North Central Florida Regional Planning Council

Serving
Alachua • Bradford
Columbia • Dixie • Gilchrist
Hamilton • Lafayette • Levy • Madison
Marion • Suwannee • Taylor • Union Counties

2009 NW 67th Place, Gainesville, FL 32653-1603 • 352.955.2200

# MEETING NOTICE

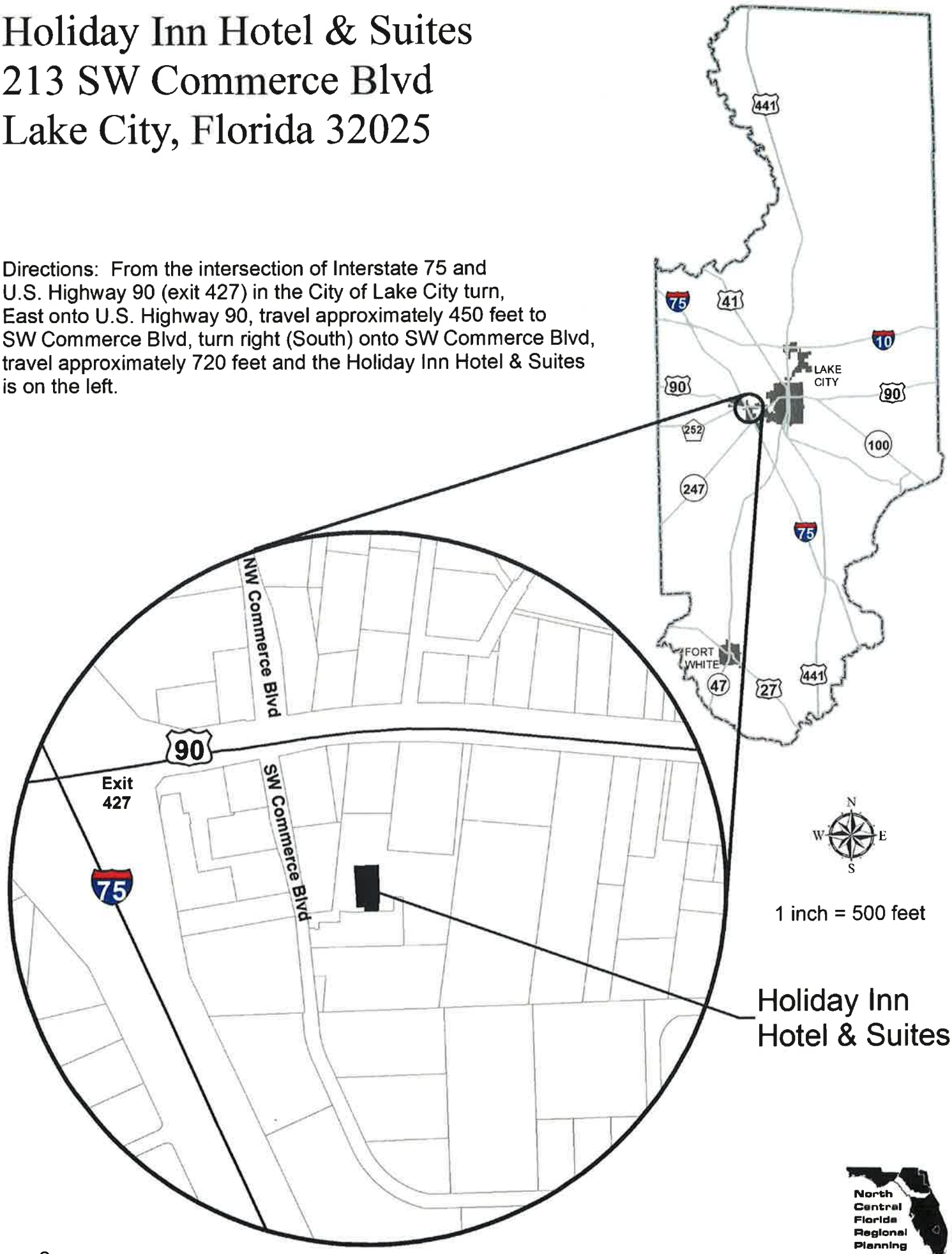
# REGIONAL PLANNING COMMITTEE

There will be a meeting of the Regional Planning Committee of the North Central Florida Regional Planning Council on **March 24, 2016**. The meeting will be held at the **Holiday Inn Hotel & Suites, 213 SW Commerce Boulevard, Lake City**, beginning at **6:30 p.m.**

(Location Map on Back)

# Holiday Inn Hotel & Suites
# 213 SW Commerce Blvd
# Lake City, Florida 32025

Directions: From the intersection of Interstate 75 and U.S. Highway 90 (exit 427) in the City of Lake City turn, East onto U.S. Highway 90, travel approximately 450 feet to SW Commerce Blvd, turn right (South) onto SW Commerce Blvd, travel approximately 720 feet and the Holiday Inn Hotel & Suites is on the left.




North Central Florida Regional Planning Council

North Central Florida Regional Planning Council

Serving
Alachua • Bradford
Columbia • Dixie • Gilchrist
Hamilton • Lafayette • Levy • Madison
Marion • Suwannee • Taylor • Union Counties

2009 NW 67th Place, Gainesville, FL 32653-1603 • 352.955.2200

# AGENDA

# REGIONAL PLANNING COMMITTEE

Holiday Inn Hotel & Suites
Lake City, Florida

March 24, 2016
6:30 p.m.



v:\srpp\committe\meeting\agenda160324.rpc.docx

NORTH CENTRAL FLORIDA REGIONAL PLANNING COUNCIL

REGIONAL PLANNING COMMITTEE

MINUTES

Holiday Inn Hotel & Suites
Lake City, Florida

February 25, 2016
6:30 p.m.

MEMBERS PRESENT

Beth Burnam, Chair
Scarlet Frisina
James Montgomery
Helen Warren
Robert Wilford
Stephen Witt

MEMBERS ABSENT

Charles Chestnut, IV
William Hunter
Mike Williams

STAFF PRESENT

Steven Dopp

The meeting was called to order by Chair Burnam at 6:38 p.m.

I. APPROVAL OF THE JANUARY 28, 2016 MEETING MINUTES

**ACTION:** **It was moved by Mayor Witt and seconded by Commissioner Wilford to approve the January 28, 2016 Committee minutes as circulated. The motion carried unanimously.**

II. ECONOMIC DEVELOPMENT ELEMENT

Mr. Dopp presented proposed amendments to the Economic Development Element of the North Central Florida Strategic Regional Policy Plan. The Committee reviewed and discussed the proposed amendments.

