

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 Washington 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 Washington 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

Washington 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 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 Washington County can continue to reduce or eliminate risks from flood and wildfire. These recommendations pertain to the use of vacant lands and/ or redevelopment practices. Based on the land use tabulations, most of the vacant acreage is susceptible to flood. 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, 3.1 acres are susceptible to Category 3 storm surge (HVZ) but is designated for conservation, 196 are susceptible to 100-year flood, and 1,697 acres are susceptible to wildfire. No vacant acres are susceptible to sinkhole. According to the Washington County LMS, the County is deemed to have a low risk from storm surge and sinkhole hazards. (Washington County LMS 2005).

Flood

About 38% of the 196 vacant acres in the 100-year floodplain are to be developed for residential, commercial, industrial uses or public facilities, indicating that these risk reduction strategies should be considered prior to development of this vacant land.

- The Comprehensive Plan should continue the implementation of policies for preserving and enhancing the natural environment through enforcing land development code for floodplain management and control, prohibiting alteration of natural watercourses and floodways, and establishing buffers or setbacks around wetlands and floodplains,
- The Comprehensive Plan should continue protecting significant wetlands per existing conservation designations on the Future Land Use Map (FLUM), and should be amended to reclassify acquired properties (from flood buy-out activities) as open space/ recreation or conservation on the FLUM.
- The Comprehensive Plan should continue requiring that new or expansions of existing school facilities not occur in floodways,
- The County should continue to coordinate with the municipalities to protect the functions of all natural drainage features.
- The County should continue to identify floodplains and/or waterbodies to acquire for conservation, preservation, and recreational purposes.
- The County should continue to require that post-development runoff rates not exceed post-development conditions.
- The Comprehensive Plan should consider alternatives to hardened structures along natural riverine tributaries, and prohibiting fill or other development activities having significant long-term impacts on the ecological or hydrological function of the floodplain except in cases of clear public interest.
- The Comprehensive Plan consider requiring that developers incorporate wetland portions of sites in the 100-year floodplain as conservation easements through the site review process; limiting residential density to 5 u.p.a for areas within the 100-year floodplain, and preserving wetlands and floodplains as conveyance systems through designation on the Future Land Use Map.
- The County should consider retrofitting stormwater management facilities.
- The County should consider encouraging new developments to demonstrate cluster development to achieve open space to protect floodplains.
- 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.
- 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 requiring that all structures built in the 100-year floodplain include at least 1 foot freeboard. Many post-disaster building

performance/damage assessments have shown that it is advisable to include freeboard to reduce future flood damages. Okaloosa and Brevard Counties, City of Jacksonville and the Santa Rosa Island Authority are example communities that have adopted freeboard requirements.

- The County should consider 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 stormwater management planning and construction of capital improvements coincide with stormwater drainage requirements to adequately address growth and development.
- 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.

Wildfire

About 95% of the 1,697 vacant acres that are susceptible to wildfire are to be developed for residential, commercial, industrial uses or public facilities, indicating that these risk reduction strategies should be considered prior to development of this vacant land.

- The County should consider participating in the Firewise Medal Community program to reduce risks within the wildland urban interface.
- Where reasonable, consideration should be made to design structures and sites within the County to minimize potential for loss of life and property (e.g., outdoor sprinkler systems, fire-resistant building materials or treatments, and landscaping and site design practices); review proposals for subdivisions, lot splits, and other developments for fire protection needs during site plan review process; coordinate with fire protection service or agencies to determine guidelines for use and development in wildfire-prone areas.
- The County should consider requirement for all new development to include 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.

General

- The Comprehensive Plan should consider including a policy to incorporate recommendations from existing and future interagency hazard mitigation reports into the Comprehensive Plan, and should consider including these recommendations during the Evaluation and Appraisal Report process as determined feasible and appropriate by the Board of County Commissioners.
- 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 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, & 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 data layers on hazard maps to illustrate population (i.e., density) or property (i.e., value) exposure.
- Include a future land use maps that include hazard data layers to illustrate which future land use categories are susceptible to each hazard.
- Include a quantitative risk assessment for future development (i.e., loss estimates) or specific critical facilities.
- Use complementary, not contradictory data in the plans such as the LMS, CEMP, and Comprehensive Plan.

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1. County Overview

Geography and Jurisdictions

Washington County is located in the Florida Panhandle. It covers a total of 615.8 square miles, of which 579.9 square miles are land and 35.9 square miles are water. There are five incorporated municipalities within Washington County, as shown in **Table 1.1**. The City of Chipley 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 Washington County and the percent change from the 2000 U.S. Census are presented in **Table 1.1**. While some residents live in incorporated jurisdictions, approximately 76% live in unincorporated areas of the county. Washington County has experienced significant population growth in recent years, a trend that is expected to continue. Between 1990 and 2000, Washington County had a growth rate of 24%, which is slightly higher than the statewide average of 23.5% for the same time period.

