Executive Summary

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

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

Summary of Recommendations

Okaloosa County's Comprehensive Plan has good integration of hazard mitigation principles and its LMS has adequate data and goals to support comprehensive planning. There are 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 Okaloosa 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. An assessment of whether the LMS goals and objectives are reflected in the comprehensive plan (and vice versa) is provided in the Preliminary Recommendations Matrix in **Section 5**. Based on the land use tabulations, most of the vacant acreage is susceptible to flood, tropical cyclone generated storm surge, and wildfire. No acres were determined to be in sinkhole susceptible areas. 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, 665 acres are susceptible to Category 1 storm surge (CHZ), 1,659 acres are susceptible to Category 1 – 3 storm surge (HVZ), 4,040 are susceptible to 100-year flood, and 1,918 acres are susceptible to wildfire.

Storm Surge

Approximately 91% of the 665 vacant acres in the Coastal High Hazard Area and 97% of the 1,659 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 require new development, redevelopment, zoning changes and land use plan amendments to be consistent and coordinated with the LMS and the Northwest Florida Hurricane Evacuation Re-Study.
- The Comprehensive Plan should continue to limit public expenditures that subsidize private sector development in Coastal High Hazard Areas (CHHA).
- The Comprehensive Plan should continue to protect property within the CHHA from coastal flooding, surge and high wind through construction standards.
- The Comprehensive Plan should continue to encourage the floodproofing of potable water and wastewater treatment plant systems in the CHHA.
- The Comprehensive Plan should continue to encourage the provision of adequate emergency evacuation routes and highway capacity on evacuation routes and by mitigation measures adopted in the LMS.
- The Comprehensive Plan should continue to require than proposed plan amendments that increase densities in the CHHA are subject to review and transportation analysis to determine the impact on hurricane evacuation times and routes
- The Comprehensive Plan should continue to require developments that increase evacuation clearance times in the CHHA to provide mitigation measures such as emergency van pools.
- The Comprehensive Plan should continue to direct population concentrations away from the CHHA through the implementation of the Future Land Use Map, land acquisition, and the LMS.
- The County should consider denying requests for residential density increases within the CHHA, above what is included on the Future Land Use Map.
- The County should consider imposing density and intensity limitations during post-disaster redevelopment.
- 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 consider not allowing new solid waste and commercial hazardous waste management facilities in the HVZ.
- The County should consider developing an inventory of transportation disadvantaged persons that would be affected by an evacuation order, and ensure the availability of adequate transportation for safe and timely evacuation of high risk areas.
- The County should consider retrofitting essential public facilities that exist in the CHHA to mitigate impacts from surge.

- The County should consider prohibiting new schools in the CHHA and retrofitting new schools as shelters outside the HVZ, where possible.
- The County should consider only allowing new on-site shelters outside the HVZ, where possible.
- The County should consider requiring that the deeds for the sale of land or structures in hurricane vulnerable zones contain a hurricane hazard disclosure statement.
- The Comprehensive Plan should consider transfer of development rights from areas within the CHHA to outside the CHHA, as another measure to reduce density in the CHHA to reduce residential and commercial development in surge prone areas
- The Comprehensive Plan should consider prohibiting the development of nursing homes, adult congregate living facilities, hospitals, mobile homes, county funded facilities, and other high-risk developments inside the CHHA. Building these facilities out of harm's way reduces risk to critical and essential government facilities, and lessens 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 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 37.5% of the 4,040 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 to require the participation of Okaloosa County in the National Flood Insurance Program (NFIP) and the Community Rating System (CRS).
- The Comprehensive Plan should continue to promote the protection, preservation and appropriate use of natural resources (e.g., wetlands, floodplains, shorelines, etc.)
- The Comprehensive Plan should continue to protect environmentally sensitive natural areas (including floodplain areas) via acquisition, conservation easements, purchase of development rights, etc.
- The Comprehensive Plan should continue to enforce rigorous development standards consistent with NFIP/CRS (e.g., anchoring structures to resist flotation, collapse and lateral movement).
- The Comprehensive Plan should continue to maintain and amend the Comprehensive Plan to address floodplain management issues, which will change over time.
- The Comprehensive Plan should continue to require that the development review process ensures new development and redevelopment are consistent with natural drainage patterns and require appropriate stormwater management systems consistent with natural drainage patterns and soil conditions.

- The Comprehensive Plan should continue to require that development be limited in floodplains and floodways per FEMA requirements.
- The Comprehensive Plan should continue to ensure that adequate open space is provided for protected natural resource lands, environmentally sensitive lands, and drainage and stormwater retention areas.
- The County should consider implementing policies to promote clustering of development and transfer of development density/intensity to limit development in areas subject to flooding, and to prohibit development in the regulatory floodway.
- The County should consider including a policy for reducing repetitive (flood) loss properties such as at risk property acquisition or elevation.
- The County should consider including a policy for reducing future losses through transfers of development right from areas within the 100-year floodplain to areas outside the 100-year floodplain, and impose density and intensity limitations in the 100-year floodplain.
- The County should consider including a policy to not approve variances to required flood elevations.
- The County should consider establishing an impact fee and/or other equitable user-oriented revenue sources for the construction of drainage facilities, either county-wide or in districts of high flooding potential.
- The County should consider 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 prohibiting land filling which results in net loss of storage within in the 100-year floodplain.
- The County should consider promoting the use of vegetated swales, sodding, landscaping, and retention of natural vegetation as components of the drainage system for natural runoff through the use of landscape and subdivision ordinances.
- The County should consider requiring that developers incorporate wetland portions of sites within the 100-year floodplain as conservation easements.
- The County should consider requiring that the maintenance and operation of private stormwater systems is funded by private sources.
- 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.
- The County should consider requiring any construction of shelters and essential public facilities be outside of the 100-year floodplain.

Wildfire

About 34.6% of the 1,918 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 in wildfire prone areas to include and implement a wildfire mitigation plan specific to that development, subject to review and approval by the County Fire Rescue Department.
- The County should consider increasing public awareness of prescribed burning and require management plans for conservation easements that address reduction in wildfire fuels.
- The County should consider additional measures to reduce risk from wildfire, such as directing developers to manage natural areas around private recreational facilities with Best Management Practices (including prescribed burning), and using a natural resources management plan to acquire sensitive lands for which fire management planning is to occur.

Sinkhole

No areas were determined to be susceptible to sinkholes according to the data used for the hazards analysis in this profile. The sinkhole hazard was not analyzed in the latest version of the Okaloosa County LMS, as there have been no historical reports of this hazard in the county.

General

- The Comprehensive Plan should continue to reference the LMS in reducing the exposure of human life and public and private property to natural hazards.
- The Comprehensive Plan should continue to require the establishment of criteria within the capital budgeting process to evaluate capital improvement projects that consider criteria for the elimination of future public hazards, consistent with LMS Guiding Principles.
- The Comprehensive Plan should continue to require new development, redevelopment, zoning changes and land use plan amendments to be consistent with the LMS regarding the protection of environmentally sensitive lands through land use policies that support sustainable communities.
- The County should consider creating an objective of policy that requires coordination with the LMS committee in updating the LMS to incorporate planning expertise, land use and development regulations.
- Include each hazard layer on the existing and future land use maps to determine where risks are possible to target hazard mitigation strategies.
- The Comprehensive Plan should consider including a policy to incorporate recommendations from existing and future interagency hazard mitigation reports into the Comprehensive Plan during the Evaluation and Appraisal Report process as determined feasible and appropriate by the Board of County Commissioners.

- The Comprehensive Plan should consider including a policy to incorporate applicable provisions of the Comprehensive Plan into the Comprehensive Emergency Management Plan and the Local Mitigation Strategy.
- Continue educating the public, especially those at high risk from hurricanes, floods and wildfires and 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.

- Include hazard maps that illustrate geographically defined hazards areas or include a clear description of geographic areas exposed to each of the hazards.
- Include maps for critical facilities.
- Include information on demographic, income, and special needs populations.
- Provide a map of repetitive loss areas and include a goal to mitigate repetitive loss properties.
- Provide loss estimates by land use in relation to the hazard.
- Provide future land use maps that include hazard data layers to illustrate which future land use categories are susceptible to each hazard.
- Include data layers on hazard maps to illustrate population (i.e., density) or property (i.e., value) exposure.
- Use complementary, not contradictory data in the plans such as the LMS, CEMP, and Comprehensive Plan.
- Include a goal to support interagency involvement in evacuation planning.
- Include a goal to ensure adequate and safe public shelters are available in all locations in the County to prevent or reduce post-disaster homelessness, including adequate electrical supplies for cooking and to maintain sanitary conditions.

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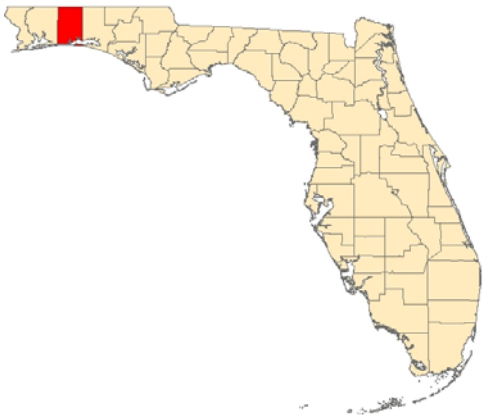
1. County Overview



Okaloosa County is located along the Gulf of Mexico in the Panhandle Region of Northwest Florida. It covers a total of 1,082 square miles, of which approximately 936 square miles are land and 146 square miles are water. There are nine incorporated municipalities within Okaloosa County, including Cinco Bayou, Crestview, Destin, Ft. Walton Beach, Laurel Hill, Mary Esther, Niceville, Shalimar and Valparaiso. The City of Crestview 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 Okaloosa County and the percent change from the 2000 U.S. Census are presented in **Table 1.1.** While some of these residents live in incorporated jurisdictions, approximately 60% live in the county's unincorporated areas. Okaloosa County has experienced significant population growth in recent years, a trend that is expected to continue. Between 1990 and 2000, Okaloosa County had a growth rate of 18.6%, which is slightly less than the statewide average of 23.5% for the same time period.

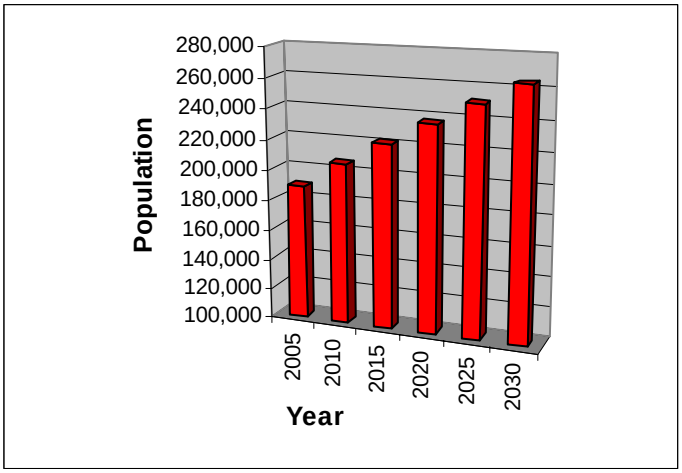
Table 1.1 Population Estimates by Jurisdiction

Jurisdiction	Population (Census 2000)	Population (Estimate 2004)	Percent Change 2000-2004	Percent of Total Population (2004)
Unincorporated	100,849	110,966	10.03%	59.73%
Cinco Bayou	377	366	-2.92%	0.20%
Crestview	14,766	17,026	15.31%	9.16%
Destin	11,119	12,015	8.06%	6.47%
Ft. Walton Beach	19,973	20,619	3.23%	11.10%
Laurel Hill	549	569	3.64%	0.31%
Mary Esther	4,055	4,211	3.85%	2.27%
Niceville	11,684	12,791	9.47%	6.89%
Shalimar	718	723	0.70%	0.39%
Valparaiso	6,408	6,492	1.31%	3.49%
Countywide Total	**170,498**	**185,778**	**8.96%**	**100.00%**

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

According to BEBR (2004), Okaloosa County's population is projected to grow steadily and is to reach an estimated 257,600 by the year 2030, increasing the average population density of 198 to 282 persons per square mile. **Figure 1.1** illustrates medium growth population projections for Okaloosa County based on 2004 calculations.

Figure 1.1 Population Projections for Okaloosa County, 2005-2030



Of particular concern within Okaloosa 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 170,498 persons residing in Okaloosa County 12.1% are listed as 65 years old or over; 17.1% are listed as having a disability; 8.8% are listed as below poverty; and 7.9% live in a home where the primary language is other than English.

2. Hazard Vulnerability

Hazards Identification

The highest risk hazards for Okaloosa County as identified in the County's Local Mitigation Strategy (LMS) are hurricane, storm surge, flood and wildfire. Sinkhole hazard was not analyzed in the latest version of the Okaloosa County LMS, as there have been no historical reports of this hazard in the county.

Hazards Analysis for Existing Population and Structures

The following analysis examines three major hazard types: surge from tropical cyclones, flood, and wildfire. 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 DMA2K revision project, and was created by Kinetic Analysis Corporation under contract with the Florida Department of Community Affairs (DCA). Estimated exposure values were determined using the Category 3 Maxima Scenario for storm surge; FEMA's designated 100-year flood zones (A, AE, V, VE, AO, 100 IC, IN, AH) for flood; and medium-to-high risk zones from MEMPHIS for wildfire (Level 5 through Level 9). 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 Exposure

Table 2.1 presents the population currently exposed to each hazard throughout Okaloosa County. Of the 170,498 (U.S. Census 2000) people that reside in Okaloosa County, over 16% are exposed to storm surge, nearly 24% are exposed to 100-year flooding, and 11.2% are exposed to wildfire. Of the 14,043 people exposed to flood, nearly 16% are over age 65 and 31.4% are disabled.