The meeting adjourned at 7:10 p.m.

_____
Beth Burnam, Chair

3/24/16
Date


# Chapter III
# Emergency Preparedness

Adopted May 23, 1996, Amended August 28, 1997, February 27, 2003 and October 27, 2011

THIS PAGE LEFT BLANK INTENTIONALLY

# Chapter III: Emergency Preparedness

## A. Conditions and Trends

### 1. Introduction

It was a cool, windy Friday, typical of the month of March in north central Florida. The National Weather Service was predicting the possibility of severe storms, particularly in Dixie and Taylor counties. Still, the weather forecast was nothing out of the ordinary and life went on as usual in the coastal fishing communities dotting Dixie and Taylor counties. Residents went to bed early, as they usually do in anticipation of an early morning fishing excursion. The rain came down hard with plenty of wind. It was so windy that electricity and telephone service was knocked out. Yes, it was a big storm, but how bad could it be? After all, it wasn't hurricane season and no evacuation order had been issued.

Hud Lillion and Laurie O'Quinn from the unincorporated Taylor County coastal community of Dekle Beach remember the night well. "After watching the water for a while I went to bed," said Hud. "I woke up about 2:00 a.m. and looked out and saw water up on the tires of my truck but it didn't particularly alarm me, so I went back to bed. Laurie woke up about 2:30 a.m. and told me Louis Lanier's house was gone and so was my truck. I knew then that this was more than just a storm, so we moved to the back of the house. Every wave that came in was knocking the boards up in the floor. I told Laurie we had to get out. I made my way to the back door. I fell through the floor two or three times. I couldn't hardly get the door open because of the wind and the door started smashing Laurie's hand."

"We finally got out on the deck, then everything started collapsing so we jumped. We swam across the road to a home that was still standing and managed to get up on the deck. We managed to get inside and tried to find some life jackets, then that house started crumbling but we managed to get on the roof. A wave came and knocked off the roof. We grabbed hold of a board and floated up to Carlton Hamilton's home. It was still dark then, about 5:30 a.m. We stayed there for some minutes. Mrs. Sapp was there holding a baby.[1] We all huddled together to try and stay warm but we were freezing. Fred Morgan and Tom Geohagen came wading in waist deep water. The wind was still blowing about 65 mph. They took us to Craig and Ruth Harvey's house where some other people had gathered and there was a fire in the fireplace. We were just glad to be alive."[14] At 5:42 a.m. a weather forecaster in Tampa went on a statewide emergency radio network to issue a flood warning.[15]

---

[1]"O'Quinn floated until she was able to grab another house, and that's when the woman swam by with a baby in her arms. 'She said, 'help me, my baby is dead,' and we just stood there and hugged each other until Fred and Tom came and got us out." "Counting People Instead of Bodies," Gainesville Sun, March 15, 1993.

[14]TaCo Times, Perry, Florida, March 17, 1993

[15]"Why the Delay in Storm-Surge Warning?" Gainesville Sun, March 19, 1993.

Adopted May 23, 1996, Amended August 28, 1997, February 27, 2003 and October 27, 2011

John Robertson was huddled in his travel trailer, listening to the rain and reading a mystery novel, when the owners of the nearby Keaton Beach Marina knocked on his door and told him he should join them in the marina's second-floor living quarters. "I'm 6-foot-4 and by the time I got to the marina I was swimming," Robertson said. "There is total destruction here. Just about everything is lost." Marina co-owner Brad Beach said a tidal surge caused the water to rise about 6 feet in 20 minutes before dawn Saturday, and it ebbed just as quickly. During its short stay, the surge crumbled concrete foundations, flooded buildings, immersed vehicles and took homes, docks, and other structures with it as it retreated. "I never saw anything like it in my life," Beach said, "It took just 20 (minutes) to get 6 feet, and then there were 4- to 5-foot waves on top of it. Houses finally floated away."[16]

In just 20 minutes Saturday morning, March 13, 1993, north central Florida coastal residents went from just another spring storm to the Storm of the Century. The storm devastated the region's entire coastline. Fully 25 percent of the region's coastal homes were destroyed and another 25 percent were damaged. Dixie County was lucky. No one died. Taylor County was not. Ten people drowned. On March 13th, President Clinton declared Florida a disaster area.

Predicting the severity of the storm and the height of the tide surge was difficult for the National Weather Service. The storm could not have occurred except for a unique set of circumstances. The storm developed suddenly late Friday as incoming Arctic air collided with a warm air stationary front over the Gulf of Mexico. The difference in temperature between the two air masses was estimated at 50 degrees. The dramatic contrast in air temperatures allowed the storm to develop very rapidly. A dramatic drop in barometric pressure followed. The storm produced the lowest barometric pressure ever recorded in the City of Tallahassee. Drops in barometric pressure are normally associated with tropical storms, which this was not. The drop in barometric pressure led to high winds. The region experienced a high tide when the storm hit land. These factors combined to produce a storm surge that surpassed forecasters predictions.[17]

Dixie and Taylor County coastal residents were unlikely to hear an evacuation warning had the weather service issued one. Neither Dixie nor Taylor County officials had access to the National Warning System radio network. Both counties were outside the range of the National Oceanic and Atmospheric Administration weather radio station network and neither county had emergency sirens.

## 2. Planning for Coastal Storms

As a result of the Presidential disaster declaration for the Storm of the Century, the President activated an Interagency Hazard Mitigation Team to identify areas of significant hazards, visit sites, and evaluate the impact of the disaster. The team was comprised of representatives of federal, state, regional, and local agencies who possess the varied backgrounds and expertise necessary to promote a comprehensive approach to hazard mitigation. The team issued a report containing 25 recommendations which describe the actions, time-lines, and potential funding sources necessary to reduce future losses from similar events. Among the team's findings were recommendations for the installation of additional weather monitoring equipment in coastal areas to help weather forecasters better predict storm events as well as a better warning system for coastal residents.

[16]"Taylor County Beach Residents Return to Ruins," Gainesville Sun, March 16, 1993.

[17]"Weather Still Hard to Predict," Gainesville Sun, March 17, 1993.

North central Florida National Oceanic and Atmospheric Administration weather radio signals coverage has been significantly expanded since the Storm of the Century. Computer-generated National Oceanic and Atmospheric Administration weather radio coverage maps developed by the National Oceanic and Atmospheric Administration suggest that, with the exception of a small area parallel to Interstate 10 in Madison County, all of north central Florida is covered by at least one of the weather radio stations identified in Table 3.1, below.

