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INLAND HURRICANE SHELTER STUDY
TECHNICAL DATA REPORT UPDATE

DeSoto, Hardee, Highlands, Okeechobee and Polk Counties

Prepared by the Central Florida Regional Planning Council
for the
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OBJECTIVE AND SCOPE OF WORK

The purpose of the Inland Hurricane Shelter Study Update is to provide information to emergency management, law enforcement, local officials and other related agencies that will be involved in the evacuation and sheltering of the population in the event of a hurricane. This information is based on the best available data and the analyses of past studies to provide the most accurate guidelines for disaster preparedness teams.

A hurricane does not effect only one county. The problems of evacuation and sheltering are regional in scope.

The Inland Hurricane Shelter Study Update in not intended to serve as the operations plan for each unit of local government. The implementation of any emergency plan is a local function. The actual deployment and assignment of manpower and equipment is the task of the local emergency management team.

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EXECUTIVE SUMMARY

CENTRAL FLORIDA REGION

INLAND HURRICANE SHELTER STUDY UPDATE

EXECUTIVE SUMMARY

The purpose of updating the Central Florida Inland Hurricane Shelter Study was to factor current population, public shelter, transportation and behavioral information into an assessment of the potential effects of Category 3, 4, or 5 hurricanes on the five-county Central Florida region (DeSoto, Hardee, Highlands, Okeechobee and Polk Counties).

The landfall of a major hurricane in Florida will affect a multi-county area. The devastation brought on by high winds, flooding and tornadoes will know no county boundaries. The evacuation and sheltering of hurricane victims therefore, is regional in scope.

The preparation and execution of evacuation procedures for weather emergencies requires the cooperation of local governments and other agencies from many counties. Law enforcement, Civil Defense, American Red Cross, fire departments, Emergency Medical Services, transportation services, utilities, local government officials and other entities are responsible for fast, safe and effective relocation and sheltering of evacuees from their jurisdictions and coastal counties.

The overall objective of this Inland Hurricane Shelter Study Update is to present the best available evacuation and shelter information to organizations that will be involved in emergency management. The study is meant to augment these agencies' plans to relocate and shelter the population vulnerable to hurricanes which can be expected to parallel or make landfall on Florida's southern or central coasts.

Florida's inland counties are designated as host counties for sheltering a portion of the coastal evacuees in the event of a hurricane. The authors of evacuation plans for coastal regions have assumed that a percentage of coastal evacuees will seek shelter in inland regions. Coastal evacuees may assume that traveling to inland areas will be safe and that shelter space will be sufficient. However, the Central Florida region will have a deficit of public shelter spaces in many scenarios. Its roadways will be highly stressed to handle the excessive amounts of traffic associated with a major evacuation. Several of the designated evacuation routes in Central Florida are subject to flooding. Emergency management officials must be aware of these critical circumstances and plan accordingly.

The Inland Hurricane Shelter Study Update is not intended to be a detailed operations plan for any particular unit of government. The development and implementation of any emergency plan is a function of organizations which have emergency management authority. The actual deployment and assignment of manpower and equipment is the task of designated national, state and local emergency management agencies.

The Central Florida Regional Planning Council, under contract with the Florida Department of Community Affairs, addressed specific issues in this separate update. Eleven contracted work tasks were addressed as separate sections in the study update:

- * Hazard/Vulnerability Analysis
- * Roadway Inundation Analysis
- * Mechanism for Inter-County or Regional Evacuation
- * Behavioral Data
- * Intra- and Inter-County Evacuation Routes
- * Evacuation Zones and Scenarios
- * Shelter Feasibility Analysis
- * Shelter Assignments
- * Shelter Checkpoint/Reception Centers
- * Inventory of Inland Public Shelters
- * Determination of Additional Shelter Space

- 1) The most hazardous aspect of a hurricane is the storm surge. Storm surge is a large volume of water moving ahead of the storm near the area where the eye of the storm makes landfall. Inland counties, including the five counties of the Central Florida region, would not be directly affected by storm surge. The threat of storm surge in coastal areas, however, will be a prime reason for the issuance of coastal evacuation orders. Inland counties could be severely threatened by the high winds, spin-off tornadoes and large amounts of rainfall associated with hurricanes.

The Central Florida region has a substantial number of mobile homes. There are approximately 65,329 mobile home units in the five county area. Mobile home occupants will be required to evacuate when winds are expected to reach a minimum of 74 mph. This notable "at-risk" population, coupled with the significant number of people living in flood-prone areas and the potential number of coastal evacuees seeking shelter inland will greatly tax emergency management agencies and resources.

Methodology for calculating the at-risk population of the inland counties included analyses of Flood Insurance Rate Maps, current population estimates for each county, and historical data from local Civil Defense offices and Post Offices for areas in each county that have been known to flood.

Mobile home numbers were acquired through actual counts conducted by the Central Florida Regional Planning Council and the Polk County Planning Department, and information gathered through the Florida Department of Highway Safety and Motor Vehicles, Licensing Bureau.

Occupancy rates of mobile homes during the hurricane season varies throughout the region. This fact was taken into consideration in estimating the number of mobile occupants that would be seeking shelter in the event of a hurricane threat. Behavioral data was also considered. The following occupancy rates for mobile homes during the hurricane season were assumed to be as follows:

| | |
|-------------------|----------------|
| DeSoto County | 100% occupancy |
| Hardee County | 100% occupancy |
| Highlands County | 50% occupancy |
| Okeechobee County | 100% occupancy |
| Polk County | 75% occupancy |

- 2) There are several points of potential flooding along the evacuation routes throughout the five county region. Because of the lack of alternate routes in some locations, there is a potential for traffic problems. Improvements to alleviate flooding have not taken place in those areas since the previous Regional Hurricane Shelter Plan was completed in 1983. In September 1988, during heavy rainfall associated with Hurricane Gilbert, a segment of Interstate 4 flooded. The east bound lanes were impassable for two to three days, with only one lane opened after four days. This is the primary evacuation route for Hillsborough and Pinellas Counties. If this situation were to repeat itself, the relocation of evacuees from these coastal counties would be greatly hindered.
- 3) The implementation of each county emergency evacuation plan and the execution of evacuation procedures for the Central Florida Region will take a consummate effort of all emergency management agencies and organizations.

The responsibility of relocation and sheltering evacuees is shared by many entities:

Civil Defense
American Red Cross
Local law enforcement

Fire Protection
Emergency Medical Response team
County Transportation systems
Elected officials
School Board

In addition, several non-profit organizations, many of them church affiliated, have extensive disaster experience and are available to assist government and the American Red Cross.

Each entity has emergency plans adopted by that agency which incorporate actions by the other entities. All emergency plans are dedicated to the safe and expedient evacuation, relocation and sheltering of the population.

- 4) A behavioral survey was conducted by Carnot E. Nelson and Michael Kleiman of the University of South Florida for the original Regional Hurricane Shelter Plan prepared in 1983. For the purposes of this update, those survey results are still considered valid.

While the population of this region has increased considerably since that time, it was the consensus of the advisory committee for the study that the behavior of residents would not have appreciably changed. At the time of this study, it was found that an average of 43% of the people surveyed in Central Florida would seek safety in a public shelter. Approximately 8% (avg.) would go to a motel or hotel.

- 5) Traffic moving into and through the region will be an immediate problem. Roadways will be stressed to handle the potential numbers of vehicles generated by the evacuees. Potentially heavy rains and hazardous driving conditions exacerbated by the evacuation circumstances will make traffic flow a major concern for law enforcement. Intra- and inter-county evacuations that were established for the 1983 Study have been utilized for the Inland Hurricane Shelter Study Update.
- 6) Evacuation zones assigned for the 1983 Regional Hurricane Shelter Plan are included in the Inland Hurricane Shelter Study Update.
- 7) Building surveys were conducted in Polk County by the Florida Department of Community Affairs, Division of Emergency Management. As of July 1989, the majority of buildings surveyed were schools which the American Red Cross had designated as primary public shelters.

Some churches, and other possible alternate public shelters, have also been included. The survey evaluated the buildings for structural soundness relative to wind loading. The suitability of shelters in Polk County has been re-evaluated utilizing this analysis. In future years, possible shelter sites in the remaining counties may be surveyed.

- 8) Local emergency management plans generally call for evacuation orders to be issued at least 72 hours prior to expected landfall of a hurricane. Under these circumstances, evacuees from coastal counties may seek shelter at an earlier time than would evacuees from inland counties.