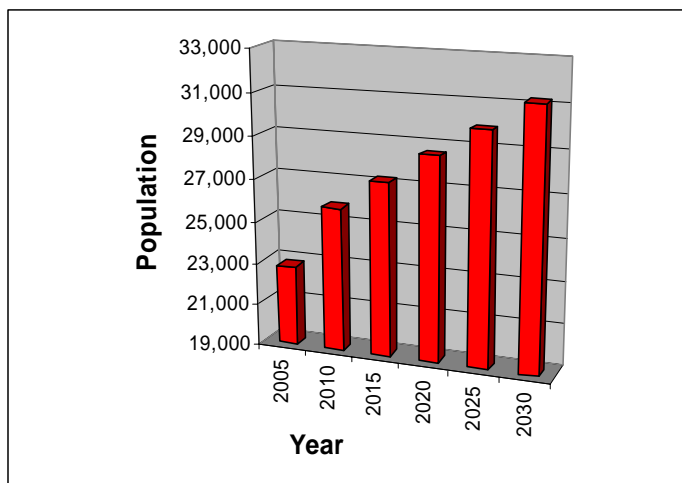
Table 1.1 Population Estimates by Jurisdiction

Jurisdiction	Population (Census 2000)	Population (Estimate 2004)	Percent Change 2000-2004	Percent of Total Population (2004)
Unincorporated	15,772	17,070	8.23%	76.09%
Caryville	218	356	63.30%	1.59%
Chipley	3,592	3,554	-1.06%	15.84%
Ebro	250	241	-3.60%	1.07%
Vernon	743	779	4.85%	3.47%
Wausau	398	434	9.05%	1.93%
Total	20,973	22,434	6.97%	100.00%

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

According to BEBR (2004), Washington County's population is projected to grow steadily and reach an estimated 31,200 by the year 2030, increasing the average population density of 39 to 54 persons per square mile. **Figure 1.1** illustrates medium growth population projections for Washington County based on 2004 calculations.

Figure 1.1 Population Projections for Washington County, 2005–2030



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

Of particular concern within Washington 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 20,973 persons residing in Washington County, 15.7% are listed as 65 years old or over, 26.8% are listed as having a disability, 19.2% are listed as below poverty, and 5.5% live in a home where the primary language is other than English.

2. Hazard Vulnerability

Hazards Identification

The highest risk hazards for Washington County as identified in the County’s Local Mitigation Strategy (LMS) are hurricanes and coastal storms, flooding, severe storms (including lightning and hail), drought/heat wave, and wildfires. Storm surge and sinkholes were discussed in the LMS, but the risk was considered to be low. Although Washington County is not a coastal county, storm surge from the Choctawhatchee Bay being pushed from south Walton County up the valley of the Choctawhatchee River could pose a flood risk to areas in the western part of the county.

Hazards Analysis

The following analysis examines four hazard types: surge from tropical cyclones, flood, wildfire and sinkholes. All of the information in this section was obtained through the online Mapping for Emergency Management, Parallel Hazard Information System (MEMPHIS). MEMPHIS was designed to provide a variety of hazard related data in support of the Florida Local Mitigation Strategy DMA 2K project, and was created by Kinetic Analysis Corporation (KAC) under contract with the Florida Department of Community Affairs (DCA). Estimated exposure values were determined using the Category 3 Maxima Scenario for storm surge; FEMA’s designated 100-year flood zones (i.e., A, AE, V, VE, AO, 100 IC, IN, AH) for flood; all medium-to-high risk zones from MEMPHIS for wildfire (Level 5 through Level 9); and the combined high, very high, extreme and adjacent zones for sinkhole based on the KAC analysis. Storm surge exposure data is a subset of flood exposure; therefore, the storm surge results are also included in the flood results. For more details on a particular hazard or an explanation of the MEMPHIS methodology, consult the MEMPHIS Web site (<http://lmsmaps.methaz.org/lmsmaps/index.html>).

Existing Population Exposure

Table 2.1 presents the population currently exposed to each hazard in Washington County. Of the 20,973 (U.S. Census 2000) people that reside in Washington County, 9.4% are exposed to 100-year flooding, 18.3% are exposed to wildfire, and no persons are exposed to storm surge or sinkholes. Of the 1,965 people exposed to flood, 21.1% are disabled and 29% are impoverished.

Table 2.1 Estimated Number of Persons Exposed to Selected Hazards

Segment of Population	Flood	Wildfire
Total (all persons)*	1,965	3,834
Minority	258	353
Over 65	290	650
Disabled	1,034	2,018
Poverty	415	469
Language-Isolated	0	0
Single Parent	124	171

Source: Mapping for Emergency Management, Parallel Hazard Information System

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

Evacuation and Shelters

As discussed in the previous sections, population growth in Washington 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 Washington 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
Calhoun	24	24	24	30	30
Gadsden	<i>Not Available</i>				
Holmes	6.25	7	7	10.25	10.25
Jackson	5.5	8.25	8.25	11	11
Liberty	<i>Not Available</i>				
Washington	6.25	6.5	6.5	8.5	8.5

Source: DCA, DEM Hurricane Evacuation Study Database, 2005

Note: This is best available data in 2005, although data is not available for some counties.

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 6.25 and 8.5 hours to safely evacuate Washington 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.