**TABLE 3.1**

**NORTH CENTRAL FLORIDA**
**NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION**
**WEATHER RADIO COVERAGE**

| Location | Station | Broadcast Frequency | Counties Covered or Partially Covered |
|---|---|---|---|
| **Lake City** | KEB-97 | 162.400mHz | Alachua, Bradford, Columbia, Gilchrist, Hamilton, Lafayette, Suwannee, Union |
| **Tallahassee** | KIH-24 | 162.400mHz | Madison, Taylor |
| **Palatka** | WNG-522 | 162.425mHz | Alachua, Bradford |
| **Salem (Taylor County)** | WWF-88 | 162.425mHz | Dixie, Lafayette, Madison, Suwannee, **Levy,** Taylor |
| **Morriston (~~Levy~~ Citrus County)** | KWN38 | 162.55mHz | Alachua, Bradford, Columbia Dixie, Gilchrist, Hamilton, Lafayette, **Levy,** Taylor, Union |
| **Gainesville** | WXJ-60 | 162.475mHz | Alachua, Bradford, Columbia, Dixie, Gilchrist, Lafayette, Suwannee, Union |
| **Valdosta, GA** | WWH-31 | 162.500mHz | Hamilton, Madison, Suwannee |
| **Ocala** | WWF-85 | 162.525mHz | Alachua**, Levy, Marion** |

Source: www.nws.noaa.gov/nwr/usframes.html, November 2010.

The National Oceanic and Atmospheric Administration weather radio website notes that the coverage maps were calculated using a computer model and station data using ideal weather conditions. The National Oceanic and Atmospheric Administration notes that coverage may be 5 to 10 percent less than indicated by the maps. Suwannee County Emergency Management personnel have noted that, since the Live Oak National Oceanic and Atmospheric Administration weather radio station was moved to Lake City in 2004, Suwannee County does not receive reliable coverage west of U.S. Highway 129, at least during periods of inclement weather. Upgrading the existing 300-watt National Oceanic and Atmospheric Administration

weather radio station in Lake City to a 1,000-watt station may provide the necessary coverage for the remaining unserved areas of Suwannee County.

During the Storm of the Century, the statewide emergency warning system consisted of a dedicated telephone system linking federal and state weather forecasters with local governments. The system allows for two-way conversation similar to a telephone system party-line. Few local governments in north central Florida were connected to this system due to its high installation and maintenance costs. A sophisticated satellite-based communications system has replaced it, linking emergency management agencies throughout the state to provide voice, high-speed data, facsimile, and video communications capabilities. It is more reliable than the National Warning System since it is not dependent upon telephone lines and will perform under any weather conditions. The system has been installed in every county, solving a missing link in north central Florida emergency management capabilities.

At the time of the storm, no weather buoys or other government-owned weather monitoring instruments were located in the Gulf of Mexico off the Big Bend coastline. Weather buoys provide valuable information regarding temperature, wind speed, wind direction, and barometric pressure. Meteorologists can run computer models that predict storm surge height based upon these factors.

Storm surge increases in height as it nears land. As of November , 2010, one Coastal-Marine Automated Network coastal weather station is located in Keaton Beach, three weather buoys are located between 51 and 100 miles of Steinhatchee, two weather buoys are located between 101 and 150 miles of Steinhatchee, and four weather buoys are located in the Gulf of Mexico between 151 to 175 miles of Steinhatchee. However, no weather buoys are located in the Gulf of Mexico between 10 and 50 miles of Steinhatchee.

Dixie and Taylor counties have four small coastal communities: the unincorporated coastal communities of Jena-Steinhatchee, Dekle Beach-Keaton Beach, Suwannee, and the incorporated Town of Horseshoe Beach. Warning sirens can be useful means of notifying community residents of storm warnings and evacuation orders when other forms of communication fail. During the Storm of the Century, none of these communities had warning sirens. As of November 2010, four north central Florida coastal communities (Horseshoe Beach, Dekle Beach, Keaton Beach, & Steinhatchee) had emergency warning sirens. The unincorporated communities of Suwannee and Jena do not have sirens, However, Dixie County has installed a "Reverse 911" notification system which is capable of notifying Dixie County coastal residents who have telephone service of approaching coastal storms.

As was evident in the Storm of the Century, the greatest danger to coastal areas is the storm surge, a 20- to 100-mile wide wall of water generated by high winds, hurricane forward velocity, and sharp changes in barometric pressure present in coastal storms. Storm surges cause nine out of ten hurricane fatalities. Dixie and Taylor counties are among the most susceptible counties in the state and, perhaps, the nation, to inundation from storm surge. This is due to the geomorphology and the bathymetry of the Gulf of Mexico. Dixie and Taylor counties are located near the Florida panhandle where the coast curves west, creating a corner which can trap sea water. Along a straight coastline, the surge can dissipate more easily by flowing parallel to the coastline. However, in Dixie and Taylor counties, the seawater is trapped in Apalachee Bay where it piles up rather than flows out. The bathymetry, or sea bottom topography, of the gulf of Mexico is much shallower than most other U.S. coastal basins. A shallow basin can increase surge height by as much as 80 percent.[18]

[18]North Central Florida Regional Planning Council, 1990 North Central Florida Regional Hurricane Inland Shelter Study Technical Report Update, Gainesville, Fl., 1990, pg. 10.

The potential loss of life and property damage due to hurricanes in Dixie and Taylor Counties is minimized due to their small populations and large coastal land holdings in public ownership. The 2008 Dixie County estimated population was 15,965, while 2008 Taylor County estimated population was 23,199. Population density is low in these counties. The 2008 Dixie County population density was 23 persons per square mile, ranked at 62 among Florida's 67 counties. Taylor County had an estimated 2008 population density of 22 persons per square mile, ranked at 64th among Florida's counties.[19] Additionally, approximately two-thirds of the Dixie and Taylor counties coastline is in public ownership.

## a. Clearance Times and Shelter Capacities

In ~~2010~~ 2015, the North Central Florida Regional Planning Council updated portions of ~~completed~~ the Statewide Regional Evacuation Study for the region. The ~~2010 hurricane~~ evacuation study reports average clearance times by "Level." A "level" is comparable to the Category 1-5 Saffir-Simpson Hurricane classification system, with Level A comparable to a Category 1 hurricane and a Level E hurricane comparable to a Category 5 hurricane.