Table 2.1 Estimated Number of Persons Exposed to Selected Hazards

Segment of Population	Storm Surge	Flood	Wildfire
Total (all persons)	**4,350**	**9,816**	**17,313**
Minority	526	1,080	2,084
Over 65	676	1,176	2,413
Disabled	851	2,331	4,689
Poverty	136	738	1,041
Language Isolated	71	81	53
Single Parent	135	468	560

Source: Mapping for Emergency Management, Parallel Hazard Information System

Evacuation and Shelters

As discussed in the previous sections, population growth in Okaloosa 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 Okaloosa County, but also for other counties in the region as shown in **Table 2.2**. Also, 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
Bay	14.5	17.5	18.5	23.75	23.75
Escambia	16.75	20	20	23.75	23.75
Okaloosa	13.5	19.25	19.25	21.75	21.75
Santa Rosa	8.5	9.25	9.25	10.5	10.5
Walton	11.75	21	21	21.5	21.5

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 13.5 and 21.75 hours to safely evacuate Okaloosa 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 United States Army Corps of Engineers and Regional Planning Councils in Florida. The study dates range from 1995 to 2004. These regional studies are updated on a rotating basis with Northeast Florida region scheduled for completion in the fall of 2005.

Similar to most of Florida's coastal counties, Okaloosa County currently has a significant shelter deficit. According to Florida's Statewide Emergency Shelter Plan, Okaloosa County has an existing shelter capacity of 800 people. The 2004 shelter demand for a Category 4 or Category 5 hurricane is 12,946 people, leaving an existing shelter deficit of 12,146. In 2009, the projected shelter demand is 14,066, leaving an anticipated shelter deficit of 13,266. 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. Okaloosa 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 Exposure

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

Table 2.3 Estimated Number of Structures Exposed to Selected Hazards

Occupancy Type	Storm Surge	Flood	Wildfire
Single Family	1,336	7,148	4,306
Mobile Home	18	10,975	2,716
Multi-Family	649	6,346	1,301
Commercial	168	2,350	569
Agriculture	16	3,100	1,704
Gov. / Institutional	22	198	348
Total	**2,209**	**30,117**	**10,944**

Source: Mapping for Emergency Management, Parallel Hazard Information System

*Note: Storm surge related flooding building exposure results are a subset of the flood results.

There are 41,061 structures exposed to at least one of the three hazards, of which most are single-family homes in subdivisions. Of these structures, over 73% are exposed to flood. Over 30,000 structures are located within the 100-year floodplain, of which 7.3% are exposed to storm surge induced flooding. Over 60% of the structures exposed to surge are single family homes. Typically, structures at risk from surge are high-value real estate due to their proximity to the ocean or tidally influenced water bodies such as the Choctawhatchee Bay, East Bay, Yellow River, and Blackwater River. According to the latest National Flood Insurance Program Repetitive Loss Properties list, as of March 2005, there are 232 repetitive loss properties in unincorporated Walton 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 26% or 10,944 structures are exposed to wildfire, of which, 39% are single-family dwellings.

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, storm surge velocity, 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 at risk from surge, flooding, wildfire and sinkholes 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 the identified hazards areas, sorted by their existing land use category according for the unincorporated areas. The total amount of acres and percentage of land in the identified hazards areas was tabulated and sorted by their future land use category according to the local Future Land Use Map (FLUM), as well as the amount of these lands listed as vacant according to existing land use. Nassau County future land use data was acquired in November 2000 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 Okaloosa County future land use map dated November 2000. 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, and wildfire 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 of Destin, Moreno Point, Ft. Walton Beach, Valparaiso, and along the waterfront of Niceville, as well as along the Choctawhatchee Bay, East Bay, the Yellow River, Blackwater River. The total amount of land in the CHZ is 2,714.2 acres. As shown in **Table 2.4**, 31.4% are residential single family homes; 24.5% are currently undeveloped; 20.7% are used for government, institutional, hospitals or education purposes; and 9.7% are parks, conservation areas and golf courses. **Table 2.5** shows that of the 664.6 undeveloped acres, 57.6% are designated for mixed use. The County has the opportunity to implement mitigation measures that will reduce vulnerability from storm surge.

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 HVZ is predominantly located in the coastal communities of Destin, Ft. Walton Beach, Mary Esther, Moreno Point, and along the waterfront areas of Cinco Bayou, Niceville, Shalimar, and Valparaiso, as well as along the Choctawhatchee Bay, East Bay, the Yellow River, Blackwater River. The total amount of land in the HVZ is 5,756.5 acres. As shown in **Table 2.4**, 30.7% are residential single family homes; 28.8% are currently undeveloped; 22.9% are used for government, institutional, hospitals or education purposes; and 6.2% are parks, conservation areas and golf courses. **Table 2.5** shows that of the 1,659.1 undeveloped acres, 50.6% are designated for mixed use. The County has the opportunity to implement mitigation measures that will reduce vulnerability from storm surge.

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. However, a majority of the large swaths surround the Yellow and Shoal Rivers and associated tributaries in the jurisdictions of Cinco Bayou, Crestview, Destin, Ft. Walton Beach, Laurel Hill, Mary Esther, Milligan, Niceville, Shalimar, Valparaiso. The total amount of land in the special flood hazard area is 52,031.9 acres. As shown in **Table 2.4**, 39.7% are in agricultural use; 34.4% are parks, conservation areas and golf courses; 14.2% are used for government, institutional, hospitals or education purposes; and 7.8% are currently undeveloped. **Table 2.5** shows that of the 4,039.7 undeveloped acres, 57.1% are designated for agricultural use. Since a large portion of the acreage is designated agricultural, the County has the opportunity to maintain this land use and low density development to prevent increased vulnerability to flooding. Although stormwater management systems are designed to eliminate flooding, these systems can fail during a storm if debris blocks drainage channels or culverts washout.

In **Attachment D**, two maps present the existing and future land uses within wildfire susceptible areas. These areas are scattered across the county, located in small areas in Crestview and Laurel Hill. The total amount of land in the wildfire susceptible areas is 1,918.1 acres. As shown in **Table 2.4**, 46.2% are in agricultural use; 21.5% are undeveloped lands; 12.4% are used for government, institutional, hospitals or education purposes; and 8.6% are parks, conservation areas and golf courses. **Table 2.5** shows that of the 1,918.1 undeveloped acres, 65.2% are used for agriculture. The County should continue to take measures to reduce wildfire risk within the urban/rural interface.

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

Existing Land Use Category		Coastal Hazards Zone	Hurricane Vulnerability Zone	Flood Zones	Wildfire Susceptible Areas
Agriculture	Acres	24.1	22.3	20,679.4	4,122.2
	%	0.9	0.4	39.7	46.2
Attractions, Stadiums, Lodging	Acres	86.3	101.4	66.0	3.3
	%	3.2	1.8	0.1	0.0
Places of Worship	Acres	0.7	8.5	3.1	3.1
	%	0.0	0.2	0.0	0.0
Commercial	Acres	84.7	245.0	193.7	2.0
	%	3.1	4.3	0.4	0.0
Government, Institutional, Hospitals, Education	Acres	560.5	1,319.5	7,405.1	1,108.9
	%	20.7	22.9	14.2	12.4
Industrial	Acres	23.0	38.1	57.7	45.3
	%	0.9	0.7	0.1	0.5
Parks, Conservation Areas, Golf Courses	Acres	261.9	359.1	17,881.0	771.3
	%	9.7	6.2	34.4	8.6
Residential Group Quarters, Nursing Homes	Acres	0.0	0.0	0.2	0.0
	%	0.0	0.0	0.0	0.0
Residential Multi-Family	Acres	114.8	168.5	31.4	0.0
	%	4.2	2.9	0.1	0.0
Residential Mobile Home, or Commercial Parking Lot	Acres	8.0	35.2	238.1	342.6
	%	0.3	0.6	0.5	3.8
Residential Single-Family	Acres	853.2	1,766.3	1,320.0	603.0
	%	31.4	30.7	2.5	6.8
Submerged Land (Water Bodies)	Acres	27.0	24.5	31.7	0.0
	%	1.0	0.4	0.1	0.0
Transportation, Communication, Rights-Of-Way	Acres	0.0	4.7	2.0	2.0
	%	0.0	0.1	0.0	0.0
Utility Plants and Lines, Solid Waste Disposal	Acres	5.6	4.2	82.7	1.8
	%	0.2	0.1	0.2	0.0
Vacant	Acres	664.6	1,659.1	4,039.7	1,918.1
	%	24.5	28.8	7.8	21.5
Total Acres	**Acres**	**2,714.2**	**5,756.5**	**52,031.9**	**8,923.7**
	%	**100.0**	**100.0**	**100.0**	**100.0**

Source: Department of Community Affairs

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

Future Land Use Category		Coastal Hazards Zone		Hurricane Vulnerability Zone		Flood Zones		Wildfire Susceptible Areas	
		Total	Vacant	Total	Vacant	Total	Vacant	Total	Vacant
Agricultural	Acres	0.0	0.0	0.0	0.0	24,510.7	2,307.1	5,362.6	1,251.1
	%	0.0	0.0	0.0	0.0	47.1	57.1	60.1	65.2
Commercial	Acres	4.7	2.0	248.3	120.6	7.6	1.6	18.7	15.4
	%	0.2	0.3	4.3	7.3	0.0	0.0	0.2	0.8
Conservation	Acres	1.3	0.0	0.0	0.0	17,725.2	102.3	677.3	3.3
	%	0.1	0.0	0.0	0.0	34.1	2.5	7.6	0.2
Eglin AFB	Acres	391.0	0.5	758.4	0.7	5,377.7	4.5	935.2	0.0
	%	14.4	0.1	13.2	0.0	10.3	0.1	10.5	0.0
High Density Residential	Acres	0.7	0.0	0.0	0.0	4.7	0.0	0.0	0.0
	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Industrial	Acres	0.0	0.0	0.0	0.0	171.4	0.0	150.7	8.0
	%	0.0	0.0	0.0	0.0	0.3	0.0	1.7	0.4
Institutional	Acres	37.7	2.0	60.9	3.3	45.3	0.5	11.6	0.0
	%	1.4	0.3	1.1	0.2	0.1	0.0	0.1	0.0
Low Density Residential	Acres	326.6	88.1	1,290.8	271.8	1,138.3	410.9	335.7	80.5
	%	12.0	13.3	22.4	16.4	2.2	10.2	3.8	4.2
Medium Density Residential	Acres	121.3	31.9	297.4	76.0	64.2	21.6	0.0	0.0
	%	4.5	4.8	5.2	4.6	0.1	0.5	0.0	0.0
Mixed Use 1	Acres	488.2	99.2	647.8	144.7	126.2	24.8	0.2	0.0
	%	18.0	14.9	11.3	8.7	0.2	0.6	0.0	0.0
Mixed Use 2	Acres	466.2	284.0	1,244.2	695.1	369.6	233.6	0.0	0.0
	%	17.2	42.7	21.6	41.9	0.7	5.8	0.0	0.0
Nat. Res. Development Area	Acres	0.0	0.0	0.0	0.0	1.8	0.0	0.0	0.0
	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Okaloosa Island	Acres	431.2	24.5	405.1	22.5	144.2	6.7	0.0	0.0
	%	15.9	3.7	7.0	1.4	0.3	0.2	0.0	0.0
Recreational	Acres	71.3	0.5	65.3	1.3	8.9	1.8	25.9	0.0
	%	2.6	0.1	1.1	0.1	0.0	0.0	0.3	0.0
Rural Mixed Use	Acres	0.0	0.0	0.0	0.0	1.1	0.2	77.6	28.1
	%	0.0	0.0	0.0	0.0	0.0	0.0	0.9	1.5
Rural Residential	Acres	0.0	0.0	0.0	0.0	1,406.9	651.6	1,267.8	490.9
	%	0.0	0.0	0.0	0.0	2.7	16.1	14.2	25.6
Suburban Residential	Acres	7.4	4.0	26.3	18.5	20.7	10.0	0.0	0.0
	%	0.3	0.6	0.5	1.1	0.0	0.3	0.0	0.0
Urban Mixed Use	Acres	111.7	65.5	516.5	250.8	261.9	147.4	59.7	40.8
	%	4.1	9.9	9.0	15.1	0.5	3.7	0.7	2.1
Water	Acres	255.0	62.4	195.5	53.7	645.4	115.3	0.7	0.0
	%	9.4	9.4	3.4	3.2	1.2	2.9	0.0	0.0
Total	**Acres**	**2,714.2**	**664.6**	**5,756.5**	**1,659.1**	**52,031.9**	**4,039.7**	**8,923.7**	**1,918.1**
	%	**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 by DCA for each of Okaloosa County's nine incorporated municipalities. These amounts are listed in

Table 2.6. The intent of this table is to show the vacant acreage in hazard zones in each municipality, and to show the percentage of vacant acreage in each hazard zone for each municipality. In the total column for each hazard, the percentage for each municipality is the hazard zone acreage as a percent of total hazard acreage for all municipalities. In the vacant column for each hazard, the percentage for each municipality is the percent of area in the hazard zone for the respective municipality. The total municipal percent of vacant acreage is the percent of acreage in the hazard zones for all municipalities.

