from the adverse impacts of growth and development.

- Policy 1.1** The Levy Coastal Zone encompasses areas within the Coastal High Hazard Area. The County shall discourage incompatible future growth in the Coastal Zone and limit development of environmentally sensitive lands including, but not limited to, coastal marshes, wetlands, mangroves, and marine grass beds, as setforth in Conservation, Future Land Use and Capital Improvement Elements of the Plan.

**Policy 1.3** Coastal marshes and wetlands disturbed by development shall be restored to an area and condition equal or greater than the original state.

**Policy 1.4** Land Development Regulations shall require that endangered and/or pristine coastal marsh habitats are buffered from development impacts through coastal setback standards and open space requirements.

**Policy 1.5** The scenic beauty of the Coastal Zone shall be conserved, protected and enhanced through the implementation and enforcement of Land Development Regulations. Clustered and Planned Unit Development shall be encourage in coastal areas to conserve natural landscape, preserve open space and to provide for the dedication of recreational land along shorelines.

Objective 2: Barrier Islands [9J-5.012(3)(b)1]  
Ensure that all future development on barrier islands does not alter or adversely impact the natural functions and environmental quality of coastal resources.

**Policy 2.2** The County shall prepare and consider for adoption a barrier island hazard mitigation plan to address the special needs and consideration for theses area.

**Policy 2.4** Development of Coastal High Hazard Areas, including barrier islands, will not be encouraged or supported by publicly funded construction of infrastructure.

**Policy 2.5** To be consistent with the need to direct population concentrations away from coastal high-hazard areas, privately-owned islands with no land area above the 100-year flood elevation shall be limited to one [1] dwelling unit per island.

Objective 3: Beach and Dune Protection [9J-5.012(3)(b)2]  
Adopt Land Development Regulations that protect beaches or dunes, establish construction standards which minimize the impacts of man-made structures on beach or dune systems and restore altered beaches or dunes.

**Policy 3.1** The Land Development Code will provide coastal construction setback guidelines and standards for construction near or on the shoreline.

**Policy 3.2** Development plans shall show the exact locations of beaches or dunes and the coastal construction setback. The developer will document proposed measures to protect these resources.

**Policy 3.3** Recreational facilities and infrastructure shall be constructed to minimize impacts to beaches and dunes. To the maximum extent possible, structures, signage and parking areas will be away from the environmentally sensitive portions of the site.

**Policy 3.4** Beaches and dunes will be preserved and/or protected from development through the provision in the Land Development Regulations for open space and recreation lands.

Objective 4: Historic And Archaeological Site Protection in the Coastal Zone

Provide for protection, preservation, or sensitive reuse of historic resources by requiring all proposed development to address historic and archaeological preservation.

**Policy 4.1** Preserve, protect and allow public access and display of sites important to Florida's and the Levy Coastal Zone's history and archaeology, by identifying one hundred percent [100%] of such sites and preserving, protecting and providing access to one hundred percent [100%] of such sites.

**Policy 4.2** Threshold criteria and performance standards for proposed development within the vicinity of historic and archaeological sites will be prepared and considered for adoption, as a means of assuring that such sites and artifacts are not destroyed. As considered appropriate and necessary by the County, development approval will be conditioned upon performance of at least some degree of archaeological salvage excavation of historical resources, or will even require historic preservation of major sites.

**Policy 4.3** Known archaeological and historic sites within proposed development should be incorporated into "greenbelt", open space, or other low intensity activity areas that will protect the physical and informational integrity of these resources.

Objective 5: Coastal Resources Protection/ Development Impacts [9J-5.012(3)(b)10]  
Land Development Regulations will be adopted and utilized to limit both specific and cumulative impacts of development or redevelopment upon wetlands, water quality, water quantity, wildlife habitat, living marine resources and beach and dune systems.

**Policy 5.10** Provide appropriate services to applicable areas of the coastal zone that ultimately reduce undesirable second and third order consequences such as pollution and excessive run-off from roadways, high maintenance costs for local governments and long-term destruction of natural resources.