The ~~2010 hurricane~~ evacuation study also identified clearance times to three separate destinations: Clearance Time to Shelter; In-County Clearance Time, and Out of County Clearance Time. Clearance Time to Shelter refers to the time necessary to safely evacuate vulnerable residents and visitors to a "point of safety" within the county based on a specific hazard, behavioral assumptions and evacuation scenario. Calculated from the point in time when the evacuation order is given to the point in time when the last vehicle reaches a point of safety within the county. In-County Clearance Time refers to the time required from the point an evacuation order is given until the last evacuee can either leave the evacuation zone or arrive at safe shelter within the county (excludes evacuees leaving the county, on their own). Out of County Clearance Time refers to the time necessary to safely evacuate vulnerable residents and visitors to a "point of safety" outside the county. It is calculated from the time an evacuation order is given to the time when the last vehicle assigned an external destination exits the county.

**The general response model, post-hurricane behavioral surveys of residents of the north central Florida region and past experience were used to determine public shelter demand. The number of evacuees who choose public shelter as their evacuation destination was based on demographic characteristics of the population including income and age, risk area and housing (mobile home vs. site built homes). The planning assumptions regarding anticipated shelter use were based upon the behavioral surveys and past experiences and were applied to the projected hurricane evacuation population estimates.**

**Several different assumptions were used regarding the evacuation population. The base scenarios used for planning and growth management purposes assume that 100 percent of the population-at-risk evacuates plus a smaller percentage of non-vulnerable population referred to as shadow evacuation.**

[19]Bureau of Economic and Business Research, 2009 Florida Statistical Handbook, University Press of Florida, Gainesville, FL., 20010, Table 1.14.

## TABLE 3.2

## ~~2010~~ 2015 CLEARANCE TIMES FOR BASE SCENARIO

| County | Clearance Times by Level (in Hours) | | | | |
|---|---|---|---|---|---|
| | Level A | Level B | Level C | Level D | Level E |
| **Clearance Time to Shelter** | | | | | |
| Dixie | 13.0 | 13.0 | 13.0 | 13.5 | 13.0 |
| Levy | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 |
| Taylor | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 |
| **In-County Clearance Time** | | | | | |
| Dixie | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 |
| Levy | 14.0 | 17.0 | 23.5 | 24.5 | 27.0 |
| Taylor | 13.0 | 13.0 | 13.0 | 13.0 | 14.5 |
| **Out of County Clearance Time** | | | | | |
| Dixie | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 |
| Levy | 22.0 | 26.0 | 32.5 | 34.5 | 36.0 |
| Taylor | 14.0 | 14.0 | 14.0 | 14.0 | 14.5 |

Source: 2015 Statewide Regional Evacuation Study for the North Central Florida Region, Volume 1: Technical Data Report, North Central Florida Regional Planning Council, September 2015

| ~~County~~ | ~~Clearance Times by Level (in Minutes)~~ | | | | |
|---|---|---|---|---|---|
| | ~~Level A~~ | ~~Level B~~ | ~~Level C~~ | ~~Level D~~ | ~~Level E~~ |
| ~~**Clearance Time to Shelter**~~ | | | | | |
| ~~Dixie~~ | ~~11.0~~ | ~~11.0~~ | ~~11.0~~ | ~~11.5~~ | ~~11.5~~ |
| ~~Taylor~~ | ~~11.5~~ | ~~11.5~~ | ~~12.5~~ | ~~12.5~~ | ~~12.0~~ |
| ~~**In-County Clearance Time**~~ | | | | | |
| ~~Dixie~~ | ~~11.5~~ | ~~11.5~~ | ~~11.5~~ | ~~12.5~~ | ~~12.5~~ |
| ~~Taylor~~ | ~~12.5~~ | ~~12.5~~ | ~~12.5~~ | ~~13.0~~ | ~~13.0~~ |
| ~~**Out of County Clearance Time**~~ | | | | | |
| ~~Dixie~~ | ~~12.0~~ | ~~12.0~~ | ~~12.0~~ | ~~12.5~~ | ~~13.0~~ |
| ~~Taylor~~ | ~~13.5~~ | ~~13.5~~ | ~~13.0~~ | ~~13.5~~ | ~~13.5~~ |

Adopted May 23, 1996, Amended August 28, 1997, February 27, 2003 and October 27, 2011

Table 3.3 below identifies risk shelter capacities for north central Florida counties.

**TABLE 3.3**

**NORTH CENTRAL FLORIDA PUBLIC SHELTER CAPACITY**
**USING AMERICAN RED CROSS PUBLIC SHELTER GUIDELINES**

| County | Shelter Capacity | Category A Surplus or (Deficit) | Category B Surplus or (Deficit) | Category C Surplus or (Deficit) | Category D Surplus or (Deficit) | Category E Surplus or (Deficit) |
|---|---|---|---|---|---|---|
| Alachua | 5,687 | 1,045 | (486) | (3,546) | (5,078) | (6,608) |
| Bradford | 1,695 | 668 | 583 | 498 | 326 | 241 |
| Columbia | 4,362 | 135 | (39) | (387) | (561) | (737) |
| Dixie | 826 | (626) | (643) | (730) | (1,002) | (1,148) |
| Gilchrist | 3,129 | 2,084 | 2,043 | 2,006 | 1,967 | 1,930 |
| Hamilton | 1,696 | 758 | 714 | 669 | 627 | 582 |
| Lafayette | 647 | 166 | 166 | 131 | 61 | 25 |
| Levy | 4,328 | 1096 | 1050 | 863 | 563 | 125 |
| Madison | 4,236 | 3,157 | 3,096 | 3,035 | 2,972 | 2,910 |
| Marion | 9,908 | (3,375) | (5,336) | (7,297) | (9,258) | (9,258) |
| Suwannee | 3,534 | 171 | 45 | (7) | (212) | (338) |
| Taylor | 3,626 | 2,372 | 2,368 | 2,211 | 2,015 | 1,850 |
| Union | 1,284 | 805 | 751 | 698 | 588 | 533 |
| - | - | - | - | - | - | - |
| Region | 44,958 | 8,456 | 4,312 | (1,856) | (6,992) | (9,893) |

| ~~County~~ | ~~Number of Shelters~~ | ~~Risk Shelter Capacity American Red Cross 4496 Compliant~~ | ~~Category 4/5 Shelter Demand~~ | ~~Category 4/5 Shelter Surplus/ (Deficit)~~ | ~~Persons with Special Needs Storm Capacity~~ | ~~Persons with Special Needs Storm Demand~~ | ~~Persons with Special Needs Surplus/ (Deficit)~~ |
|---|---|---|---|---|---|---|---|
| ~~Alachua~~ | ~~24~~ | ~~6,451~~ | ~~9,576~~ | ~~(3,125)~~ | ~~534~~ | ~~2,450~~ | ~~(1,916)~~ |
| ~~Bradford~~ | ~~10~~ | ~~1,462~~ | ~~2,294~~ | ~~(832)~~ | ~~197~~ | ~~136~~ | ~~61~~ |
| ~~Columbia~~ | ~~21~~ | ~~4,661~~ | ~~6,337~~ | ~~(1,676)~~ | ~~0~~ | ~~76~~ | ~~(76)~~ |