The City of Destin has the most vacant acres in the Coastal Hazards Zone, but Cinco Bayou has the largest proportion of surge prone acres out of its vacant land area. Destin has the most acres in the HVZ, and has the largest proportion of HVZ acres out of its vacant land area. Laurel Hill has the most vacant acres in the flood zone, but the Crestview has the largest proportion of flood zone acres out of its vacant land area. The City of Crestview is the only municipality with vacant acreage in wildfire susceptible areas.

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

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

Future Land Use Category		Coastal Hazards Zone		Hurricane Vulnerability Zone		Flood Zones		Wildfire Susceptible Areas	
		Total	Vacant	Total	Vacant	Total	Vacant	Total	Vacant
Cinco Bayou	Acres	1.8	0.4	6.2	1.1	15.2	1.8	0.0	0.0
	%	100.0	25.0	100.0	17.9	100.0	11.8	0.0	0.0
Crestview	Acres	0.0	0.0	0.0	0.0	217.8	114.1	60.6	48.2
	%	0.0	0.0	0.0	0.0	100.0	52.4	100.0	79.4
Destin	Acres	1,183.3	249.5	3,915.5	797.6	421.6	107.5	0.0	0.0
	%	100.0	21.1	100.0	20.4	100.0	25.5	0.0	0.0
Ft. Walton Beach	Acres	26.1	3.1	476.8	24.7	278.7	20.1	47.7	0.0
	%	100.0	12.0	100.0	5.2	100.0	7.2	100.0	0.0
Laurel Hill	Acres	0.0	0.0	0.0	0.0	1,011.9	208.0	53.9	2.9
	%	0.0	0.0	0.0	0.0	100.0	20.6	100.0	5.4
Mary Esther	Acres	0.0	0.0	134.7	23.0	31.9	6.7	0.9	0.0
	%	0.0	0.0	100.0	17.1	100.0	21.0	100.0	0.0
Niceville	Acres	261.3	42.8	239.0	39.0	619.7	160.5	0.0	0.0
	%	100.0	16.4	100.0	16.3	100.0	25.9	0.0	0.0
Shalimar	Acres	9.1	0.7	115.5	7.8	24.5	4.7	0.0	0.0
	%	100.0	7.3	100.0	6.8	100.0	19.1	0.0	0.0
Valparaiso	Acres	47.7	2.7	342.2	32.1	191.9	41.2	0.2	0.0
	%	100.0	5.6	100.0	9.4	100.0	21.5	100.0	0.0
Total Municipal Acres	**Acres**	**1,529.3**	**299.2**	**5,229.9**	**925.4**	**2,813.2**	**664.6**	**163.4**	**51.1**
	%	**100.0**	**19.6**	**100.0**	**17.7**	**100.0**	**23.6**	**100.0**	**31.2**

Source: Department of Community Affairs

3. Existing Mitigation Measures

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

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

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

> Hazard Identification and Vulnerability Assessment. This section identifies a community's vulnerability to natural hazards. Under Florida rules, the HIVA is required to include, at a minimum, an evaluation of the vulnerability of structures, infrastructure, special risk populations, environmental resources, and the economy to any hazard to which the community is susceptible. According to FEMA, LMSes revised pursuant to the Disaster Mitigation Act of 2000 (DMA 2000) criteria must include maps and descriptions of the areas that would be affected by each hazard to which the jurisdiction is exposed, information on previous events, and estimates of future probabilities. Vulnerability should be assessed for the types and numbers of exposed buildings, infrastructure, and critical facilities with estimates of potential dollar losses. Plan updates will be required to assess the vulnerability of future growth and development.
>
> Guiding Principles. This section lists and assesses the community's existing hazard mitigation policies and programs and their impacts on community vulnerability. This section typically contains a list of existing policies from the community's Comprehensive Plan and local ordinances that govern or are related to hazard mitigation. Coastal counties frequently include policies from their PDRPs.
>
> Mitigation Initiatives. This component identifies and prioritizes structural and non-structural initiatives that can reduce hazards vulnerability. Proposals for amendments to Comprehensive Plans, land development regulations, and building codes are often included. Structural projects typically address public facilities and infrastructure, and buy-outs of private structures that are repetitively damaged by flood. Many of these qualify as capital improvement projects based on the magnitude of their costs and may also be included in the capital improvements elements of the counties' and cities' Comprehensive Plans.

The Okaloosa County LMS was assessed to determine if the hazard analysis and vulnerability assessment (i.e., 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). Future updates to the assessment will include working with Okaloosa County to determine if the capital improvement projects are included in the LMS hazard mitigation project list.

Hazard Analysis and Vulnerability Assessment (Sections 4 and 5).

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

Strengths:

- Provides a hazards analysis and a qualitative risk assessment for each hazard.
- Includes a color-coded, spatially-defined risk vulnerability assessment on a parcel by parcel basis for the entire county, including separate assessments for each municipal jurisdiction.
- Extensive GIS analysis of vulnerable facilities and/or structures in relation to hurricane, flood, storm surge and wildfire hazard areas.
- Provides county property values in identified hazard zones.
- Includes exposure values and potential dollar losses due to hazards.
- Considers existing and future land use classifications and hazard data layers to illustrate which land use categories are susceptible to the hurricane, flood, storm surge and wildfire hazards.

Weaknesses:

- Does not include hazard maps for hurricane, flood, storm surge, wildfire or sinkhole, although data in the LMS was drawn from FDCA's MEMPHIS (Mapping for Emergency Management, Parallel Hazard Information System) web-based mapping tool.
- Does not include maps for critical facilities, although a listing of critical facilities is incorporated by reference and the LMS does refer to GIS-based vulnerability assessments by overlaying hazard areas onto point locations of critical facilities.
- Does not include information on demographic, income, and special needs population.
- Does not include a listing or maps for repetitive loss properties.

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 Okaloosa County LMS does not include a Guiding Principles section for the county nor each municipality. 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. It is recommended that Okaloosa County's next LMS update include a Guiding Principles section.

LMS Goals and Objectives

The Okaloosa 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 E**. An assessment of whether the LMS goals and objectives are reflected in the comprehensive plan (and vice versa) is provided in **Table 5.1** as part of the preliminary recommendations. Final recommendations will result from a collaborative process between DCA, Okaloosa County, and PBSandJ. The following is a summary of the LMS goals and objectives that support comprehensive plan GOPs.

Goal 3 refers to the update of the LMS plan, as necessary, to identify changes to hazards, vulnerability, goals, initiatives/priorities accomplishments/withdrawal/additions/pending, update of funding sources, current disaster declarations, and adoption of revisions. The applicable objectives under this goal include having the Steering Committee direct staff to update plan sections, tables, maps, etc., based upon current activities, trends, or issues and continually reviewing the plan and comparing it to other planning requirements (emergency management plans, comprehensive land use plans, community rating system plans) that contain mitigation provisions or may otherwise help to assert or hinder mitigation initiatives.

Goal 4 refers to providing assistance to property owners, residents, businesses, non-profits and others in understanding and knowing of their eligibility for grants, loans and services that may help to mitigate hazards that directly affect their interests. The applicable objectives under this goal include working with existing programs within the County and municipalities (building inspections, local Community Rating System/National Flood Insurance Program, emergency management, chambers of commerce, etc.) to connect mitigation to these efforts.

Goal 5 focuses on reducing or eliminating hazards identified to at risk locations in the County and its municipalities. The applicable objectives under this goal include targeting mitigation efforts and activities towards areas where hazards exist, working with agencies, professionals, and the public to develop the best solutions for identified hazards, and examining and implementing appropriate technologies to identify, model, or otherwise simulate risks and zones of risk and incorporating these into the LMS plan.

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 Okaloosa County adopting and implementing corresponding policies that are legally enforceable.

Comprehensive Emergency Operations Plan (CEMP)

The Okaloosa County CEMP does not include any specific goals or objectives, though it does reference the LMS document immediately in the beginning of Annex B: Mitigation. Annex B of the CEMP discusses hazard mitigation in the context of standard operating procedures, activities, responsibilities and available programs that "do not otherwise occur within the community's normal day-to-day operations." 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.

Post-Disaster Redevelopment Plan (PDRP)

Okaloosa County's PDRP includes the following goals, objectives and policies that are directly related to local comprehensive planning and growth management:

Goal 1 *Reestablish the economic vitality and social order of Okaloosa County in a timely and orderly manner consistent with the other goals of this plan.*

Objective 1.3 Establish the necessary staff structure and planning procedures to accommodate the emergency nature of redevelopment.

Policy 1.3.1 The Committee shall evaluate the projected workload for managing the recovery and reconstruction process and recommend the hiring of temporary workers or contracting portions of the workload to specialists. The Board of County Commissioners shall approve or disapprove such recommendations.

Policy 1.3.2 The County shall evaluate the long-term needs for capital facilities planning and LMS project list immediately after meeting the human needs following a hurricane or other disaster.

Policy 1.3.3 If necessary, the County shall prepare and forward to the Florida Department of Community Affairs an amendment to the Capital Improvements Element of the Comprehensive Plan and revisions to the LMS project list to obtain a Statement of Consistency. This will be accomplished as soon as practical.

Policy 1.3.4 County department heads and staff shall initiate coordination and cooperation with State and Federal agencies to obtain assistance in mitigation planning, relocation, or repair-in-place of public facilities.

Policy 1.3.5 The Committee may identify and designate areas that can be used for relocation of residential housing and public facilities outside of the Hurricane Vulnerability Zone.

Goal 2 *Reduce the loss of life and property in any future hurricane, flood, or other disaster.*

Objective 2.1 Permitting and certification of structures will continue to be required to ensure compliance with applicable building, FEMA, CRS and related codes, zoning, and redevelopment policies to limit the potential for future loss of life and property.

Policy 2.1.1 Except for facilities requiring access to the waterfront, water wells and towers, recreation facilities, or those which provide essential services, safety and evacuation functions, all public structures in the Coastal High Hazard Area that were destroyed will be relocated out of such zone.

Policy 2.1.2 When feasible, destroyed bulkheads and seawalls will be replaced with nonstructural forms of shoreline stabilization in accordance with all Federal, State, Regional and Local jurisdictional rules and regulation including emergency orders, except where such replacement would endanger essential transportation routes, critical facilities, or the public safety.

Policy 2.1.3 The County and private developers will be required to coordinate with the necessary Federal, State, Regional and Local jurisdictional agencies as required by law or regulation for the permitting of reconstruction or redevelopment in order to ensure safety and protect the environment.

Policy 2.1.4 Coordinate with public and private utilities to flood proof facilities and utility services through incentives or regulations consistent with the local mitigation strategy.

Objective 2.2 Establish a procedure to review proposals for redevelopment of public and private structures and develop policies to guide redevelopment decisions, consistent with the local mitigation strategy.

Policy 2.2.1 The timing of redevelopment reviews is set forth in Goal 1. The review of redevelopment permits for destroyed structures shall be guided by the following priorities:

a. Reduce the pre-disaster density of residential development in the Coastal High Hazard Area (CHHA) or flood inundation areas through relocation assistance, zoning incentives, or acquisition of property for open space.

b. Encourage the relocation of all non-residential structures destroyed in the CHHA or flood inundation areas to areas outside such zones by using relocation assistance or zoning incentives, or acquisition of property for open space.

c. Structures in the CHHA or V, VE, A, or AE flood zones that were destroyed, and where the owner decides to rebuild in the same zone, will be designed and constructed consistent with the adopted Comprehensive Plan, Future Land Use Maps, Land Development Code including zoning maps, Local Mitigation Strategy, FEMA flood insurance rate maps, Community Rating System and Florida building codes. They will be prohibited from purchasing flood insurance underwritten by the Federal and State Government unless they meet all additional requirements as may be imposed by the Federal, State, and Local Government for elevation, flood proofing, etc.

d. Prior to issuance of a building permit, the applicant must submit a post-disaster survey, (pre disaster if available) and/or site plan, as applicable, of the lot and structure and cost estimate for reconstruction. The construction plan must provide for direct, unimpeded, approved vehicle ingress and egress to the parcel.

e. Destroyed structures outside the Coastal High Hazard Area (CHHA), but within the Hurricane Vulnerability Zone (HVZ) and rebuilt in the HVZ shall be designed and constructed consistent with the adopted Comprehensive Plan, Future Land Use Map, Land Development Code, FEMA Flood Insurance Rate Maps, and Florida building and related codes, i.e., Coastal codes, FEMA and CRS.

f. All destroyed structures, if rebuilt within the HVZ, will be required to be inspected prior to issuance of a Certificate of Occupancy to ensure conformance with building and related codes or regulations.

g. Coordinate the redevelopment of shoreline areas with the Florida Department of Environmental Protection, U.S. Army Corps of Engineers, and/or other Local, State and Federal agencies which may have regulatory jurisdiction over these areas.

h. Certificates of Occupancy for private structures which were destroyed shall be contingent upon the immediate provision of services necessary for health and safety to the structure, e.g., sewer or septic service, electrical power, disaster debris removal and potable water.

i. The Committee may make recommendations for increasing building standards or rezoning that would reduce the potential for damage or loss of life from future disasters. The Board of County Commissioners may adopt such recommendations as deemed prudent and necessary, and all redevelopment efforts after enactment will be required to comply with such stricter standards.