Shelters will fill up along evacuation routes as evacuees enter the region. As the need for evacuation develops for vulnerable inland residents, shelter space will become less available. Shelters are assigned on an "as-needed" basis and facilities will be utilized by evacuees as they arrive, whether they are inland or coastal evacuees. Those unable to find shelter space within the Central Florida region will then have to travel out of this region to seek shelter in counties further from their homes.

- 9) Shelter checkpoints and reception center sites are structured around evacuation zones to facilitate evacuation to the closest available shelter in the most expedient and safe manner. Those checkpoint/reception center sites designated in the 1983 Regional Hurricane Shelter Plan were utilized in the Inland Hurricane Shelter Study Update.

- 10) Coastal evacuees will tend to seek shelter in hotels or motels, or with friends or relatives before they will seek public shelter. There are approximately 72 hotels and/or motels along evacuation routes through the Central Florida region. The typical hotel/motel occupancy rate in this region is 50% during the hurricane season. Availability of hotel/motel rooms would help to alleviate shelter space problems. However, there would still be a deficit in some scenarios.

With the potential influx of coastal evacuees, the inland counties cannot shelter everyone. Coastal county officials and residents have assumed that inland regions can accommodate coastal evacuees in the event of a hurricane. This situation must be re-evaluated. The list of shelters presented in this section will be updated and a more accurate account of shelter spaces will be made available upon completion of building surveys.

The disaster recovery phase and sheltering of post-storm victims was not addressed in this study. Post-storm devastation of the coastal counties and also some inland areas could leave thousands without homes. After the severe weather conditions have dissipated, those facilities available for sheltering these persons could include churches and undamaged public buildings that may not have been considered safe prior to the onset of the disaster.

The question of sheltering the "special needs" population is currently being addressed by Red Cross staff, Civil Defense, and others on the Polk County Disaster Coordinating Committee (PCDCC). The size of this population is significant, but has not been quantified. Civil Defense, Red Cross and PCDCC are jointly conducting a campaign that will identify and locate that segment of this population with medical needs (identified here as "special needs") which would make the process of sheltering difficult. A mail-out questionnaire has been distributed to approximately 50,000 residents in Polk County and Civil Defense has received 250 responses. Pertinent information will be stored on computer at the Civil Defense office and will be utilized when relocation of these residents is required. If they need to be evacuated, people with special needs will be sheltered in designated special needs shelters, hospitals, or nursing homes.

- 11) American Red Cross chapters and the counties are considering other buildings as alternate shelter facilities, such as lodges, churches, civic centers, and shopping malls. Alternate shelters are those that the Red Cross would be utilize if the primary shelters (schools) were either at capacity or otherwise not available. Their feasibility as shelters will be analyzed along with the new data for schools. While some of these facilities may not be able to withstand the high winds during a storm event, they could be used for sheltering post-storm victims.

The Central Florida region will face a number of difficulties in managing a hurricane related disaster. An inadequate number of public shelter spaces, the potentially large number of coastal evacuees seeking shelter inland, coastal evacuees arriving in Central Florida from both the southern and central coasts (depending on the track of the storm), the relatively large number of vulnerable Central Florida residents, high clearance times relative to the onset of sustained gale-force winds, and inadequate carrying capacity of local evacuation routes relative to the potential demand require careful planning and analysis to safely shelter and protect the population during a hurricane disaster.

INTRODUCTION

THE HURRICANE - NATURE'S DEADLIEST FORCE

The hurricane has been termed nature's deadliest force. The winds associated with hurricanes do not necessarily compete with a tornado's capability of 300+ mph wind speeds, but the hurricane can pack a sustained wind speed of 155+. Sustained winds have been recorded in excess of 200 mph in several storms. Hurricanes travel for a great many miles from their point of origin. This is usually in the Caribbean or along the coast of Africa (Figure 1). Hurricanes sometimes move in an erratic course and have been known to make landfall in more than one location. The length of the hurricane's effect can last for weeks, from pre-landfall winds and rain with accompanying flooding, to the aftermath at its area of landfall and the storm's track across land and water bodies.

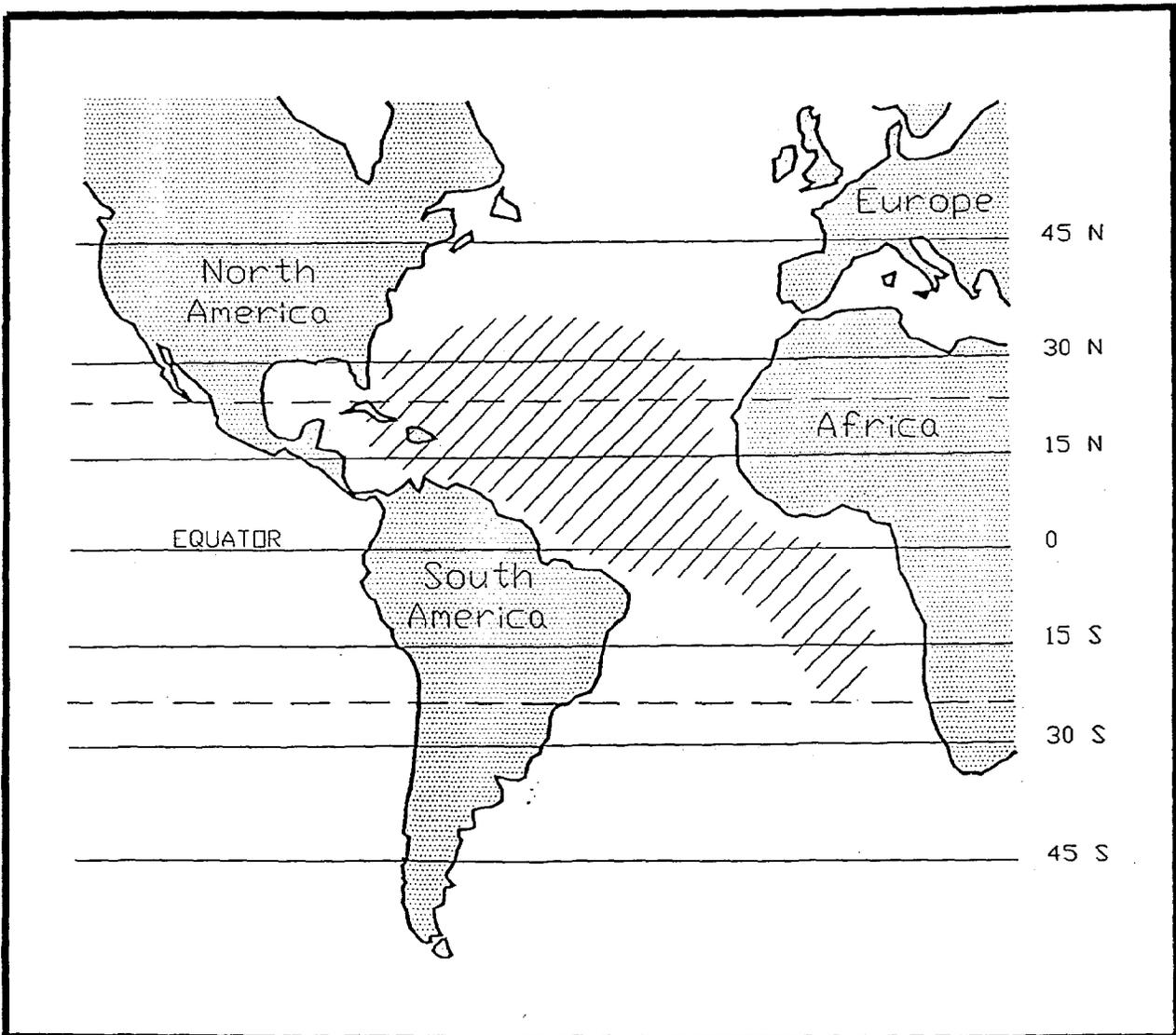
The technology of today's weather services is impressive. Weather forecasting has become a much more precise science than it was a few short years ago. Doppler Radar, the GOES satellite, reconnaissance aircraft, and many computer models are available and able to provide the weather service network with the most accurate information possible. However, 100 percent accuracy in forecasting the hurricane's path and/or landfall location is still an educated guess. Some aspects of forecasting are not predictable, such as where rainfall will occur and the intensity of that rainfall. Therefore, flooding locations and levels cannot always be predicted. Wind speed at ground level is another condition that cannot be precisely predicted. There is a 10,000 foot ceiling for reconnaissance aircraft measurement of wind speed. This is not readily adjusted to surface wind speeds, or inland measurements.