**Policy 5.18** The County will request that either the Levy County Health Department or Florida Department of Environmental Regulation recommend increased minimum setbacks from surface waters, or elevations above the water table, that can be adopted by the county for use within the 100-year floodplain.

Objective 7: Shoreline Protection

Minimize adverse impacts of shoreline modification structures on existing shorelines.

**Policy 7.1** Shoreline modification shall be set at or landward of the mean high water line except where provided by state law and/or the adopted coastal construction setback line.

- Policy 7.2** Shoreline modification and construction will be regulated through appropriate county ordinances and regulations to protect water quality, natural habitats or adjacent shore areas. These regulations may include, but not be limited to, such examples as subdivision drainage, stormwater run-off, and retention standards; limitations on shoreline modifications.
- Policy 7.3** The County shall, where appropriate, consult federal and state agencies in developing and implementing comprehensive plans for stabilization, modification or restoration of coastal shorelines.
- Policy 7.4** All proposed shoreline uses shall meet the following criteria:
- a. The proposed land use must be compatible with all adjoining land uses.
  - b. Upland support services shall be available and adequate to serve the proposed use at or above minimum acceptable service levels.
  - c. A hurricane contingency plan shall be provided by any non-residential use.
  - d. Ownership shall be documented.
  - e. An environmental protection plan shall be provided, documenting pre-construction, construction, and post-construction protection of water quality, water depth, marshes and marine ecosystems; and, including a mitigation plan to restore in the event of damage or destruction to the coastal environment.
  - f. Availability for public use and access shall be documented.
  - g. A market analysis shall document both the economic need and economic feasibility.
- Policy 8.3** The County will support the preservation, continued maintenance and additional acquisition of park and recreational lands.
- Policy 8.6** A minimum construction setback line of seventy-five [75] feet will be maintained on any land adjoining surface water including rivers and the Gulf of Mexico. Water dependent structures such as boats, wharfs, marinas, etc., will be exempt from this setback requirement.
- Policy 9.13** New and expanded marina plans shall address and document consistency with the following standard and guidelines:
- h. **Erosion Control** - Marina design shall incorporate natural wetland vegetative buffers whenever possible near the docking area and in ingress/egress areas for erosion and sediment control, run-off purification and habitat purposes.

Objective 12: Hazard Mitigation [9J-5.012(3)(b)8]  
 Prepare and adopt a post-disaster redevelopment plans which reduce or eliminate the exposure of human life and public and private property to natural hazards.

- Policy 12.1** The County adopts, as a part of the Levy County Comprehensive Plan, *the Peacetime Civil Defense Plan*, by reference. The County shall prepare Land Development Regulations to implement Coastal Hazard Mitigation Plans which address pre-disaster and recovery activities. The Levy County Emergency Management Director shall develop and updated mitigation plans and recommend mitigation actions to the County as necessary.
- Policy 12.2** The County will provide existing developments along the Levy County coast with a disaster preparedness plan that would be implemented to ease the burden of hurricanes and other natural and man induced disaster[s] that may occur in this part of the state.

Objective 13: Hurricane Evacuation [9J-5.012(3)(c)7]  
Maintain or reduce hurricane evacuation times in the Coastal Zone.

- Policy 13.1** Allow development in the hurricane flood zone to occur only if human welfare and the quality of life are not jeopardized, and natural floodplain functions are protected.
- Policy 13.2** Limit development to low densities and intensities within the 100-year flood elevations and areas identified as Environmentally Sensitive Lands consistent with development standards and guidelines specified in Future Land Use Element Policy 1.5, 2.2, 2.6 and the adopted Future Land Use Map series.
- Policy 13.3** The County Coastal Zone is defined as the Coastal High Hazard Area that is identified and adopted as areas with the category 1 evacuation zone and shown in the *Levy County Storm Surge Atlas, Cedar Key Evacuation Study, Levy County, Florida, 1995*. Development shall be limited in these areas, and non-essential infrastructure will be relocated/replaced away from these areas, when it is feasible.
- Policy 13.4** The County shall limit public expenditures that subsidize development in coastal high-hazard areas, except for restoration or enhancement of natural resources, or maintaining existing infrastructure, consistent with the guidelines in the Capital Improvement and Future Land Use Element and documented through the adopted capital improvements program.
- Policy 13.5** Use Future Land Use Element guidelines and the adopted future land use map as a tool in managing growth and directing population concentrations away from Coastal High Hazard Areas.
- Policy 13.6** In the Levy Coastal Zone, hurricane flood zones encompasses lands between the shoreline and the 100-year flood line. Development shall not be precluded in these areas, but shall require special consideration and standards, as provided in the Land Development Regulations to ensure protection of public safety and interest.