Policy 2.2.2 The review of redevelopment permits for structures experiencing major damage, or which propose addition or changes exceeding 50-percent of the pre-disaster value of the structure, shall be guided by the following redevelopment policies.

a. Where feasible, reduce the pre-disaster density of residential development which experienced major damage.

b. Encourage the relocation of structures experiencing major damage in the CHHA to outside the CHHA.

c. Structures experiencing major damage in the CHHA and redeveloped in the CHHA shall be designed and reconstructed consistent with the adopted Comprehensive Plan, Future Land Use Map, Land Development Code, FEMA FIRM, CRS and Florida Building and related codes.

d. Prior to issuance of a development or building permit on the same parcel, the applicant must submit a post-disaster survey (pre-disaster survey if available) and estimate of construction, and site plan as applicable, of the parcel and structure if there is a proposed increase in the building footprint or if any portion of the parcel or parcels was eroded away by wave action, storm surge, or flood water. The construction plan must provide for direct, unimpeded, approved vehicle ingress and egress to the parcel.

e. Structures experiencing major damage and redeveloped outside the CHHA, but within the HVZ, shall be designed and constructed consistent with the adopted Comprehensive Plan, Future Land Use Map, Land Development Code, FEMA FIRM, CRS and Florida Building and related codes.

f. All structures experiencing major damage and redeveloped will be required to be inspected prior to issuance of a Certificate of Occupancy to ensure conformance with building codes and related regulations.

g. Nonconforming uses (as defined in the adopted Comprehensive Plan, and Land Development Code) damaged outside the CHHA but within the HVZ, shall be designed and rebuilt consistent with the adopted Comprehensive Plan, Future Land Use Map, Land Development Code, FEMA FIRM, CRS, Florida Building and related codes.

h. Certificates of Occupancy and permitting for redevelopment of private structures which suffered major damage shall be contingent upon the immediate provision of services necessary for health and safety to that structure, e.g., sewer or septic service, electrical power, and potable water, and comply with the FEMA 50% rule.

i. The Committee may make recommendations for increasing building standards consistent with the Florida Building Codes or rezoning that would reduce the potential for damage or loss of life from future disasters. The Board of County Commissioners may adopt such recommendations as deemed prudent and necessary, and all redevelopment efforts after enactment would be required to comply with such stricter standards.

Policy 2.2.3 The review of building permits for structures experiencing minor damage shall be guided by the following redevelopment priorities.

a. Structures experiencing minor damage in the HVZ, including the CHHA, shall be allowed to rebuild to pre-disaster square footage consistent with the adopted Comprehensive Plan, Future Land Use Map, Land Development Code, FEMA FIRM, CRS, Florida Building and related codes.

b. Prior to issuance of a building permit on the same parcel, the applicant must submit a post-disaster survey (pre-disaster if available) and/or site plan as applicable, of the lot and structure if there is a proposed increase in building footprint or if any portion of the lot or lots was eroded away by wave action, storm surge, or flood waters. The site plan must provide for direct, unimpeded, approved vehicle egress and ingress to each lot.

c. Certificates of Occupancy and permitting for redevelopment to pre-disaster square footage of private structures which suffered minor damage shall be contingent upon the immediate provisions of services necessary for health and safety to that structure, e.g., sewer or septic service, electrical power, waste disposal and potable water.

d. Eligibility for flood insurance underwritten by the Federal Government will be contingent on program rules regarding the specific case.

Policy 2.2.4 All private development which was destroyed or suffered major damage shall be guided by the following redevelopment priorities:

a. Develop new street patterns in hardest hit areas to accommodate clustering of structures away from the CHHA and attempt to remove structural and physical patterns which increase the susceptibility of development to the hazards of hurricane, flood, or other natural disasters.

b. Residential redevelopment densities shall not exceed pre-disaster development without providing enhanced evacuation methods and routes in order to reduce evacuation times.

c. In order to reduce potential future property damage, redevelopment floor area ratios for commercial and office development in the HVZ shall not exceed those established in the adopted Comprehensive Plan and Future Land Use Map.

d. Discourage the rebuilding and relocation of mobile homes and manufactured housing in the CHHA and HVZ unless they are proven to be able to withstand wind load requirements and structural safety rules established for other structures in the CHHA and HVZ by local, state, and federal building and related codes. This provision shall not be construed to limit the establishment of short-term housing areas to provide immediate and emergency relief to victims of the disaster.

e. The Building Official shall, after consultation with the Growth Management Director, Planning Manager, Public Works Director/County Engineer and Chief of Emergency Management or in his/her absence Emergency Management Coordinator, condemn land parcels or lots that are destroyed and replaced by tidal waters.

f. The replacement or repair of private beach or beach stabilization structures shall be the sole responsibility of the property owner, and shall conform to the rules and regulations of Local, State, Regional and Federal jurisdictional agencies.

g. If a structure listed on the National Register of Historic Places, the State Inventory of Historic Places, or the State of Florida Master File suffers major or minor damage, it will not be required to redevelop in such a way as to cause it to lose its historic designation if the Building Official approves such exemption.

Policy 2.2.5 Provision of water and sewer service at private expense to existing parcels of record in the CHHA will be permitted, provided that such service does not conflict with existing policies for determining when structures can be rebuilt, land development regulations, building and related codes, and state and federal policies regarding development and construction in the CHHA and environmental regulations. New sanitary sewer and potable water facilities in the CHHA will be flood proofed.

Policy 2.2.6 It shall be the policy of Okaloosa County not to expend public funds for the repair of damaged private roads or easements, except in conjunction with the repair and maintenance of the county's water and sewer system or public easements. In cases where a declared disaster has resulted in a private road being rendered impassable to emergency vehicles, and therefore renders it impossible to conduct fire/rescue or law enforcement activities for a populated area, the county may make temporary, emergency repairs sufficient to allow passage of emergency vehicles. These repairs will be temporary in nature, such as filling holes or gaps in the roadway with dirt or sand, and will be done only once. Thereafter, it will be the responsibility of the owners to make any repairs and perform necessary maintenance. Real estate developers or sellers shall inform all future potential buyers in writing if the property is located on a private road that is not maintained by the county.

Policy 2.2.7 The Committee will review mitigation alternatives and make recommendations for consideration by the Board of County Commissioners. The Committee will review the nature and extent of damages, the causal relationships between the damage and land use policies, and ways to reduce damage in future disasters. Among those policies and programs that will be considered are:

a. Changes from residential to commercial zoning to reduce evacuation times.

b. Reduction in residential density by increasing the minimum lot size or reducing the number of dwelling units allowed per acre.

c. Awarding bonus or incentive points that would allow increased density if developers incorporate hazard-reduction features.

d. Clustering development on the most protected portions of parcels.

e. Requests for Special Exemptions will be reviewed and considered based on the impact on population density (which effects evacuation

clearance times and search/rescue needs) and potential for suffering or aggravating damage to other structures in the area.

f. Reconstruction must comply with, FEMA FIRM, CRS, Florida Building and related codes.

Policy 2.2.8 The County will seek opportunities through grants or other means to acquire land in the CHHA. The land acquisition will be designed to reduce development in the CHHA, increase open space ratings, and thereby mitigate potential loss of life or property in future disasters.

Goal 3 *Provide public facilities and services which guarantee to the extent possible the health, safety, and welfare of the citizens of Okaloosa County and which reduce future expenditure for public infrastructure in the CHHA.*

Objective 3.1 Based upon the extent of damage, the review of permits for relocation or repair shall be guided by the following policies:

Policy 3.1.1 Those facilities that are essential to the immediate health, safety, and welfare of citizens will be assigned high priority. If this is not feasible, every effort will be made to provide the service through alternative means.

Policy 3.1.2 Public buildings in the CHHA that were destroyed or suffered major damage shall be relocated out of the CHHA consistent with the adopted Comprehensive Plan, Future Land Use Map, Land Development Code, FEMA FIRM, and CRS and will be rebuilt to current local, state, and federal standards. Facilities for access to the waterfront, recreational facilities, water and sewer, and facilities that are needed for evacuation may be allowed in the CHHA.

Policy 3.1.3 Public buildings that must function during a hurricane or other disaster, such as hospitals, blood banks, police and fire stations, emergency operations centers, communication centers and facilities, electrical power-generating substations and plants, and water treatment plants shall be relocated to the extent feasible from the CHHA if they were destroyed or suffered major damage. If an entire fire district is in the CHHA, then that fire district's fire station may be rebuilt in the CHHA.

Policy 3.1.4 Public facilities which experienced minor damage in the CHHA shall be rebuilt in place to current local, state, and federal standards.

Policy 3.1.5 Public facilities outside the CHHA, but within the HVZ, and are destroyed or suffer major damage will be rebuilt in place or relocated consistent with the adopted Comprehensive Plan, Future Land Use Map, and Land Development Code. Their construction will be consistent with Local, State, FEMA, and CRS standards.

Policy 3.1.6 Public facilities currently located in the CHHA that must function during a hurricane or other disaster, such as police and fire stations, emergency operations center, and communication centers shall be considered for relocation outside the CHHA in order to mitigate possible disruption of service due to their location in a surge zone or possible high velocity wave action from storms.

Policy 3.1.7 Prior to repair or reconstruction of county roads and bridges, except when deemed a crucial transportation route or corridor or crucial to the public

health, safety and welfare, which were destroyed or damaged by a disaster, the County shall consider alternative solutions, including, but not limited to, abandonment procedures, special assessment and condemnation, and construction practices to mitigate damage from future disasters. This shall not prevent the temporary repair of roads and bridges during or after the disaster event.

National Flood Insurance Program/Community Rating System

Okaloosa County and all of its municipalities participate in the National Flood Insurance Program (NFIP), with the exception of Laurel Hill which is not currently in the program. Okaloosa County participates in the NFIP Community Rating System (CRS) with a rating as a class 6, and the following municipalities participate in the CRS with ratings as follows: Destin (7), Fort Walton Beach (7), Niceville (10), Shalimar (8). Cinco Bayou, Crestview, Laurel Hill, Mary Esther and Valparaiso do not currently participate in the CRS.

4. Comprehensive Plan Review

Purpose and Intent

The Okaloosa County Comprehensive Plan (Adopted November 7, 2000, with amendments) was reviewed for the purpose of developing this profile. This review was undertaken in order to assess what steps Okaloosa 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 storm surge, flooding, wildfire and sinkhole 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 F**. 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 Okaloosa County as identified per the County's Local Mitigation Strategy (LMS) are hurricane, storm surge, flood and wildfire. Sinkholes are not identified as a potential hazard risk. Therefore, sinkhole hazard is not addressed in this summary. Okaloosa Comprehensive Plan language places emphasis on the necessary linkage between that Plan and the Okaloosa County LMS and PDRP. Policy 2.6.1 of the Coastal Management Element, directs the implementation of the LMS Guiding Principles through completion of the County disaster mitigation projects which have been identified, analyzed, and ranked. Another policy provides direction for the implementation of recommendations in the LMS and PDRP, in order to reduce the risk from riverine and coastal flooding and hurricane wind forces to life, property and critical infrastructures.

A primary Plan objective is to protect life and property, including historic resources, in locations subject to destruction by hurricanes. Several policies support LMS goals by directing growth management decisions to reduce or eliminate hazards to the built environment. Policies facilitate this goal by requiring compliance with FDEP Coastal Construction Control Line (CCCL) regulations that require location of construction a sufficient distance landward to permit natural

shoreline fluctuations and preserve dune stability. There is also a mitigation strategy in place to direct population concentrations away from the CHHA through implementation of the Future Land Use Map, acquisition of land, and implementation of the County LMS.

Flooding

Flooding is addressed from two vantage points, the protection of natural drainage features, and protection of lives and properties through development standards and stormwater abatement. Policy 2.1.c of the Conservation Element requires dwelling units to be constructed so that the lowest floor elevation is at least one foot above FEMA base flood elevation. In addition, new structures within the CHHA and FEMA V Zone must be built to FDEP CCCL standards and FEMA Special Hazard Area Minimum standards.

Plan policies support efforts of all municipalities and the County to continue participation in NFIP and CRS programs. There are also policies to ensure that all public buildings that serve first response and critical emergency/public needs are located outside of flood zones or flood-prone areas.

Storm Surge and Evacuation

There are provisions related to maintaining or reducing hurricane evacuation times as established in the Northwest Florida Hurricane Evacuation Re-Study. The intent is to guide growth away from the coast through transportation planning and development mitigation measures. Transportation Element, Objective 1.5 requires the provision of alternative evacuation routes and adequate highway capacity on evacuation routes, in addition to the implementation of mitigation measures adopted in the LMS.

Proposed plan amendments which would increase densities within the Coastal High Hazard Area will be subject to review and transportation impact analysis to determine their impact on hurricane evacuation times and routes. Developments that will increase hurricane evacuation times must provide mitigation measures, such as transportation improvements, emergency van pools, and/or private on-site emergency shelters.

Intergovernmental coordination is an important mitigation tool included in the Plan. Policies emphasize coordination with the Ft. Walton Beach Urbanized Area Metropolitan Planning Organization (MPO), FDOT, and Alabama DOT to evaluate major evacuation routes. Part of the evaluation process will include determining where deficiencies occur and where operational improvements can be made to maintain or reduce hurricane evacuation times.

Sheltering

Similar to most of Florida's coastal counties, Okaloosa County currently has a significant shelter deficit. According to Florida's Statewide Emergency Shelter Plan, Okaloosa County has an existing shelter capacity of 800 people. The 2004 shelter demand for a Category 4 or Category 5 hurricane is 12,946 people, leaving an existing shelter deficit of 12,146. In 2009, the projected shelter demand is 14,066, leaving an anticipated shelter deficit of 13,266. 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 Plan includes provisions to deal both with the immediate sheltering need during a disaster, as well as requirements to ensure that new development does not precipitate an increase in hurricane evacuation times. Policy 2.5.4 of the Coastal Management Element requires new public emergency shelters to be built outside of the CHHA, however private on-site shelters will be permitted, in accordance with Policy 2.5.3, related to the required provision of shelters in new development.