Adopted May 23, 1996, Amended August 28, 1997, February 27, 2003 and October 27, 2011

| County | Number of Shelters | Risk Shelter Capacity American Red Cross 4496 Compliant | Category 4/5 Shelter Demand | Category 4/5 Shelter Surplus/ (Deficit) | Persons with Special Needs Storm Capacity | Persons with Special Needs Storm Demand | Persons with Special Needs Surplus/ (Deficit) |
|---|---|---|---|---|---|---|---|
| Dixie | 15 | 2,051 | 2,562 | (511) | 84 | 55 | 29 |
| Gilchrist | 9 | 3,243 | 2,170 | 1,073 | 102 | 52 | 50 |
| Hamilton | 12 | 1,397 | 1,537 | (140) | 101 | 10 | 91 |
| Lafayette | 8 | 570 | 1,185 | (615) | 60 | 1 | 59 |
| Madison | 21 | 4,487 | 1782 | 2,705 | 28 | 30 | (2) |
| Suwannee | 22 | 3484 | 5768 | (2,284) | 50 | 81 | (31) |
| Taylor | 17 | 3,623 | 2,576 | 1,050 | 0 | 142 | (142) |
| Union | 13 | 1,251 | 1,277 | (26) | 33 | 82 | (49) |
| Region | 172 | 32,680 | 37,064 | (4,381) | 1,189 | 3,115 | (1,926) |

Source: ~~2010 Statewide Emergency Shelter Plan, Florida Division of Emergency Management, January 31, 2010~~ 2015 Update of North Central Florida Statewide Regional Evacuation Study, September 2015.

# 3. Riverine and Freshwater Flooding

The Suwannee River System has a broad, expansive floodplain which is regularly inundated in response to spring rains.[20] The Suwannee River Water Management District, in conjunction with the Federal Emergency Management Agency, has mapped the 100-year floodplain of the Suwannee River System in order to assist local governments with management of the floodplain. Many local governments within the region have adopted floodplain ordinances for the Suwannee River System to regulate the construction and location of structures within the 100-year floodplain.

Every north central Florida county adjacent to the Suwannee River System has, and requires through their comprehensive plans, low dwelling unit densities within the floodplain. The comprehensive plans of north central Florida local governments limit rural floodplain dwelling unit densities to one unit per five acres and one unit per ten acres. Six small urban areas (Branford, Dowling Park, Fanning Springs, Old Town, Suwannee, and White Springs) are located within the Suwannee River 100-year floodplain. Within these urban areas, the maximum allowable residential density within the floodplain is four units per acre.

[20]The Suwannee River System consists of the Suwannee River and its major tributaries the Alapaha, Santa Fe, and the Withlacoochee rivers.

Along the major tributaries of the Suwannee (Alapaha, Santa Fe, and Withlacoochee Rivers), dwelling unit densities within the 100-year floodplain are also limited to one unit per five acres and one unit per ten acres. No north central Florida municipalities or urban areas are located within the 100-year floodplains of these rivers. The 100-year floodplains of the region's regionally significant coastal rivers (Aucilla, Econfina, and Steinhatchee) are similarly protected with maximum allowable dwelling unit densities ranging from one unit per five acres to one unit per ten acres. Only one urban area, the unincorporated town of Steinhatchee, is within the 100-year floodplain of a coastal river (the Steinhatchee River).

In addition to the Suwannee River System, the Federal Emergency Management Agency has prepared maps which identify flood hazard areas for all unincorporated areas of the region as well the region's incorporated municipalities. As of November 2010, 39 of the region's 41 local governments with mapped flood hazard areas within their jurisdiction participated in the National Flood Insurance Program. Participation in the program makes federal flood insurance, the only flood insurance in the nation, available for properties located within the 100-year floodplain. All north central Florida local governments with floodable areas within their jurisdiction, regardless of whether they participate in the National Flood Insurance Program, have comprehensive plans which identify floodable areas and contain policies which address flood management.

**In 2014, the City of Live Oak was impacted by freshwater flooding that was reported to be the worst since Hurricane Dora in 1964.**

# 4. Tornadoes

Between 1950 and ~~2007~~ **2014**, **218** tornadoes have touched down in north central Florida resulting in ~~one death and 59~~ **11 fatalities and 155** injuries.[21] Tornadoes occur most frequently in the region during the months of May through August, with June as the peak month. However, tornadoes can occur year-round. Currently, there is no accurate way to predict where or when a tornado will "touch down." Due to their violent nature and the increasing number of mobile homes locating in the region, the probability of property damage and deaths due to tornadoes is increasing.

While mobile homes are of special concern, all north central Florida buildings are vulnerable to tornado damage. Few conventionally-built homes in the region have basements or underground tornado shelters due to a high water table which makes their construction impractical. None of the region's local governments require construction of tornado shelters or safe rooms for large shopping malls, schools, hospitals, or mobile home parks. The construction of safe rooms may be financially infeasible given the level of risk.

Improvements have been made to the region's tornado warning system. The National Weather Service installed Doppler weather radar at its Jacksonville and Tallahassee weather stations in 1995 as part of a nationwide modernization program. These locations provide Doppler weather radar information for all eleven north central Florida counties. Doppler radar is a significant improvement over the older weather radar system. Under the old system, meteorologists had to identify tornadoes based on certain visual patterns displayed on the radar screen. Doppler radar detects wind directions and wind velocities at a high degree of resolution within a storm. In addition to displaying radar data on a screen, Doppler radar data is fed to a computer which helps meteorologists understand the storm's dynamics. Meteorologists at the Jacksonville weather station believe Doppler radar allows the National Weather Service to issue tornado

[21]Tornado History Project, ~~March 24, 2009~~ **March 16, 2016**, http://www.tornadohistoryproject.com.

warnings ten to 15 minutes earlier than they could using the prior system. Accuracy is also increased. In June, 1995's, Hurricane Allison, the Jacksonville weather station identified 16 of the 17 tornadoes which occurred within their area of jurisdiction. According to Al Sandrick, a meteorologist stationed at the Jacksonville National Weather Service station, "We would never have imagined achieving that type of accuracy with the old radar system."