According to Florida’s Statewide Emergency Shelter Plan, unlike most counties in the state, Washington County has an adequate existing shelter capacity of 2,356 people. The 2004 shelter demand for a Category 4 or Category 5 hurricane is 1,534 people, leaving an existing shelter surplus of 822. In 2009, the projected shelter demand is 1,702, leaving an anticipated shelter surplus of 654. However, because Washington County is a host county there might not be enough shelter space for its own residents due to the influx of evacuees seeking shelter from nearby counties. Therefore, it is essential that Washington County continue to coordinate with nearby counties for evacuation and shelter planning. The opportunity also 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.

It is important for counties to maintain or reduce hurricane evacuation times. This could be accomplished by using better data to determine the hazard risk to populations to evaluate which areas to evacuate, and increasing the ability to shelter in place to decrease the number of evacuees. Washington 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 Washington 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 Washington County’s existing structures to the storm surge, flood, wildfire, and sinkhole hazards was determined through MEMPHIS.

Table 2.3 Estimated Number of Structures Exposed to Selected Hazards

Occupancy Type	Storm Surge*	Flood	Wildfire	Sinkhole
Single Family	6	2,313	1,494	6
Mobile Home	4	466	381	1
Multi-Family	1	637	221	0
Commercial	0	929	352	0
Agriculture	8	5,270	2,452	0
Gov. / Institutional	2	764	580	6
Total	21	10,379	5,480	13

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 15,872 structures exposed to at least one of the four hazards, of which most are used for agriculture. Of these structures, 65.4% are exposed to flood. Over 10,000 structures are located within the 100-year floodplain, of which less than one percent is exposed to storm surge induced flooding. Slightly more than 38% of the structures exposed to surge are used for agriculture, and 28.6% are single-family homes. Typically, structures exposed to surge are high-

value real estate due to their proximity to the ocean or tidally influenced water bodies such as the Choctawhatchee River. According to the latest National Flood Insurance Program Repetitive Loss Properties list, as of March 2005, there are two repetitive loss properties in unincorporated areas of Washington 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.”

Slightly over 35%, or 5,480 structures are exposed to wildfire, of which 44.7% are used for agriculture and 27.3% are single-family homes. The County’s unincorporated lands are very rural and include vast tracts of undeveloped, silvicultural, and swamp land, which can ignite during dry conditions (Washington County LMS, 2005). Less than one percent or 13 structures are located within sinkholes susceptible areas, of which the vast majority includes single-family homes and government/institutional structures.

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 exposed to surge, flood, sinkholes, and wildfire according to MEMPHIS estimates. This section is used to demonstrate the County’s vulnerabilities to these hazards in both tabular format and spatially, in relation to existing and future land uses. DCA tabulated the total amount of acres and percentage of land in identified hazard exposure areas, sorted by existing land use category for the unincorporated areas. Existing land use data was acquired using the Florida Land Use Cover Classification System (FLUCCS) from the Florida Department of Environmental Protection (FDEP) and Northwest Florida Water Management District (NFWFMD) in 1995. DCA also tabulated the total amount of acres and percentage of land in the identified hazards areas 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. Washington County future land use data was acquired from Washington County in March 2006 and might not reflect changes per recent future land use amendments. DCA has provided maps of existing land use within hazard areas based on the 1995 FLUCCS geographic information system (GIS) shapefiles. Maps of future land uses in hazard areas were developed using the Washington County future land use map dated March 2006. 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 hurricane vulnerability zones in relation to evacuation clearance times, flood zones in relation to the 100-year flood, wildfire susceptible areas, and sinkhole susceptible areas.

In **Attachment A**, two maps present the existing and future land uses within the Hurricane Vulnerability Zone (HVZ), which represents Category 1 to 3 Hurricane Evacuation Zones. The HVZ is located in the western part of the county along the Choctawhatchee River. The total amount of land in the HVZ is 80.5 acres. As shown in **Table 2.4**, 86.7% are parks, conservation areas and golf courses; 9.4% are submerged lands; and 3.9% are currently undeveloped. **Table**

2.5 shows that of the 3.1 undeveloped acres, 100% is designated for conservation. The County has taken favorable action in designating all vacant acreage in the HVZ for conservation.

In **Attachment B**, 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 many creeks, streams and rivers such as the Choctawhatchee River in the western part of the county and the Holmes River in the central part of the County. The total amount of land in the special flood hazard area is 102,928.5 acres. As shown in **Table 2.4**, 65.1% are in agricultural use; 25.3% are parks, conservation areas and golf courses; 8% are submerged lands; and 0.7% is used for low-density residential purposes. **Table 2.5** shows that of the 196 undeveloped acres, 27.1% are designated for agriculture/silviculture. The County has taken favorable action in designating 27.1% of vacant acreage in the 100-year flood zone for agriculture/silviculture and 23.9% for conservation. The County has taken favorable action over half of the vacant acreage in the 100-year flood zone for agriculture/silviculture and conservation.