**Policy 13.7** The Standard Building Code, augmented by more restrictive standards which are necessary to mitigate the effects of wave wash and high winds, shall regulate all coastal construction.

**Policy 13.8** The County will continue to update and enforce, a Floodplain Ordinance which restricts fill and which requires flood proofing or elevation for new construction.

Objective 14: Redevelopment [9J-5.12(3)(b)8]  
Restrict post-disaster redevelopment to activities that reduce or eliminate repetitive loss and future risk to human life and property from natural disaster.

**Policy 14.1** The Levy County building official, the Levy County sanitarian and the Chairman of the Board of County Commissioners, acting as a Redevelopment Task Force, shall hear and decide all requests for immediate repair needed to protect public health and safety.

**Policy 14.2** Only roads, electric utilities, water and sewer, and water-dependent public facilities are considered to be "essential" infrastructure, which as such, may be modified or repaired regardless of the degree of damage. Other, non-essential infrastructure shall be removed or relocated if located within the "V-Zone".

**Policy 14.3** In areas of repeated damage, redevelopment shall conform to F.E.M.A., Coastal Construction Setback and other adopted County construction standards.

**Policy 14.4** Any inter-agency or local peacetime hazard mitigation reports shall be incorporated into this plan element within one year of their receipt by the County.

**Policy 14.5** A local floodplain management ordinance and various standard construction codes shall be utilized in hazard mitigation.

**Policy 14.8** Local ordinances will be adopted which require the retention of coastal vegetation as an integral part of all development proposals.

**Conservation Element**

Objective 2: Natural Resource Protection [9J-5.013(b)2]  
Maintain and enhance the environmental, economic and recreational quality of the County by conserving and protecting environmentally sensitive lands, ecological systems, and Natural Reservations.

**Policy 2.1** Environmentally sensitive lands shall be designated and shown on the Future Land Use map series as an overlay zone based on the following criteria. ESLs shall include:

- a. Tide-influenced salt marshes, mangroves, shorelines and barrier/offshore islands.
- b. Historic and archaeological sites.
- c. The Cedar Key Scrub Preserve and all other habitats of threatened or endangered species.



- d. Freshwater and coastal springs, swamps, marshes, wetlands as defined by the Department of Environmental Protection. Streamside management zones and along the Suwannee, Waccassassa and Withlacoochee Rivers, and each of the rivers and spring-fed tributaries.
- e. County and/or State recreation areas.
- f. Wellhead Protection Areas
- g. State and federal preserves, refuges and wildlife management areas.
- h. The 10 and 100-year floodplain
- i. Coastal and Riverine Flooding Areas as defined in Future Land Use Element, Policy 1.5 - Conservation Land Use
- j. Coastal High Hazard areas (Category one hurricane evacuation zone) (Class 1 Storm Surge area)

**Policy 2.2** Environmentally Sensitive Lands designated shall be protected using the following guidelines and standards:

- a. Identifying ESL on the Future Land Use map series.
- b. Coordinating the review of proposed residential and non-residential development within or adjacent to ESL areas with the appropriate state resource agencies. Protective measures and mitigation, if applicable, shall be documented by the developer and approved by the appropriate regulatory agency prior to the issuance of County development approval.
- c. Limiting development land uses in floodprone areas (i.e., 100 year flood ) to rural/low density residential, agricultural uses and non-residential uses consistent with Conservation Element Policies including, but not limited to, Policy 3.1 and 6.1 and Future Land Use Element 1.5;
- d. Require that proposed Planned Units of Development (PUD) within ESL areas meet or exceed standards established in Chapter 380.06 and Rule 9J-28, Florida Quality Development, and standards deemed appropriate by the Board to protect these lands.