What is a Hurricane?

Hurricanes begin as tropical cyclones. There are several climatic forces which are responsible for the formation and lifting of the initial mass of hot moist air. Moisture condenses as it rises, heat is thrown off and a cloud is formed. More air rises, creating a chimney effect. As the storm grows, this circle of air may form an area 50 to several hundred miles in diameter. The winds press in toward the central low-pressure core and that becomes the eye of the hurricane. The whirling winds around the eye ascend and begin to cool.

FIGURE 1

AREA OF HURRICANE FORMATION



Much vapor condenses and liberates heat, thus further lowering the pressure in the eye. This makes the storm grow. The Coriolis Force, wind direction governed by the earth's rotation in the northern hemisphere, causes the counter-clockwise motion of the hurricane (Figure 2).

Meteorologists divide the life of a hurricane into four general stages:

1. Formative - an organized circulation that ends only when wind speeds have reached hurricane intensity
2. Immature - period of actual growing to maximum intensity
3. Mature - not growing; greatest area covered by gale and hurricane force winds.
4. Decay - begins to disintegrate as it moves inland

In some respects, mankind today is more vulnerable to hurricanes than were his predecessors several thousand years ago. The increase in population of coastal areas and their barrier islands creates the potential of thousands of lost lives and destruction of property that may mount into the billions of dollars.

Florida has become synonymous with Hurricane. Since the 1900's Florida has experienced many devastating storms of hurricane proportion. During the first two decades, Florida was struck with twenty-two hurricanes.

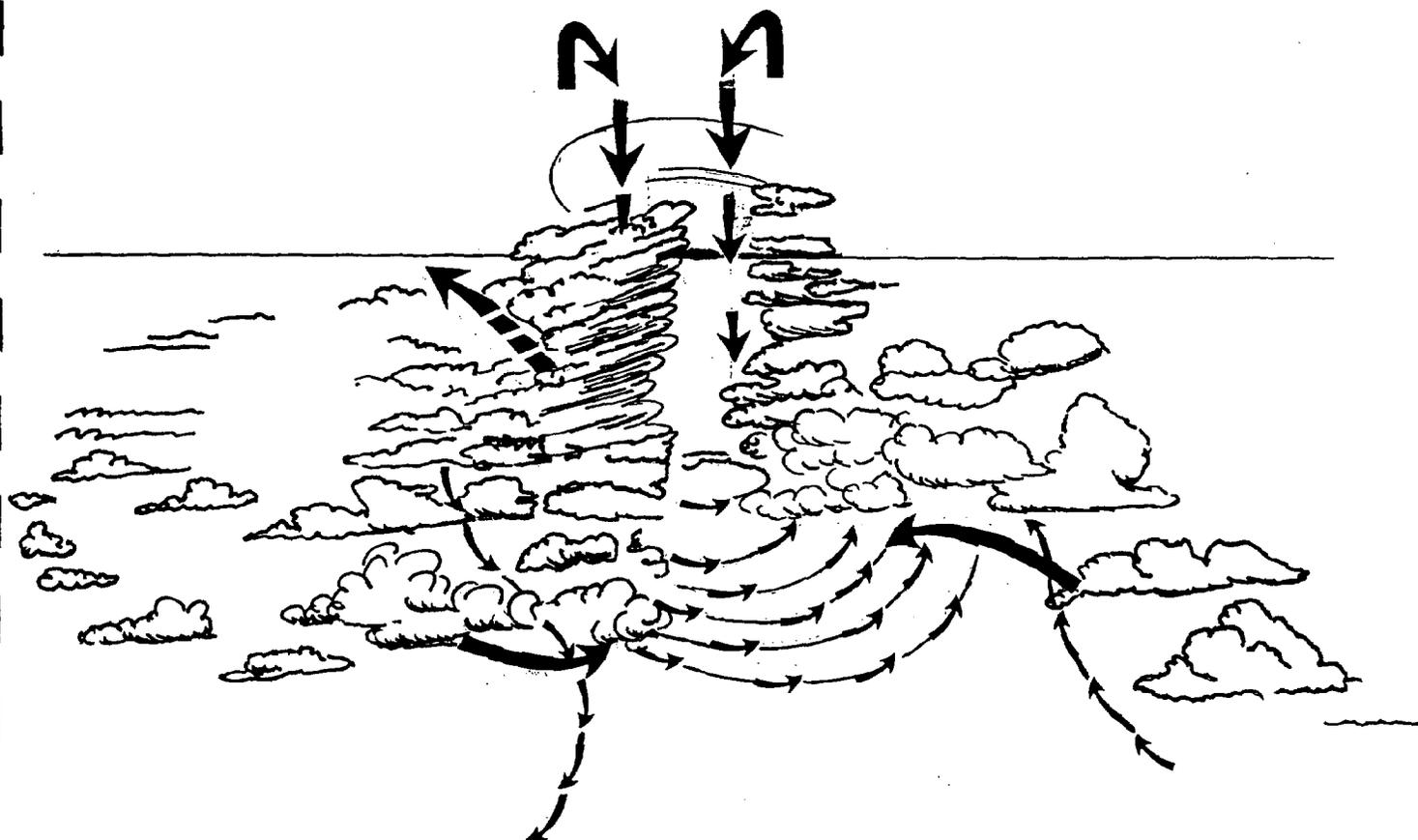
A Brief History

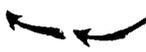
- 1901 - two hurricanes struck in August
- 1902 - one struck in June
- 1903 - in September, same hurricane struck two areas
- 1906 - four hurricanes in four months; 200 people killed
- 1928 - flooding of Lake Okeechobee caused in excess of 2000 killed
- 1949 - central Florida heavily damaged, including the Lakeland area
- 1955 - Hurricane Diane considered the first "billion-dollar Hurricane"
- 1960 - Hurricane Donna swept through the Keys and up through central Florida, 148 dead (Figure 3)
- 1985 - Hurricane Elena threatened Tampa Bay causing evacuation of 500,000 residents

Figures 4-5 depict the courses of hurricanes that have struck or have come within range of the Florida coastlines from 1901 to 1985.

FIGURE 2

DEPICTION OF HURRICANE FORMATION



-  GENERAL FLOW OF AIR INTO STORM
-  DIRECTION OF STORM (TRACK)
-  GENERAL ISOBAR PATTERN

Because Florida has not suffered the direct hit of a hurricane in many years, residents have been lulled into a false sense of security. But the probability - not possibility - of a major hurricane is very real.

Hurricane Elena

Since the first Central Florida Regional Hurricane Shelter Study in 1983, Florida experienced Hurricane Elena on Labor Day weekend, September, 1985. Elena lashed the western coast with heavy rains, tornados and flooding, but never made landfall there. Seventeen (17) counties evacuated close to one million people. Several tornados damaged mobile homes in Central Florida, Daytona Beach, Leesburg, and Lake counties. Two were killed and several injured. \$4 million in damages were to the mobile homes.

The 40 mile wide eye, surrounded by 100 mph winds stalled about 100 miles northwest of Lakeland. Shelters reported 891 evacuees in Polk County, 200 in Hardee, and 60 in Highlands. One thousand people were without electricity in Lakeland. McDill Air Force Base evacuated 230 to Lakeland. Approximately 1000 Polk County residents lost electrical power.

Hurricane Elena did not make landfall in the Central Florida region. This area was spared the brunt of the storm.