## 5. Regionally Significant Emergency Preparedness Facilities

The facilities listed in Table 3.4 are recognized as regionally significant facilities.[22]

**TABLE 3.4**

**REGIONALLY SIGNIFICANT EMERGENCY PREPAREDNESS FACILITIES**

| |
|---|
| Alachua County Emergency Operations Center |
| **Dixie County Emergency Operations Center** |
| **Taylor County Emergency Operations Center** |
| **Levy County emergency Operations Center** |
| Public Emergency Shelters |
| NOAA Radio Stations |
| Weather Buoys and Similar Off-shore Weather Monitoring Equipment |
| Doppler Weather Radar Installations Covering the Region |
| Warning Sirens in Coastal Communities |
| Gainesville Fire Rescue Hazardous Materials Emergency Response Team |

Source: North Central Florida Regional Planning Council, 2010.

## 6. Hazardous Materials Releases

Under contract with the Florida Division of Emergency Management, the North Central Florida Regional Planning Council serves as staff to the North Central Florida Local Emergency Planning Committee. The North Central Florida Local Emergency Planning Committee was established in 1988 in response to the federal Emergency Planning and Community Right-to-Know Act which requires the preparation of local emergency response plans for hazardous materials releases which, for the State of Florida, have been developed utilizing the the **ten** ~~**eleven**~~ regional planning council districts.[23] The North Central Florida Local Emergency Planning Committee is composed of representatives of 18 different occupational categories. Membership is also distributed geographically to assure that each of the region's eleven counties has at least

[22]Hurricane evacuation routes recognized as regionally significant transportation facilities are listed in Table 5.8. North central Florida regionally significant facilities and resources, as defined in Rule 27E.005, Florida Administrative Code, consist of Regionally Significant Emergency Preparedness Facilities identified in Table 3.4, Natural Resources of Regional Significance identified in Table 4.1, Regionally Significant Transportation Facilities identified in Table 5.8, and Regionally Significant Facilities and Resources, identified in Section VI.

[23]Although referred to as a local plan, it is, in fact, a regional plan which addresses all eleven north central Florida counties.

one resident serving as a member. Committee members are appointed by the State Emergency Response Committee.

The local emergency response plan for north central Florida was adopted by the Committee on June 9, 1989, is updated annually. The North Central Florida Local Emergency Planning Committee emergency response plan identifies locations of possible hazardous materials releases based upon known locations of hazardous materials. The plan also delineates vulnerable zones.[24]

In addition to the emergency response plan, the North Central Florida Local Emergency Planning Committee is also involved in establishing training programs, conducting emergency response exercises, providing public information campaigns, and other activities aimed at minimizing risks from hazardous materials releases.

Given the rural nature of north central Florida and the large populations located south of the region, it is likely that the biggest hazardous materials emergencies involving unknown chemicals could result from releases from trucks and trains passing through the region. In 2003, the Local Emergency Planning Committee conducted a hazardous materials commodity flow study. The study was used to identify the most common chemicals transported through the region. The information helps guide the selection of hazardous materials training classes as well as planning efforts by the Local Emergency Planning Committee. The commodity flow study looked at transportation on Interstate Highways 10 and 75, as well as U.S. Highways 19 and 301. The most common hazardous materials identified in the study included flammable liquids, toxic and corrosive noncombustible substances, water-miscible, flammable liquids and other toxic or corrosive substances.

When a hazardous materials release occurs, a local fire department or other local government personnel arrive at the scene and determine if local resources can deal with the release. If the incident requires greater than local resources, the local government contacts one of the region's regional response teams.

No regional hazardous materials response team is located within a ~~sixty~~ **60** minute response time of Perry or Greenville. North Central Florida Regional Hazardous Materials Response Team members are located in the City of Alachua, Lake City, Gainesville, Starke and Fanning Springs, and Dixie County. Response times to all eleven counties by at least one of the regional hazardous materials response teams is 60 to 90 minutes. The District 2 Regional Domestic Security Task Force has hazmat response capabilities located in Tallahassee that also provide coverage to Madison and Perry. However, the response times to Perry, Cross City, and Greenville are still in excess of 60 minutes.

There are areas of north central Florida where the closest hazardous materials response team is in either Valdosta, Georgia or Dothan, Alabama. The Local Emergency Planning Committee has been working to establish a tri-state hazardous materials mutual aid agreement. As of **2015,** ~~2010~~ an agreement has not been adopted by all of the parties. Nevertheless, cross-state hazardous materials response is occurring in the absence of an agreement.

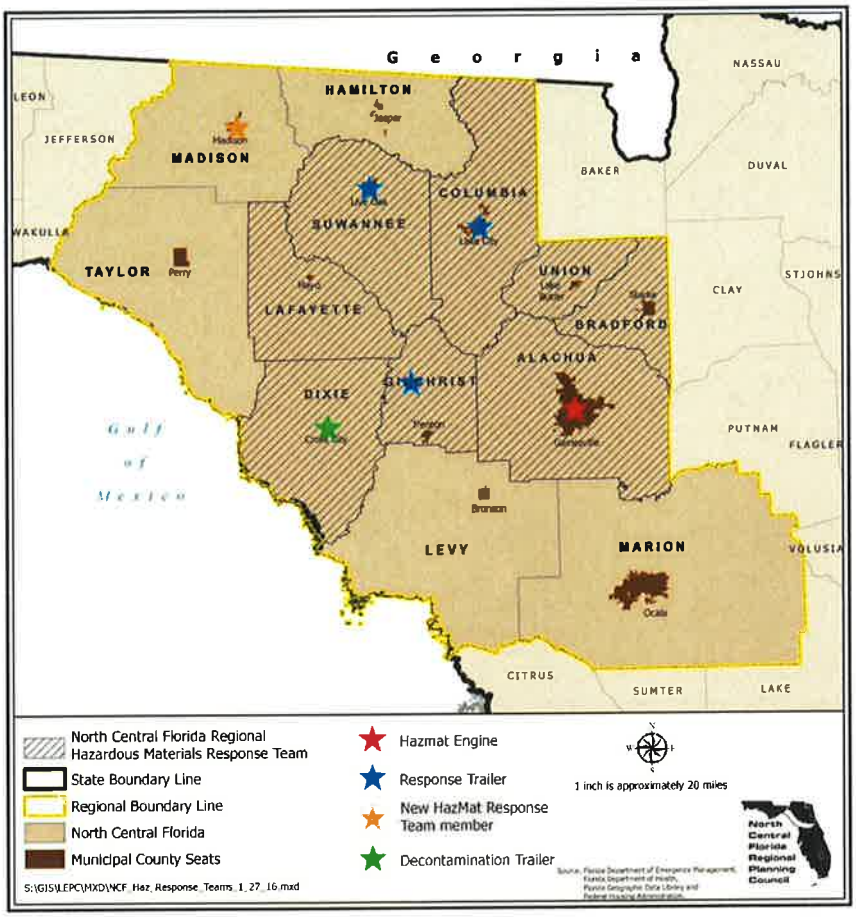
**The North Central Florida Regional Hazardous Materials Response Team has expanded the areas which can receive a more timely response. Illustration 3.1. shows the locations of Team members.**

[24]Vulnerable zones are areas where the estimated chemical concentration from an accidental release is at a level where people's health could be adversely impacted during a worst-case release.