**Policy 2.3** Unique natural areas within the 100 year floodplain adjacent to the Suwannee River system shall be identified and protected. The identification of unique natural areas shall be based on the best available information, including but not limited to, vegetative land cover mapping, resource investigations, and site investigations. Long range strategies for protecting unique natural areas shall be coordinated with state and regional resource management agencies. The review of proposed development shall be coordinated with the Suwannee River Water Management Districts.

**Policy 2.4** County-owned facilities within the 100-year floodplain of the Suwannee River system shall be maintained in a manner that prevents any potential adverse impacts to the Suwannee River system such as erosion, release of inadequately treated stormwater or wastewater, or the accumulation of trash and debris.

- Policy 2.6** Land Development Regulations shall be developed and used to promote compatibility with adjacent land uses and to minimize the impact of development on the natural resources in the area. Proposed development contiguous to natural reservations shall provide a buffer and ensure compatibility. The minimum development setback shall be 330 feet from the natural reservation area boundary.
  
- Policy 2.8** Measures such as, the regulation of density, buffering, setback and open space requirements will be utilize to protect existing natural reservations from encroachment by incompatible land use.
  
- Policy 3.4** The *Soil Survey of Levy County* will be used to identify soil suitability and limitations to support land use decisions. On-site soil characteristics and constraints will be one of the determining factors in land use changes that involve the increase of intensity and density.
  
- Policy 4.1** The County shall protect, conserve and encourage the continued productivity of forestry activities, discourage the encroachment of incompatible activities and promote compatibility among forestry and other uses by
  - a.** Limiting the densities and intensities of future growth in areas predominately used for forestry/agriculture.
  
  - b.** Providing Subdivisions standards including, but not limited to, buffering, setback and clustering requirements.

Objective 3: Soils, Minerals and Native Vegetative Communities[9J-5.013(2)(b)3]  
 Conserve and protect native vegetative communities, mineral resources, farm and forest lands, and preserve the natural drainage functions of the soils through the appropriate use of land.

- Policy 3.1** Development proposals will be review ed to ensure that environmentally sensitive features of the land are protected. Topographical characteristics, soils suitability and limitations, potential impact to surface and groundwater flow and quality and a floodplain assessment shall be reviewed prior to issuance of any development approval. The methods used to protect sensitive features of the land and to address physical and environmental limitation of the land shall be documented by the developer prior to the issuance of development approval.
  
- Policy 3.11** Excavated slopes will be protected from erosion by:
  - a.** Immediate establishment of vegetative cover, terraces, mulches or a combination of these practices as appropriate, on excavated slope areas.

b. Preservation of dense vegetative stands adjacent to excavation and site stripping activity to prevent water run-off.

**Policy 4.6** *Silvicultural Best Management Practices* guideline and standards shall be followed in all forest management activities.

**Policy 4.7** The County will protect lives and property from wildfires on unmanaged lands. The Board may authorize and/or request prescribed burning by the Division of Forestry, in accordance with *Silvicultural Best Management Practices* guidelines and rules.

**Policy 6.2** The County will coordinate plans for growth and development with the Suwannee River Water Management District (SRWMD) and the Southwest Florida Water Management District (SWFWMD) to protect the hydrological characteristics of the area. A development review process shall be developed to enhance the coordination and use of technical assistance services available to the County from the Water Management Districts.

**Policy 6.10** Emergency conservation measures will be mandated to minimize the impacts of drought and protect the supply of potable water, upon request from the Southwest Florida Water Management District and the Suwannee River Water Management District.

**Policy 6.12** Innovative site design and construction materials (i.e. Paving blocks and other paving alternatives) which retain soil permeability will be encouraged through density bonuses or other incentives.

**Policy 6.13** Preservation of open space lands shall be encouraged in areas of high natural recharge, wetlands areas, and in areas identified as Environmentally Sensitive Land.