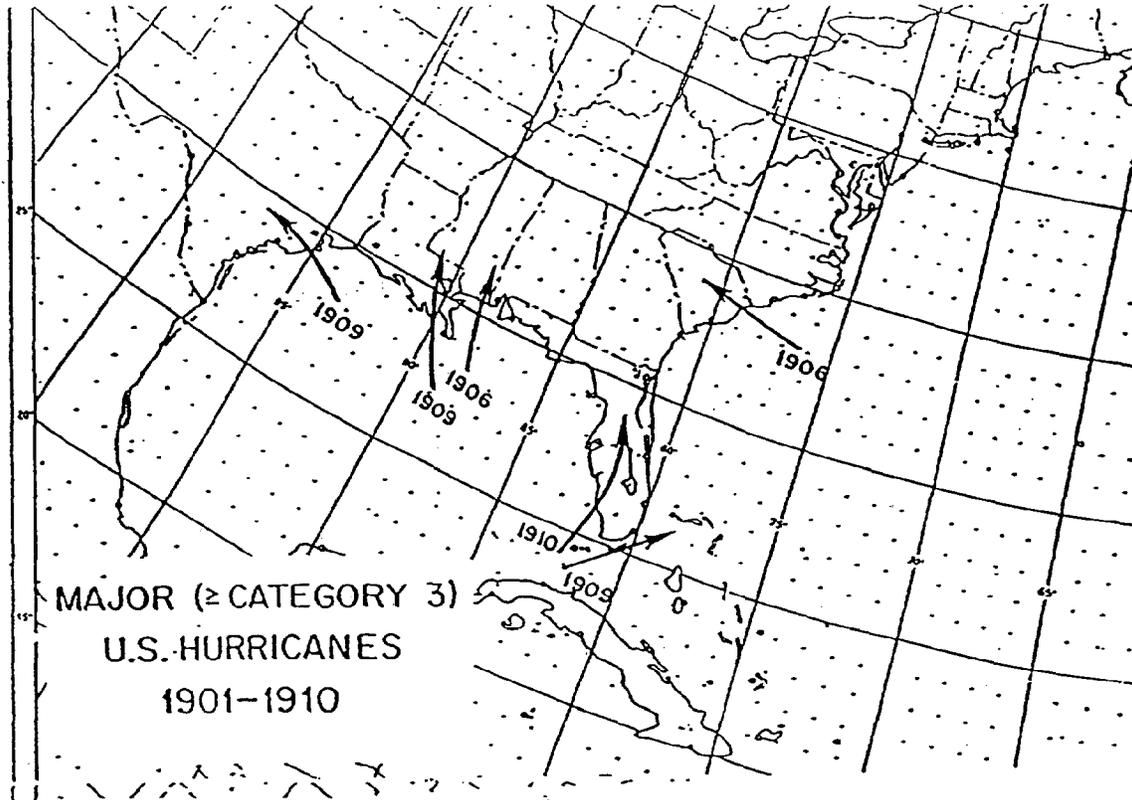
Hurricane Gilbert

In September 1988, Hurricane Gilbert made landfall in Mexico, just 100 miles south of Brownsville, Texas. Hurricane Gilbert, a Category 5 on the Saffir/Simpson Scale, was the highest category storm recorded since historical records have been kept of named hurricanes.

Had Gilbert's path taken an easterly route from the Yucatan Pinsular and into Florida, 1/3 to 1/2 of the state could have been entirely shut down. The devastation would have been beyond comprehension. Again, Central Florida was spared.

FIGURE 4

1901-1910 Major (category 3,4, or 5) landfalling (U.S.)
hurricanes.



1911-1920 Major (category 3,4, or 5) landfalling (U.S.)
hurricanes.

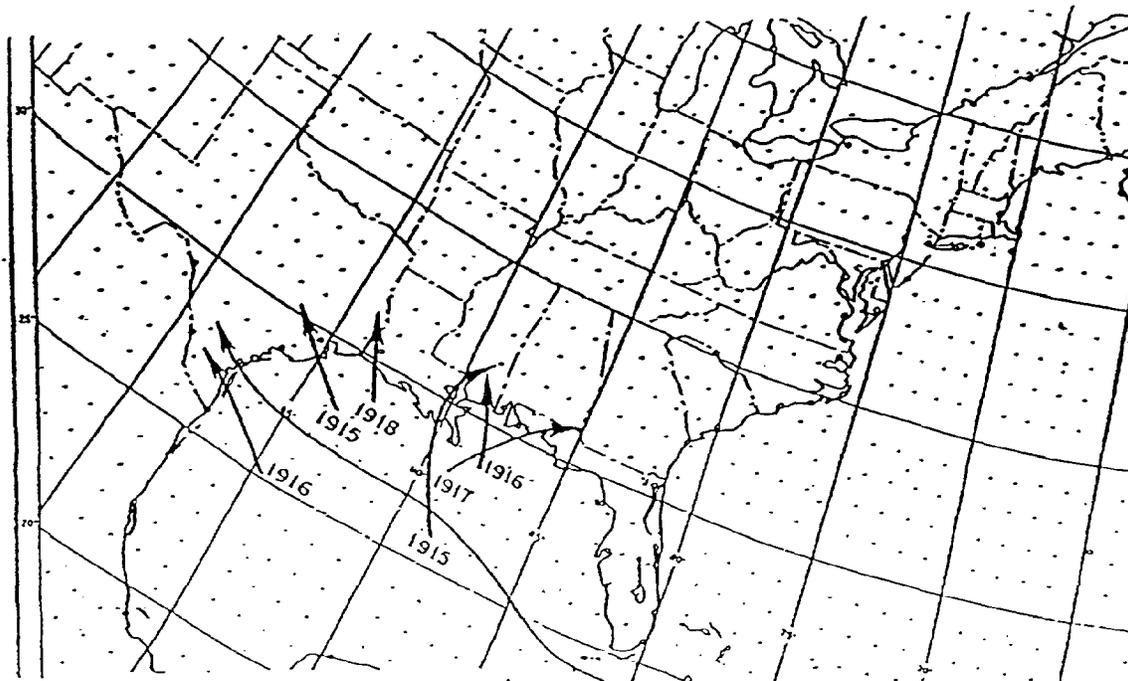
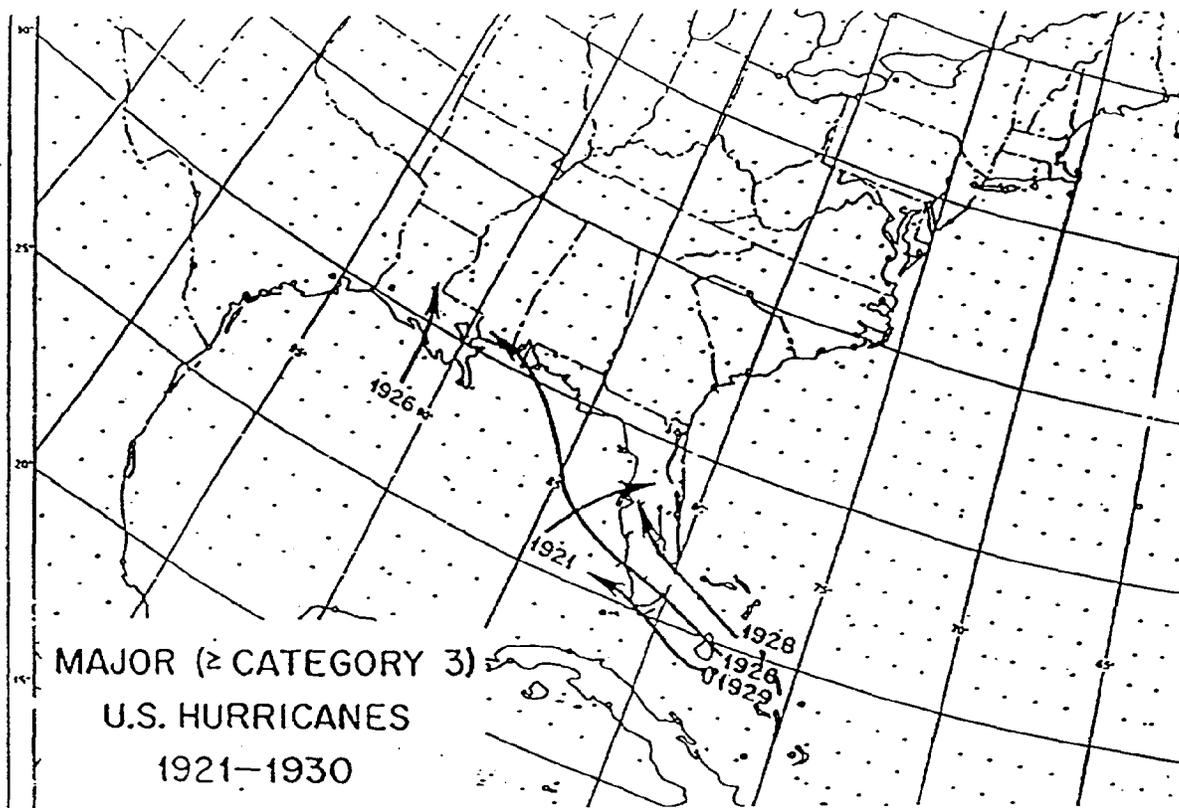


FIGURE 4~
cont.

