

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

This profile of Charlotte 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 Charlotte County's existing and potential risk to identified hazards; (2) assess how well local hazard mitigation principles have been incorporated into the County's Comprehensive Plan; (3) provide recommendations on how hazard mitigation can better be integrated into the Comprehensive Plan; and (4) determine if any enhancements could be made to the LMS to better support comprehensive planning. Best available statewide level data is provided to convey exposure and risk as well as to illustrate the vulnerability assessment component of the integration process.

Summary of Preliminary Recommendations

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

Comprehensive Plan Preliminary Recommendations

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

Of the vacant lands, 10,045 acres are susceptible to Category 1 storm surge (CHZ), 47,323 acres are susceptible to Category 1 – 3 storm surge (HVZ), 62,782 are susceptible to 100-year flood, 21,445 acres are susceptible to wildfire, and 471 acres are susceptible to sinkholes. Susceptibility for surge, flood and wildfire are based on risk, whereas susceptibility for sinkhole is based on exposure. Therefore, further analysis is needed to determine the level of risk associated with sinkhole hazards.

Storm Surge

Around 92% of the 10,045 vacant acres in the Coastal High Hazard Area and 86% of the 47,323 vacant acres in the Hurricane Vulnerability Zone are to be developed for residential, commercial,

industrial uses or public facilities, indicating that these risk reduction strategies should be considered prior to development of this vacant land.

- The Comprehensive Plan should continue to implement overlay districts and include transfer of development rights to reduce residential and commercial development on the Gulf Islands and in other surge prone areas, and other existing measures to minimize risk.
- The Comprehensive Plan should consider prohibiting the development of nursing homes, adult congregate living facilities, and hospitals inside the Coastal High Hazard Area and other high-risk developments, similar to how mobile homes and most county funded facilities have been regulated. Building these facilities out of harm's way reduces evacuation needs of the special needs population. In addition, the number of evacuees is reduced who are under medical supervision or need medical staff chaperones, potentially reducing hurricane evacuation clearance times.
- The County should consider prohibiting septic tanks in the CHHA except in cases of excessive hardship where (1) no reasonable alternative exists, (2) a discharge from a septic tank will not adversely affect public health and will not degrade surface or ground water and (3) where the Health Department determines that soil conditions, water table elevation and setback provisions are adequate to meet state requirements.
- The Comprehensive Plan should include a policy to maintain or reduce the hurricane evacuation clearance time published in the FDEM Hurricane Evacuation Study, institute a level of service (LOS) standard that is tied to levels of development or population and/or institute an impact fee in the CHHA or HVZ to help pay for additional road capacity, retrofits required for evacuations, and shelter space.

Flood

About 71% of the 62,782 vacant acres in the 100-year floodplain are to be developed for residential, commercial, industrial uses or public facilities, indicating that these risk reduction strategies should be considered prior to development of this vacant land.

- The Comprehensive Plan should continue the implementation of policies for stormwater management, evacuation route enhancement, at risk property acquisition, transfers of development right, and other measures to reduce the risk from flood.
- The County should consider the requirement for the installation of back-flow preventers on new septic tanks in the 100-year floodplain to mitigate impacts from flood, or create incentives and disincentives to reduce the desirability of septic installation within the 100-year floodplain.
- The County should consider requiring that all structures built in the 100-year floodplain include at least 1 foot freeboard. Many post-disaster building performance/damage assessments have shown that it is advisable to include freeboard to reduce future flood damages. Okaloosa and Brevard Counties, City of Jacksonville and the Santa Rosa Island Authority are example communities that have adopted freeboard requirements.
- The County should consider requiring areas that have not established base flood elevations to be studied prior to development.
- The County should consider calling for compensating storage calculations in all non coastal flood hazard areas.

Wildfire

About 88% of the 21,446 vacant acres that are susceptible to wildfire are to be developed for residential, commercial, industrial uses or public facilities, indicating that these risk reduction strategies should be considered prior to development of this vacant land.

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

Sinkhole

Sinkhole hazard was not discussed in the hazards analysis in the latest version of the Charlotte County LMS.

- Sinkhole hazards could be evaluated further in the next update of the hazards analysis of the LMS to determine the risk. However, based on available data, it appears that sinkhole risk is very low.

General

- Include each hazard layer on the existing and future land use maps to determine where risks are possible to target hazard mitigation strategies.
- Continue educating the public, especially those at high risk from hurricanes, floods, and wildfires, & make them aware of proactive steps they can take to mitigate damage.

Local Mitigation Strategy Preliminary Recommendations

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

- Provide hazard maps that include data layers to illustrate population (i.e., density) and/or property (i.e., value) exposure.
- Provide future land use maps that include hazard data layers to illustrate which future land use categories are susceptible to each hazard.
- Provide loss estimates by land use in relation to the hazard.
- Provide a map of repetitive losses.
- Include a quantitative risk assessment for existing and future development (i.e., loss estimates), and specific critical facilities.
- Use complementary, not contradictory data in the plans such as the LMS, CEMP, and Comprehensive Plan.

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1. County Overview

Geography and Jurisdictions

Charlotte County is located in southwestern Florida along the Gulf Coast. It covers a total of 859.1 square miles, of which approximately 693.6 square miles are land and 165.5 square miles are water. There is one incorporated municipality within Charlotte County, as shown in **Table 1.1**. The City of Punta Gorda serves as the county seat.



Population and Demographics

According to the April 1, 2004 population estimate by the University of Florida's Bureau of Economic and Business Research (BEBR), population estimates for all jurisdictions within Charlotte County and the percent change from the 2000 U.S. Census are presented in **Table 1.1**. While some residents live in incorporated jurisdictions approximately 89% live in the county's unincorporated areas. Charlotte County has experienced rapid population growth in recent years, a trend that is expected to continue. Between 1990 and 2000, Charlotte County had a growth rate of 37.6%, which is much greater than the statewide average of 23.5% for the same time period.

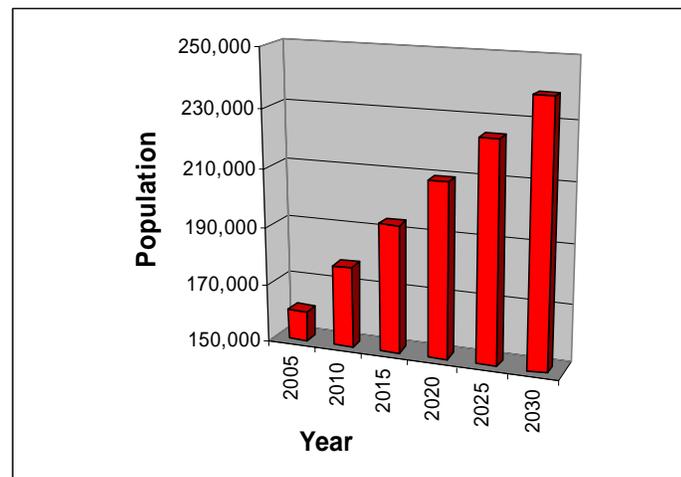
Table 1.1 Population Estimates by Jurisdiction

Jurisdiction	Population (Census 2000)	Population (Estimate 2004)	Percent Change 2000-2004	Percent of Total Population (2004)
Unincorporated	127,283	139,817	9.85%	89.06%
Punta Gorda	14,344	17,168	19.69%	10.94%
Total	141,627	156,985	10.84%	100.00%

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

According to BEBR (2004), Charlotte County's population is projected to grow steadily and reach an estimated 238,700 by the year 2030, increasing the average population density of 226 to 344 persons per square mile. **Figure 1.1** illustrates medium growth population projections for Charlotte County based on 2004 calculations.

Figure 1.1 Population Projections for Charlotte County, 2005–2030



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

Of particular concern within Charlotte County’s population are those persons with special needs or perhaps limited resources such as the elderly, disabled, low-income or language isolated residents. According to the 2000 Census, of the 127,283 persons residing in Charlotte County 34.7% are listed as 65 years old or over, 24.9% are listed as having a disability, 8.2% are listed as below poverty, and 8.2% live in a home where the primary language is other than English.

2. Hazard Vulnerability

Hazards Identification

The highest risk hazards for Charlotte County as identified in the County’s Local Mitigation Strategy (LMS) are hurricanes and tropical storms, thunderstorms, flooding, tornadoes, and wildfires. Sinkholes were not discussed in the LMS.

Hazards Analysis

The following analysis examines four hazard types: storm surge, flood, wildfire and sinkholes. All of the information in this section was obtained through the online Mapping for Emergency Management, Parallel Hazard Information System (MEMPHIS). MEMPHIS was designed to provide a variety of hazard related data in support of the Florida Local Mitigation Strategy DMA 2K project, and was created by Kinetic Analysis Corporation (KAC) under contract with the Florida Department of Community Affairs (DCA). Estimated exposure values were determined using the Category 3 Maxima Scenario for storm surge; FEMA’s designated 100-year flood zones (i.e., A, AE, V, VE, AO, 100 IC, IN, AH) for flood; all medium-to-high risk zones from MEMPHIS for wildfire (Level 5 through Level 9); and the combined high, very high, extreme and adjacent zones for sinkhole based on the KAC analysis. 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>).

Existing Population at Risk

Table 2.1 presents the population currently exposed to each hazard throughout Charlotte County. Of the 127,283 (U.S. Census 2000) people that reside in Charlotte County, 53.4% are exposed to storm surge, 54.9% are exposed to 100-year flooding, 60.8% are exposed to wildfire, and less than one percent (0.9%) is exposed to sinkholes.

Table 2.1 Estimated Numbers of Persons Exposed to Selected Hazards

Segment of Population	Storm Surge	Flood	Wildfire	Sinkhole
Total (all persons)*	68,045	69,926	77,403	1,136
Minority	3,373	3,474	5,682	58
Over 65	26,342	27,523	25,499	194
Disabled	28,712	30,937	32,307	387
Poverty	6,024	5,741	6,744	45
Language-Isolated	433	477	525	0
Single Parent	2,908	2,816	3,404	85

Source: Mapping for Emergency Management, Parallel Hazard Information System

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

Evacuation and Shelters

As discussed in the previous sections, population growth in Charlotte County has been steady, and the trend is projected to continue. Additionally, storm events requiring evacuation typically impact large areas, often forcing multiple counties to issue evacuation orders simultaneously and placing a greater cumulative number of evacuees on the roadways which may slow evacuation time further. Thus, it is important to not only consider evacuation times for Charlotte County, but also for other counties in the region as shown in **Table 2.2**. As the population increases in the future, the demand for shelter space and the length of time to evacuate will increase, unless measures are taken now. Also, it should be noted that population that will reside in new housing stock might not be required to evacuate as new construction will be built to higher codes and standards.

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

County	Category 1 Hurricane	Category 2 Hurricane	Category 3 Hurricane	Category 4 Hurricane	Category 5 Hurricane
Charlotte	11	14	17	22	22
Collier	6.6	16.4	27.1	40.2	50.9
Lee	9.5	16.5	24.5	27	27
Sarasota	10.5	10.5	11.5	15	15

Source: DCA, DEM Hurricane Evacuation Study Database, 2005

As the population increases in the future, the demand for shelter space and the length of time to evacuate will increase, unless measures are taken now. Currently, it is expected to take between 11 and 22 hours to safely evacuate Charlotte County depending on the corresponding magnitude of the storm, as shown in **Table 2.2**. This data was derived from eleven regional Hurricane Evacuation Studies that have been produced by FEMA, the U.S. Army Corps of Engineers, and Florida Regional Planning Councils. The study dates range from 1995 to 2004. These regional studies are updated on a rotating basis.