Wildfire

The Plan contains policies pertaining to fire stations as these facilities relate to disasters and emergency management. However, no policies pertaining to wildfire mitigation or management practices were found in the Comprehensive Plan.

5. Recommendations

For the Local Mitigation Strategy (LMS) to be effective in the decision-making process of growth management, its objectives and policies must be integrated into the Comprehensive Plan. The Plan is the legal basis for all local land use decisions made. It is the document that outlines the fundamental regulatory provisions for all development, and should therefore state the broad measures of hazard mitigation to be implemented by other regulations such as ordinances, neighborhood plans, land use codes and development regulations.

The following Preliminary Recommendations Matrix provides an overview of hazard mitigation strategies found within the County's LMS, policies found within the Okaloosa County Comprehensive Plan, and suggestions to strengthen such plans

Strategies and Integration Topics: Are these integrated in the LMS and Local Comprehensive Plan			Current LMS Information, Goals and Objectives	Current Comp Plan Policies	Options for Further Integration into the Comprehensive Plan	Options for Further Integration into the LMS	Basis For Suggested Options
	LMS	Comp	Key G = Goal O = objective P = Policy MA = Mitigation Action				
Strategy - Collaboration, coordination, and education							
Is there information sharing and/or involvement in plan development between planners and emergency managers?	Yes: Same steering committee of planners and emergency managers updated LMS and comp plan.		G 2 Maintain communication with LMS steering committee and key county/municipal departments to coordinate intra- and inter-departmental mitigation activities among jurisdictions and the public	None found during this review.	Create an objective or policy to coordinate with LMS committee in updating the LMS to incorporate planning expertise, land use and development regulations. Require a planner to be on the LMS Committee	The 2005 LMS adequately addresses this strategy through Goal 2.	Clear directives for planning and emergency management staff to work together will ensure that the plans address all aspects of hazards. Best management practices from *Protecting Florida's Communities.*
Do the Comp Plan, LMS, CEMP, and other local and regional plans cross-reference each other and include consistent data on hazardous locations?	Yes: LMS references CEMP and Comp,and Comp references LMS		G 3 O Continually review LMS and compare with plans that have mitigation provisions (e.g., comp plan).	CE 2.9 Coordinate with adjacent governments, state and regional agencies, and private groups to implement the NW FL Resource Management Plan for beach, dune and shoreline protection, and floodplain management.	The 2000 Comp Plan adequately addresses this strategy.	The 2005 LMS adequately addresses this strategy through Goal 3.	
				SE P 1.2 Stormwater Master Plan will be coordinated with LMS Guiding Principles			
				FLUE O 7 New development, redevelopment, zoning changes and land use plan amendments shall be consistent and coordinated with the LMS and NW FL Hurricane Evacuation Re-Study			
				FLUE P 7.1 Implement guiding principles from LMS to protect environmentally sensitive lands.			
			G 4 O Work with existing programs in county and municipalities (building inspections, local CRS -NFIP, emergency management, chambers of commerce, etc.) to connect mitigation to these efforts.	CME P 1.2.7 Coordinate existing resource protection plans and LMS.			
				CME P 2.6.2 Participate in NFIP and CRS			

Strategies and Integration Topics: Are these integrated in the LMS and Local Comprehensive Plan			Current LMS Information, Goals and Objectives	Current Comp Plan Policies	Options for Further Integration into the Comprehensive Plan	Options for Further Integration into the LMS	Basis For Suggested Options
	LMS	Comp	Key G = Goal O = objective P = Policy MA = Mitigation Action				
Do the Comp Plan, LMS, CEMP, and other local and regional plans cross-reference each other and include consistent data on hazardous locations? (continued)	LMS and Comp data needs to be compared (local action)		MA Support activities that newly document or update hazard maps to focus on mitigation activities.	Data and Analysis section not reviewed for this project.	Include map of identified hazard locations (e.g., SLOSH, 100-year floodplain) overlain with land uses in the FLU series.	Include existing and future land uses on each hazard map, for those hazards identified as those that county is at most risk.	Consistent use of data will enhance/strengthen hazard mitigation planning. Maps are useful to analyze relationship between land uses in hazard areas for mitigation planning or changes to future land uses.
					Cross reference the LMS source data that is used in plan updates to ensure that data is consistent and not conflicting.		
Are hazard mitigation projects addressed in the 5-year schedule of Capital Improvement Projects?	Local Action	Local Action	No specific projects are listed in the version of the LMS that was reviewed for this profile.	CIE O 2 Limit public expenditures that subsidize private sector development in Coastal High Hazard Areas (CHHA)	During the annual review of the five-year schedule of capital improvements the LMS project list should be considered.	Update the LMS projects on a regular basis, to incorporate into the CIE.	FEMA funds are available for hazard mitigation, and opportunity for implementation is increased by projects being listed in both plans.
				CIE P 1.2 Establish criteria within the capital budgeting process to evaluate capital improvement projects that consider criteria for the elimination of future public hazards, consistent with LMS Guiding Principles	Add a policy similar to CIE policy: Limit public expenditures that subsidize private sector development in Coastal High Hazard Areas.		Bay County Comp Plan CME O 7.7

Strategies and Integration Topics: Are these integrated in the LMS and Local Comprehensive Plan			Current LMS Information, Goals and Objectives	Current Comp Plan Policies	Options for Further Integration into the Comprehensive Plan	Options for Further Integration into the LMS	Basis For Suggested Options
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Are there measures to educate residents, homeowner/property associations, and the business community of ways they can mitigate against hazards?	Yes	No	G 4 Assist property owners, residents, businesses, non-profits and others in understanding and knowing or their eligibility for grants, loans an services that may help to mitigate hazards that directly affect their interests. G 4 O Work with existing programs in county and municipalities (building inspections, local CRS -NFIP, emergency management, chambers of commerce, etc.) to connect mitigation to these efforts. G 4 O Develop website to convey updated information about mitigation activities on a continual basis. G 4 O Maintain initiatives or priorities and contact persons lists to facilitate rapid notification of assistance (mitigation) availability.	None found during this review.	Coordinate with the LMS committee to educate public about mitigation techniques and benefits associated with property protection via floodproofing or elevating existing structures in SFHA (via the CRS outreach initiatives), Firewise initiative, retrofitting against wind hazards, landscaping to reduce wind-borne debris, and increasing flood water retention; and preparedness measures such as evacuation and sheltering.	The 2005 LMS adequately addressed this strategy through Goal 4.	While regulation for new development can reduce or eliminate risk to hazards, one of the best ways to mitigate existing risk is through education.

Strategies and Integration Topics: Are these integrated in the LMS and Local Comprehensive Plan			Current LMS Information, Goals and Objectives	Current Comp Plan Policies	Options for Further Integration into the Comprehensive Plan	Options for Further Integration into the LMS	Basis For Suggested Options
	LMS	Comp	Key G = Goal O = objective P = Policy MA = Mitigation Action				
Strategy - Get out of the way: provide evacuation and sheltering services							
Are there measures to provide adequate evacuation clearance time to support current population and population growth?	Yes	Yes	MA Ensure that maps accurately reflect the amount of surge, wave action and flood caused by hurricanes.	FLUE O. 7 New development, redevelopment, zoning changes and land use plan amendments shall be consistent and coordinated with the LMS and NW FL Hurricane Evacuation Re-Study	Require subdivisions/PUDs to include more than one exiting roadway in defined high risk areas, such as CHHA or HVZ.	Examine the topographic data that was used to run the SLOSH model to determine if better data (.i.e.., LIDAR), as available, could be used to identify evacuation zones.	Science and technology can provide more accurate data, and enhance analysis.
				FLUE P 7.2 Implement provisions of NW FL Hurricane Evacuation Re-Study through appropriate land use and transportation planning activities and development mitigation measures.	Hurricane evacuation routes are identified and shown on Future Transportation Map Series		Bay County Comp Plan TE P 4.11.1
			MA Ensure roads are designed and engineered for the amount of wind, surge, flooding and debris that can be expected.	TE O 1.5 Provide adequate emergency evacuation routes and highway capacity on evacuation routes and by mitigation measures adopted in LMS.	Prioritize evacuation route improvements in Capital Improvements schedule and MPO Long-Range Transportation Plan.	The 2005 LMS adequately addresses this strategy through the mitigation action.	Best management practices from *Protecting Florida's Communities*
				TE P1.5.1 Coordinate with Ft. Walton Beach Urbanized Area MPO, FDOT and AL DOT to provide adequate evacuation routes			
				CME P 2.5.1 CEMP will be adopted that is consistent with updated NWFL Hurricane Evacuation Re-Study	Institute a level of service (LOS) standard that is tied to levels of development and/or institute an impact fee in the CHHA or HVZ to help pay for public expense of implementing evacuation orders.	Include goal/objective to support interagency involvement in evacuation planning.	
				CME P 2.5.2 Maintain or reduce clearance times per NW FL Hurricane Evacuation Re-Study through appropriate land use and transportation planningand/or through development mitigation measures			
				CME P 2.5.3 (in part) Proposed plan amendments that increase densities in CHHA are subject to review and transportation analysis to determine impact on hurricane evacuation times and routes	Modify to reflect 9-J 5 requirement to not allow plan amendments that increase CHHA densities.		

Strategies and Integration Topics: Are these integrated in the LMS and Local Comprehensive Plan			Current LMS Information, Goals and Objectives	Current Comp Plan Policies	Options for Further Integration into the Comprehensive Plan	Options for Further Integration into the LMS	Basis For Suggested Options
	LMS	Comp	Key G = Goal O = objective P = Policy MA = Mitigation Action				
Are there measures to provide adequate shelter space to meet population growth and special needs?	Yes	Yes	MA Ensure adequate and safe public shelters are available in all locations in the County to prevent or reduce post-disaster homelessness, including adequate electrical supplies for cooking and to maintain sanitary conditions.	CME P 2.5.3 (in part) Developments that increase evacuation clearance time in the CHHA are required to provide mitigation measures such as emergency van pools or on-site emergency shelters	Institute impact fees in HVZ zone to cover costs to build new shelters, or retrofit schools to be used as shelters, and operating costs.	Update social vulnerability results on a regular basis in the LMS and existing shelter capacity to substantiate mitigation action pertaining to sheltering provisions.	There is an existing shelter deficit of 12,146 and population growth is imminent.
					Require new developments that increase evacuation clearance time in the CHHA to provide mitigation measures such as emergency van pools or emergency shelters outside of the HVZ where appropriate.	Include Florida Statewide Shelter Plan Table 3-1 Shelter Demand/Capacity In People and Table 6-1 Hurricane Shelter Deficit Reduction Cumulative Progress to demonstrate shelter capacity. Map existing shelter locations overlaid with special needs population densities and FLU to show where more shelters may be needed/retrofitted.	
			MA Ensure that all public buildings that serve as first response and critical emergency or public needs are located outside flood zones or flood-prone areas.	CME P 2.5.4 New public emergency shelters shall be built outside the CHHA with exception of onsite shelters built per Policy 2.5.3	Institute a LOS standard or ratio for population in an HVZ to shelter capacity		Best management practices from *Protecting Florida's Communities*
					To increase shelter capacity, all new or school retrofit projects outside of the HVZ and 100-year floodplain shall be evaluated for sheltering of special needs and general population, and built to ARC standards.		
					All new mobile homes and recreational vehicle developments within the HVZ shall be required by county development regulations to pay an impact fee to the county for off-site shelter.		Escambia County Comp Plan CME P 11.A.7.8
					Per CEMP, the emergency management division will maintain a voluntary register of people who need assistance during an evacuation and maintain shelter list at EOC.		Escambia County Comp Plan CME P 11.A.7.3

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	LMS	Comp	Key G = Goal O = objective P = Policy MA = Mitigation Action				
Strategy - Make the environment less hazardous: Protect and enhance natural protective features							
Are there measures to protect and/or restore natural resources that might in turn decrease the risk from storm surge?	Yes	Yes		CME G 1 Protect coastal barrier islands by planning for and restricting development that would damage these resources, while also providing public access for recreation.		Include data and maps of environmentally sensitive lands (e.g., CBRS, and coastal dunes and wetlands, etc.) overlaid with storm surge zones and future land uses.	Most sensitive portion of coastal area shall be managed through the imposition of strict construction standards to minimize damage to natural environment, private property, and life [§161.53(5), F.S.]; protect beaches or dunes, establish construction standards which minimize impacts of man-made structures on beach or dune systems, and restore altered beaches or dunes [9 J-5.012(3)(b)4], and best management practices from *Protecting Florida's Communities.*
				CME O 1.1 Protect beaches/dunes to restore altered beaches/dunes, or comply with construction standards which minimize impacts of man-made structures on beach/dunes to maximum extent possible	Require dune restoration as condition of development approval.		
				CME P 1.1.1 Comply with CCCL to permit natural shoreline change and preserve dunes	Exceed CCCL permitting standards.		
				CME P 1.1.5 Encourage activities that protect and rebuild coastal dunes in coordination with LMS	Institute special assessment districts to finance beach renourishment and berm maintenance in areas that do not grant public beach access.		
			MA Promote continued purchase of undeveloped lands at high risk to flooding, with proper considerations of private property rights and compensation	CME P 1.2.2 Protect environmentally sensitive coastal areas unduly threatened by development, through acquisition, public or private conservation easements, purchase of development rights, etc.			
				CME P 2.1.1 The CHHA is defined as the category 1 evacuation zone	Define CHHA to also include category 1 surge zone.	To illustrate those at risk to a Cat 1 hurricane, include map of category 1 hurricane evacuation zone, category 1 storm surge, existing evacuation corridors and population density of evacuees.	
				CME P 6.6 No development seaward of CCCL except where authorized by federal or state permits that allow types of construction that do not diminish the natural storm buffering and protection of the dunes			
				FLUE O 6 Protect coastal resources through identification, classification, planning, management, and limitations on use consistent with the degree of protection required.			
				FLUE P 7.1 New development, redevelopment, zoning changes and land use plan amendments shall be consistent with LMS Guiding Principles regarding the protection of environmentally sensitive lands through land use policies that support sustainable communities	New roads, pipelines, and other public infrastructure within high risk areas (e.g., CHHA, 100-year floodplain) shall be built to lessen direct damages from natural hazards.	As LMS Guiding Principles are updated, incorporate into the comp plan.	Consistent use of information will enhance/strengthen planning endeavors for hazard mitigation, and Santa Rosa County Comp Plan CME P 7.1.A.7