1921-1930 Major (category 3,4,or5) landfalling (U.S.
hurricanes.



1931-1940 Major (category 3,4, or 5) landfalling (U.S.
hurricanes.

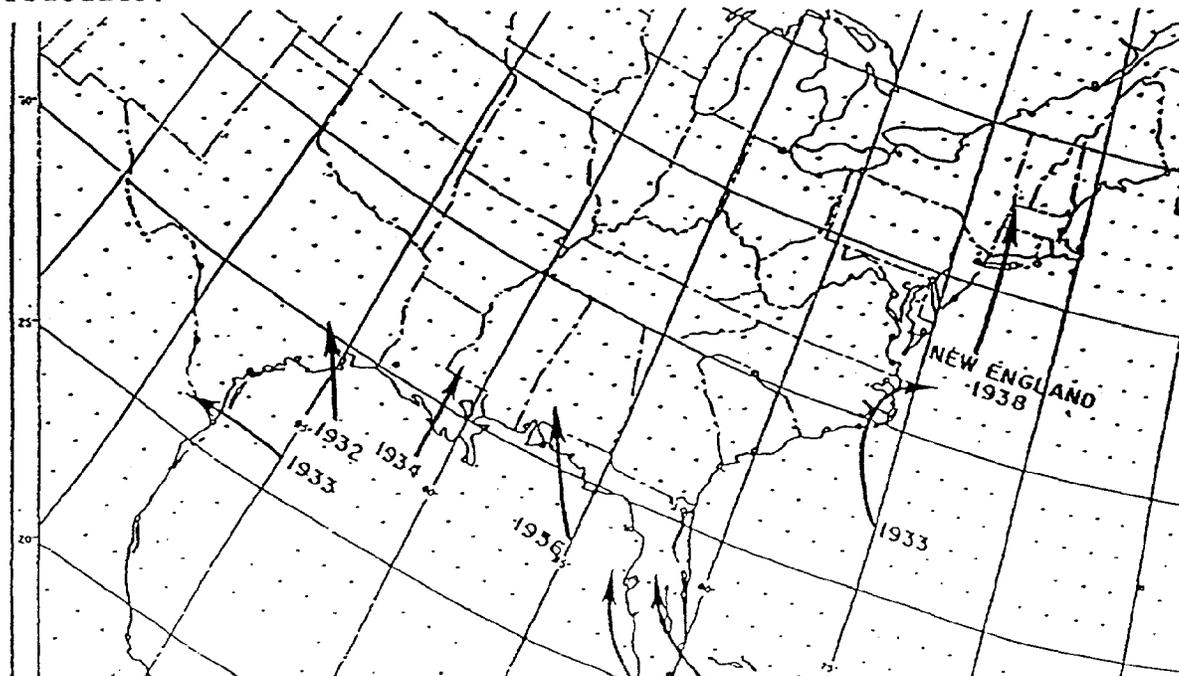
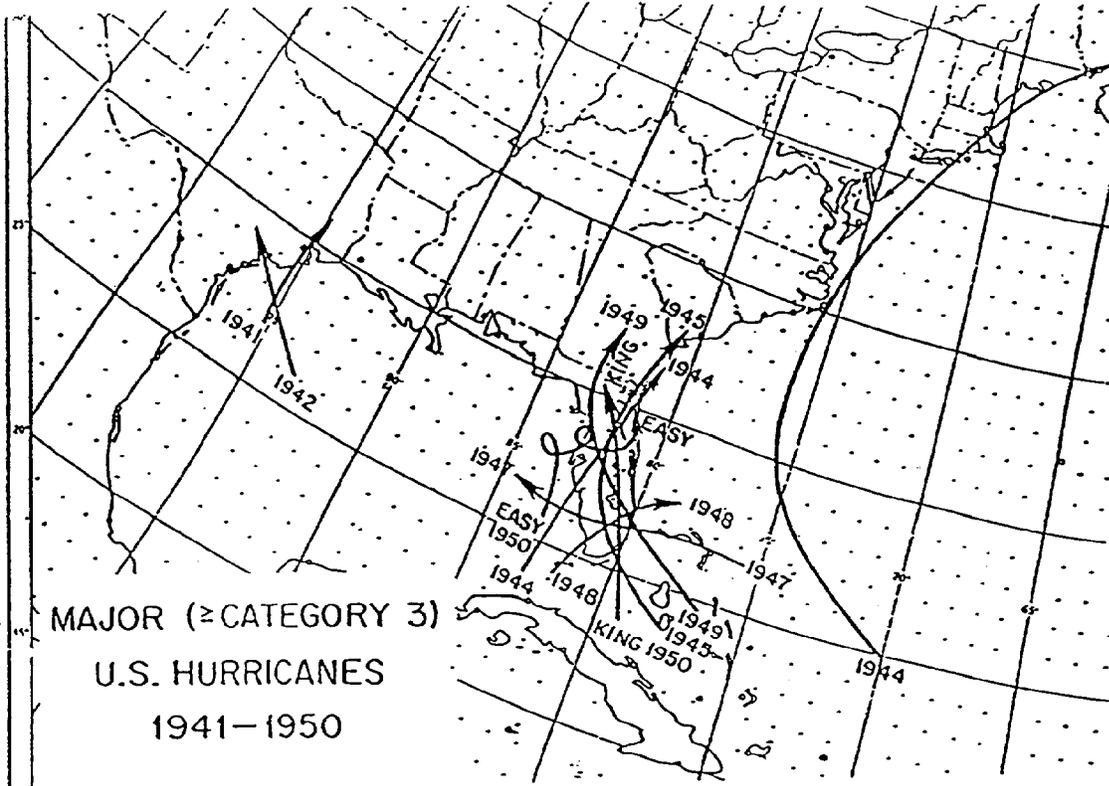


FIGURE 4
cont.

1941-1950 Major (category 3,4,or 5) landfalling (U.S.)
hurricanes.



1951-1960 Major (category 3,4,or 5) landfalling (U.S.)
hurricanes.