Similar to most of Florida’s coastal counties, Charlotte County currently has a significant shelter deficit. According to Florida’s Statewide Emergency Shelter Plan, Charlotte County has an existing shelter capacity of 1,500 people. The 2004 shelter demand for a Category 4 or Category 5 hurricane is 29,649 people, leaving an existing shelter deficit of 28,149. In 2009, the projected shelter demand is 33,336, leaving an anticipated shelter deficit of 31,836. The opportunity exists to construct new facilities to standards that will allow them to serve as shelters, and to construct future public facilities outside of floodplain areas.

Per an objective in the Coastal Element (9J-5.012(3)(b)7.), counties must maintain or reduce hurricane evacuation times. This could be accomplished by using better topographical data to determine the surge risk to populations to evaluate which areas to evacuate, and increasing the ability to shelter in place to decrease the number of evacuees. Charlotte County could encourage new homes to be built with saferooms, community centers in mobile home parks or developments to be built to shelter standards (outside of the hurricane vulnerability zones), or require that new schools be built or existing schools be retrofitted to shelter standards; which would be based on FEMA saferoom and American Red Cross shelter standards. Additionally, the county could establish level of service (LOS) standards that are tied to development.

Existing Built Environment

While the concern for human life is always highest in preparing for a natural disaster, there are also substantial economic impacts to local communities, regions, and even the state when

property damages are incurred. To be truly sustainable in the face of natural hazards, we must work to protect the residents and also to limit, as much as possible, property losses that slow down a community’s ability to bounce back from a disaster. **Table 2.3** presents estimates of the number of structures in Charlotte County by occupancy type that are exposed to each of the hazards being analyzed. The estimated exposure of Charlotte County’s existing structures to the flood, wildfire, and sinkhole hazards was determined through MEMPHIS.

Table 2.3 Estimated Numbers of Structures Exposed to Selected Hazards

Occupancy Type	Storm Surge	Flood	Wildfire	Sinkhole
Single Family	28,162	39,281	33,848	231
Mobile Home	4,084	36,505	3,895	0
Multi-Family	8,491	12,114	6,432	54
Commercial	1,543	7,256	1,320	19
Agriculture	122	2,716	1,029	3
Gov. / Institutional	592	1,075	949	0
Total	42,994	98,947	47,473	307

Source: Mapping for Emergency Management, Parallel Hazard Information System

There are 146,727 structures exposed to at least one of the four hazards, of which most are single-family homes in subdivisions. Of these structures, 67.4% are exposed to flood. Nearly 99,000 structures are located within the 100-year floodplain, of which 43.5% are exposed to storm surge induced flooding. Slightly more than 65% of the structures exposed to surge are single-family homes, and 19.7% are multi-family homes. Typically, structures exposed to surge are high-value real estate due to their proximity to the ocean or tidally influenced water bodies such as the Peace and Myakka Rivers. According to the latest National Flood Insurance Program Repetitive Loss Properties list, as of March 2005, there are 124 repetitive loss properties in Charlotte County. Under the National Flood Insurance Program (NFIP), repetitive loss properties are defined as “any NFIP-insured property that, since 1978 and regardless of any change(s) of ownership during that period, has experienced: a) four or more paid flood losses; or b) two paid flood losses within a 10-year period that equal or exceed the current value of the insured property; or c) three or more paid losses that equal or exceed the current value of the insured property.”

Over 32%, or 47,473 structures, are exposed to wildfire, of which approximately 71.3% are single family homes and 13.5% are multi-family homes. Most susceptible areas are generally located in the western portion of the unincorporated county. Only 0.02% or 307 structures are within sinkhole susceptible areas, with over 75% of those being single family homes.

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

Analysis of Current and Future Vulnerability Based on Land Use

The previous hazards analysis section discussed population and existing structures exposed to flooding, sinkholes, and wildfire according to MEMPHIS estimates. This section is used to

demonstrate the County's vulnerabilities to these hazards in both tabular format and spatially, in relation to existing and future land uses. Existing land use data was acquired from County Property Appraisers and the Florida Department of Revenue in 2004 for tabulation of the total amount of acres and percentage of land in identified hazard areas, sorted by existing land use category for the unincorporated areas. The total amount of acres and percentage of land in the identified hazards areas was tabulated and sorted by future land use category according to the local Future Land Use Map (FLUM), as well as the amount of these lands listed as vacant according to existing land use. Charlotte County future land use data was acquired in February 2005 from Charlotte County and might not reflect changes per recent future land use amendments. Maps of existing land use within hazard areas are based on the 2004 County Property Appraiser geographic information system (GIS) shapefiles. Maps of future land uses in hazard areas were developed using the Charlotte County future land use map dated February 2005. A series of maps were created as part of the analysis and are available as attachments to the county profile. All maps are for general planning purposes only.

For the purposes of this profile, the identified hazard areas include the coastal hazards zone in relation to storm surge, hurricane vulnerability zones in relation to evacuation clearance times, flood zones in relation to the 100-year flood, wildfire susceptible areas, and sinkhole susceptible areas.

In **Attachment A**, two maps present the existing and future land uses within the Coastal Hazards Zone (CHZ), which represents the Category 1 Hurricane Evacuation Zone joined with the Category 1 Storm Surge Zone. The areas that are most susceptible to storm surge are located in the coastal communities in the western portion of the County, including the municipality of Punta Gorda. Areas include the Gulf Islands and land along the Charlotte Harbor, Peace and Myakka Rivers. The total amount of land in the CHZ is 49,761.3 acres. As shown in **Table 2.4**, 58.4% are parks, conservation areas and golf courses; 20.2% are currently undeveloped; 6.5% are residential single-family homes; and 5.6% are used for utility plants and lines and solid waste disposal. **Table 2.5** shows that of the 10,044.6 undeveloped acres, 55% are designated for low density residential use. The County has taken favorable action in designating a portion of vacant acreage in the CHZ for low dwelling density.

In **Attachment B**, two maps present the existing and future land uses within the Hurricane Vulnerability Zone (HVZ), which represents Category 1 to 3 Hurricane Evacuation Zones. The areas that are most susceptible are located in the coastal communities and in the central and western parts of the County. The total amount of land in the HVZ is 203,289.1 acres. As shown in **Table 2.4**, 48.3% are parks, conservation areas and golf courses; 23.3% are currently undeveloped; 13.3% are in agricultural use; and 7.5% are residential single-family homes. **Table 2.5** shows that of the 47,322.9 undeveloped acres, 61.8% are designated for low density residential use. The County has taken favorable action in designating a portion of vacant acreage in the HVZ for low dwelling density.

In **Attachment C**, two maps present the existing and future land uses within a 100-year flood zone. There are flood-prone areas scattered across the County, especially along the Gulf Coast and in the central and western portions of the County. Areas along the coastline, the Charlotte Harbor and the two major rivers stemming from the Charlotte Harbor, the Peace River and the Myakka River, are prone to flooding the most populous areas of the county, including the City of Punta Gorda during an event that produces storm surge (Charlotte County LMS, 2002 – 2003). The total amount of land in the special flood hazard area is 308,571.8 acres. As shown in **Table 2.4**, 34% are parks, conservation areas and golf courses; 33.7% are in agricultural use; 20.3% are currently undeveloped; and 5.4% are residential single-family homes. **Table 2.5** shows that of the 62,782.2 undeveloped acres, 49.4% are designated for low density residential use. The County has taken favorable action in designating a portion of vacant acreage in flood zones for low dwelling density.

In **Attachment D**, two maps present the existing and future land uses within wildfire susceptible areas. These areas are scattered across the County, and are predominately located in the western portion of the County. The total amount of land in the wildfire susceptible areas is 42,751.7 acres. As shown in **Table 2.4**, 50.2% are currently undeveloped; 15% are parks, conservation areas and golf courses; 14.3% are in agricultural use; and 13.2% are residential single-family homes. **Table 2.5** shows that of the 21,445.2 undeveloped acres, 68.1% are designated for low density residential use. The County should continue to take measures to reduce wildfire risk within the urban/rural interface.

In **Attachment E**, two maps present the existing and future land uses within sinkhole susceptible areas. These areas are located in the northwestern corner of the County. The total amount of land in the sinkhole susceptible areas is 568.5 acres. As shown in **Table 2.4**, 83% are currently undeveloped; 11.1% are residential single-family homes; 2.5% are residential multi-family homes; and 2.4% are residential group quarters and nursing homes. **Table 2.5** shows that of the 471.7 undeveloped acres, 80.9% are designated for low density residential use.

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	Sinkhole Susceptible Areas
Agriculture	Acres	1,264.9	27,057.0	103,934.2	6,134.6	0.0
	%	2.5	13.3	33.7	14.3	0.0
Attractions, Stadiums, Lodging	Acres	36.6	83.2	85.2	6.9	0.9
	%	0.1	0.0	0.0	0.0	0.2
Places of Worship	Acres	42.1	383.7	403.3	149.4	0.0
	%	0.1	0.2	0.1	0.3	0.0
Commercial	Acres	482.9	1,507.2	1,560.5	91.2	4.5
	%	1.0	0.7	0.5	0.2	0.8
Government, Institutional, Hospitals, Education	Acres	998.5	3,698.4	5,995.0	1,023.5	0.4
	%	2.0	1.8	1.9	2.4	0.1
Industrial	Acres	100.8	663.4	1,063.8	64.9	0.0
	%	0.2	0.3	0.3	0.2	0.0
Parks, Conservation Areas, Golf Courses	Acres	29,056.0	98,244.4	104,923.8	6,394.1	0.0
	%	58.4	48.3	34.0	15.0	0.0
Residential Group Quarters, Nursing Homes	Acres	12.5	175.4	167.4	43.0	13.4
	%	0.0	0.1	0.1	0.1	2.4
Residential Multi-Family	Acres	873.2	2,590.2	2,927.5	610.4	14.3
	%	1.8	1.3	0.9	1.4	2.5
Residential Mobile Home, or Commercial Parking Lot	Acres	583.0	1,565.6	2,096.0	303.6	0.0
	%	1.2	0.8	0.7	0.7	0.0
Residential Single-Family	Acres	3,242.1	15,191.1	16,718.4	5,623.9	63.3
	%	6.5	7.5	5.4	13.2	11.1
Submerged Land (Water Bodies)	Acres	141.8	216.0	327.9	106.1	0.0
	%	0.3	0.1	0.1	0.2	0.0
Transportation, Communication, Rights-Of-Way	Acres	114.6	168.8	204.4	55.1	0.0
	%	0.2	0.1	0.1	0.1	0.0
Utility Plants and Lines, Solid Waste Disposal	Acres	2,767.7	4,421.8	5,382.2	699.8	0.0
	%	5.6	2.2	1.7	1.6	0.0
Vacant	Acres	10,044.6	47,322.9	62,782.2	21,445.2	471.7
	%	20.2	23.3	20.3	50.2	83.0
Total	Acres	49,761.3	203,289.1	308,571.8	42,751.7	568.5
	%	100.0	100.0	100.0	100.0	100.0