Strategies and Integration Topics: Are these integrated in the LMS and Local Comprehensive Plan			Current LMS Information, Goals and Objectives	Current Comp Plan Policies	Options for Further Integration into the Comprehensive Plan	Options for Further Integration into the LMS	Basis For Suggested Options
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Are there measures to protect and/or restore natural resources that might in turn decrease the risk from flooding?	Yes	Yes	MA Promote the continued purchase of undeveloped lands at high risk to flooding, with proper considerations of private property rights and constitutional requirements for compensation, as appropriate.	CE G Promote protection, preservation and appropriate used of natural resources (e.g., wetlands, floodplains, shorelines, etc.)	Designate wetlands, floodplains for preservation through FLUM or overlay zoning district.	Include map of 100-year floodplain overlain with future land uses.	Best management practice from *Protecting Florida's Communities* and Consistent use of data will enhance/strengthen mitigation planning.
				CE P 2.1 Restrict increases in land use density and intensity in wetlands. Development is subject to TDRs where sufficient uplands exist, and lowest floor elevation must be one foot above the BFE per FIRM. Where uplands don't exist development will be limited to a threshold.			
				CE P 2.2 For development or redevelopment that degrades wetlands, impacts shall be mitigated per DEP permitting regulations	Use GIS to institute a wetlands identification and monitoring program inside the 100-year flood plain and identified surge zones. Identify lots/parcels containing wetlands based on actual jurisdictional interpretations and develop monitoring program to determine wetland loss		Panama City Beach County Comp Plan
				CE O 5 Require development practices that maintain/improve wetlands to the maximum extent possible			
				CE P 5.1 Restore/enhance disturbed/ degraded wetlands by removing invasive toxics or replanting native vegetation on county-owned land			
				CE P 5.3 Protect environmentally sensitive natural areas via acquisition, conservation easement, purchase of development rights, etc.		Include goal/objective to protect environmentally sensitive lands in 100-year floodplain	
				FLUE O 10 Maintain and amend comp plan to address floodplain management issues	County will adopt regulations to ensure new development doesn't create flood hazard to existing or downstream development		Bay County Comp Plan CE P 6.13.4
				FLUE P 1.2 Development approval process shall ensure new development and redevelopment are consistent with natural drainage patterns and require appropriate stormwater management systems consistent with adopted drainage LOS, natural drainage patterns and soil conditions.			

Strategies and Integration Topics: Are these integrated in the LMS and Local Comprehensive Plan			Current LMS Information, Goals and Objectives	Current Comp Plan Policies	Options for Further Integration into the Comprehensive Plan	Options for Further Integration into the LMS	Basis For Suggested Options
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Are there measures to protect and/or restore natural resources that might in turn decrease the risk from flooding? (continued)	Yes	Yes		FLUE P 1.3 Development shall be limited in floodplains and floodways per FEMA requirements	Exceed FEMA requirements for development in floodplains and floodways, where feasible. (e.g. CRS)	Include goal/objective to exceed FEMA requirements for development in 100-year floodplain, where feasible.	
				FLUE P 6.3 Protect environmentally sensitive lands by limitations on density and intensity of development, building placement (clustering), building coverage or impervious surface, or setbacks and landscaped buffers, and an evaluation of proposed plan amendment to ensure they do not contribute to urban sprawl that fails to protect natural resources		Include goal/objective to limit impervious surfaces in 100-year floodplain where possible	
				FLUE P 6.4 Wetlands shall be protected by buffer zones (e.g., 25 - 50 feet)			
				FLUE P 7.1 New development, redevelopment, zoning changes and land use plan amendments shall be consistent with LMS Guiding Principles regarding the protection of areas identified as high hazard impact areas, such as CHHA, through land use policies that support sustainable communities			
				FLUE P 10.8 Ensure adequate open space for protected natural resource lands, environmentally sensitive lands, and drainage and stormwater retention areas			
				CME P 1.2.1 Implement policies in the Conservation Element that limit specific and cumulative impacts on wetlands	There shall be no reduction in the flood storage capacity or the other natural functions and values of the floodplain in designated floodway areas. Encroachments shall be prohibited within designated regulatory floodway including fill and new construction and development improvements that would result in any increase in flood levels.		Santa Rosa Comp Plan IE P 6.3.B.5
				SME 0 3 Protect natural functions of stormwater management features		Include goal/objective to maintain/enhance stormwater management systems in 100-year floodplain.	
				SME P 3.1 Protect natural functions of stormwater management features through land development regulations and proper classification of land uses			
				SME P 3.2 Protect quality and quantity of stormwater runoff by limiting impacts from development/redevelopment on wetlands, water quality and quantity			

Strategies and Integration Topics: Are these integrated in the LMS and Local Comprehensive Plan			Current LMS Information, Goals and Objectives	Current Comp Plan Policies	Options for Further Integration into the Comprehensive Plan	Options for Further Integration into the LMS	Basis For Suggested Options
	LMS	Comp	Key G = Goal O = objective P = Policy MA = Mitigation Action				
Are there measures to protect and/or restore natural resources that might in turn decrease the risk from wildfire?	Yes	No	MA Support activities that newly document or update maps, aerials photos, or remote sensing imagery that shows degree of risk (Levels of Concern) for wildfire - use data to focus mitigation activities.	None found during this review.	Identify areas that are susceptible to wildfire. Include maps that depict wildfire risk to existing and future land use.	Update wildfire risk map on a regular basis, to support wildfire related comp plan policies.	Areas susceptible to wildfire 9J-5.006(2)(b)
			MA Support public education activities of local fire departments and FL Division of Forestry in promoting "Firewise" programs, local inspections, and enforcement activities to reduce/ eliminate wildfire risk.		County shall implement Firewise Medal Community Program		
					The County shall educate the public, especially those at high risk from wildfires, and make them aware of proactive steps they can take to mitigate wildfire damage.		DCA's *Wildfire Mitigation in FL: Land Use Planning Strategies and Best Development Practicesand* Alachua County Comp Plan
			MA Support public and private mitigation efforts to provide fire hydrants to locations at risk along the urban/rural interface where water systems exist to provide such services.		Install fire hydrants in high risk wildfire areas in the wildland urban interface.		DCA's *Wildfire Mitigation in FL: Land Use Planning Strategies and Best Development Practices*
			MA Support activities that integrate wildfire mitigation techniques with design and review process of subdivision plats to reduce risks to new communities through cooperative efforts between land planning offices, fire departments and FL Division of Forestry.		Require management plans for conservation easements that address reduction in wildfire fuels.		
					Review proposals for subdivisions, lot splits, and other developments for fire protection needs during site plan review process.		
					Cooperate with fire protection service or agencies to determine guidelines for use and development of wildfire-prone areas.		

Strategies and Integration Topics: Are these integrated in the LMS and Local Comprehensive Plan			Current LMS Information, Goals and Objectives	Current Comp Plan Policies	Options for Further Integration into the Comprehensive Plan	Options for Further Integration into the LMS	Basis For Suggested Options
	LMS	Comp	Key G = Goal O = objective P = Policy MA = Mitigation Action				
Are there measures to protect and/or restore natural resources that might in turn decrease the risk from wildfire? (continued)	Yes	No	MA Support activities that integrate wildfire mitigation techniques with design and review process of subdivision plats to reduce risks to new communities through cooperative efforts between land planning offices, fire departments and FL Division of Forestry. (continued)	None found during this review.	Advance directives and policies of local emergency management operational plans and LMS to eliminate or reduce present and future vulnerability to wildfire hazards. Restrict or prohibit certain land uses as necessary to assure public health, safety, and welfare and protection of property. All new development should complete and implement a wildfire mitigation plan specific to that development, subject to review and approval by the Okaloosa County Fire Rescue Department. Structures shall be designed 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. Streets, roads, driveways, bridges and culverts should be designed to assure access for firefighting. County shall pursue funds for community/volunteer service program for fuels management on County owned land County shall implement a fuels management program to include prescribed burning, mechanical fuel reduction, thinning; increased public awareness of prescribed burning.		Alachua County Comp Plan

Strategies and Integration Topics: Are these integrated in the LMS and Local Comprehensive Plan			Current LMS Information, Goals and Objectives	Current Comp Plan Policies	Options for Further Integration into the Comprehensive Plan	Options for Further Integration into the LMS	Basis For Suggested Options
	LMS	Comp	Key G = Goal O = objective P = Policy MA = Mitigation Action				
Strategy - Make structures more resistant to natural hazard forces							
Are there measures that support retrofitting or relocating private and/or public structures in hazard areas?	Yes	Yes	G 4 Assist property owners, residents, businesses, non-profits and others in understanding and knowing or their eligibility for grants, loans an services that may help to mitigate hazards that directly affect their interests.	CME P 1.2.5 Floodproof WWTP and WTP systems in CHHA	Prioritize public structures for retrofit, relocation, or flood-proofing public facilities or infrastructure in high risk hazard areas.	Map and assess vulnerability of public facilities and infrastructure that are susceptible to hazards. This information can be used to prioritize facilities for structural/operational analyses. The analysis results can then be used to prioritize LMS mitigation projects and capital improvement projects.	Best management practices from *Protecting Florida's Communities*
			G 5 Reduce or eliminate hazard identified to at risk locations in the County and its municipalities.	CME 2.2 Protect property within the CHHA from coastal flooding, surge and high wind through construction standards	Limit expansion of public facilities in high risk hazard areas, when retrofitting or floodproofing is used instead of relocation or replacement.		
			G 5 O Targeting mitigation efforts and activities towards areas where hazards exist.	CME 2.2.1 Enforce rigorous development standards consistent with NFIP/CRS (e.g., anchoring structures to resist flotation, collapse and lateral movement)	County shall continue its participation in NFIP *and CRS*		
			MA Ensure all future buildings are constructed to FBC, and are built above BFE in FIRM A and V zones.	CME 2.2.2 Design to Standard Building Code construction standards using 110 mph wind speed construction standards, and other design conditions that require foundations to withstand storm conditions, wave forces, hydrostatic and hydronamic loads consistent with FEMA minimum construction standards.	New roads, pipelines, and other public infrastructure within high risk areas (e.g., CHHA, 100-year floodplain) shall be built to lessen direct damages from natural hazards.		
					Prohibit septic tanks in CHHA.		
Are there measures to protect cultural resources from natural hazards?	No	Yes		CME G 2 Protect human life and property, including historic resources, in locations subject to destruction from hurricanes	Create an inventory of culturally significant facilities/sites (e.g., historic, archaeological) in high hazard areas.	Asses vulnerability of historic structures and include goal/objective to mitigate historic properties	
					Protect culturally significant facilities (e.g., historic, archaeological) in high hazard areas.		

Strategies and Integration Topics: Are these integrated in the LMS and Local Comprehensive Plan			Current LMS Information, Goals and Objectives	Current Comp Plan Policies	Options for Further Integration into the Comprehensive Plan	Options for Further Integration into the LMS	Basis For Suggested Options
	LMS	Comp	Key G = Goal O = objective P = Policy MA = Mitigation Action				
Does the comp plan include measures to mitigate flood damage to Repetitive Loss structures?	Yes	No	G 4 O Work with existing programs in county and municipalities (building inspections, local CRS -NFIP, emergency management, chambers of commerce, etc.) to connect mitigation to these efforts.		Identify structures that are repetitively damaged by coastal storms (this is completed per CRS Program).	Include a goal/objective to mitigate repetitive loss properties.	Repetitive loss structures shall be inventoried or analyzed [9J-5.012(2)(e)2]
				CME P 2.6.2 Participate in NFIP and CRS	Perform an analysis for acquiring, relocating or elevating Repetitive Loss structures in the SFHA (100- year floodplain.		
			MA Ensure all future buildings are constructed to FBC, and are built above BFE in FIRM A and V zones.	CME P 2.2.1 Enforce rigorous development standards consistent with the NFIP and CRS program	Initiate grant/ loan program to assist all property owners with financing elevating , floodproofing, or relocating existing repetitive loss structures in SFHA..		FEMA funds are available for hazard mitigation.
Are there measures to require compliance with or exceed building codes and/or design standards for certain hazard areas?	Yes	Yes	MA Building Construction and Flooding - Ensure all future buildings are constructed to FBC, and are built above BFE in FIRM A and V zones.	CME P 2.2.1 Enforce rigorous development standards consistent with the NFIP and CRS program, and CME 2.2.2 comply with CCCL regulations and Standard Building Code in CHHA	Adopt more stringent development standards than the NFIP and existing building codes, and exceed CCCL permitting standards in CHHA.		The most sensitive portion of the coastal area shall be managed through the imposition of strict construction standards in order to minimize damage to the natural environment, private property, and life. (§161.53(5), F.S.) and Best management practices from *Protecting Florida's Communities*
			G 4 O Work with existing programs in county and municipalities (building inspections, local CRS -NFIP, emergency management, chambers of commerce, etc.) to connect mitigation to these efforts.	CME P 2.6.2 Participate in NFIP and CRS			
				FLUE P 1.3 Development shall be limited in floodplains and floodways per FEMA requirements	Adopt more stringent development standards than the NFIP in the 100-year floodplain and floodways (i.e. per CRS Program)		
					Exceed CCCL permitting standards in CHHA		
					Prohibit unauthorized obstruction of natural or man-made drainageways.		Bay County Comp Plan SME P 5E.10.1.1
					Ensure development does not cause any adverse impacts to adjacent or other properties		Bay County Comp Plan CE P 6.13.4