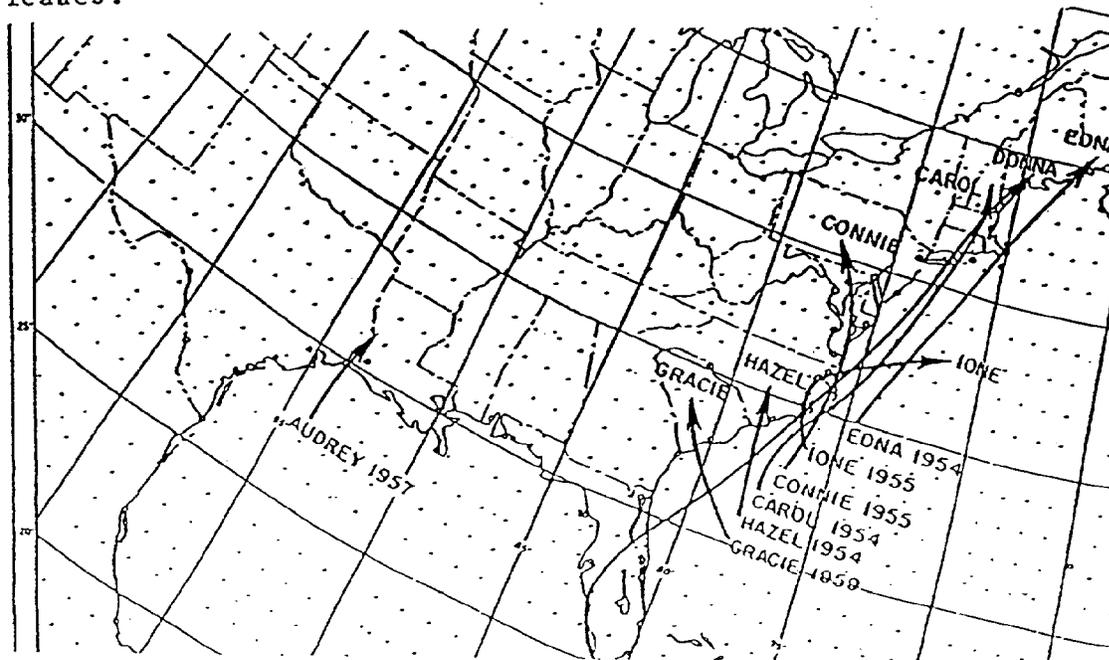
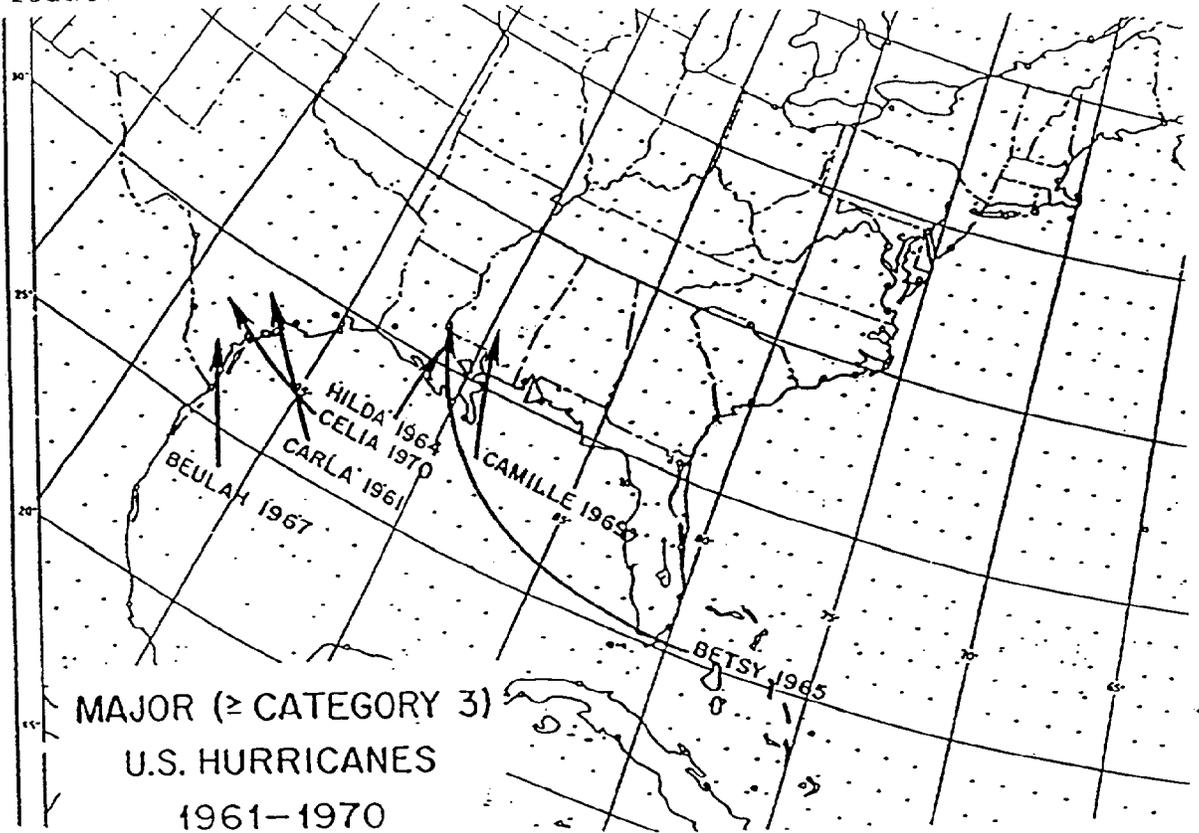


FIGURE 4
cont.

1961-1970 Major (category 3, 4, or 5) landfalling (U.S.)
hurricanes.



1971-1980 Major (category 3, 4, or 5) landfalling (U.S.)
hurricanes.

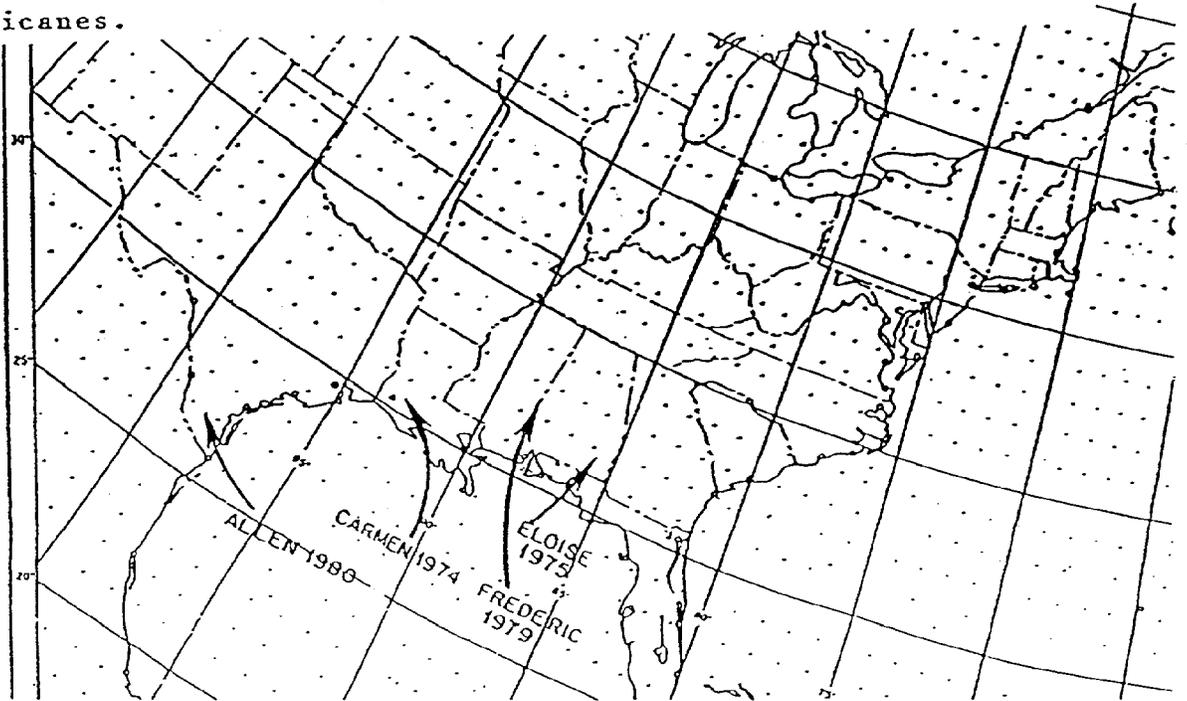
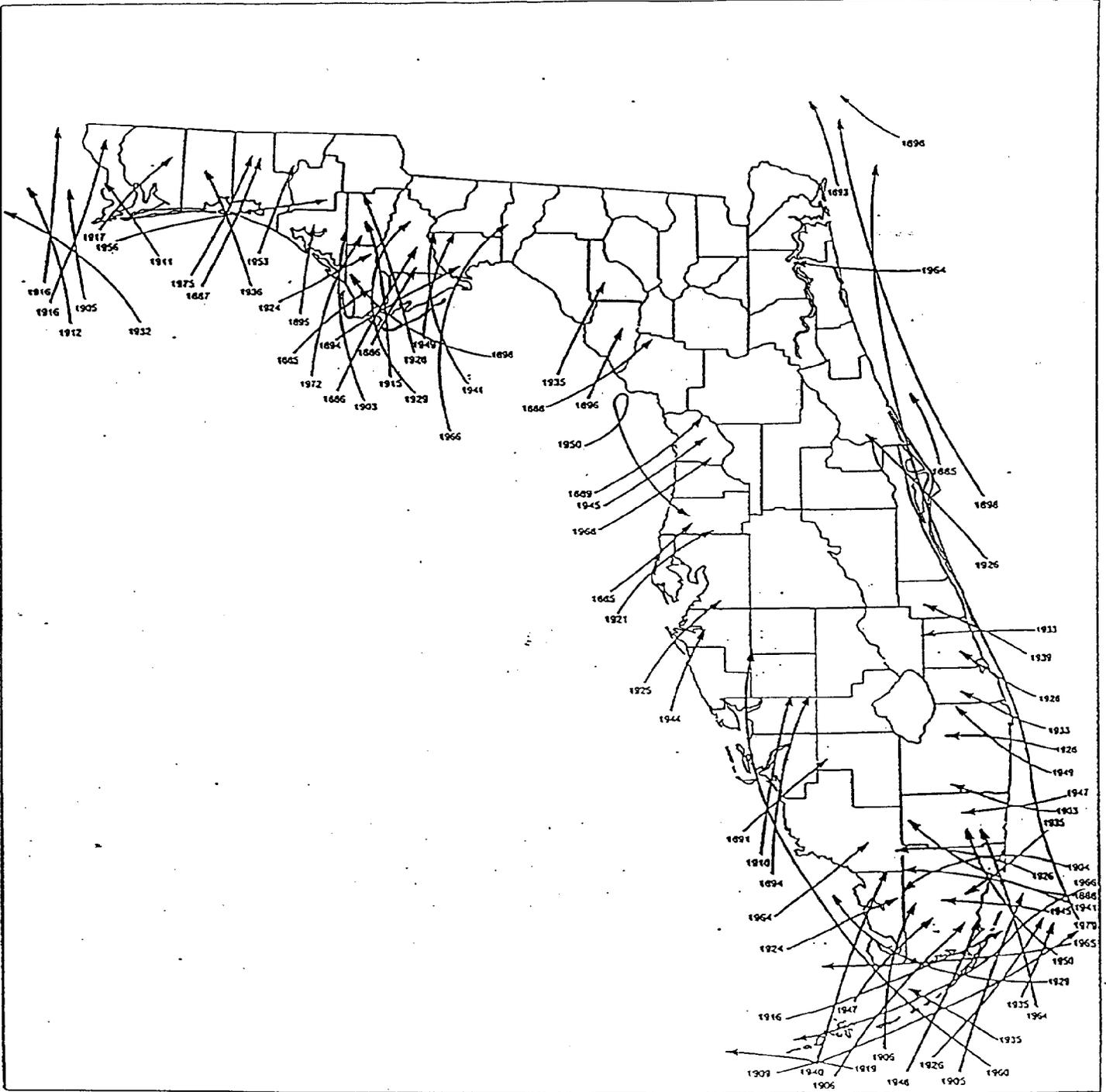