In **Attachment C**, two maps present the existing and future land uses within wildfire susceptible areas. These areas are scattered across the County, but are more predominate in southern and eastern portions of the county. The total amount of land in the wildfire susceptible areas is 12,439 acres. As shown in **Table 2.4**, 79.6% are in agricultural use; 9.7% are currently undeveloped; 4.1% are parks, conservation areas and golf courses; and 1% includes transportation, communication and rights-of-way. **Table 2.5** shows that of the 1,696.7 undeveloped acres, 94.7% are designated for Sunny Hills mixed use. The County should continue to take measures to reduce wildfire risk within the urban/rural interface.

In **Attachment D**, two maps present the existing and future land uses within sinkhole susceptible areas. These isolated areas are located in the west-central portion of the county as well as in the northeastern portion of the county just south of Chipley. The total amount of land in the sinkhole susceptible areas is 1,498.3 acres. As shown in **Table 2.4**, 91.3% are used for agriculture, 6.1% are low-density residential homes; 1.9% includes transportation, communication and rights-of-way; and 0.4% is submerged land. **Table 2.5** shows that there is no undeveloped acreage located in sinkhole susceptible areas.

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

Existing Land Use Category		Hurricane Vulnerability Zone	Flood Zones	Wildfire Susceptible Areas	Sinkhole Susceptible Areas
Agriculture	Acres	0.0	67,015.2	9,906.6	1,367.2
	%	0.0	65.1	79.6	91.3
Attractions, Stadiums, Lodging	Acres	0.0	0.0	8.2	0.0
	%	0.0	0.0	0.1	0.0
Places of Worship	Acres	0.0	2.5	1.1	0.0
	%	0.0	0.0	0.0	0.0
Commercial	Acres	0.0	64.9	0.0	0.0
	%	0.0	0.1	0.0	0.0
Government, Institutional, Hospitals, Education	Acres	0.0	85.4	0.0	0.0
	%	0.0	0.1	0.0	0.0
Parks, Conservation Areas, Golf Courses	Acres	69.8	26,019.5	508.1	0.0
	%	86.7	25.3	4.1	0.0
Residential High-Density	Acres	0.0	214.5	1.1	0.0
	%	0.0	0.2	0.0	0.0
Residential Low-Density	Acres	0.0	678.4	119.0	92.1
	%	0.0	0.7	1.0	6.1
Residential Medium-Density	Acres	0.0	223.8	41.7	4.7
	%	0.0	0.2	0.3	0.3
Residential Mobile Home, or Commercial Parking Lot	Acres	0.0	0.0	4.5	0.0
	%	0.0	0.0	0.0	0.0
Submerged Land (Water Bodies)	Acres	7.6	8,205.6	27.0	6.2
	%	9.4	8.0	0.2	0.4
Transportation, Communication, Rights-Of-Way	Acres	0.0	219.8	120.8	28.1
	%	0.0	0.2	1.0	1.9
Utility Plants and Lines, Solid Waste Disposal	Acres	0.0	2.9	4.2	0.0
	%	0.0	0.0	0.0	0.0
Vacant	Acres	3.1	196.0	1,696.7	0.0
	%	3.9	0.2	13.6	0.0
Total Acres	Acres	80.5	102,928.5	12,439.0	1,498.3
	%	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

		Hurricane Vulnerability Zone		Flood Zones		Wildfire Susceptible Areas		Sinkhole Susceptible Areas	
		Total	Vacant	Total	Vacant	Total	Vacant	Total	Vacant
Agriculture/Silviculture	Acres	0.0	0.0	33,801.8	53.1	8,847.2	80.9	975.1	0.0
	%	0.0	0.0	32.8	27.1	71.1	4.8	65.1	0.0
Conservation	Acres	80.5	3.1	53,509.9	46.8	747.3	3.3	82.3	0.0
	%	100.0	100.0	52.0	23.9	6.0	0.2	5.5	0.0
General Commercial	Acres	0.0	0.0	295.2	0.0	52.4	3.8	118.8	0.0
	%	0.0	0.0	0.3	0.0	0.4	0.2	7.9	0.0
Incorporated Area	Acres	0.0	0.0	2,623.9	6.2	64.2	2.7	37.5	0.0
	%	0.0	0.0	2.5	3.2	0.5	0.2	2.5	0.0
Industrial	Acres	0.0	0.0	68.9	0.0	0.0	0.0	0.0	0.0
	%	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Lakes	Acres	0.0	0.0	10,004.7	22.3	26.8	0.0	0.0	0.0
	%	0.0	0.0	9.7	11.4	0.2	0.0	0.0	0.0
Low Density Residential	Acres	0.0	0.0	1,704.3	14.7	603.7	0.0	236.3	0.0
	%	0.0	0.0	1.7	7.5	4.9	0.0	15.8	0.0
Low/Medium Density Residential	Acres	0.0	0.0	211.8	0.0	84.5	0.0	47.5	0.0
	%	0.0	0.0	0.2	0.0	0.7	0.0	3.2	0.0
Public/Semi-Public	Acres	0.0	0.0	8.9	0.0	19.6	0.0	0.9	0.0
	%	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.0
Recreation	Acres	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0
	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sunny Hills Mixed Use	Acres	0.0	0.0	699.1	52.8	1,993.0	1,606.0	0.0	0.0
	%	0.0	0.0	0.7	26.9	16.0	94.7	0.0	0.0
Total Acres	Acres	80.5	3.1	102,928.3	196.0	12,439.0	1,696.7	1,498.3	0.0
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0.0

Source: Department of Community Affairs

The amount of total land and existing vacant land in identified hazard areas was also tabulated for each of Washington County's five 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.