Strategies and Integration Topics: Are these integrated in the LMS and Local Comprehensive Plan			Current LMS Information, Goals and Objectives	Current Comp Plan Policies	Options for Further Integration into the Comprehensive Plan	Options for Further Integration into the LMS	Basis For Suggested Options
	LMS	Comp	Key G = Goal O = objective P = Policy MA = Mitigation Action				
Strategy - Manage the development and redevelopment in hazardous areas							
Are there measures to limit population densities in high-hazard areas?	No	Yes: for Surge and flood.		CME O 2.1 Direct population concentrations away from the CHHA through implementation of FLUM, acquisition of land, and LMS	The 2000 Comp Plan adequately addresses this strategy.	Include map that depicts population densities in existing land use categories, and project growth rate to illustrate current and potential future vulnerability	Population density by demographics, as listed in this Hazards Profile, mapping is useful for mitigation planning for issues such as evacuation route retrofits/expansions, shelter retrofits, areas with least resources to mitigate (e.g., renters), etc.
				CME 2.1.2 New structures are prohibited (except recreational) in the FEMA V Zone portion of CHHA, unless all DEP and FEMA SFHA requirements are met			
				CME P 2.1.3 New high-density residential development (over 25 units/acre) shall not be permitted in the CHHA, except for areas that are grandfathered	Densities/intensities of land use will be regulated consistent with the Comp Plan in order to maintain required road clearance times. Alternatively, LOS standards shall be implemented to maintain current evacuation times.		Santa Rosa County Comp Plan FLUE P 3.1.F.3
				CE P 2.1 Restrict increases in land use density and intensity in wetlands and development is subject to TDRs where sufficient uplands exist, and lowest floor elevation must be one foot above the BFE per FIRM. Where uplands don't exist development will be limited to a threshold.	High risk developments (e.g., nursing homes, convalescent homes, hospitals, mobile home parks, subdivisions or RV parks shall not be located in CHHA.		Bay County Comp Plan CME P 7.7.3
					Use local, state or federal funds to purchase/lease large tracts of undeveloped land in the CHHA to reduce the development potential of these areas.		Bay County Comp Plan CME P 7.7.4

Strategies and Integration Topics: Are these integrated in the LMS and Local Comprehensive Plan			Current LMS Information, Goals and Objectives	Current Comp Plan Policies	Options for Further Integration into the Comprehensive Plan	Options for Further Integration into the LMS	Basis For Suggested Options
	LMS	Comp	Key G = Goal O = objective P = Policy MA = Mitigation Action				
Are there measures to limit public expenditures that subsidize development in high-hazard areas?	No	Yes		CME P 2.1.2 New structures are prohibited (except recreational) in the FEMA V Zone portion of CHHA, unless all DEP and FEMA SFHA requirements are met	Capacity of public infrastructure shall not be increased on Coastal Barrier Resources consistent with CBRA.	Include objective to limit public expenditures in high hazard areas, unless funds are used to mitigate an existing critical facility or repetitive loss structure.	Bay County Comp Plan CME P 7.13.2
			Ensure that all public facilities that serve first response and critical emergency needs are located outside the flood zone or flood prone areas.	CME P 2.1.3 High risk facilities must be located outside the CHHA wherever possible, and must prepare an evacuation plan	Prohibit high risk facilities within the CHHA.	Include list of all mitigated projects in high hazard areas, damage costs prior to mitigation, cost to mitigate and cost savings due to mitigation (if known).	Limitation of public expenditures that subsidize development in high hazard coastal areas, and establishing criteria to consider public hazard elimination when evaluating capital improvement projects.9J-5.016
				CIE P 2.1 Limit public expenditures in CHHA (e.g., parks, recreational, dune walkovers, erosion control devices, waste water control facilities that replace septic systems or to increase public access to shoreline, fire protection, water supply and transportation facilities	Conduct an analysis on unintended consequences (e.g., subsidizing development) from allowing public expenditures in CHHA.	Include map of critical facilities and table and map of infrastructure in hazard zones, to depict those currently exposed to hazard impacts.	
				CME O 2.3 Limit public expenditures that subsidize development in CHHA; give priority to shoreline dependent land uses	County shall not accept dedications of roads, water and sewer facilities, or other public facilities in high risk areas (e.g., CHHA, 100-year floodplain) unless specifically provided for in an enforceable development agreement.		Bay County Comp Plan CME P 7.7.5
				CME 2.3.5 Siting of marinas shall be coordinated with all agencies using appropriate environmental information. Have hurricane contingency and mitigation activity plans in place			
			Ensure that all public facilities that serve first response and critical emergency needs are located outside the flood zone or flood prone areas.	CME P 2.5.4 New public emergency shelters shall be built outside the CHHA with exception of onsite shelters built per Policy 2.5.3	Critical facilities should not be located in 100-year flood plain.	Update the LMS maps/tables that show which critical facilities are located in SFHAs. These could be prioritized for retrofit or relocation using HMGP, PDM, or FMA funds.	Critical facilities ability to provide essential services may be hampered if the structure or surrounding areas are flooded, posing a barrier to access.

Strategies and Integration Topics: Are these integrated in the LMS and Local Comprehensive Plan			Current LMS Information, Goals and Objectives	Current Comp Plan Policies	Options for Further Integration into the Comprehensive Plan	Options for Further Integration into the LMS	Basis For Suggested Options
	LMS	Comp	Key G = Goal O = objective P = Policy MA = Mitigation Action				
Are there creative neighborhood design solutions or development regulations that mitigate hazards, such as clustering or transfer of development rights?	No	Yes		FLUE P 6.3 Protect environmentally sensitive lands by limitations on density and intensity of development, building placement (clustering), building coverage or impervious surface, or setbacks and landscaped buffers, and an evaluation of proposed plan amendment to ensure they do not contribute to urban sprawl that fails to protect natural resources.	County will limit disturbance of natural topography by requiring that development be clustered on portion of site with least slope and by requiring that structures and roads be designed to maintain natural topography to the maximum extent feasible.	Include goal/objective to encourage creative neighborhood design solutions or development regulations which mitigate natural hazards	Walton County Comp Plan FLUE P L-1.6.2
				CE P 2.1 Restrict increases in land use density and intensity in wetlands and development is subject to TDRs where sufficient uplands exist, and lowest floor elevation must be one foot above the BFE per FIRM. Where uplands don't exist development will be limited to a threshold.			
					County will adopt regulations to ensure development doesn't create flood hazard to existing or downstream development		Bay County Comp Plan CE P 6.13.4
Are there measures to limit redevelopment in hazard areas and procedures for post-disaster recovery that will lead to a more disaster-resistant community?	No	Yes		CME P 1.2.2 Protect environmentally sensitive coastal areas unduly threatened by development, through acquisition, public or private conservation easements, purchase of development rights, or other means as deemed appropriate.	Limit specific impacts and cumulative impacts of development or redevelopment upon wetlands, water quality, water quantity, or other natural resources through site design techniques, such as clustering, elevation on pilings, setbacks, and buffering. The intent of this policy is to avoid such impact and to permit Mitigation of impacts only as a last resort.		Walton County Comp Plan CE P C-1.1.1
				CME O 2.6 Implement recommendations from the LMS and PDRP to reduce risk from riverine and coastal flooding and hurricane wind to life property and critical infrastructure.			
				CME P 2.6.1 Implement Guiding Principles in LMS to protect people, reduce post-disaster public expenditures, mitigate losses and coordinate with private sector to mitigate losses.			
				FLUE P 1.2 Development approval process shall ensure new development and redevelopment are consistent with natural drainage patterns and require appropriate stormwater management systems consistent with adopted drainage LOS, natural drainage patterns and soil conditions.	Permitting of new development and redevelopment in any Hurricane Evacuation Zones shall not result in increased hurricane evacuation times.		Walton County Comp Plan CE P C-4.2.5

7. 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.

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.

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
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)
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 "Evac_cat" 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 "Evac_cat" is equal to "Zone TS" or "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 available at 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.
    - The rating scale in the "Wildfire Susceptibility Index" GIS coverages has a range of 0 to 100,000 in north Florida counties, and a range of 0 to 1.0 in south Florida counties.

Parks, Conservation Areas, Golf Courses
"Parks, Conservation Areas, Golf Courses" existing land uses include all public and private conservation areas depicted on the statewide GIS coverage of conservation lands "flma_200501.shp", produced by FDEP (2005).

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
Local Mitigation Strategy
Goals and Objectives Pertaining to Comprehensive Planning

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

- ***Goal 3*** *Update the LMS plan, as necessary, to identify changes to hazards, vulnerability, goals, initiatives/priorities accomplishments/withdrawal/additions/pending, update of funding sources, current disaster declarations, and adoption of revisions. (Section 6, p. 2)*

  Objectives:
  - o Having the Steering Committee direct staff to update plan sections, tables, maps, etc., based upon current activities, trends, or issues.
  - o Continually reviewing the plan and comparing it to other planning requirements (emergency management plans, comprehensive land use plans, community rating system plans) that contain mitigation provisions or may otherwise help to assert or hinder mitigation initiatives.

- ***Goal 4*** *Assist property owners, residents, businesses, non-profits and others in understanding and knowing of their eligibility for grants, loans and services that may help to mitigate hazards that directly affect their interests. (Section 6, p. 3)*

  Objectives:
  - o Working with existing programs within the County and Municipalities (building inspections, local Community Rating System/National Flood Insurance Program, emergency management, chambers of commerce, etc.) to connect mitigation to these efforts.

- ***Goal 5*** *Reduce or eliminate hazards identified to at risk locations in the County and its municipalities. (Section 6, p. 3)*

  Objectives:
  - o Targeting mitigation efforts and activities towards areas where hazards exist.
  - o Working with agencies, professionals, and the public to develop the best solutions for identified hazards.
  - o Examining and implementing appropriate technologies to identify, model, or otherwise simulate risks and zones of risk and incorporating these into the LMS plan.

ATTACHMENT F
Okaloosa County Comprehensive Plan Excerpts Related to Hazard Mitigation

FUTURE LAND USE ELEMENT

OBJECTIVE 1: The County shall coordinate the location of future land uses with topographic conditions, soil types and environmental constraints.

Policy 1.2: The development approval process shall ensure that new development and redevelopment is consistent with natural drainage patterns, and further shall require appropriate stormwater management systems consistent with the adopted drainage level of service, natural drainage patterns, and soil conditions.

Policy 1.3: Flood plains and floodways in the County shall be identified and development shall be limited, consistent with FEMA requirements.

OBJECTIVE 6: (Chapter 2) Natural resources, environmental lands, and coastal resources shall be protected through identification, classification, planning and management, and limitations on use consistent with the degree of protection required.

Policy 6.3: The protection of environmentally sensitive lands, as defined in Conservation Policy 3.5, and shall be accomplished by one or more of the following techniques, based on the degree of protection required: a. limitations on development density and intensity; b. limitations on building placement, such as required clustering on the non-sensitive portions of the site; c. limitations on building coverage or impervious surface coverage; d. setbacks and landscaped buffers sufficient to provide protection to the resource; and e. evaluation of proposed plan amendments to ensure that they do not contribute to urban sprawl that fails to protect natural resources.

Policy 6.4: In addition to protective measures in Policy 6.3, wetlands shall be protected by the following: a. For both tidal and non-tidal wetlands, the first 25 feet from the mean high water line or the ordinary high water line shall not contain principal or accessory structures except where state and federal permits have been obtained. b. For tidal-influenced wetlands an additional 25-foot buffer zone is imposed that shall not contain any principal structures (the total 500-foot buffer zone is measured from the mean high water line). c. A vegetated buffer must be established, either through retention of the existing native vegetation, planting of new vegetation, or a combination of both, within the required 25-foot or 50-foot buffer zones, provided that appropriate permits can be secured from state and regional agencies.

Policy 6.6: Development shall not be permitted seaward of the Coastal Construction Control Line except where authorized by the appropriate state and federal permits that allow certain types of construction to occur to the extent that the natural storm buffering and protection capability of the dunes is not diminished. The County shall maintain land development regulations to ensure that the location of development is consistent with this policy.

OBJECTIVE 7: Proposed development, redevelopment, changes in zoning, and land use plan amendments shall be consistent with and coordinated with the Okaloosa County Local Mitigation Strategy and the Northwest Florida Hurricane Evacuation Re-Study.

Policy 7.1: The County shall implement the Guiding Principles adopted in the Okaloosa County Local Mitigation Strategy, in part through the protection of environmentally sensitive lands and through land use policies that support sustainable communities.

Policy 7.2: The County shall implement the provisions of the Northwest Florida Hurricane Evacuation Re-Study through appropriate land use and transportation planning activities and through development mitigation measures.

OBJECTIVE 10: (in part) The County shall maintain, and amend as needed to implement this comprehensive plan, land use and development regulations to address the following issues in addition to those identified in other objectives and policies: c. provide for floodplain management

Policy 10.1: (in part) Okaloosa Island – This category applies to the land area of Okaloosa Island and is governed by the "Santa Rosa Island Plat Map and Protective Restrictions and Covenants" for development on the island. In addition, permits from FDEP must be issued for construction of any structures seaward of the CCCL before the County will permit construction. Additionally, the density bonus may not be applied on Okaloosa Island in areas lying within the Coastal High Hazard Area.