Adopted May 23, 1996, Amended August 28, 1997, February 27, 2003 and October 27, 2011

**Illustration 3.1**

**North Central Florida Regional Hazardous Materials Response Team Locations of Members**




# 7. State Emergency Management Efforts

In the aftermath of 1992's Hurricane Andrew, the state revitalized its efforts in emergency preparedness planning, especially for hurricanes. After Andrew, the Governor's Disaster Planning and Response Review Committee was established to identify problems with statewide disaster preparedness and recommend improvements. In a report commonly known as the Lewis Report after Committee Chairman Philip D. Lewis, the Committee made 99 recommendations as to how the state could improve its ability to handle emergencies.[25] The Committee identified five key recommendations: improve communications at and among all levels of government; strengthen plans for evacuation, shelter, and post-disaster response and recovery; enhance intergovernmental coordination; improve training; and provide sufficient funding for the development of emergency management plans and activities.

[25]Governor's Disaster Planning and Response Review Committee, Draft Final Report, Executive Office of the Governor, Tallahassee, Fl, December 2, 1992.

The major recommendations of the Lewis report were incorporated into amendments to the State Emergency Management Act (Chapter 252, Florida Statutes). Formerly, the act required the preparation of three, and sometimes four, county emergency management plans: a Peacetime Emergency Plan, a Nuclear Civil Protection Plan, a Hazardous Materials Emergency Plan, and a Radiological Emergency Plan for counties located within 50 miles of a nuclear power plant. These plans are now consolidated into a single Comprehensive Emergency Management Plan. Nuclear civil protection planning was de-emphasized due to the greater likelihood of emergencies resulting from other events. Another major change to the legislation was the creation of the Emergency Management Preparedness and Assistance Trust Fund from surcharges on residential and commercial property insurance policies. Funds from the trust are used to support the Florida Division of Emergency Management, as well as local government emergency preparedness agencies. The trust fund allowed, by 1994, every north central Florida county to hire a full-time emergency management director.[26]

## 8. Local Government Comprehensive Emergency Management Plans

Rule 9G-6, Florida Administrative Code, requires local governments to prepare revised Comprehensive Emergency Management Plans which meet the requirements of rule 9G-7, Florida Administrative Code. The county Comprehensive Emergency Management Plan is to provide a detailed description of the process to be followed at the local level whenever an emergency or disaster occurs as a result of natural or manmade causes. Such emergencies include, but are not limited to: tornadoes, hurricanes, wind storms, floods, freezes, electrical generating capacity shortages, drought, hazardous materials releases, and civil disturbances. Each county Comprehensive Emergency Management Plan is required to address the following 17 emergency support functions: animal services, communications, energy, fire fighting, food and water, hazardous materials, health and medical services, information and planning, law enforcement and security, mass care, military support, public works and engineering, public information, resource support, transportation, search and rescue, and volunteers and donations. County Comprehensive Emergency Management Plans are submitted to the Florida Division of Emergency Management for compliance review.

## 9. Mutual Aid Agreements

Most north central Florida local governments have not entered into formal mutual aid agreements with their neighbors. If a north central Florida local government requires assistance, it merely calls and their neighboring local government responds. Few such requests have been made, and where they occurred, in the spirit of cooperation, local governments did not charge the requesting local government to cover the costs of the request. However, in an age of increasingly tight local government budgets, the need for more specialized regional response teams, and concerns regarding liability issues, formal mutual aid agreements are becoming increasingly important to assure assistance is available.

Mutual aid agreements provide greater assurances that assistance will be provided, when available, by other local governments. An agreement can decrease the time required by local governments to exchange resources during an emergency without the delay of declaring a formal "state of emergency." This is especially important due to the short timeframes associated with hazardous materials releases.

[26]With the exception of Madison County, every north central Florida county has a full-time emergency management director.

The State Emergency Management Act authorizes the Division of Emergency Management to develop and enter into mutual aid agreements. The Division has prepared a statewide mutual aid agreement and is requesting all local governments to adopt the agreement.

The statewide agreement allows for reimbursement to assisting local governments for most incurred costs from the Emergency Management Preparedness and Assistance Trust Fund as well as from the requesting local government. The agreement also establishes a supervision and control structure for assisting local government personnel and resources at the scene of the emergency, formalizes procedures for making emergency assistance requests, and resolves other mutual aid issues. As of January 2011, 41 of the region's 44 local governments had adopted the agreement.

# B. Problems, Needs and Opportunities

The Council identifies the following emergency preparedness problems, needs, and opportunities:

1. A need exists for an additional National Oceanic and Atmospheric Administration weather station radio to better serve Suwannee County.

2. A need exists for additional weather monitoring buoys or other meteorological instruments in the Gulf of Mexico between 10 and 50 miles of Steinhatchee.

3. A need exists for the installation of emergency warning sirens in north central Florida coastal communities.

4. An opportunity exists to make flood hazard insurance available within all north central Florida local government jurisdictions.

5. A need exists to reduce the response times of regional hazardous material response teams to hazardous materials emergencies to 60 minutes in Perry and Greenville.

6. Both a need and an opportunity exist for all north central Florida local governments to receive assistance from other local governments during emergencies by becoming signatories to the Statewide Mutual Aid Agreement for Catastrophic Disaster Response and Recovery.

# C. Regional Goals and Policies

**REGIONAL GOAL 3.1.** Improve emergency preparedness for coastal storms in the region.

**Regional Indicators**

1. As of **2015,** ~~**2010**~~, one Coastal-Marine Automated Network coastal weather station is located in Keaton Beach, no weather buoys are located in the Gulf of Mexico between 10 and 50 miles of Steinhatchee, three weather buoys are located between 51 and 100 miles of Steinhatchee, two weather buoys are located between 101 and 150 miles of Steinhatchee, and four weather buoys are located in the Gulf of Mexico between 151 to 175 miles of Steinhatchee.

2. As of **2015,** ~~**2010**~~, National Oceanic and Atmospheric Administration weather radio transmissions covered approximately **97** ~~**96.5**~~ percent of the region.