No municipality in Washington County has acreage within the Hurricane Vulnerability Zone (HVZ). The Town of Caryville has the most acres in the flood zone but Chipley has the largest proportion of flood zone acres out of its vacant land area. The City of Vernon has the most acres in the wildfire susceptible areas, but Chipley has the largest proportion of wildfire susceptible acres out of its vacant land area. The City of Chipley is the only municipality which contains sinkhole susceptible areas, though none are vacant.

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 Washington 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

Jurisdiction		Flood Zones		Wildfire Susceptible Areas		Sinkhole Susceptible Areas	
		Total	Vacant	Total	Vacant	Total	Vacant
Caryville	Acres	1,493.6	0.7	11.4	0.0	0.0	0.0
	%	100.0	0.0	100.0	0.0	0.0	0.0
Chipley	Acres	169.0	5.3	10.0	3.1	45.7	0.0
	%	100.0	3.2	100.0	31.1	100.0	0.0
Ebro	Acres	274.6	0.4	14.9	0.0	0.0	0.0
	%	100.0	0.2	100.0	0.0	0.0	0.0
Vernon	Acres	680.8	0.0	16.3	0.0	0.0	0.0
	%	100.0	0.0	100.0	0.0	0.0	0.0
Wausau	Acres	220.9	0.0	14.9	0.0	0.0	0.0
	%	100.0	0.0	100.0	0.0	0.0	0.0
Total Municipal Acres	Acres	2,839.0	6.5	67.5	3.1	45.7	0.0
	%	100.0	0.2	100.0	4.6	100.0	0.0

Source: Department of Community Affairs

3. Existing Mitigation Measures

Local Mitigation Strategy (LMS) Assessment

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

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

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

Hazard Identification and Vulnerability Assessment. 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 Washington County LMS (adopted in 2005) was assessed to determine if the hazard analysis and vulnerability assessment (i.e., flood, wildfire, and sinkhole) data can support comprehensive planning, whether the guiding principles include a comprehensive list of policies for the county and municipalities, and whether the LMS goals and objectives support comprehensive planning goals, objectives, and policies (GOP).

Hazard Analysis and Vulnerability Assessment (Page 27-187)

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

Strengths:

- Provides information about demographic, income, and special needs population.
- Provides population exposure to each hazard, including special needs population exposure.
- Provides county property exposure values for occupancy classes for each hazard.
- Provides a hazards analysis and a qualitative vulnerability assessment.
- Provides a clear description of geographic areas exposed to each of the hazards.
- Includes maps for each of the hazards.
- Includes a qualitative risk assessment for each hazard for each jurisdiction.
- Includes a list and location map of critical facilities.
- Includes a future land use map.
- Includes loss estimates by land use.
- Addresses repetitive loss properties.

Weaknesses:

- Hazard maps do not include data layers to illustrate population (i.e., density) or property (i.e., value) exposure.
- Does not include a future land use maps that include hazard data layers to illustrate which future land use categories are susceptible to each hazard.
- Does not include a quantitative risk assessment (i.e., loss estimates) for future development or critical facilities.

Incorporating land use and population data into the risk assessment of the LMS provides a better source of data for planners to use in policy making and policy evaluation of the local

comprehensive plan. The LMS also sets a standard for the quality of data that should be used in determining risk and thereby used to determine mitigation policies.

Guiding Principles

The Washington 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. The Washington County LMS does list plans, research and other documents which were cross-referenced during the preparation of the LMS. It is recommended that Washington County's next LMS update include a Guiding Principles section.

LMS Goals and Objectives

The Washington County LMS has goals 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**. The following is a summary of the LMS goals that support comprehensive plan GOPs.

Goal 1 strives to continually provide mechanisms for local government jurisdictions and the public to accomplish mitigation activities in Washington County. Goal 2 vows to maintain communication between the LMS Steering Committee and key County and Municipal departments to coordinate intra- and inter-departmental mitigation activities among various jurisdictions, and with the public.

Goal 3 seeks to monitor and update the LMS plan, as necessary, to identify changes to hazards, vulnerabilities, goals, initiatives, priorities, funding sources, disaster declarations, and adoption of revisions. This can be accomplished by continually reviewing the plan and comparing it to other planning requirements (e.g., emergency management plans, comprehensive land use plans, and community rating system plans) that contain mitigation provisions or may otherwise help to assert or hinder mitigation initiatives.

Goal 4 aims to 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. This goal may be accomplished through continued working with existing programs within the County and Municipalities (e.g., building inspections, local Community Rating System/National Flood Insurance Program, emergency management, and chambers of commerce, etc.) to connect mitigation to these efforts, as well as by being perceptive of and proactively engage in new opportunities to promote mitigation interests.