**Policy 7.1** The County will regulate dredging, waterfront development, filling, construction of roads and similar activities with proximity to coastal estuaries, grass beds, hammocks or salt marsh by enforcing Land Development Regulations.

**Policy 7.3** The County will continually review and improve the Zoning and Subdivision Regulations to protect and conserve the natural functions of existing soils, commercially important fish or shellfish locations, wildlife habitats, rivers, bays, lakes, floodplains, harbors, wetlands, estuarine marshes, freshwater beaches and shores and marine habitats. In addition, developers shall document measures taken to protect coastal resources and environmentally sensitive lands on site for proposed developments.

**Recreation And Open Space**

**Policy 3.7** Identify flood-prone areas on public and private lands and reserve those areas for open space, and/or appropriate recreational activities (ball fields, picnic areas, nature trails, open space, etc.)

**Infrastructure Element**

Aquifer Recharge Sub-Element

**Goal:** Protect the quality and supply of ground water through the proper management of development activities in aquifer recharge/dischage and floodprone areas.

**Objective 1:** Natural Groundwater Recharge Areas and Discharge Features [9J-5.011(2)(b)5]

Protect the natural functions of groundwater recharge and discharge areas by identify the sensitive features of the land and providing Land Development Regulations standards to ensure the adequate provision of stormwater facilities and floodplain management.

**Policy 1.1** Proposed land uses and development will be reviewed to identify natural groundwater recharge/dischage (i.e., wetlands, floodplains) areas and karst characteristics of the land using the best available data including, but not limited to, topographic maps delineating the 100- year and 10-year flood elevations and FEMA maps.

**Policy 1.3** Wetlands shall be protected and preserved. New development shall preserve the total area of wetlands on site and protect the natural drainage features of associated wetland systems. All water courses shall be preserved in a natural state to protect the natural drainage features of the land.

**Stormwater Sub Element**

**Goal:** Ensure that stormwater management systems are adequately provided to reduce the risk of public endangerment and property damage from long term flooding and protect surface and ground water quality.

**Objective 1:** Stormwater and Floodplain Protection [9J-5.011(2)(b)5]  
Review and update the Land Development Regulation annually to assure that stormwater and floodplain management standards are consistent with local, state and federal management regulations.

**Policy 1.1** Land Development Regulations shall implement development standards for floodprone and wetland areas. New development shall be required to provide on-site water retention and/or detention areas adequate to accommodate any increased stormwater run-off unless exemption is permitted under the applicable Water Management regulation.

**Policy 1.3** Wetlands shall be protected and preserved. New development shall preserve the total area of wetlands on site and protect the natural drainage features of associated wetland systems. All water courses shall be preserved in a natural state to protect the natural drainage features of the land.

**Potable Water Sub- Element**

Objective 5: Water Conservation [9J-5.011(2)(b)(4)]  
 Promote water conservation measures, with the long-term goal of reducing per capita consumptive use.

**Policy 5.2** The County will encourage the use of water conservation techniques in the design of new developments. Land Development Regulations shall:

- a. Regulate and minimize development impacts to environmentally sensitive lands as set forth in the Conservation and Coastal Elements of the Plan.
- b. Provide for innovative land use design techniques, including but not limited to, incentives for clustered development and the preservation of open space and existing vegetation.

**Policy 5.3** The County will cooperate with the water management districts in instituting water conservation measures to address drought conditions.

**Future Land Use Element**

**Policy 1.1** The Future Land Use Map series shall delineate areas to provide for Urban and Rural land uses, and identify Overlay Zones.

- c. Overlay Zones shall be used to identify existing locally recognized communities, special water and sewer districts, mixed use districts, Environmentally Sensitive Lands (i.e., wetlands, Coastal High Hazard Areas, etc...)

**Policy 2.6** The County will regulate development within all areas subject to flooding. The adopted Floodplain Ordinance shall limit and provide design criteria for land within the 100 year flood zone. Methods including, zoning and subdivision regulations, development clustering incentives and requirements for open space shall be used to minimize adverse development impacts.