3. As of **2015,** ~~**2010**~~, eight National Oceanic and Atmospheric Administration weather radio stations serve north central Florida.

4 As of **2015,** ~~**2010**~~, **three** ~~**four**~~ north central Florida coastal communities (~~**Horseshoe Beach**~~ Dekle Beach, Keaton Beach, & Steinhatchee) had emergency warning sirens.

5. As of **2015,** ~~**2010**~~, Dixie County had a Level E In-county clearance time of ~~**12.5**~~ **13.0** hours.

6. As of **2015,** ~~**2010**~~ Taylor County had a Level E In-county clearance time of ~~**13.0**~~ **14.5** hours.

7. **As of 2015 Levy County had a Level E In-county clearance time of 13.0 hours.**

**8.** As of **2015,** ~~**2010**~~, the American Red Cross 4496-Compliant Risk Public Shelter Capacity for the region was ~~**32,680**~~ **44,958**.

**Policy 3.1.1.** Install weather monitoring buoys or other meteorological instruments at 100, 50, and 10 mile locations in the Gulf of Mexico spaced approximately 50 miles apart along the west Florida coastline from Pinellas to Franklin counties.

**Policy 3.1.2.** Establish National Oceanic and Atmospheric Administration weather radio station radio coverage for all of north central Florida.

**Policy 3.1.3.** Establish emergency warning sirens for north central Florida coastal communities.

**Policy 3.1.4.** Maintain up-to-date hurricane evacuation and inland hurricane shelter plans for north central Florida.

**Policy 3.1.5.** With the exception of enhancements necessary for the health, safety, and welfare of its residents, avoid the expenditure of state funds that subsidize development in Coastal High Hazard Areas.

**Policy 3.1.6.** Complete public shelter surveys to determine their compliance status with American Red Cross Publication 4496 guidelines in order to determine the public shelter Risk Capacity for the region.

Adopted May 23, 1996, Amended August 28, 1997, February 27, 2003 and October 27, 2011

**Policy 3.1.7.** Determine the public shelter Risk Capacity net surplus/deficit for all north central Florida counties.

**Policy 3.1.8.** Encourage local governments to include in their comprehensive plans to require an analysis of public shelter capacity and evacuation times of new development locating within the Coastal High Hazard Area and within coastal storm evacuation areas to ensure that such development is adequately notified of an approaching storm, evacuated in a timely fashion and does not adversely impact public shelter capacity.

**REGIONAL GOAL 3.2.** Participation by all north central Florida local governments in the National Flood Insurance Program.

**Regional Indicators**

1. As of **2015,** ~~**2010**~~, ~~**39**~~ **56** of the ~~**41**~~ **58** local governments in the region with mapped flood hazard areas within their jurisdictions participated in the National Flood Insurance Program.

2. As of **2015,** ~~**2010,**~~ National Flood Insurance Rate Maps are available for all north central Florida local governments.

3. As of **2015,** ~~**2010**~~, two north central Florida local governments do not contain mapped flood hazard areas within their jurisdictions.

**Policy 3.2.1.** Maintain local government eligibility for the Federal Emergency Management Agency Flood Insurance program.

**Policy 3.2.2.** Assist non-participating north central Florida local governments whose jurisdictions contain floodable area to become eligible and apply for the National Flood Insurance Program.

**Policy 3.2.3.** Request the Federal Emergency Management Agency to prepare National Flood Insurance Rate Maps for north central Florida municipalities for which such maps have not been prepared.

**REGIONAL GOAL 3.3.** Reduce response times of regional hazardous materials response teams to 60 minutes for hazardous materials emergencies in Perry and Greenville.

**Regional Indicators**

1. As of **2015,** ~~**2010**~~, a hazardous materials commodity flow study was completed to determine the types and amounts of hazardous materials moving via highways in the region.

2. As of **2015,** ~~**2010**~~, North Central Florida Regional Hazardous Materials Response Team **had four active hazardous materials response units** ~~**members are**~~ located in the Cities of ~~**Alachua, Fanning Springs**~~, **Cross City,** Gainesville, Lake City~~,~~ **and** Live Oak~~, Starke and Dixie County~~.

**Policy 3.3.1.** Establish a regional hazardous materials response team in or near the City of Perry.

**Policy 3.3.2.** Provide state funding for regional hazardous materials emergency response teams.

Adopted May 23, 1996, Amended August 28, 1997, February 27, 2003 and October 27, 2011

**Policy 3.3.3.** Promote coordination among Valdosta, Georgia, Dothan, Alabama, Tallahassee, Florida and north central Florida local governments to provide hazardous materials emergency response services with response times of 60 minutes or less to Madison County.

**REGIONAL GOAL 3.4.** Improve the ability of emergency response teams to respond to hazardous materials emergences.

**Regional Indicators**

1. As of **2015,** ~~**2010**~~, ~~**a**~~ **two** hazardous materials commodity flow ~~**study was**~~ **studies were** completed to determine the types and amounts of hazardous materials moving via highways in the region.

2. As of **2015,** ~~**2010**~~, no commodity flow studies have been undertaken to determine the types and amounts of hazardous materials moving via railroads in the region.

**Policy 3.4.1.** Conduct a commodity flow study to determine the types and amounts of hazardous materials moving via railroads located in the region.

**Policy 3.4.2.** Continue to provide technical assistance to local governments in the preparation of their hazardous materials response plans.

**Policy 3.4.3.** Continue to serve as staff to the North Central Florida Local Emergency Planning Committee.

**Policy 3.4.4.** Provide local emergency dispatch operators with a summary of hazards analysis information so as to inform responders as to what types of hazardous materials at the scene of the emergency.

**Policy 3.4.5.** Provide training to local emergency personnel for dealing with hazardous materials emergencies.

**Policy 3.4.6.** Keep the general public informed of potential hazardous materials dangers facing their communities by promoting annual hazardous materials spill prevention week programs.

**REGIONAL GOAL 3.5.** All north central Florida local governments are signatories to the Statewide Mutual Aid Agreement for Catastrophic Disaster Response and Recovery.

**Regional Indicator**

As of January **2015,** ~~**2010, 41**~~ **58** north central Florida local governments have adopted the Statewide Mutual Aid Agreement for Catastrophic Disaster Response and Recovery.

**Policy 3.5.1.** Actively promote north central Florida local governments to adopt the statewide mutual aid agreement for catastrophic disaster response and recovery.

Adopted May 23, 1996, Amended August 28, 1997, February 27, 2003 and October 27, 2011

THIS PAGE LEFT BLANK INTENTIONALLY