Goal 5 aspires to reduce or eliminate hazards identified to at risk locations in the County and its municipalities. This can be accomplished by: 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 Washington County adopting and implementing corresponding policies that are legally enforceable.

Comprehensive Emergency Operations Plan (CEMP)

The Washington County CEMP briefly references the LMS in Section 3: Mitigation Functions Annex. The CEMP notes that all mitigation goals, projects, and prioritization are documented in the LMS. The CEMP also notes jurisdiction participation in the National Flood Insurance Program. The LMS Committee includes representation from each municipality, county road department, Tri-County Community Council, county administrator, and other agencies.

The CEMP could be a more robust tool for planners by identifying specific collaborative procedures for working with emergency management such as developing the LMS and risk assessment, participating in post-disaster damage assessments, and assisting with the identification of hazard mitigation projects.

Post-Disaster Redevelopment Plan (PDRP)

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

National Flood Insurance Program/Community Rating System

Washington County and all of its municipalities participate in the National Flood Insurance Program (NFIP). Neither the Washington County nor any of its municipalities currently participate in the NFIP Community Rating System (CRS).

4. Comprehensive Plan Review

Purpose and Intent

The Washington County Comprehensive Plan (adopted December, 2000) was reviewed for the purpose of developing this profile. This review was undertaken in order to assess what steps Washington County has taken to integrate hazard mitigation initiatives from their Local Mitigation Strategy (LMS) and hazard mitigation initiatives in general, into the local planning process. Each Element of the Plan was evaluated to establish the extent to which the principles from the LMS were incorporated into the objectives and policies of the existing Comprehensive Plan.

Approach

This review includes an assessment of tropical cyclone generated storm surge, flooding, and wildfire hazards. A preliminary list of objectives and policies currently contained in the Plan that pertain to hazard mitigation and any policies related to these hazards is found in **Attachment 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 Washington County as identified in the County's Local Mitigation Strategy (LMS) are hurricanes and coastal storms, flooding, severe storms (including lightning and hail), drought/heat wave, and wildfires. Storm surge and sinkholes were discussed in the LMS, but the risk was considered to be low. Washington County is not a coastal county, though storm surge could cause riverine flooding. Policies relating to hazard mitigation within the Plan include those relating to flooding, and stormwater control and protection. There are no policies in the Plan focused on wildfire mitigation and protection measures.

The Washington County Comprehensive Plan also focuses on the protection of natural features such as floodplains and wetlands through development controls and stormwater management.

The Plan supports a surface management strategy that relies on natural features and natural systems to receive and otherwise manage storm and surface waters.

Flooding

Flooding is addressed from two vantage points, the protection of natural drainage features, and protection of properties through development standards and stormwater abatement. There are several policies directed at minimizing flooding and stormwater runoff, and protecting flood prone areas from potential development impacts. The Plan incorporates development controls in place to minimize the impact of new development within the 100-year floodplain which include: no development shall serve to increase the height and/or velocity of regulatory floods (Policy 3-1d Infrastructure Element), a 50-foot development setback from the ordinary high water line of water bodies (Policy 2-1d Conservation Element), and enforcing Land Development Regulations to include provisions which establish and implement construction standards in accordance with the Federal Emergency Management Agency (FEMA) guidelines at a minimum (Policy 3-2 Conservation Element).

The mitigation of flood waters through stormwater quantity levels are addressed in the Infrastructure and Capital Improvements Element. These elements stress the importance of protecting natural drainage features including the prevention of altering natural watercourses, as well as addressing level-of-service standards for stormwater management (Policy 1-1, CIE).

Sheltering

As with many inland counties in Florida, in the event of a hurricane, Washington County may receive evacuees from coastal counties. The County is currently in a favorable position to shelter storm evacuees, with a shelter surplus. According to Florida's Statewide Emergency Shelter Plan, Washington County has an adequate existing shelter capacity of 2,356 people. The 2004 shelter demand for a Category 4 or Category 5 hurricane is 1,534 people, leaving an existing shelter surplus of 822. However, because Washington County is a host county there might not be enough shelter space for its own residents due to the influx of evacuees seeking shelter from nearby counties. Therefore, it is essential that Washington County continue to coordinate with nearby counties for evacuation and shelter planning. The opportunity also 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.

Wildfire

The Washington County Comprehensive Plan does not address wildfire mitigation and management practices goals, objectives or policies.

Sinkhole

The Washington County Comprehensive Plan does not address sinkhole protection or mitigation and management practices goals, objectives or policies in relation to hazard mitigation.

5. Data Sources

County Overview:

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

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

Hazard Vulnerability:

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

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

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

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

State of Florida. 2005 Hurricane Evacuation Study Database. 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 Hurricane Vulnerability Zone

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

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

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

ATTACHMENT E
Local Mitigation Strategy
Goals and Objectives Pertaining to Comprehensive Planning

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

Goal 1 - Continually provide mechanisms for local government jurisdictions and the public to accomplish mitigation activities in Washington County.