Policy 10.8: (in part) It is the intent of Okaloosa County to ensure that adequate open space is provided through the following: (Future Land Use Element) c. protected natural resource lands; d. protected environmentally sensitive lands e. areas devoted to drainage and stormwater retention;

CONSERVATION ELEMENT

Goal: Promote the protection, preservation, and appropriate use of Okaloosa County's natural resources, including minerals, water supply sources, wetlands, estuarine and riverine systems, floodplains, shorelines, areas of sensitive topography, and natural vegetative, marine, and wildlife habitats.

OBJECTIVE 2: Conserve, appropriately use and protect the quality of waters that flow into the bay, bayous or Gulf of Mexico through appropriate land use planning, regulation and education and through cooperation with environmental planning and regulatory agencies.

Policy 2.1: Increases in land use density and intensity shall be restricted within wetlands, and development in wetland areas shall be subject to the following provisions: (Conservation Element)
a. Where sufficient uplands exist to locate the proposed development in the upland portion of the site, the County may allow the transfer of development at the future land use densities established on the Future Land Use Map from the wetlands to the upland portion of the site. The transfer of density may occur provided all other plan provisions regarding upland and floodplain resource protection, compatibility of adjacent land use, stormwater management and setbacks, etc. are met. b. Where sufficient uplands do not exist to avoid a taking, development in the wetlands shall be restricted to allow residential density use at a maximum density of one (1) unit per ten (10) acres, one (1) unit per five (5) acres, or one (1) unit per lot of record. c. The dwelling unit shall be constructed so that the lowest floor elevation is at least one (1) foot above the base flood elevation as established by the FEMA Flood Insurance Rate Maps for those wetlands that are also within the floodplains. d. Okaloosa County does not duplicate the rules of other environmental agencies. Therefore, prior to construction in jurisdictional areas, all necessary permits must have been issued by the Florida Department of Environmental Protection and/or the U.S. Army Corps of Engineers, as required by the agency or agencies having jurisdiction.

Policy 2.2: When development or redevelopment cannot occur without degrading wetlands, the impacts shall be mitigated pursuant to FDEP permitting regulations.

Policy 2.6: The development and adoption of a comprehensive Stormwater Master Plan for Okaloosa County shall be completed in its entirety or in phases in compliance with NPDES requirements. This plan will include an inventory of existing facilities and shall recommend

needed drainage improvements, analyze the adopted level of service standards and recommend alternative standards if necessary.

Policy 2.9: Coordinate with adjacent local governments, state and regional agencies, and private groups in the implementation of applicable recommendations in the Northwest Florida Resource Management Plan and its identified management issues and special needs: Water supply, wastewater treatment and disposal, and solid waste disposal; Water quality in Choctawhatchee Bay; and Soil erosion, runoff and sedimentation control, beach, dune and shoreline protection, floodplain management, coordination of development controls

OBJECTIVE 5: Require development practices that maintain or improve wetlands and estuarine environmental quality to the maximum extent practicable.

Policy 5.1: Restore or enhance disturbed or degraded wetlands, estuarine and riverine systems by establishing and implementing a program that provides for the removal of invasive exotics and the replanting of native vegetation on County-owned land.

Policy 5.3: With respect to acquisition, the County, where feasible, shall protect environmentally sensitive natural areas through acquisition, establishment of public or private conservation easements, purchase of development rights, or through other available means as deemed appropriate.

COASTAL MANAGEMENT ELEMENT

Goal 1: Protect coastal barrier islands and maintain or improve estuarine environmental quality by planning for and where appropriate restricting development that would damage these resources, while also providing public access for recreation purposes.

OBJECTIVE 1.1: Require development to protect beaches or dunes, to restore altered beaches or dunes, and to comply with construction standards which minimize the impacts of man-made structures on beach or dune systems to the maximum extent practicable

Policy 1.1.1: Ensure compliance with the Florida Department of Environmental Protection (FDEP) Coastal Construction Control Line (CCCL) regulations that require location of construction a sufficient distance landward of the beach to permit natural shoreline fluctuations and to preserve dune stability. Construction may occur to the extent that the natural storm buffering and protection capability of the dunes is not diminished.

Policy 1.1.5: The County will encourage activities that protect and rebuild coastal dunes. This will be accomplished by continuing, or supporting the continuation of, activities by private and public agencies for dune restoration purposes, installation of sand fences on public and private properties, and enforcing restrictions regarding the destruction of sea oats and requiring the planting of sea oats by new development in coastal areas. All activities will be coordinated with the Guiding Principles of the Local Mitigation Strategy.

Policy 1.2.1: Implement all policies in the Conservation Element that are applicable to limiting specific and cumulative impacts due to development or redevelopment upon wetlands, water quality and quantity, wildlife habitat and living marine resources, including estuaries within the jurisdiction of more than one local government.

Policy 1.2.2: With respect to acquisition, the County, where feasible, shall protect environmentally sensitive coastal areas unduly threatened by development, through acquisition, establishment of public or private conservation easements, purchase of development rights, or through other available means as deemed appropriate.

Policy 1.2.5: All sewage treatment and public water supply systems within a Coastal High Hazard Area shall be flood-proofed to prevent infiltration of surface water expected under storm conditions or shall be otherwise designed to function when submerged under such storm conditions, consistent with the Local Mitigation Strategy Guiding Principles.

Policy 1.2.7: Coordinate with the following existing resource protection plans: Choctawhatchee River and Bay S.W.I.M. Plan, Pensacola Bay S.W.I.M. Plan, FDEP Ecosystem Management Plan, West Florida Strategic Regional Policy Plan, Rocky Bayou Aquatic Preserve Management Plan, and the Northwest Florida Resource Management Plan, and the Local Mitigation Strategy.

OBJECTIVE 2: Consistent with the goals, objectives, and policies of the Coastal Management Element limit public expenditures that subsidize private sector development in Coastal High Hazard Areas.

Policy 2.1: Public expenditures in Coastal High Hazard Areas of Okaloosa County shall be limited to the provision or support of recreation uses such as parks and walkovers, erosion control devices, wastewater collection facilities when they replace septic tank concentrations, or to increase public access to the shoreline, fire protection, water supply and transportation facilities unless consistent with densities and intensities of the plan and the "Santa Rosa Island Plat Map and Protective Covenants and Restrictions."

Goal 2: Protect human life and property, including historic resources, in locations subject to destruction by hurricanes in Okaloosa County. (Coastal Management Element)

OBJECTIVE 2.1: Direct population concentrations away from Coastal High Hazard Areas through implementation of the future land use map, through acquisition of land, and through implementation of the Local Mitigation Strategy.

Policy 2.1.1: The Coastal High Hazard Area is hereby defined as the evacuation zone for a category 1 hurricane as established on the surge zone maps of the regional hurricane evacuation study.

Policy 2.1.2: New structures, other than dune walkovers, and structures needed to accommodate conservation and passive recreation uses, are prohibited within the portion of the Coastal High Hazard Area lying within the FEMA V Zone, unless all Department of Environmental Protection Coastal Construction Control Standards and FEMA Special Hazard Area Minimum Construction Requirements are met.

Policy 2.1.3: New high-density residential development (over 25 units per acre) shall not be permitted within the Coastal High Hazard Area (CHHA) except on Okaloosa Island where leases supported by the covenants and restrictions have been previously granted. New nursing homes, assisted living facilities, and hospitals are required to be located outside of the CHHA, wherever possible. In addition, these facilities shall provide an evacuation plan. Future residential land use in the CHHA shall be limited to the following densities: a. In CHHA's outside of Okaloosa Island new development shall be limited to low and medium density (maximum 16 units per acre): and b. On Okaloosa Island high density residential development (limited to 40 units per acre in the FLUE) shall be permitted only in Zones B-2 and B-3 as identified in the officially recorded "Santa Rosa Island Plat Map and Protective Covenants and Restrictions."

OBJECTIVE 2.2: Protect property within Coastal High Hazard Areas from coastal flooding, storm surge and high winds through implementation of construction standards.

Policy 2.2.1: Enforce rigorous development standards consistent with the County's NFIP and the CRS program for flood hazard reduction including: location of buildings landward of the reach of the mean high tide; requirement to elevate structures one (1) foot above base flood elevation as specified on F.E.M.A. maps; anchoring standards to resist flotation, collapse, and lateral

movement; prohibiting fill used as structural support in V zones, and; prohibiting alteration of sand dunes which would increase potential flood damage.

Policy 2.2.2: Ensure compliance with Florida Department of Environmental Protection (FDEP) Coastal Construction Control Line (CCCL) regulations that require major structures to be designed and constructed in accordance with the Standard Building Code (SBC) using a wind speed of one hundred ten (110) miles per hour. Other design conditions and standards require foundations that can withstand design storm conditions, wave forces, hydrostatic loads, and hydrodynamic loads, consistent with FEMA minimum construction requirements.

OBJECTIVE 2.3: Limit public expenditures that subsidize development permitted in coastal high hazard areas, and give priority in shoreline development to those land uses that are dependent on or related to water access and to developments that comply with performance standards.

Policy 2.3.5: (in part) Siting of marinas will be coordinated with all applicable state and federal agencies using the most current available data regarding locations of seagrass beds or other environmentally sensitive habitats. Before additional marinas are developed they must demonstrate compliance with the following criteria: c. A hurricane contingency plan is in place. A plan is in place for mitigation activities in the event that the environment is adversely affected;

Objective 2.5: Maintain or reduce hurricane evacuation times as established in the Northwest Florida Hurricane Evacuation Re-Study through appropriate land use and transportation planning and/or through development mitigation measures.

Policy 2.5.1: The County will adopt and implement a Comprehensive Emergency Management Plan that is consistent with the updated data contained in the Northwest Florida Hurricane Evacuation Re-Study.

Policy 2.5.2: Coordinate with the Ft. Walton Beach Urbanized Area MPO, FDOT, and the Alabama Department of Transportation in evaluating major evacuation routes and determining where deficiencies occur and where operational improvements can be made to maintain or reduce hurricane evacuation times.

Policy 2.5.3: Proposed plan amendments which would increase densities within the Coastal High Hazard Area shall be subject to review and transportation impact analysis to determine their impact upon hurricane evacuation times and routes. Developments that will increase hurricane evacuation times shall be required to provide mitigation measures, such as transportation improvements, emergency van pools, and/or private on-site emergency shelters intended specifically for the needs of the development, designed to ensure no increase in evacuation times as a result of the new development.

Policy 2.5.4: New public emergency shelters shall be built or designated outside of the CHHA, with the exception of private, on-site emergency shelters built pursuant to Policy 2.5.3.

OBJECTIVE 2.6: Implement recommendations in the County's Local Mitigation Strategy and post-disaster redevelopment plan to reduce the risk from riverine and coastal flooding and hurricane wind forces to life, property and critical infrastructures.

Policy 2.6.1: (in part) Implement the Guiding Principles enumerated in the adopted Okaloosa County Local Mitigation Strategy through completion of the list of disaster mitigation projects in the County which have been identified, analyzed, and ranked. The adopted Strategy includes a plan for annual evaluation and enhancement of the Strategy itself, which will ensure that a complete and current plan is in place to address mitigation activities. The Local Mitigation Strategy implements the following list of adopted Guiding Principles: 1. Protect human life and private property from the effects of disaster events; 2. Reduce public expenditures due to damage

from disaster events; 6. Mitigate potential losses through administrative measures; and 7. Coordinate with private sector to mitigate losses.

Policy 2.6.2: The County shall continue its participation in the National Flood Insurance Program in conformance with Public Law 93-288 and the Community Rating System Program.

TRANSPORTATION ELEMENT

OBJECTIVE 1.5: Provide for adequate emergency evacuation by providing alternative evacuation routes and adequate highway capacity on evacuation routes and by mitigation measures adopted in the Okaloosa County Local Mitigation Strategy.

Policy 1.5.1: Coordinate with the Ft. Walton Beach Urbanized Area MPO, FDOT, and the Alabama Department of Transportation in evaluating major evacuation routes and determining where deficiencies occur and where operational improvements can be made to maintain or reduce hurricane evacuation times.

STORMWATER MANAGEMENT ELEMENT

OBJECTIVE 1: Correct existing stormwater management deficiencies by implementing improvements adopted in the 5-Year Schedule of Capital Improvements, developing and implementing a Stormwater Master Plan, and paving of roads according to adopted level of service standards.

Policy 1.2: The development and adoption of a comprehensive Stormwater Master Plan for Okaloosa County shall be completed in its entirety or in phases in compliance with NPDES requirements. This plan will include an inventory of existing facilities and shall recommend needed stormwater management improvements, analyze the adopted level of service standards and recommend alternative standards if necessary. The Stormwater Master Plan will be coordinated with the Local Mitigation Strategy Guiding Principles. The County's Comprehensive Plan, including the Capital Improvements Element, will be revised based on the Stormwater Master Plan.

OBJECTIVE 3: The County shall protect natural functions of stormwater management features. This shall be accomplished in part through land development regulations and proper classification of land uses.

Policy 3.1: The LDC shall include land use regulations which require site specific development plans to protect natural stormwater management features and incorporate such features into the site planning and site development process.

Policy 3.2: Protect the quality and quantity of stormwater runoff through the implementation of all policies in the conservation element that are applicable to limiting specific and cumulative impacts of development or redevelopment upon wetlands, water quality and quantity.