Source: Department of Community Affairs

**INTEGRATION OF THE LOCAL MITIGATION STRATEGY INTO THE LOCAL COMPREHENSIVE PLAN
CHARLOTTE COUNTY PROFILE**

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

Future Land Use Category		Coastal Hazard Zone		Hurricane Vulnerability Zone		Flood Zones		Wildfire Susceptible Areas		Sinkhole Susceptible Areas	
		Total	Vacant	Total	Vacant	Total	Vacant	Total	Vacant	Total	Vacant
Agriculture	Acres	1,095.7	174.1	30,281.3	4,473.5	102,696.7	15,680.2	8,220.8	1,887.5	0.0	0.0
	%	2.2	1.7	14.9	9.5	33.3	25.0	19.2	8.8	0.0	0.0
Airport Commerce Park	Acres	19.2	11.6	1,510.4	855.4	3,380.5	1,287.6	740.1	235.6	0.0	0.0
	%	0.0	0.1	0.7	1.8	1.1	2.1	1.7	1.1	0.0	0.0
Charlotte Harbor CRA	Acres	403.5	124.6	546.2	153.2	587.4	170.1	119.7	48.4	0.0	0.0
	%	0.8	1.2	0.3	0.3	0.2	0.3	0.3	0.2	0.0	0.0
City	Acres	4,652.3	483.3	6,722.0	1,058.5	7,572.0	1,205.4	476.2	211.3	0.0	0.0
	%	9.3	4.8	3.3	2.2	2.5	1.9	1.1	1.0	0.0	0.0
Coastal Residential	Acres	10.5	10.5	10.3	10.3	12.5	12.5	0.9	0.9	0.0	0.0
	%	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Commercial Center	Acres	531.7	400.6	1,776.8	1,295.4	1,692.0	1,220.8	612.6	482.4	0.0	0.0
	%	1.1	4.0	0.9	2.7	0.5	1.9	1.4	2.2	0.0	0.0
Commercial Corridor	Acres	559.1	249.9	2,519.3	1,419.6	2,782.6	1,612.9	781.6	637.4	87.4	71.3
	%	1.1	2.5	1.2	3.0	0.9	2.6	1.8	3.0	15.4	15.1
High Density Residential	Acres	633.6	369.8	2,295.5	1,168.8	2,273.2	1,155.4	765.5	513.2	0.0	0.0
	%	1.3	3.7	1.1	2.5	0.7	1.8	1.8	2.4	0.0	0.0
High Intensity Industrial	Acres	46.4	21.4	170.8	71.3	70.7	33.9	12.7	5.3	0.0	0.0
	%	0.1	0.2	0.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0
Low Density Residential	Acres	9,860.4	5,520.6	45,702.7	29,225.5	48,055.9	31,006.9	20,012.9	14,611.3	444.1	381.4
	%	19.8	55.0	22.5	61.8	15.6	49.4	46.8	68.1	78.1	80.9
Low Intensity Industrial	Acres	319.7	56.6	1,165.0	463.5	1,137.6	476.4	214.2	141.1	0.0	0.0
	%	0.6	0.6	0.6	1.0	0.4	0.8	0.5	0.7	0.0	0.0
Medium Density Residential	Acres	759.5	437.4	2,495.0	1,762.7	2,234.0	1,556.3	719.8	596.8	23.9	18.9
	%	1.5	4.4	1.2	3.7	0.7	2.5	1.7	2.8	4.2	4.0
Mixed Use	Acres	2,024.7	1,521.5	3,214.0	2,250.3	3,818.3	2,423.7	929.2	527.2	0.0	0.0
	%	4.1	15.1	1.6	4.8	1.2	3.9	2.2	2.5	0.0	0.0
Parks & Recreation	Acres	488.9	3.1	2,548.5	937.4	2,722.2	962.8	1,318.2	426.7	0.0	0.0
	%	1.0	0.0	1.3	2.0	0.9	1.5	3.1	2.0	0.0	0.0
Preservation	Acres	27,627.3	606.1	29,783.7	996.7	33,645.9	1,063.8	583.2	45.3	0.0	0.0
	%	55.5	6.0	14.7	2.1	10.9	1.7	1.4	0.2	0.0	0.0
Public Lands & Facilities	Acres	158.1	22.1	3,352.4	307.0	4,666.4	375.4	1,110.4	203.5	13.2	0.0
	%	0.3	0.2	1.6	0.6	1.5	0.6	2.6	0.9	2.3	0.0
Recreational Vehicle Park	Acres	18.9	18.9	210.9	210.9	175.2	160.3	23.0	20.5	0.0	0.0
	%	0.0	0.2	0.1	0.4	0.1	0.3	0.1	0.1	0.0	0.0
Resource Conservation	Acres	533.0	0.9	67,240.1	73.3	88,407.8	728.5	4,626.0	86.1	0.0	0.0
	%	1.1	0.0	33.1	0.2	28.7	1.2	10.8	0.4	0.0	0.0
Rural Estate Residential	Acres	18.7	11.4	1,744.4	589.6	2,640.8	1,649.2	1,484.5	764.6	0.0	0.0
	%	0.0	0.1	0.9	1.2	0.9	2.6	3.5	3.6	0.0	0.0
Total Acres	Acres	49,761.1	10,044.6	203,289.2	47,322.9	308,571.9	62,782.2	42,751.5	21,445.2	568.5	471.7
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Department of Community Affairs

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

Punta Gorda has 486 vacant acres in both the coastal hazard zone (CHZ) and hurricane vulnerability zone (HVZ), which is 10.4% of all CHZ and HVZ acreage in Punta Gorda. Punta Gorda has 1,229.9 vacant acres in flood zones, which is 16% of all floodprone acreage in Punta Gorda. Punta Gorda also has over 209 vacant acres in wildfire susceptible areas, which is 45.2% to all wildfire susceptible acreage in Punta Gorda. No sinkhole susceptible areas were detected in Punta Gorda.

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

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

Jurisdiction		Coastal Hazard Zone		Hurricane Vulnerability Zone		Flood Zones		Wildfire Susceptible Areas	
		Total	Vacant	Total	Vacant	Total	Vacant	Total	Vacant
Punta Gorda	Acres	4,680.9	486.0	4,680.9	486.0	7,708.5	1,229.9	464.6	209.8
	%	100.0	10.4	100.0	10.4	100.0	16.0	100.0	45.2
Total Municipal Acres	Acres	4,690.2	494.5	4,690.2	494.5	7,713.6	1,231.2	464.6	209.8
	%	100.0	10.5	100.0	10.5	100.0	16.0	100.0	45.2

Source: Department of Community Affairs\

3. Existing Mitigation Measures

Local Mitigation Strategy (LMS) Assessment –

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

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

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

Hazard Identification and Vulnerability Assessment (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 to which the community is susceptible. According to FEMA, LMSes revised pursuant to the Disaster Mitigation Act of 2000 (DMA 2000) criteria must include maps and descriptions of the areas that would be affected by each hazard to which the jurisdiction is exposed, information on previous events, and estimates of future probabilities. Vulnerability should be assessed for the types and numbers of exposed buildings, infrastructure, and critical facilities with estimates of potential dollar losses. Plan updates will be required to assess the vulnerability of future growth and development.

Guiding Principles. This section lists and assesses the community's existing hazard mitigation policies and programs and their impacts on community vulnerability. This section typically contains a list of existing policies from the community's Comprehensive Plan and local ordinances that govern or are related to hazard mitigation. Coastal counties frequently include policies from their PDRPs.

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

The Charlotte County LMS (adopted in 2002) was assessed to determine if the hazard analysis and vulnerability assessment (i.e., storm surge, flood, wildfire, and sinkhole) data can support comprehensive planning, whether the guiding principles include a comprehensive list of policies for the county and municipalities, and whether the LMS goals and objectives support comprehensive planning goals, objectives, and policies (GOP).

Hazard Analysis and Vulnerability Assessment (LMS pp. 3-11)

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

Strengths:

- Provides demographic information.
- Provides information about population and property exposure to certain hazards.
- Provides a hazards analysis and a qualitative vulnerability assessment for the county.
- Includes a list of types and locations of critical facilities.
- Provides a list of repetitive losses.
- Includes a qualitative risk assessment for each hazard, along with tabular data showing risks to the county from storm surge and hurricanes.

Weaknesses:

- Hazard maps are not included, which should include data layers to illustrate population (i.e., density) and/or property (i.e., value) exposure.
- Does not include future land use maps that include hazard data layers to illustrate which future land use categories are susceptible to each hazard.

- Does not include loss estimates by land use.
- Does not provide a map of repetitive losses.
- Does not include a quantitative risk assessment for existing and future development (i.e., loss estimates) or specific critical facilities.

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

Guiding Principles

The Charlotte County LMS includes a section which contains a list of regulations, policies, and documents addressing local hazard mitigation, which may also be considered as “Guiding Principles” for the county and the municipality. The listing located in Tab C of the LMS includes the responsible agency, an evaluation of the document, and an analysis for strengthening the document. The Guiding Principles section is found in most counties’ LMSes and is useful in providing the different jurisdictions ideas for enhancing their own plans or providing the LMS committee an analysis of where there may be weaknesses in implementing mitigation strategies.

LMS Goals and Objectives

The Charlotte County LMS has goals and objectives that support mitigation principles that are found in the comprehensive plan. A list of the LMS goals and objectives pertaining to comprehensive planning can be found in **Attachment F**. The following is a summary of the LMS goals that support comprehensive plan GOPs.

Goal 1 seeks to reduce the vulnerability and exposure of the public by protecting lives and property from the losses of natural disasters. Objectives protect lives, property, and natural resources from natural disasters. Objectives ensure that Charlotte County's code and ordinances are sufficient to protect public safety and property, and encourage the development of advance plans for evacuation. Objectives protect coastal resources, marine resources, and dune systems from the adverse effects of development; and ensure that mitigation measures are effectively incorporated in the comprehensive system of coordinated planning, management, and land acquisition. Objectives encourage land and water uses that are compatible with the protection of sensitive coastal resources having value and benefits as mitigative measures, and prohibits development and other activities, which disturb coastal dune systems, and ensure and promote the restoration of coastal dune systems that have been damaged.

Goal 2 states that the Charlotte County Office of Emergency Management will take a proactive lead to ensure coordination within government agencies. Objectives encourage cooperation and participation between and among all Charlotte County departments in mitigation planning, and ensure that the Charlotte County Hazard Mitigation Plan incorporates appropriate hazard mitigation measures as reflected in each agency’s Emergency Support Function or Departmental Standard Operating Procedures.

Goal 3 strives to reduce the vulnerability of critical and public facilities from natural disasters. Objectives aim to disaster-proof existing and proposed critical facilities, in regards to location and construction, and to develop and maintain energy preparedness plans that will be both practical and effective under circumstances of disrupted energy supplies. Objectives also encourage the incorporation of hazard mitigation measures in any rehabilitation or reuse of existing public facilities, structures, and buildings.

Goal 4 seeks to strengthen plans for post-disaster, recovery, and mitigation, by encouraging the analysis, review and update of County post-disaster, recovery, and mitigation plans.

Goal 5 aims to improve coordination of emergency management information, through the media, to increase public awareness and participation in preparedness, response, mitigation, and recovery. Objectives strive to provide educational programs and research to meet local, state, and regional planning, growth management, and hazard mitigation needs.

Goal 6 states that Charlotte County shall protect and acquire unique natural habitats and ecological systems and restore degraded natural systems to a functional condition in order to maximize hazard mitigation values. Objectives aims to conserve forests, wetlands, and coastal natural features to maintain their economic, aesthetic, and recreational values; and to acquire, retain, manage, and inventory public lands to provide conservation and related public benefits including hazard mitigation. Objectives promote the use of agricultural practices that are compatible with the protection of natural systems, and encourage the multiple use of forest resources, where appropriate, to provide for watershed protection and erosion control and maintenance of water quality. Objectives strive to protect and restore the ecological functions of wetland systems to ensure their long-term environmental, economic, and recreational values, including hazard mitigation practices, and to develop and implement a comprehensive planning, management, and acquisition program to ensure the integrity of Charlotte County's waterways. Objectives emphasize the acquisition and maintenance of ecologically intact systems in all land and water planning, management, and regulation.