Goal 2 - Maintain communication between the LMS Steering Committee and key County and Municipal departments to coordinate intra- and inter-departmental mitigation activities among various jurisdictions, and with the public.

Goal 3 - Monitor and Update the LMS plan, as necessary, to identify changes to hazards, vulnerabilities, goals, initiatives, priorities, funding sources, disaster declarations, and adoption of revisions.

Accomplish by:

- 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.

Accomplish by:

- 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.
- Being perceptive of and proactively engage new opportunities to promote mitigation interests.

Goal 5 - Reduce or eliminate hazards identified to at risk locations in the County and its municipalities.

Accomplish by:

- 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.
- 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
Washington County Comprehensive Plan Excerpts Pertaining to Hazard Mitigation

From the December, 2000 Washington County Comprehensive Plan

FUTURE LAND USE ELEMENT

Policy 1-1: Land Development Regulations (LDR's) shall be maintained which will contain specific and detailed provisions required to implement the adopted Comprehensive Plan, and shall, at a minimum:

- c. Continue to regulate as well as enhance the regulation of areas subject to seasonal or periodic flooding, and provide for drainage and stormwater management consistent with 17-25 and 17-302 F.A.C., as well as with FEMA standards;

Policy 3-9: Conservation land uses will be classified as follows:

Purpose -To identify land held for conservation of natural features.

Uses (in part) -Activities compatible with the purposes of conserving or protecting natural resources, including flood control.

- a. Leave permanent natural vegetative buffers (above the observed normal waterline) 100 feet from the Choctawhatchee River, 75 feet from Holmes Creek, 75 feet from Econfina Creek, and 75 feet from Pine Log Creek; and
- b. Do not impair or degrade the integrity and productivity of the natural ecosystem; and

Density - No residential density is allowed in this area.

Policy 4-8: In accordance with CDBG Mitigation Policies and Procedures, the County and all Municipalities shall, upon completion of all property acquisition activities involved with flood buy-out programs amend the Comprehensive Plan such that all acquired properties are reclassified as open space/recreation or conservation future land use.

Policy 6-5: The adopted LDR's shall contain requirements for buffering, development setbacks and/or provisions for protection from environmentally sensitive areas, (floodplains and wetlands) areas of known habitat for endangered or threatened species, and from major managed areas. These requirements shall include:

- a. Protection of the natural functions of floodplains through enforcement of FEMA Construction Standards (See Policy 3-1 Conservation Element);
- b. Establishing a 25 foot permanent natural vegetative buffers from all wetlands and surface water bodies (See Policy 2-1 Conservation Element); and
- c. Establishing standards for identification and protection of other isolated environmentally sensitive areas (location of endangered/protected species, etc.) on a site by site basis and subject all development to site plan review which shall be the primary means for insuring protection; and
- d. Establishing a 100 foot permanent natural vegetative buffer from all major areas (See Policy 9-3 Conservation Element).

Policy 6-6: Proposals for development or redevelopment within the designated 100 year floodplains shall be approved only if such development is conducted consistent with the County's adopted floodplain management ordinance: These provisions of the LDR's shall be consistent with FEMA construction standards (See Policy 3-1 Conservation Element), and will preclude development of any type which would individually or collectively increase flood flows, heights, or damages. No development other than accessory recreational uses (boat ramps, etc.) will be allowed in the regulatory floodway.

Policy 6-7: Concurrent with the adoption of this plan, the developer/owner of any site shall be responsible for the onsite management of runoff in a manner so that post-development runoff rates, volumes, and pollutant loads do not exceed pre-development conditions.

Policy 6-8: The County shall identify causes of current specific stormwater management deficiencies on an ongoing basis, shall specify solutions, shall prioritize a schedule of correcting the deficiencies. These items shall be programmed into the Schedule of Capital Improvements where warranted based on cost.

Policy 6-11: Moderate to high aquifer recharge zones of the Florida Aquifer shall be protected from contamination and restricted recharge through the adoption of this Plan and implementation of the LDR's by:

- a. Limiting impervious surfaces constructed within such areas to 50% of the total area of a given parcel;
- d. Managing stormwater flow on roadways and development sites so as to eliminate sedimentation and non-point pollution in the surrounding wetlands and recharge zone;

Policy 11-4: In addition to consistency with the Washington County Comprehensive Plan, the proposed location of a new or expanded public educational facility within one of the allowable land use categories shall be reviewed and considered and shall be consistent with the following general criteria:

- g. The proposed location is not within a velocity flood zone or floodway.

INFRASTRUCTURE ELEMENT

Policy 1-1g: All adopted Land Development Regulations (LDR's) including regulations governing the provisions and/or construction of stormwater management facilities shall be consistent with State regulations (Chapter 17-25, F.A.C.).

GOAL 2: The County and municipalities shall provide sanitary sewer, solid waste, stormwater management, and potable water facilities to meet existing and projected demands identified in this plan.

Objective 2-2: The County shall continue to work in concert, through existing intergovernmental mechanisms, with the County Health Department and the State Department of Environmental Protection to ensure that mandatory requirements for siting, installation, inspection, operation, and maintenance of onsite wastewater treatment systems are implemented and maintained.