Objective 4: Coastal Area [9J-5.006(3)(b)5 and 6]  
 Population concentrations shall be directed away from known Coastal High-Hazard Areas and wetland systems through the designation of Conservation areas and coordination with the appropriate local or regional hurricane evacuation plan. Coastal High-Hazard Areas shall include all lands in the category 1 evacuation zones.

**Policy 4.1** Local Hazard Mitigation plans, including the County Hurricane Evacuation Plan, shall be updated annually by the Emergency Management Director to identify needs and ensure adequate services for those population densities proposed on the Future Land Use Map.

**Policy 4.2** Land Development Regulations shall provide for the orderly and well planned development of hurricane evacuation corridors in order to preserve the safe and efficient traffic circulation on the

roadway. This shall include at a minimum, site plan review of all development which would exceed low density standards for residential development and all commercial development. This review shall give special consideration to traffic circulation and access issues, stormwater drainage and flood protection and the provision of public services and facilities.

**Policy 4.3** The County shall coordinate the review of proposed development within Coastal High Hazard areas with appropriate governments and regulatory agencies. Development review procedures and process will be prepared and considered for adoption to enhance coordination and mitigate potentially adverse impacts of future development and redevelopment activities along hurricane evacuation routes.

**Policy 8.1** The County will prepare draft intergovernmental agreements establishing a mechanism to enhance the coordination of plans to manage and protect of natural resources with the Suwannee River Water Management District (SRWMD) and the Southwest Florida Water Management District (SWWMD). Final agreements will be adopted by resolution by the County.

**Intergovernmental Coordination Element**

**Policy 1.1** Intergovernmental issues and procedures shall be addressed through a County Technical Advisory Committee. Appropriate governmental, regulatory and non-regulatory representatives shall meet, when necessary, to coordinate land use plans, emergency planning, natural resource protection and proposed development issues that impact multiple jurisdictions and involve other regulatory and non regulatory interests.

**Policy 2.5** The review of proposed land use and development plans within the Coastal High Hazard Area (Category 1 Evacuation Zone) will be coordinated with Cedar Key, Inglis, Yankeetown, Citrus County and Dixie County. A scheduled workshop with the adjacent jurisdiction will be held prior to issuance of development approval.

**Capital Improvements Element**

**Policy 1.2** Capital improvement needs will be evaluated and prioritized based on the following criteria for each element of the plan. The criteria are as follows:

- a. Elimination of a public hazards;
- b. Compliance with all legal mandates to provide facilities and services;
- c. Elimination of existing Level of Service deficiencies;
- d. Financial feasibility based of local budget;
- e. Reduction of operation costs or future improvement costs;
- f. Protects or increases the efficiency of prior infrastructure investments;
- g. Promotes compact development within the urban service area;

- h. Accommodates new development and redevelopment facility demands;
- i. Supports state agencies and water management districts plans;
- k. Respond to unseen opportunity, situations, and disasters.

Objective 2: Coastal High Hazard Area [9J-5.016(3)(b)2.]  
Limit public expenditures that subsidize development in Coastal High Hazard areas.

**Policy 2.1** Coastal High Hazard areas are defined as evacuation zones for a category 1 hurricane as established in the *Storm Surge Atlas, Cedar Key Hurricane Evacuation Study, Levy County, Florida, 1995*.

**Policy 2.2** The County will make appropriations for infrastructure and improvement projects in the Coastal High Hazard Area that are based on the following guidelines and criteria:

- a. Essential to the public health, safety and welfare or to support the coastal economy;
- b. For water dependent public facilities or services;
- c. For public beach shoreline access, resources restoration or similar projects.

**Policy 2.3** Public expenditures for the replacement of infrastructure within a high hazard area for essential public needs shall be directed to:

- a. Essential facilities that have existing or anticipated deficiencies;
- b. Improvements that would protect or increase the efficiency of evacuation routes;
- c. Mitigation of storm damage; and
- d. Enhancements to shoreline access for public recreational facilities. **(New Policy)**