Maintaining consistent language for outlining goals and objectives in both the LMS and comprehensive plan presents a united front on decreasing risk in the county. While the LMS may not be able to regulate land use as the comprehensive plan does, having these common goals and objectives increases the likelihood of the jurisdictions of Charlotte County adopting and implementing corresponding policies that are legally enforceable.

Comprehensive Emergency Operations Plan (CEMP)

The Charlotte County CEMP references the LMS in the Basic Plan as well as the Mitigation Annex. Disaster mitigation, recovery and redevelopment matters are the responsibility of the Charlotte County Office of Emergency Management and the Charlotte County Board of County Commissioners. All mitigation, recovery, and redevelopment activities in the City of Punta Gorda will be handled through the Punta Gorda Police Department. Post-disaster mitigation priorities consider the LMS analyses and project lists, in addition to damage assessment reports and the County Emergency Management Director's expertise. The CEMP discusses hazard mitigation in the context of standard operating procedures, activities, responsibilities and available programs. This includes the post-disaster implementation of the Hazard Mitigation Grant Program and related disaster mitigation, response and recovery assistance programs, as well as pre-disaster mitigation programs such as the National Flood Insurance Program, Community Rating System and Flood Mitigation Assistance Program.

Though the identification of mitigation opportunities lies predominately with the County Emergency Management Director and the LMS working group, the document lists numerous activities and supporting agencies to assist in supporting mitigation in the County. In addition to various county departments providing management and assistance in managing plans and strategies for pre-and post-disaster mitigation, municipal departments also support these efforts. Damage assessments are conducted by teams consisting of: Public Works, City and County Engineering Personnel, City and County Roads and Bridges or Public Works Personnel, Law Enforcement and Fire Officials, County Agricultural Extension Agents, County Health Officials, Building Construction Inspectors, Social Services Officials, and Parks and Recreation Officials.

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

Post-Disaster Redevelopment Plan (PDRP)

The Charlotte County PDRP was not available for review at the time that this profile was developed.

National Flood Insurance Program/Community Rating System

Charlotte County (unincorporated areas) and the municipality of Punta Gorda participate in the National Flood Insurance Program (NFIP). Charlotte County (unincorporated areas) and the municipality of Punta Gorda participate in the NFIP Community Rating System (CRS): Charlotte County currently has a rating of five and Punta Gorda has a rating of six.

Long Term Recovery Plan

The Charlotte County LTRP proposes a variety of measures to reduce risk, damage, and loss through the protection of lives, property, and natural resources. The LTRP includes

Several projects include measures for evacuation and shelter enhancements. It is recommended that evacuation plans and sheltering plans are updated to include items such as repairing and retrofitting existing shelters, building two new shelters to Category 4 wind-load resistance and out of the 100-year flood plain, and the tidal surge zone if possible; and one or more for special needs populations. Projects also include developing incentive or funding programs to retrofit homes, businesses and public buildings to incorporate saferoom technology; and an educational program on evacuation and sheltering. An opportunity does exist for the County to consider implementing a 1 foot or higher freeboard requirement in the 100-year floodplain for residential, commercial, and industrial development.

A number of public facilities and transportation improvement projects are provided. A water, wastewater, stormwater and flood control project is proposed. Projects include improvement of the county's infrastructure to increase reliability of service during an emergency, a county-wide stormwater master plan a water system that would allow regional water sharing to ensure drinking water is available during emergencies. It is suggested that one fire station be improved on site and another to be relocated, to decrease their risk from hurricanes. It is also recommended that a public safety complex be built outside the 100-year floodplain and Category 4 storm surge area. Several roads are recommended for expansion to improve evacuation capacity. Funds are being secured to strengthen several schools, and possibly relocate to less risky areas.

The protection of natural resources is suggested as well. It is suggested that various undeveloped parcels of land be acquired for preservation and recreational purposes. These lands include water recharge areas and are beneficial for natural flood retention. Beach renourishment is also recommended for several areas that were damaged by Hurricane Charley

4. Comprehensive Plan Review

Purpose and Intent

The 1997-2010 Charlotte County Comprehensive Plan (Adopted October 7, 1997, Amendment date unavailable) was reviewed for the purpose of developing this profile. This review was undertaken in order to assess what steps Charlotte County has taken to integrate hazard mitigation initiatives from their Local Mitigation Strategy (LMS), and hazard mitigation initiatives in general, into the local planning process. Each Element of the Plan was evaluated to establish the extent to which the principles from the LMS were incorporated into the objectives and policies of the existing Comprehensive Plan.

Approach

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

Summary of Findings

The highest risk hazards for Charlotte County as identified in the County's Local Mitigation Strategy (LMS) are hurricanes and tropical storms, thunderstorms, flooding, tornadoes, and wildfires. Sinkhole hazard was not discussed in the hazards analysis in the latest version of the Charlotte County LMS. Therefore, sinkhole hazard is not addressed in this summary. The Comprehensive Plan addresses emergency management and hazard mitigation issues extensively. The Community Facilities and Services Element of the Plan mandates that Charlotte County develop a mitigation plan to reduce the effects of natural hazards. Policy 1.17.5 of the Natural Resources and Coastal Element states that the Charlotte County Comprehensive Emergency Management Plan (CEMP) will be used as the operational guide in preparation of, response to and recovery from a tropical storm, hurricane or other emergency. In addition, Policy 1.17.6 refers to the implementation of the Post Disaster Redevelopment Plan (PDRP) for guidance in mitigation, recovery and redevelopment.

Charlotte County is a coastal county, so policies are geared toward coastal resource protection and protection of vulnerable populations and properties. The protection of the coastline is incentivised through a mixture of development controls and opportunities for density bonuses on non-environmentally sensitive lands. For example, Future Land Use Element policies indicate that through a "Transfer of Development Rights (TDRs)", densities bonuses may be allocated to developments in which densities are transferred from the Coastal High Hazard Area(CHHA), wetland jurisdictional areas, and FEMA FIRM map 'A' and 'V' zones.

Flooding

Flooding is addressed from two vantage points, the protection and restoration of natural resources, and protection of vulnerable populations and properties from the flood hazard. Numerous policies address both drainage and stormwater issues. Policies also address the need for utilities and transportation routes, to be designed with resistance to flooding and surge. These policies focus primarily on the maintenance and upgrading of evacuation routes, in particular. Policies state that upon completion of a Master Stormwater Management Plan, Charlotte County will formally adopt and include appropriate implementation projects within the five-year schedule of capital improvements which direct the short-term implementation of stormwater management programs.

To increase protection of property and encourage the purchase of flood insurance by property owners, policies state that Charlotte County will participate in the National Flood Insurance Program (NFIP) and the NFIP's Community Rating System. All new residential or commercial development located within the FEMA 100-year flood hazard zone is required to be constructed at or above the base flood elevation, as established by the FEMA Flood Insurance Rate Maps. Policies also require that new development in 'A' and 'V' zones be elevated above base flood elevation and constructed to withstand damage from tidal actions. However, if a freeboard requirement exists, the height should be included. For properties within the 100-year floodplain, Transfer of Development Rights (TDR) may be granted for property owners electing not to develop within the 100-year floodplain. Lands from which a TDR has been granted must remain in perpetuity as undisturbed or unaltered open space.

Storm Surge and Evacuation

Objective 1.17 of the Natural Resources and Coastal Element states that Charlotte County's hurricane evacuation system must be improved to ensure that evacuation times will be maintained, and reduced as of the year 2000. The County uses several land use tools, including density limitations, transportation improvements, and CHHA restrictions to strive for this goal.

The Future Land Use Element contains a policy which defines densities specific to coastal areas and to Tropical Storm and Category 1 Hurricane Vulnerability Zones. In addition, Policy 2.6.10 of this Element states that "New communities" and "Rural communities", specific land use designations, shall not be permitted in the CHHA. The Bridgeless Barrier Island Overlay District (BBIOD) consists of Charlotte County's bridgeless barrier island chain and includes, Don Pedro Island, Knight Island, Thornton Key, and Little Gasparilla Island. This overlay district reduces the intensity of residential development on the islands to reduce the potential for devastation from hurricanes.

Many Plan policies dealing with evacuation, center around transportation issues pertaining to the evacuation network, as well as evacuation times. The Plan requires that the County conduct regular reviews of the impacts of new development on evacuation times. The annual Capital Improvements Element evaluation and update, and the quarterly Concurrency Management Report are tools designated by the Plan for this purpose. According to the Plan, Charlotte County will prepare and adopt an annual Capital Improvements Program to guide the timing, location, and development intensity of capital expenditures.

The Comprehensive Plan heavily emphasizes the intergovernmental coordination component of hazard mitigation. Policies dictate that through its Emergency Management Operations Department, MPO, Community Development Department, and Public Works Division, Charlotte County will continue to work with Sarasota to establish effective hurricane evacuation routes off of the Cape Haze peninsula. Policies also require that the maintenance and improvement of specific roads be consistent with their use as hurricane evacuation routes, as feasible.

As required by Chapter 9J-5, the use of public funds to subsidize development in high hazard coastal areas will be held to an absolute minimum to safeguard the public health, safety, and welfare. The construction of public facilities in the CHHA is limited. Public facilities are required to incorporate more than one floor level to provide surge flood evacuation protection, when practicable.

The Housing Element includes a policy stating that as part of the review of the Land Development Regulations, the County will consider the potential damage of catastrophic hurricanes and tornadoes, based upon Florida's 1992 experiences with Hurricane "Andrew" and with other disastrous storm events. The policy further states that the Board of County Commissioners will revise the Land Development Regulations, if appropriate, to protect the safety of the residents in low income housing areas.

Sheltering

Similar to most of Florida's coastal counties, Charlotte County currently has a significant shelter deficit. According to Florida's Statewide Emergency Shelter Plan, Charlotte County has an existing shelter capacity of 1,500 people. The 2004 shelter demand for a Category 4 or Category 5 hurricane is 29,649 people, leaving an existing shelter deficit of 28,149. In 2009, the projected shelter demand is 33,336, leaving an anticipated shelter deficit of 31,836.

The opportunity exists to construct new facilities to standards that will allow them to serve as shelters, and to construct future public facilities outside of floodplain areas. The Community Facilities and Services Element states that Charlotte County will explore opportunities for developing sheltering possibilities, especially for shelters in the category 4 or 5 hurricane storm

surge zone. The Plan also states that the use of new school facilities as hurricane evacuation shelters should be pursued in a manner consistent with the provisions of the county and regional shelter location and design policies.

Wildfire

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

5. Data Sources

County Overview:

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

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

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

Hazard Vulnerability:

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

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

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

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

GIS Data:

Flood Zone GIS Data

Source: FEMA FIRM GIS coverages (1996), supplied by University of Florida GeoPlan Center Florida Geographic Data Library Version 3.0.

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

Hurricane Evacuation Zone/Coastal High-Hazard Area (Category 1 Hurricane Evacuation Zone) GIS Data

Source: GIS coverage of hurricane zones compiled by Florida Department of Community Affairs/Division of Emergency Management (2003), from GIS data collected from county emergency management agencies in the State of Florida.

- Areas shown/analyzed are those areas in the above-referenced GIS coverage where the value in the field "Evacuation Category" is equal to "Zone TS", "Zone A/1", "Zone B/2", or "Zone C/3", in the maps/tables for the Hurricane Vulnerability Zone.
- Areas shown/analyzed are those areas in the above-referenced GIS coverage where the value in the field "Evacuation Category" is equal to "Zone TS", "Zone A/1" in the maps/tables for the Coastal Hazards Zone.

Hurricane Storm Surge Zone GIS Data

Source: GIS coverage of storm surge zones compiled by Florida Department of Community Affairs/Division of Emergency Management (2004), from various storm surge studies performed by regional planning councils and the U.S. Army Corps of Engineers.