FIGURE 5

HURRICANES FROM 1885-1985



Saffir/Simpson Hurricane Scale

The Saffir/Simpson Hurricane Scale is used by the National Weather Service to give the public safety officials assessments of the potential for wind and storm damage from a hurricane in progress. Scale numbers are made available to public officials when a hurricane is within 72 hours of landfall. Scale assessments are revised regularly as new observations are made, and public safety organizations are kept informed of new estimates of the hurricane's disaster potential.

Scale numbers range from 1 to 5. Scale number 1 begins with hurricanes in which the maximum sustained winds are between 74 and 95 mph, or which will produce a storm surge of 4 to 5 feet above normal water level, while a Scale number 5 applies to those in which maximum sustained winds are 155 mph or above and have the potential to produce a storm surge of 18 feet above normal.

The Scale was developed by Herbert Saffir, Dade County, Florida, consulting engineer, and Dr. Robert H. Simpson, former National Hurricane Center director, and projects scale assessment categories as follows:

Category No. 1 - Winds of 74 to 95 mph. Damage primarily to shrubbery, trees, foliage, and unanchored mobile homes. No real damage to other structures. Damage to poorly constructed signs. Storm surge 4 to 5 feet above normal. Low-lying coastal roads inundated, minor pier damage, some small craft in exposed anchorage torn from moorings.

Category No. 2 - Winds of 96-110 mph. Considerable damage to shrubbery and tree foliage; some trees blown down. Major damage to exposed mobile homes. Extensive damage to poorly constructed signs. Some damage to roofing materials of buildings, some window and door damage. Coastal roads and low-lying evacuation routes inland cut off by rising water two to four hours before arrival of hurricane center. Considerable damage to piers. Marinas flooded. Small craft in unprotected anchorages torn from moorings. Evacuation of some shoreline residences and low-lying island areas required.

Category No. 3 - Winds of 111 to 130 mph. Foliage torn from trees; large trees blown down. Practically all poorly constructed signs blown down. Some damage to roofing materials of buildings; some window and door damage. Some structural damage to small buildings. Mobile homes destroyed. Storm surge 9 to 12 feet above normal. Serious flooding at coast and many smaller structures near coast destroyed. Large structures near coast damaged by battering waves and floating debris.

Low-lying escape routes inland cut off by rising water three to five hours before hurricane center arrives. Flat terrain 5 feet or less above sea level flooded inland 8 miles or more. Evacuation of low-lying residences within several blocks of shoreline required.

Category No. 4 - Winds of 131 to 155 mph. Shrubs and trees blown down; all signs down. Extensive damage to roofing materials, windows, doors. Complete failure of roofs on many small structures. Complete destruction of mobile homes. Storm surge 13 to 18 feet above normal. Flat terrain 10 feet or less above sea level flooded inland as far as six miles. Major damage to lower floors of structures near shoreline due to flooding and battering of waves and floating debris. Low-lying escape routes inland cut off by rising water three to five hours before hurricane center arrives. Major erosion of beaches. Massive evacuation of all residences within 500 yards of shore required. Single story residences on low ground within two miles of shore evacuated.

Category No. 5 - Winds greater than 155 mph. Shrubs and trees blown down; considerable damage to roofs on many residences and industrial buildings. Extensive shattering of glass windows and doors. Some complete building failures. Small buildings over-turned or blown away. Complete destruction of mobile homes. Storm surge greater than 18 feet above normal. Major damage to lower floors of all structures less than 15 feet above sea level within 500 yards of shore. Low-lying escape routes inland cut off by rising water three to five hours before hurricane center arrives. Massive evacuation of residential areas on low ground within five to ten miles of shore required.

Atmospheric pressure was assigned to the Saffir/Simpson Scale by Dr. Neil Frank. These pressure ranges, along with a numerical breakdown of wind and storm surge ranges are as follows:

| <u>SCALE</u> <u>NUMBERS</u> | <u>CENTRAL PRESSURES</u> | | <u>WINDS</u> | <u>SURGE</u> | <u>DAMAGE</u> |
|--------------------------------|--------------------------|---------------|--------------|--------------|---------------|
| | <u>MILLIBARS</u> | <u>INCHES</u> | <u>(MPH)</u> | <u>(FT)</u> | |
| 1 | 980 | 28.94 | 74-95 | 4-5 | Minimal |
| 2 | 965-979 | 28.50-28.91 | 96-110 | 6-8 | Moderate |
| 3 | 945-964 | 27.91-28.47 | 111-130 | 9-12 | Extensive |
| 4 | 920-944 | 27.17-27.88 | 131-155 | 13-18 | Extreme |
| 5 | 920 | 27.17 | 155+ | 18+ | Catastrophic |

ABOUT THE REGION

The Central Florida Region is an area that comprises five counties: DeSoto, Hardee, Highlands, Okeechobee and Polk. Together they encompass 4,900 square miles. The region is in close proximity to either coast and has been considered in the coastal hurricane plans as a host area for coastal evacuees in the event of a hurricane.

The population of the region was estimated to be 541,216 in 1988. It is rural in nature with Lakeland/Winter Haven the only Standard Metropolitan Statistical Area. The population of the region has increased 26% since the 1980 Census (Table 1).

This five-county region is unique in that it is the only state-organized planning region without a coastline. Four basic land formations are in the region: highlands, ridges (the highest elevation in the state is situated in Lake Wales, Polk County), intermediate plains, and lowlands. The region contains one of the highest concentrations of inland water bodies in the state. Major floodplains occur along two rivers; the Peace and Kissimmee. Lake Okeechobee is partially located in the southern portion of Okeechobee County and is the largest lake in Florida.

TABLE 1

POPULATION OF CENTRAL FLORIDA REGION
1908, 1988

| <u>COUNTY</u> | <u>1980</u> | <u>1988</u> | <u>PERCENT CHANGE</u> |
|---------------|-------------|-------------|-----------------------|
| DeSoto | 19,039 | 23,418 | 23.0 |
| Hardee | 20,357 | 22,231 | 9.2 |
| Highlands | 47,526 | 66,380 | 39.7 |
| Okeechobee | 20,264 | 28,762 | 41.9 |
| Polk | 321,652 | 400,426 | 24.5 |
| Total | 428,838 | 541,217 | 26.2 |

Source: Bureau of Economic and Business Research, April 1988, p.37.