- f. In accordance with the existing Subdivision Ordinance, the installation of sewage disposal systems requiring soil absorption systems shall be prohibited by the Planning Commission where such systems will not function due to high ground water, flooding, or unacceptable soil characteristics.

Objective 2-3: The County shall improve the management of stormwater and the protection of water resources by implementing the following policies.

Policy 2-3a: The County and municipalities shall implement adopted LDR's which shall include provisions for stormwater management.

Policy 2-3b: The County and municipalities shall require implementation of the Division of Forestry Best Management Practices as provided by Stormwater Management Level of Service Standards defined in Infrastructure Policy 1-id.

GOAL 3: The County and municipalities shall regulate land use to protect the functions of natural drainage features and natural groundwater aquifer recharge areas.

Objective 3-1: Consistent with level of service standards for drainage, nonstructural approaches to stormwater management shall be permitted in new development to allow for aquifer recharge.

Policy 3-1b: Prohibit the alteration of natural watercourses and floodways, unless in the case of a finding of overriding public interest. An overriding public interest shall be based upon reducing the hazards of flooding in areas of development existing prior to the adoption date of this comprehensive plan.

Policy 3-1c: The county and municipalities shall protect the functions of all natural drainage features (such as streams, lakes, wetlands, and estuaries, etc.). The purpose of such protection is to allow for the natural treatment and recharge of water from overland flow, to reduce sedimentation, siltation, and soil erosion, and to allow for the retention, infiltration, evapotranspiration, and evaporation of water, as well as wildlife habitat and floodplain protection.

Policy 3-1d: Recognize that periodic flooding is natural and acceptable, and therefore, in order to prevent damage to property and life, require that all development within the 100-year floodplain be in compliance with Washington County's adopted LDRs (including their FEMA Flood Damage Prevention Ordinance) and state and federal regulations, and that no development shall serve to increase the height and/or velocity of regulatory floods.

Policy 3-1e: Require that all proposed building and development within the 100-year floodplain shall be constructed consistent with established state and federal standards regulating development within designated floodplains.

Policy 3-2e: The natural functions of wetlands (i.e., groundwater recharge, wildlife habitat, floodplain protection, etc.) shall be conserved by limiting future development in such areas in concert with the conservation land use classification found in the Future Land Use Element of this Plan.

CONSERVATION ELEMENT

Policy 2-1: The County and municipalities shall continue implementing the comprehensive stormwater management ordinance consistent with 17-25 and 17-302, F.A.C. establishing:

- c. 25-foot waterline buffer zones adjacent to wetlands and surface water bodies to preserve natural vegetation which provides filtration of stormwater runoff;
- d. a 50 foot development setback from the ordinary high water line of water bodies;
- e. general design and construction standards for onsite stormwater management systems for new development (consistent with State and federal rules and regulations) to ensure that post-development runoff rates, volumes and pollutant loads do not exceed predevelopment conditions;

The County shall continue to coordinate the approval of all stormwater management facilities with FDEP.

Objective 3: The County and municipalities shall protect the natural functions of areas within the 100-year floodplain.

Policy 3-1: The County and municipalities shall continue to enforce minimum FEMA construction standards for the 100-year floodplain (as contained in presently adopted Floodplain Management Ordinances). In floodplain areas where base flood elevations have not been established, the County and municipalities will require development setbacks from streambanks of 50 feet or 5 times the width of the stream at to the top of the bank width, which ever is greater, in accordance with the LDCs of Washington County.

Policy 3-2: The County and municipalities shall continue to enforce Land Development

Regulations which include provisions which establish and implement construction standards in accordance with the Federal Emergency Management Agency (FEMA) guidelines at a minimum.

Policy 3-3: The County shall identify and recommend to the State and the NFWFMD floodplains and/or waterbodies that would warrant acquisition under conservation, preservation, and recreation use acquisition grant programs.

Policy 8-2: The County shall coordinate with adjacent counties and the NFWFMD to protect unique vegetative communities along the County's border by enforcement of the respective County floodplain ordinances, by establishing a 100-foot buffer around major damaged areas and by establishing a 25-foot waterline buffer.

Policy 11-1: The County will continue to enforce the stormwater management ordinance which incorporates a 25-foot waterline buffer zone.

CAPTIAL IMPROVEMENTS ELEMENT

Policy 1-1: The following levels of service (LOS) standards are hereby adopted and will be maintained as growth occurs in the County and cities.

7. Stormwater Management

Development fronting or contributing to stormwater on principal or minor arterial roadways

LOS A for 50 yr. 24 hour storm event and treatment retention/detention systems as required by LDR's and State regulations (i.e., 17-25 FAC)

8. Stormwater Management

Development fronting or contributing to stormwater on collector roadways

LOS A for 25 yr, 24 hour storm event and treatment retention/detention systems as required by LDR's and State regulations (i.e., 17-25 FAC)

9. Stormwater Management

Development fronting on local streets

LOS A for 15 yr. 24 hour storm residential neighborhoods event and treatment (including new subdivisions) retention/detention systems as required by LDR's and State regulations (i.e., 17-25 FAC)