- Areas shown/analyzed are those areas in the above-referenced GIS coverage where the value in the field "Category" is equal to "Tropical Storm" or "Category 1".

Sinkhole Hazard GIS Data

Source: Kinetic Analysis Corporation web site (2005),
at: http://lmsmaps.methaz.org/lmsmaps/final_cty/

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

Wildfire Susceptibility GIS Data

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

- Areas shown as "wildfire susceptible areas" and that were analyzed are those areas with a "Wildfire Susceptibility Index" value of greater than 10,000 (in north Florida counties) or greater than 0.1 (in south Florida counties)*, based on the FRAS model, and that are also within areas of forest or shrub vegetation or "low impact urban" land cover, based on the Florida Fish and Wildlife Conservation Commission "Florida Vegetation and Land Cover - 2003" GIS data.

Municipal Boundaries

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

**ATTACHMENT A
Maps of the Existing and Future Land Uses within Coastal Hazards Zone**

ATTACHMENT B
Maps of the Existing and Future Land Uses within Hurricane Vulnerability Zone

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

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

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

ATTACHMENT F
Local Mitigation Strategy Goals and Objectives
Related to Comprehensive Planning

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

Goal 1: Charlotte County shall reduce the vulnerability and exposure of the public by protecting lives and property from the losses of natural disasters.

Objective 1.1: Maximize the protection of the public's health, safety, and welfare as they are related to natural disasters.

Objective 1.2: Reduce the loss of personal and public property due to natural disasters.

Objective 1.3: Require the protection of natural resources (such as environmentally sensitive lands) in order to maximize their mitigative benefits and to safeguard them from damage caused by natural disasters.

Objective 1.4: Ensure that Charlotte County's code and ordinances are sufficient to protect public safety and property.

Objective 1.5: Develop advance plans for the safe evacuation of coastal residents.

Objective 1.6: Protect coastal resources, marine resources, and dune systems from the adverse effects of development.

Objective 1.7: Ensure mitigation measures are effectively incorporated in the comprehensive system of coordinated planning, management, and land acquisition.

Objective 1.8: Encourage land and water uses that are compatible with the protection of sensitive coastal resources having value and benefits as mitigative measures.

Objective 1.9: Prohibit development and other activities, which disturb coastal dune systems, and ensure and promote the restoration of coastal dune systems that have been damaged.

Goal 2: In order to enhance hazard mitigation planning and subsequent mitigation actions, the Charlotte County Office of Emergency Management will take a proactive lead to ensure intro-governmental coordination within its own agencies, and intergovernmental coordination between other government agencies.

Objective 2.4: Encourage cooperation and participation between and among all Charlotte County departments in mitigation planning.

Objective 2.5: Ensure that the Charlotte County Hazard Mitigation Plan incorporates appropriate hazard mitigation measures as reflected in each agency's Emergency Support Function or Departmental Standard Operating Procedures.

Goal 3: Reduce the vulnerability of critical and public facilities from natural disasters.

Objective 3.1: Disaster-proof existing and proposed critical facilities, in regards to location and construction.

Objective 3.2: Develop and maintain energy preparedness plans that will be both practical and effective under circumstances of disrupted energy supplies.

Objective 3.3: Incorporate hazard mitigation measures in any rehabilitation or reuse of existing public facilities, structures, and buildings.

Goal 4: Strengthen plans for post-disaster, recovery, and mitigation.

Objective 4.1: Analyze, review and update Charlotte County post-disaster, recovery, and mitigation plans.

Goal 5: Improve coordination of emergency management information, through the media, to increase public awareness and participation in preparedness, response, mitigation, and recovery.

Objective 5.2: Provide educational programs and research to meet local, state, and regional planning, growth management, and hazard mitigation needs.

Goal 6: Charlotte County shall protect and acquire unique natural habitats and ecological systems (such as wetlands, hardwood hammocks, palm hammocks, and virgin longleaf pine forests) and restore degraded natural systems to a functional condition in order to maximize hazard mitigation values.

Objective 6.1: Conserve forests, wetlands, and coastal natural features to maintain their economic, aesthetic, and recreational values.

Objective 6.2: Acquire, retain, manage, and inventory public lands to provide conservation and related public benefits including hazard mitigation.

Objective 6.3: Promote the use of agricultural practices that are compatible with the protection of natural systems.

Objective 6.4: Encourage multiple use of forest resources, where appropriate, to provide for watershed protection and erosion control and maintenance of water quality.

Objective 6.5: Protect and restore the ecological functions of wetland systems to ensure their long-term environmental, economic, and recreational values, including hazard mitigation practices.

Objective 6.6: Develop an implement a comprehensive planning, management, and acquisition program to ensure the integrity of Charlotte County's waterways.

Objective 6.7: Emphasize the acquisition and maintenance of ecologically intact systems in all land and water planning, management, and regulation.

ATTACHMENT G
Charlotte County Comprehensive Plan Excerpts Related to Hazard Mitigation

FUTURE LAND USE ELEMENT

OBJECTIVE 1.6 (Future Land Use coordination): The location and intensity of development shall coincide with the availability of facilities and services and appropriate topography and soil conditions.

Policy 1.6.3: New development in 'A' and 'V' zones as defined by the Flood Insurance Rate Map shall be elevated above base flood elevation and constructed to withstand damage from tidal actions.

OBJECTIVE 2.2: Charlotte County will designate lands suitable for urban development at various densities on the Future Land Use Map series.

Policy 2.2.1: The following classifications shall be used to designate residential lands: Coastal Residential: These lands are designated for residential uses in coastal areas. Coastal Residential lands are located within the Tropical Storm and Category 1 Hurricane Vulnerability Zones. Coastal Residential lands may be developed from 1 dwelling unit per acre up to a density of three and one-half (3.5) dwelling units per acre. Residential development within environmentally sensitive lands, such as wetlands, may not exceed one (1) dwelling unit per forty (40) acres. Uses on lands designated as such include: single family residential dwelling units, and multi-family residential dwelling units, and recreational facilities.

OBJECTIVE 2.5 (Overlay Districts): Charlotte County will identify areas on the Future Land Use Map which require unique consideration for land density and development activities.

Policy 2.5.3: The Bridgeless Barrier Island Overlay District (BBIOD) consists of Charlotte County's bridgeless barrier island chain and includes, Don Pedro Island, Knight Island, Thornton Key, and Little Gasparilla Island. In order to reduce the potential for devastation resulting from involuntary natural disasters, this overlay district restricts the intensity of residential development. Residential densities within the district may not exceed one (1) dwelling unit per gross acre. All residential lots created within the Bridgeless Barrier Island Overlay District subsequent to February 1, 1992 shall not exceed one (1) dwelling unit per gross acre requirement. However, all residential lots created consistent with the Charlotte County Subdivision Regulations shall have an allowable density of one (1) dwelling unit per subdivided lot.

OBJECTIVE 2.6 (New Communities): Conversion of rural lands within the three urbanized areas of West, Mid, and South Counties to more intensive uses may occur through the establishment of self-supporting "New Communities."

Policy 2.6.6: New Community proposals must include transfers of development rights from targeted platted lands or environmentally sensitive areas identified in a resource management plan as a component of a master development plan. The residential development potential of a New Community shall be achieved through transfer of development rights. Lands from which transfer of development rights occur shall be encumbered through a recorded easement or transfer of deed to Charlotte County, state government, or federal government. Transferred densities shall be at least a one-for-one transfer. In addition, the following density bonuses shall apply: a. an increase by 300% of the sending zone's underlying density for development rights transferred from 'A' and 'V' zones as defined by the Flood Insurance Rate Map (FIRM); b. an increase by 200% of the sending zone's underlying density for development rights transferred from the Coastal High Hazard Area; c. an increase by 150% of the sending zone's underlying density for development rights transferred from a jurisdictional wetland area to be preserved consistent with Policy 1.11.7 of the Natural Resources and Coastal Planning Element; d. an

increase by 150% of the sending zone's underlying density for development rights transferred from agricultural areas which will be maintained in an agricultural use.

Policy 2.6.10: New Communities shall not be permitted within the Coastal High Hazard Area.

Policy 2.7.9: Rural Community proposals will include transfers of development rights from targeted platted lands or environmentally sensitive areas identified in a resource management plan as a component of a master development plan. The residential development potential of a Rural Community shall be achieved through transfer of development rights. Lands from which transfer of development rights occur shall be encumbered through a recorded easement or transfer of deed to Charlotte County, state government, or federal government. Transferred densities shall be at least a one-for-one transfer. In addition, the following density bonuses shall apply: a. an increase by 300% of the sending zone's underlying density for development rights transferred from 'A' and 'V' zones as defined by the Flood Insurance Rate Map (FIRM); b. an increase by 200% of the sending zone's underlying density for development rights transferred from the Coastal High Hazard Area; c. an increase by 150% of the sending zone's underlying density for development rights transferred from a jurisdictional wetland area to be preserved consistent with Policy 1.11.7 of the Natural Resources and Coastal Planning Element; d. an increase by 150% of the sending zone's underlying density for development rights transferred from agricultural areas which will be maintained in an agricultural use.

Policy 2.7.11: Rural Communities shall not be permitted within the Coastal High Hazard Area.

OBJECTIVE 5.1 (Hurricane Protection): Through the planning timeframe of 2010, Charlotte County will protect existing and future populations from the loss of life and property caused by catastrophic hurricanes by limiting densities of new plats to a maximum of 3.5 units per gross acre within the Coastal High Hazard Area.

Policy 5.1.1: To prevent the intense development of lands in unincorporated Charlotte County within the Category I Hurricane Vulnerability Zone as illustrated on the most recently updated SLOSH map issued by the Southwest Florida Regional Planning Council, population densities of development platted subsequent to April 19, 1993 will not exceed 3.5 units per gross acre. In accordance with the provisions of Ordinance #90-58, population densities on the bridgeless barrier islands are reduced to one unit per gross acre; areas on the bridgeless barrier islands platted prior to the date of adoption of Ordinance #90-58 shall have an allowable density of one unit per subdivided lot.

Policy 5.1.2: In addition to the density reductions prescribed in Policy 5.1.1 above, Charlotte County will allow the voluntary transfer of densities out of the Category I Hurricane Vulnerability Zone consistent with the provisions of the Transfer of Development Rights (TDR) Ordinance.

Policy 5.1.3: Charlotte County will conduct regular reviews of the impact of new developments on hurricane evacuation times. The annual Capital Improvement Element evaluation and update process and quarterly Concurrency Management Report are appropriate vehicles for this re-evaluation.

OBJECTIVE 5.2 (Public Facilities Locations): Through the planning timeframe of 2010, Charlotte County will locate public facilities in locales which are less susceptible to severe weather damage and not within the Coastal High Hazard Area unless such location is the only one which serves a particular structure's intended public purpose.

Policy 5.2.1: In order to reduce the potential for property damage, Charlotte County will not construct government buildings within the Coastal High Hazard Area unless such location is the only one which serves that particular structure's intended public purpose.

Policy 5.2.2: Public facilities, when practicable, will incorporate more than one floor level in order to provide storm surge flood evacuation protection. Such public facilities include office buildings, and storm shelters.

TRANSPORTATION ELEMENT

OBJECTIVE 10.1: Criteria for Priorities. Select projects to be funded under the capital improvements program on criteria so that priorities are funded.

Policy 10.1.1: Criteria to rank new projects for funding under Federal, State and local capital improvements programs in Charlotte County include: Project preserves/improves highway pavement; Project preserves/improves bridges; Project improves highway safety; Project improves hurricane evacuation and recovery; and Project supports urban service strategies.

OBJECTIVE 11.1: Hurricane Evacuation Corridors. Provide improvements to hurricane evacuation corridors in each geographical area of the county.

Policy 11.1.1: Through its Emergency Management Operations Department, MPO, Community Development Department, and Public Works Division, Charlotte County will continue to work with Sarasota to establish effective hurricane evacuation routes off of the Cape Haze peninsula.

Policy 11.1.2: Maintain King's Highway, and CR 74 as evacuation routes. Improve these roads consistently with their use as hurricane evacuation, as feasible. Cooperate with the Florida Department of Transportation to improve US 17 for evacuation purposes. Cooperate with Desoto County to improve Kings Highway for evacuation purposes, as opportunities arise.

Policy 11.1.3: Base consideration of hurricane evacuation corridor improvements on the following criteria:

- The roadway heads inland and away from the coast
- The roadway rises out of areas affected by storm surge
- Water crossings are minimized
- The roadway provides a direct route to high ground and shelter
- The roadway is not affected by rainfall flooding
- Constrained roadways are improved.

NATURAL RESOURCES AND COASTAL ELEMENT

OBJECTIVE 1.13: Charlotte County shall protect its beach and dune systems, including native dune vegetation, from human induced erosion.

Policy 1.13.1: Charlotte County shall utilize State approved dune walk-over structures at all County-owned and maintained beaches to prevent impacts to native vegetation and dune systems.

Policy 1.13.2: The County shall require the use of dune walk-over structures for all beachfront development permitted subsequent to the date of adoption of this plan, and will encourage the use of such structures for development permitted prior to that date.

Policy 1.13.3: All construction activity is prohibited seaward of the Coastal Construction Control Line (CCCL) except as permitted by the FDEP under Beach and Shore Preservation, FS 161. Charlotte County shall review proposed CCCL construction permit applications for compliance with the Comprehensive Plan, Article II, Section 3-9-70, Special Zoning Regulations (1989), the Coastal Construction Code, Article VIII, Section 3-2, County Code (1986) and Shoreline Protection, Article XIII, Section 3-5, County Code (1989). The county shall submit a letter of no objection and compliance with the county code for acceptable development proposals within the CCCL as required by state Permit Application Requirement Procedures, 62B-33.008, Sub 2(c),

FAC (1980). The county's Beaches and Shores Advisory Board, as established by Resolution 88-150 will review and provide recommendations to the Board of County Commissioners for projects which may impact the coastal zone.

Policy 1.13.4: Except in the case of emergency as provided in Chapter 161, FS, the construction of artificial shoreline hardening structures shall be prohibited. The emergency use of such structures constructed in compliance with Chapter 161, FS, is categorically consistent with the Comprehensive Plan.

Policy 1.13.5: Except for the minimal disturbance necessary to accomplish County and State approved beach restoration or renourishment activities, as well as the minimum disturbance associated with activities permitted pursuant to Policies 1.13.1, 1.13.2, and 1.13.3, above, the excavation or destructive alteration of beach and dune systems is prohibited.

Policy 1.13.6: Charlotte County shall require the use of indigenous plant species for public and private dune restoration or renourishment projects.

Policy 1.13.7: The operation of motor vehicles is prohibited on beaches and frontal dunes except in association with law enforcement activities, emergency medical services, public land management, or as necessitated by an approved restoration, renourishment, or emergency project.

Policy 1.13.8: Except for emergencies, all coastal construction projects, including beach restoration and renourishment projects, shall protect sea turtle nesting areas by limiting construction in dune and beach areas to non-nesting periods. In historic shore-bird nesting areas construction must begin prior to shorebird nesting. Establishment of marked protection zones around sea turtle and shorebird nest areas is required to ensure that impacts associated with construction activities landward of the dune and beach system are limited to the actual construction site.

Policy 1.13.9: Lots and parcels created subsequent to the date of adoption of this plan shall be of sufficient size and dimension to ensure a 50 foot buffer between any structures or improvements (except dune cross-overs) and the landward edge of the primary dune. This buffer will remain in its natural state except for the minimum disturbance necessary to accommodate dune crossover structures.

Policy 1.13.10: Charlotte County shall review and, where necessary, amend its Code of Laws and Ordinances to ensure compliance with these policies regarding beach and dune protection.

Policy 1.13.11: Recognizing that sand and coastal processes do not recognize political boundaries, Charlotte County will, within one year of the date of adoption of this plan, initiate discussions with the Southwest Florida Regional Planning Council, FDEP, USACOE, and coastal governmental bodies in the Southwest Florida region to determine the feasibility of undertaking a cooperative, regional sand source study and beach management program.

Policy 1.13.12: Charlotte County will work with its Beaches and Shores Advisory Committee and FDEP to identify areas along the County's coastal barriers which are experiencing severe beach erosion in order to prioritize sites for beach stabilization.

Policy 1.13.13: Charlotte County will evaluate alternative methods and technologies to traditional beach renourishment and stabilization practices.

Policy 1.13.14: Charlotte County will continue to promote the formation of special erosion control taxing units, and will research grants and other funding mechanisms, to provide funds for beach renourishment, restoration, and management projects.

OBJECTIVE 1.16: Charlotte County shall reduce the threat of loss of life and property to catastrophic hurricanes and locate new public facilities outside of the Coastal High Hazard Area except as necessary to ensure public health and safety.

Policy 1.16.1: The Coastal High Hazard Area includes all areas designated by the Southwest Florida Regional Planning Council as requiring evacuation in the event of a landfalling Category I hurricane.

Policy 1.16.2: Within the Coastal High Hazard Area, Charlotte County will prohibit new publicly-funded buildings, except for restrooms and other structures including, but not limited to: boat ramps, boat docks, picnic shelters, bridge tender's building, landscape or facility maintenance sheds, boat lock, and food or rental concession stand, along with the necessary water, sewer and road infrastructure which are appropriate and necessary for public use and recreation and cannot be located elsewhere. Public buildings and structures along with the necessary water, sewer and road infrastructure associated with essential life safety services, such as police/sheriff district stations, fire stations, or emergency medical service stations may be developed or redeveloped in Coastal High Hazard Area as needed to protect the public health, safety, and welfare. This policy shall not apply to buildings and structures proposed within developments of regional impact for which master development orders have been adopted pursuant to Chapter 380, Florida Statutes prior to the date of adoption of this policy.

Policy 1.16.3: Charlotte County will not approve Future Land Use Map Amendments, Rezonings, subdivisions, or Planned Developments (PDs) which will, upon development, cause increased traffic along evacuation routes which serve the site in violation of the concurrency requirements provided in Objective 14.3 and its implementing policies as stated in the Transportation Element.

Policy 1.16.4: The density of development platted subsequent to April 19, 1993 in unincorporated Charlotte County within the Category I Hurricane Vulnerability Zone as illustrated by the most recently updated SLOSH map issued by the Southwest Florida Regional Planning Council shall not exceed 3.5 units per gross acre.

Policy 1.16.5: In accordance with the provisions of Ordinance 90-58, population density on the bridgeless barrier islands is limited to one unit per gross acre; areas on the bridgeless barrier islands platted prior to the date of adoption of Ordinance 90-58 shall have an allowable density of one unit per platted lot.

Policy 1.16.6: Charlotte County will actively facilitate the removal of density from the Coastal High Hazard Area by plat vacation and other means.

Policy 1.16.7: Bridgeless barrier islands and areas within the Category I Hurricane Vulnerability Zone may be used as sending zones for transfers of development rights.

Policy 1.16.8: Charlotte County shall determine the cumulative impact of new development on hurricane evacuation times on annual basis and shall include appropriate funding within the five-year schedule of capital improvements to ensure that those improvements most needed to reduce evacuation times are provided.

Policy 1.16.9: To protect the public health, safety, and welfare and to mitigate property loss in the built environment, Charlotte County shall enforce: a. the most recent state adopted Standard Building Code which provides for wind resistant building construction, and b. the Federal Emergency Management Agency's Managing Floodplain Development through the National Flood Insurance Program, October 21-25, 1996, which address floodplain and coastal construction management.

Policy 1.16.10: To increase protection of property and encourage the purchase of flood insurance by property owners, Charlotte County shall continue to participate in the National Flood Insurance Program (NFIP) and the NFIP's Community Rating System.

Policy 1.16.11: Within one year of the adoption of this plan, Charlotte County will amend its Code of Laws and Ordinances to meet the requirements of the Robert T. Stafford Disaster Assistance and Relief Act, 42 USC, 5121, et seq, regarding emergency preparedness and assistance programs.

Objective 1.17: Charlotte County's hurricane evacuation system shall be improved to ensure that evacuation times will be maintained, and by the year 2000 will be reduced.

Policy 1.17.1: Through its Emergency Operations Department, Metropolitan Planning Organization, Community Development Department, and Public Works Division, Charlotte County shall continue to work with Sarasota County to establish effective evacuation routes off of the Cape Haze Peninsula.

Policy 1.17.2: Improvements to Charlotte County's primary hurricane evacuation routes shall be consistent with this function, and shall be maintained at elevations above the Category 3 or Category 4 Storm surge, as feasible and applicable, based on the Southwest Florida Regional Planning Council's SLOSH model.

Policy 1.17.3: Within one year of the date of adoption of this plan, Charlotte County shall develop an effective hurricane evacuation signage program.

Policy 1.17.4: Hurricane evacuation corridor improvements shall be based on the following criteria: a. The roadway heads inland and away from the coast. b. The roadway rises out of areas affected by storm surge. c. Water crossings are minimized. d. The roadway provides a direct route to high ground and shelter. e. The roadway is not subject to roadway flooding.

Policy 1.17.5: The Charlotte County Comprehensive Emergency Management Plan shall be used as the operational guide in preparation of, response to, and recovery from a tropical storm, hurricane or other emergency.

1) Management techniques which address immediate repair and cleanup which protects public health and safety:

- a. Charlotte County shall analyze each form of critical infrastructure and prioritize function based on risk and vulnerability. The County shall catalogue materials, parts, and supplies that can be accessed expeditiously and identify areas for stocking piling needed parts and supplies.
- b. Charlotte County shall develop design criteria for wind resistance and flood proofing protection based on each critical infrastructure system's assets determined by the analysis outlined in the preceding management technique. All new construction shall comply with the design criteria for wind resistance and flood proofing. Existing facilities shall be retrofitted according to priority and rank as determined by the previous management technique.
- c. Charlotte County shall coordinate the auxiliary power supply at all key utilities and facilities and promote incentives for utilities and facilities to implement the most cost-effective system possible to deal with future disasters.

2) Management techniques which address long-term repair and redevelopment:

- a. Charlotte County shall develop an ordinance which requires the preparation of a post-disaster redevelopment plan.
- b. Charlotte County shall identify and implement long-term cost effective mitigation measures, including flood proofing operating facilities to the 25 year event and eliminate flood water inflow and infiltration into sanitary sewer systems.
- c. Charlotte County shall enhance the provision of the local building code or floodplain management ordinance which requires that substantially damaged building (which are

- repairable) be brought into compliance with current code and ordinance requirements during the repair process.
- d. Charlotte County shall identify and implement technically feasible methods of retrofitting undamaged portions of (less than substantially) damaged buildings for compliance with current code requirements.
 - e. Charlotte County shall implement a program that offsets retrofit burdens. Financial assistance through such vehicles as loan supports, tax credits, and insurance incentives as well as public funding are possible financial components of a retrofit program.
 - f. Charlotte County shall develop and adopt a building code for all new structures which addresses the issues of roof, weather envelope, and window and roof failures. Specifically, address requirements and incentives for shutters, improved roof connections, and creation of a safe shelter space within the living areas of each residence.
 - g. Charlotte County shall adopt and implement wind and flood design, and siting requirements for mobile homes and pre-engineered housing.
 - h. Charlotte County shall adopt and implement local ordinances governing the installation of hazardous materials storage containers not currently regulated to minimize the impact of flood and fire hazards. This includes residential propane tanks.
 - i. Charlotte County implement a comprehensive effort to enforce adopted codes, to include the following:
 - (1) Mandatory certification program for inspectors and certification for building inspectors emphasizing wind-resistant construction.
 - (2) Amend all building codes to require the number of inspections necessary to ascertain that all critical load path members and connection comply with code requirements. These include, roof sheathing, framing anchors, tie downs, roof framing, wall framing, and wall sheathing.
 - j. When in need of additional building inspectors, Charlotte County shall use the Building Officials Association of Florida and establish mutual aid agreements for use of building inspectors from other cities and counties during reconstruction efforts.
 - k. Charlotte County shall strengthen the procedures and guidelines under which variances to building codes and zoning ordinances may be granted, to avoid compromising regulations designed to minimize losses of life and property.
- 3) Management techniques which address removal, relocation, or structural modification of damaged infrastructure:
- a. Charlotte County shall make all critical facilities disaster resistant by retrofitting or through relocation.
 - b. Charlotte County shall develop acquisition and relocation ordinances for storm damaged buildings located in high hazard areas which can be converted into open space or less vulnerable land uses.
 - c. Charlotte County shall identify parcels which are located in the Special High Flood Hazard Areas.
 - d. Charlotte County shall determine whether critically damaged key infrastructure and facilities should remain in place or be relocated.
 - e. Charlotte County shall note possible relocation sites for key infrastructure and facilities on the Future Land Use Map.
 - f. Charlotte County shall consider the structure of secure living quarters for skeleton crews at key work stations when the presence of operations is essential for operations of facilities.
 - g. Charlotte County shall investigate the use of solar energy and alternative sources of power to reduce dependence on vulnerable supplies for short or long-term operations.
- 4) Management techniques which address redevelopment in areas of repeated damage:
- a. Charlotte County shall prohibit development and other activities which disturb coastal dune systems, and ensure and promote the restoration of coastal dune systems that have been damaged.
 - b. Charlotte County shall continually generate new floodplain information and revise floodplain boundaries through land development.

- c. Charlotte County shall further coordinate with local and private floodplain studies for updating FIRMs.
 - d. Charlotte County shall adopt a cumulative substantial damage and improvement limit for all structures in the special flood hazard area.
- 5) Management techniques which address the incorporation of recommendations of interagency hazard mitigation reports:
- a. In order to enhance hazard mitigation planning and subsequent mitigation actions, the Charlotte County Office of Emergency Management will take a proactive lead to ensure coordination between other governmental agencies.
 - b. Charlotte County shall pre-establish and update a network of state and local contacts to coordinate Charlotte County needs.
 - c. Charlotte County shall establish and protect the essential flow of information before, during, and after a disaster.
 - d. Charlotte County shall ensure that the Charlotte County Hazard Mitigation Plan incorporates appropriate hazard mitigation measures as reflected in each agency's Emergency Support Function, interagency hazard mitigation report, or Departmental Standard Operating Procedures.

Policy 1.17.6: Charlotte County shall implement its Post Disaster Redevelopment Plan which seeks to reduce potential damage from storm events through mitigation, and to guide recovery and redevelopment activities from natural and man-induced disasters.

OBJECTIVE 1.18: Charlotte County shall maintain and increase shelter space available for general evacuees and special needs populations.

Policy 1.18.1: Multi-level structures located within the Category 3 or higher hurricane evacuation zones shall be assessed for use as vertical shelters.

Policy 1.18.2: All new publicly funded buildings in Charlotte County shall be designed to serve as evacuation shelters. Law enforcement, fire rescue, and emergency medical buildings shall be designed to function as emergency shelters for their mission personnel and equipped with a flood proof emergency power supply.

Policy 1.18.3: Charlotte County will encourage the construction of nursing homes, adult congregate living facilities, and hospitals outside of the Category II Hurricane Vulnerability Zone.

Policy 1.18.4: Within one year from the date of adoption of this plan, Charlotte County shall amend its Land Development Regulations to require all newly constructed nursing homes, adult congregate living facilities, and hospitals to include shuttering or the use of shatterproof glass, as well as independent emergency power supplies located above base flood elevation or otherwise protected from flooding, as part of such facilities' design and construction.

Policy 1.18.5: Charlotte County will work with the American Red Cross to identify potential sites for consideration as designated hurricane shelters.

Policy 1.18.6: Within one year from the date of adoption of this plan, Charlotte County will initiate discussions with the Charlotte County School Board to determine the feasibility of incorporating hurricane shelter capacity as a function of any form of development of the 67 acre Bachman Tract, and to consider hurricane shelter needs in the siting and design of school facilities in general.

OBJECTIVE 1.19 (Limitation of Expenditures in CHHA): Charlotte County shall limit additional public investment in the Coastal High Hazard Areas except as necessary to ensure public health or safety.

Policy 1.19.1: Charlotte County shall prohibit the construction or reconstruction of County funded facilities or infrastructure in the Coastal High Hazard Area except for recreation facilities and those necessary to ensure public health and safety.

Policy 1.19.2: Charlotte County may use the power of eminent domain and regulatory authority to relocate threatened or damaged public structures and infrastructure landward of the Coastal High Hazard Area when appropriate.

OBJECTIVE 1.20 (Directing populations away from the CHHA): Charlotte County shall direct concentrations of population away from Coastal High Hazard Areas.

Policy 1.20.1: Charlotte County shall prohibit any new mobile home zoning on the Barrier Islands or within the Coastal High Hazard Areas.

Policy 1.20.2: Charlotte County will advocate hotel/motel development in Storm Category Zones 3, 4, or 5 rather than Storm Category Zones 1 or 2.

Policy 1.20.3: Charlotte County will evaluate development orders for their impacts on traffic circulation, evacuation routes, on-site hurricane shelter provisions, and proximity to off-site shelter facilities within the Storm Category Zones of 1, 2, and 3.

Policy 1.20.4: Charlotte County will limit maximum residential development in the Coastal High Hazard Areas to those densities depicted on the Future Land Use Map as part of this Comprehensive Plan.

Policy 1.20.5: Charlotte County will evaluate the costs of acquisition of privately-owned, developed properties—for which the County provides infrastructure—that have been severely or repetitively damaged by tropical storms, hurricanes, floods, or other natural disasters. The acquisition cost shall be compared against the costs associated with rebuilding the required infrastructure for that property or the rebuilding of the property itself. This will be done in order to determine the most cost-effective options for addressing loss, mitigation, or prevention.

Policy 1.20.6: Any structure that does not meet the flood mitigation standards and current building codes must be rebuilt to the current standards and code should they sustain substantial damage—damage which equals or exceeds 50 percent of the market value of the structure before the damage—after a natural or man-made disaster. An existing structure is considered to be substantially damaged if damage from any origin is sustained and the cost of restoring the structure to its pre-damaged condition is equal to or exceeds 50 percent of the market value of the structure before it was damaged.

OBJECTIVE 1.21: Within one year from the date of adoption of this plan, Charlotte County shall develop and adopt a Post Disaster Redevelopment Plan which shall consider the following:

- a. land uses and public facilities in the Coastal Zone Area;
- b. areas of known high-hazard;
- c. the effects of hurricanes on the dynamics of coastal areas;
- d. the direct and indirect costs of a major storm disaster.

Policy 1.21.1: Upon adoption of the Post Disaster Redevelopment Plan, the Plan shall be incorporated into and be made part of, the Comprehensive Plan.

Policy 1.21.2: The Post Disaster Redevelopment Plan shall contain an estimate of the potential damage done to property and what debris removal might cost in order to determine eligibility for State and Federal assistance. The plan shall also contain provisions for a thorough determination of damage assessment in dollar value, and of the economic and social effects of that damage upon the county immediately after the occurrence of a disaster. In regards to the assessment of damages, the plan shall also contain provisions for Charlotte County to coordinate with public and

private agencies, and to establish County Damage Assessment Teams as outlined in the Charlotte County Recovery and Mitigation Plan.

Policy 1.21.3: The Post Disaster Redevelopment Plan shall outline how emergency work (which includes efforts to save lives, protect property and maintain operation of essential facilities until permanent restoration can be made) will be conducted. The emergency work provisions shall include plans to repair and restore damaged water and sewer treatment facilities immediately after the storm event in order to function consistently within health and environmental plans and shall also evaluate emergency sewer disposal procedures.

Policy 1.21.4: The Post Disaster Redevelopment Plan shall outline how permanent work (which involves actions necessary to repair, restore, reconstruct, or replace public and certain private non-profit facilities damaged or destroyed by the disaster) will be conducted, and will include provisions for the following:

- a. Determination of whether critically damaged key infrastructure and facilities should remain in place or be relocated.
- b. Consideration of acquisition and relocation ordinances for damaged buildings in high hazard areas, and when appropriate, relocation of damaged public structures and infrastructure landward of the Coastal High Hazard Area with the power of eminent domain and regulatory authority.
- c. Evaluation of the costs of acquisition of privately-owned developed properties—for which the County provides infrastructure—that have been severely or repetitively damaged by tropical storms, hurricanes, floods, or other natural disasters against the costs associated with rebuilding in order to determine the most cost-effective options for addressing loss, mitigation, or prevention.
- d. Compliance with current code and ordinance requirements during the repair process of substantially damaged, but repairable buildings.

OBJECTIVE 1.22: To protect and preserve the function and value of marine and freshwater natural shoreline ecosystems. These systems serve a variety of functions including, but not limited to, wildlife habitat, flood control and erosion control.

Policy 1.22.1: Charlotte County shall protect natural estuarine and freshwater shorelines in order to protect the function of the estuary, enhance water quality, and preserve shoreline wetlands.

Policy 1.22.2: Charlotte County shall maintain the functional integrity of natural estuarine and freshwater shorelines on newly acquired public lands by removing exotic and nuisance vegetation from the shoreline.

PUBLIC FACILITIES ELEMENT

OBJECTIVE 1.1: Charlotte County will develop and implement a Master Stormwater Management Plan (MSMP).

Policy 1.1.1: By, December 31, 1998, Charlotte County will develop a Master Stormwater Management Plan identifying drainage basins and inventorying both the location and condition of existing stormwater infrastructure and identify areas where stormwater infrastructure deficiencies exist. The Master Stormwater Management Plan will contain maintenance schedules and implementation strategies for the construction of new stormwater management facilities and the upgrading of deficient ones.

Policy 1.1.2: By December 31, 1998, Charlotte County will begin to implement the Master Stormwater Management Plan.

Policy 1.1.3: The Charlotte County Public Works Division will develop procedures, for reviewing development orders and/or permits relative to stormwater capacity and quality, to assure consistency with the Master Stormwater Management Plan and its associated drainage basin management plan.

Policy 1.1.4: The maintenance of existing stormwater facilities and the construction of new ones will be implemented in accordance with the following priorities:

- (1) Reduction of building structure flooding;
- (2) Reduction of flooding of highways;
- (3) Reduction of other types of flooding.

The priorities shall also reflect the following Urban Service Area strategy, in descending priority:

- (1) First priority - Urban Infill Areas;
- (2) Second priority - Suburban Areas; and
- (3) Rural Service Areas.

OBJECTIVE 1.2: Stormwater runoff will be managed to minimize degradation of water quality.

Policy 1.2.1: Charlotte County and the applicable water management district will apply the stormwater management plans to new developments in the county. The appropriate water management district will inspect new facilities prior to the transfer of a permit to the Operation and Maintenance Phase as provided by law (Florida Administrative Code 62-25).

Policy 1.2.2: Charlotte County will be responsible for construction, inspection, and maintenance of stormwater management facilities which are located on County owned land. Charlotte County will maintain stormwater management facilities constructed by others, when they are built, operational dedicated, and accepted by Charlotte County.

Policy 1.2.3: Land Development Regulations governing drainage will require the following:

- a. All new development meet or exceed the policies and regulations of the applicable water management district (*Florida Administrative Code 62-25*);
- b. The engineering, design, and construction standards for on-site stormwater management systems are reviewed by Land Development in the Building Permit Review;
- c. Appropriate devices, whether temporary or permanent, will be in place on a site to control erosion and insure stormwater runoff quality is maintained. All devices will be installed prior to the commencement of any development activity. Disturbed areas of the site will be revegetated and stabilized as soon as possible. Stormwater management facilities will be operated and maintained by the current owner of the property;
- d. Periodic inspections and maintenance of on-site Stormwater Management systems is required as a condition of Southwest Florida Water Management District (SWFWMD) system permit issuance;
- e. A Professional Engineer will certify that the stormwater management systems were built in substantial conformance to plans approved by the appropriate water management district and Charlotte County before issuance of a certificate of occupancy; and
- f. Stormwater runoff is treated as required by State and Federal regulations (*Florida Administrative Code 62-25: Clean Water Act, 1972 and those appropriate re-authorizations of the Act*).

Policy 1.2.6: The post-development runoff rate of an individual site or a new subdivision (in its entirety) will not exceed the pre-development runoff rate for all new development except as exempted by Policy 1.3.2 (d), or unless applicable County and/or water management district permit(s) issued in accordance with Charlotte County Code #v 3-5-111 and FAC 62-25 provide otherwise.

Policy 1.2.7: Stormwater facilities constructed for new development and the upgrading of existing infrastructure will use both structural and non-structural Best Management Practices

(BMPs)(Handbook, Urban Runoff Pollution Prevention and Control Planning. EPA/625/R-93/004, September 1993).

Policy 1.2.8: Charlotte County will determine areas which need to be acquired in order to provide adequate retention/detention capacity within drainage basins.

Policy 1.2.9: Stormwater management facilities and conveyances constructed in Charlotte County shall have easements to enable maintenance around culverts, Storm drains, and other enclosed conduit drainage systems.

Policy 1.2.10: Charlotte County will discourage the use of closed stormwater conveyance systems which will reduce the infiltration capacity of the soils and treatment characteristics of an open swale conveyance system.

Policy 1.3.2: Charlotte County adopts the following level of service standards for stormwater management facilities:

- a. New arterial and collector roadways will be designed and constructed to enable not less than one lane of traffic in each direction above the design high water elevation resulting from a 25-year frequency, 24-hour duration rainfall event distributed in accordance with methodologies approved by the appropriate water management district;
- b. Stormwater management facilities for structures in all new subdivisions will manage stormwater resulting from a 25-year frequency, 24-hour rainfall event distributed in accordance with methodologies approved by the appropriate water management district; by either providing individual on-site facilities or a central facility(s).
- c. New parking facilities will be designed and constructed with a maximum temporary detention depth of nine (9) inches resulting from a 5-year frequency, 24-hour duration rainfall event distributed in accordance with methodologies approved by the appropriate water management district;
- d. All new development on existing platted lots (except single-family, duplex, and tri-plex dwelling units within Charlotte County) is required to provide on-site stormwater management for runoff resulting from a 25-year, 24-hour rainfall event distributed in accordance with methodologies approved by the appropriate water management district;
- e. New local residential streets will be designed and constructed with the pavement centerline at or above the design high water elevation resulting from a 5-year, 24-hour rainfall event distributed in accordance with methodologies approved by the appropriate water management district.

Policy 1.3.3: All improvements for the replacement, expansion, or increase in capacity of stormwater management facilities will meet or exceed the level of service standards described in Policy 1.3.2.

Policy 1.3.4: Charlotte County adopts the water quality standards of Chapter 62- 25, Florida Administrative Code. Pollution abatement shall be accomplished by requiring stormwater management systems in accordance with the requirements of that chapter.

Policy 1.3.5: Relatively unaltered drainage features will be protected from disruption of natural hydroperiods, flows and water quality. Natural hydroperiods, flows and water quality will be protected from construction allowed in relatively unaltered drainage features.

OBJECTIVE 1.5: Charlotte County will maintain its certification under the Community Rating System (CRS) administered by the Federal Emergency Management Agency (FEMA).

Policy 1.5.1: Charlotte County will continue to implement stormwater management activities in order to be rated by the Community Rating System (Federal Emergency Management Agency, National Flood Insurance Program Community Rating System Coordinators Manual, July 1996, Government Printing Office #FIA-15).

OBJECTIVE 1.6: Charlotte County will work to fund and implement stormwater management programs to achieve the objectives set forth herein.

Policy 1.6.1: Charlotte County will employ a system of Municipal Services Benefit Units (MSBUs), stormwater utility, or other funding mechanism for stormwater management to fund the construction and maintenance of stormwater management infrastructure and associated lands.

Policy 1.6.2: The funding mechanism for property located within Charlotte County may be based on the Equivalent Residential Unit (ERU) or similar measure for all property subject to the Stormwater Management Program.

Policy 1.6.3: Charlotte County will evaluate the drainage benefit districts for the purpose of funding the acquisition of required drainage easements and bonds for required stormwater management improvements within each basin.

Policy 1.6.4: Upon completion of the Master Stormwater Management Plan, Charlotte County will formally adopt and include appropriate implementation projects within the five-year schedule of capital improvements which direct the short-term implementation of stormwater management programs.

Policy 1.6.5: In addition to the priorities set forth herein, the Capital Improvements Coordinating Committees will evaluate and rank proposed stormwater management Capital improvements projects consisting of the following priority level guidelines (Level One priority represents the most important):

- Level One - the project: a. protects the public's health and safety from flooding; b. fulfills a legal commitment (such as required by the National Pollution Discharge Elimination System) to provide facilities and services; or c. preserves or achieves the full use of existing facilities. d. secures hurricane evacuation routes; and e. those categories listed in Policy 1.3.2.
- Level Two - the project: a. increases the efficient use of existing facilities; or b. prevents or reduces the cost of future stormwater management improvements.
- Level Three - the project: a. represents a logical extension of facilities or services within a designated service area; or b. results from a new development activity.

OBJECTIVE 1.7: Charlotte County will manage development within the Federal Emergency Management Agency (FEMA) 100-year floodplain.

Policy 1.7.1: For properties within the 100-year floodplain, Transfer of Development Rights (TDR) shall be granted for property owners electing not to develop within the 100-year floodplain. Lands from which a TDR has been granted must remain in perpetuity as undisturbed or unaltered open space.

Policy 1.7.2: All new residential or commercial development located within the FEMA 100-year flood hazard zone will be constructed at or above the base flood elevation, as established by the FEMA Flood Insurance Rate Maps.

Policy 1.7.3: All new development located within the 100-year floodplain should be in good standing with FEMA.

HOUSING ELEMENT

OBJECTIVE 2.1: Charlotte County will facilitate its public/private partnership with the Affordable Housing Partnership and other private and nonprofit programs to increase the supply of housing for very-low, low, and moderate-income households appropriately distributed throughout the community. This objective is measured by the number of mortgages, loans, new and rehabilitated homes made available for very-low, low, and moderate-income households.

Policy 2.1.6: As a part of the review of the Land Development Regulations, the County will consider the potential damage of catastrophic hurricanes and tornadoes, based upon Florida's 1992 experiences with Hurricane "Andrew" and with other disastrous storm events. The Board of County Commissioners will revise the Land Development Regulations, if appropriate, to protect the safety of the residents.

INTERGOVERNMENTAL COORDINATION ELEMENT

OBJECTIVE 1.1: Charlotte County will coordinate the implementation of the Comprehensive Plan as it relates to Charlotte County with the City of Punta Gorda, Charlotte County Public Schools, the Charlotte County-Punta Gorda MPO, and other units of local government - such as independent districts, the comprehensive plans of adjacent municipalities and counties, and privately owned utilities serving Charlotte County.

Policy 1.1.2: Charlotte County will maintain or increase the current communication efforts which are made in order to insure consistency between new school construction and related public facilities, as well as to coordinate land use planning with school siting:

- c. Insure consistency between the Natural Resources and Coastal Planning Element of this plan, particularly the disaster mitigation component, and school location and design. The use of new school facilities as hurricane evacuation shelters should be pursued in a manner that is consistent with the provisions of the county and regional shelter location and design policies.

CAPITAL IMPROVEMENTS ELEMENT

OBJECTIVE 1.1: Charlotte County will maintain a Concurrency Management System in order to manage growth and development by requiring that adopted level of service standards be maintained by public or private investment.

Policy 1.1.5: Charlotte County adopts the following level of service standards for the Infrastructure Element: Drainage:

- a. New arterial and collector roadways will be designed and constructed to enable not less than one lane of traffic in each direction above the design high water elevation resulting from a 25-year frequency, 24-hour duration rainfall event distributed in accordance with methodologies approved by the appropriate water management district.
- b. Stormwater management facilities for structures in all new subdivisions will manage stormwater resulting from a 25-year frequency, 24-hour rainfall event distributed in accordance with methodologies approved by the appropriate water management district; by either providing individual on-site facilities or a central facility(s).
- c. New parking facilities will be designed and constructed with a maximum temporary detention depth of nine (9) inches resulting from a 5-year frequency, 24-hour duration rainfall event distributed in accordance with methodologies approved by the appropriate water management district.
- d. All new development on existing platted lots (except single-family, duplex, and tri-plex dwelling units within Charlotte County) is required to provide on-site stormwater management for runoff resulting from a 25-year, 24-hour rainfall event distributed in accordance with methodologies approved by the appropriate water management district.
- e. New local residential streets will be designed and constructed with the pavement centerline at or above the design high water elevation resulting from a 5-year, 24-hour rainfall event distributed in accordance with methodologies approved by the appropriate water management district.

OBJECTIVE 1.3: Charlotte County will prioritize available fiscal resources to effect levels of service standards and land use decisions as it adopts each annual update to the Five-Year Capital Improvements Program. The County will use this program to detail the projects which fund, construct, and acquire capital facilities needed to prevent deficiencies, to accommodate

future growth, to correct existing deficiencies, and to repair or replace obsolete or worn-out facilities.

Policy 1.3.1: Charlotte County will prepare and adopt an annual Capital Improvements Program to guide the timing, location, and development intensity of capital expenditures. As required by Chapter 9J-5, the use of public funds to subsidize development in high hazard coastal areas will be held to an absolute minimum to safeguard the public health, safety, and welfare.

OBJECTIVE 1.4: To limit public expenditures that subsidize or encourage new land development in Coastal High Hazard Areas.

Policy 1.4.1: Charlotte County will restrict public funding for capital improvements projects in Coastal High Hazard Areas unless such expenditure replaces deficient or worn-out facilities, provides open space or recreational facilities, addresses a public health, safety, or welfare issue, or the project can only be located in such an area due to its intrinsic nature.

COMMUNITY FACILITIES AND SERVICES ELEMENT

OBJECTIVE 1.6: Charlotte County will provide for the safety of its residents and visitors by maintaining or improving emergency storm plans.

Policy 1.6.1: Charlotte County will explore opportunities for developing sheltering possibilities, especially for shelters in the category 4 or 5 hurricane storm surge zone.

Policy 1.6.2: Charlotte County will develop a mitigation plan to reduce the effects of natural hazards.