HAZARD/VULNERABILITY ANALYSIS

TYPES OF HAZARDS

The most devastating aspect of a hurricane is the storm surge. The storm surge is a dome of moving water located near the eye of the hurricane. A storm surge could reach a maximum of 20 feet in the Tampa Bay area. This storm surge could crash against coastal areas, causing flooding and damage to beaches, roads and buildings. The Central Florida Region, being landlocked, is not vulnerable to that devastating force.

There are no concentric flood zones in the inland counties, as illustrated in SLOSH (Sea, Lake and Overland Surges from Hurricanes) models. The SLOSH model predicts the tidal surge heights that would result from hypothetical hurricanes with selected various combination pressure, size, forward speed, tract and winds. Because of the Central Florida Region's inland location, tidal surge would have no direct bearing on the evacuation of the inland population. However, the storm surge indirectly affects the Central Florida area by generating potential coastal evacuees seeking inland shelter.

High winds are the second most critical aspect of a hurricane. Winds can reach over 155 miles per hour (Category 5 on the Saffir/Simpson Scale). According to the National Weather Service, the Central Florida Region can expect to experience a storm no stronger than a Category 3 storm (winds of 111-130 mph) due to the hurricane's natural wind dissipation as it moves over land. The topography of the land and the structures located on land dissipate the wind's force.

While these two factors are not major problems to inland counties, the Central Florida Region is still vulnerable to the effects of a hurricane. High winds, large amounts of rainfall, and the possibility of "spinoff" tornados will necessitate the evacuation of a sizable portion of the population.

Freshwater flooding is a primary concern to this region. Rainfall cannot be predicted for any given hurricane. There are no rainfall standards that may be applied to the regional hurricane scenarios. As a rule of thumb, however, a hurricane can be expected to produce from 6 to 12 inches of rain. Hurricanes can be "wet" (producing much more than 12 inches in a short time) or "dry" (producing very little rainfall).

With regard to rainfall, most of the Central Florida Region is relatively secure from large-scale freshwater flooding. However, the populated areas most vulnerable to flooding are along the Peace River, particularly in DeSoto County, parts of Okeechobee County, and particularly the more densely populated areas around the many lakes. Other less populated areas susceptible to flooding are in northern Polk County, known as the Green Swamp and along the Kissimmee River (see Maps 1-5).

While flooding in the Green Swamp or along the Kissimmee River may not threaten many lives, flooding along the Peace River and around the many lakes could threaten hundreds of lives. Flooding in any of these areas may hinder evacuation or transportation through those areas.

VULNERABILITY

Mobile home residents are the most vulnerable to the effects of hurricane-force winds. Whether in low-lying areas or not, evacuation would be mandatory. Approximately sixty (60%) percent of the "at-risk" population in this region are mobile home residents (Table 2). Although newer units are required to have tie-downs, and some residents have added "permanent" additions to their units, wind and wind-borne debris can cause severe damage. The most securely tied down mobile home cannot withstand gale-force winds. It is mandatory to evacuate mobile homes if winds are expected to reach 74 miles per hour or more.

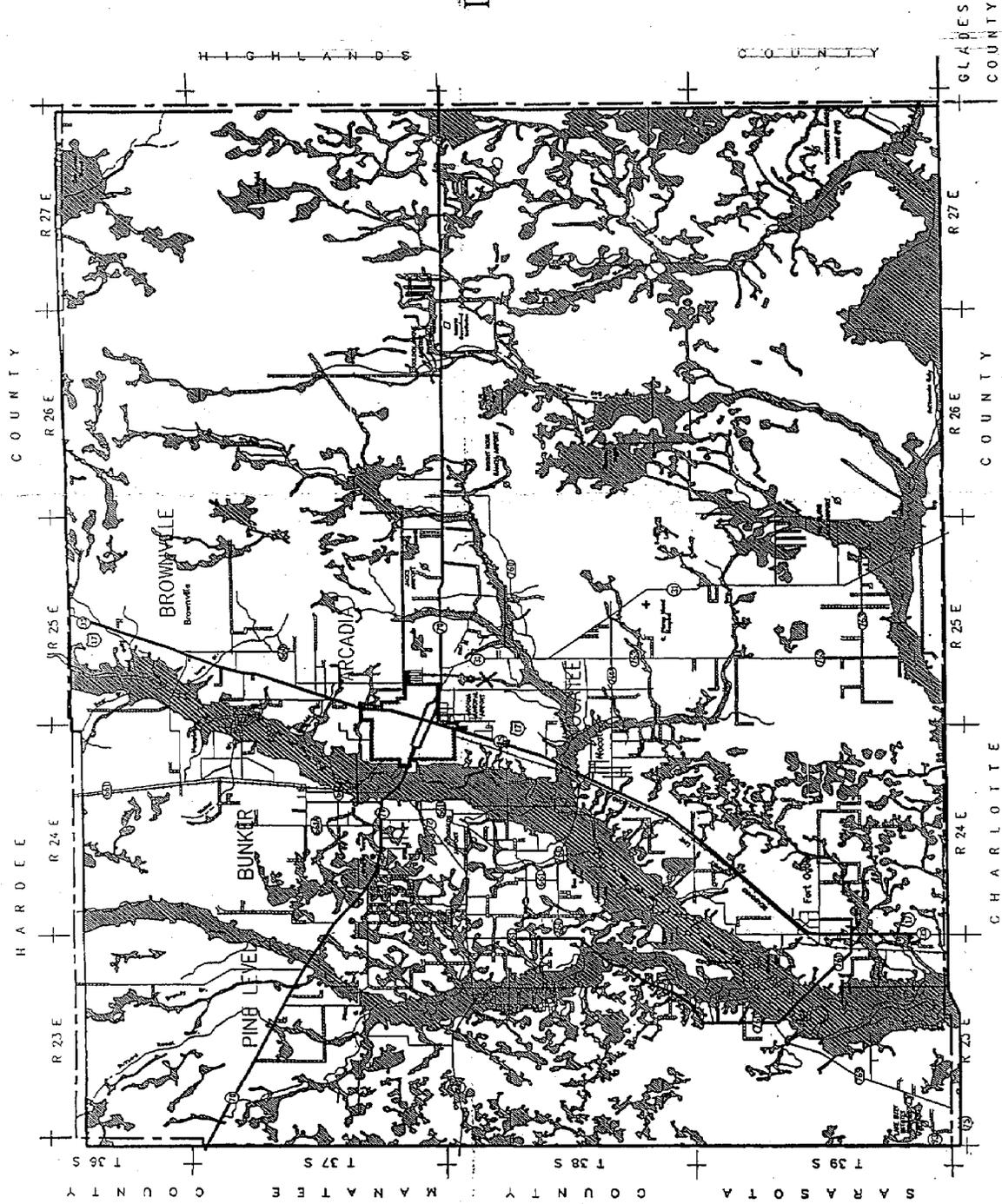
In this study, the "at-risk" population in flood-prone areas is an approximate count. Data were obtained from the previous regional hurricane study (1983), National Flood Insurance Program maps, historical data for the region, and current population numbers from the University of Florida Bureau of Economic and Business Research Estimates for April 1, 1988.

The estimated number of potential evacuees from the Central Florida Region is also an approximation. The total number of "at-risk" residents in the region would not be evacuating at one time. Past behavioral analyses are also considered in calculating the potential numbers of evacuees.

TABLE 2

| TOTAL "AT-RISK" POPULATION - CENTRAL FLORIDA REGION | | |
|---|-----------------------------------|---------------------------|
| | POTENTIAL "AT-RISK" POPULATION | NUMBER OF MOBILE HOMES |
| DESOTO COUNTY: | | |
| Non-Mobile Home Population | 9,840 | |
| Mobile Home Population | 7,500 | 3,750 |
| Total | 17,340 | |
| HARDEE COUNTY: | | |
| Non-Mobile Home Population | 5,460 | |
| Mobile Home Population | 5,064 | 2,532 |
| Total | 10,524 | |
| HIGHLANDS COUNTY: | | |
| Non-Mobile Home Population | 7,684 | 8,000 |
| Mobile Home Population | 15,890 | |
| Total | 23,574 | |
| OKEECHOBEE COUNTY: | | |
| Non-Mobile Home Population | 12,771 | |
| Mobile Home Population | 17,800 | 8,900 |
| Total | 30,571 | |
| POLK COUNTY: | | |
| Non-Mobile Home Population | 52,290 | |
| Mobile Home Population | 84,294 | 42,147 |
| Total | 136,584 | |
| TOTAL "AT-RISK" FOR REGION | 218,593 | |

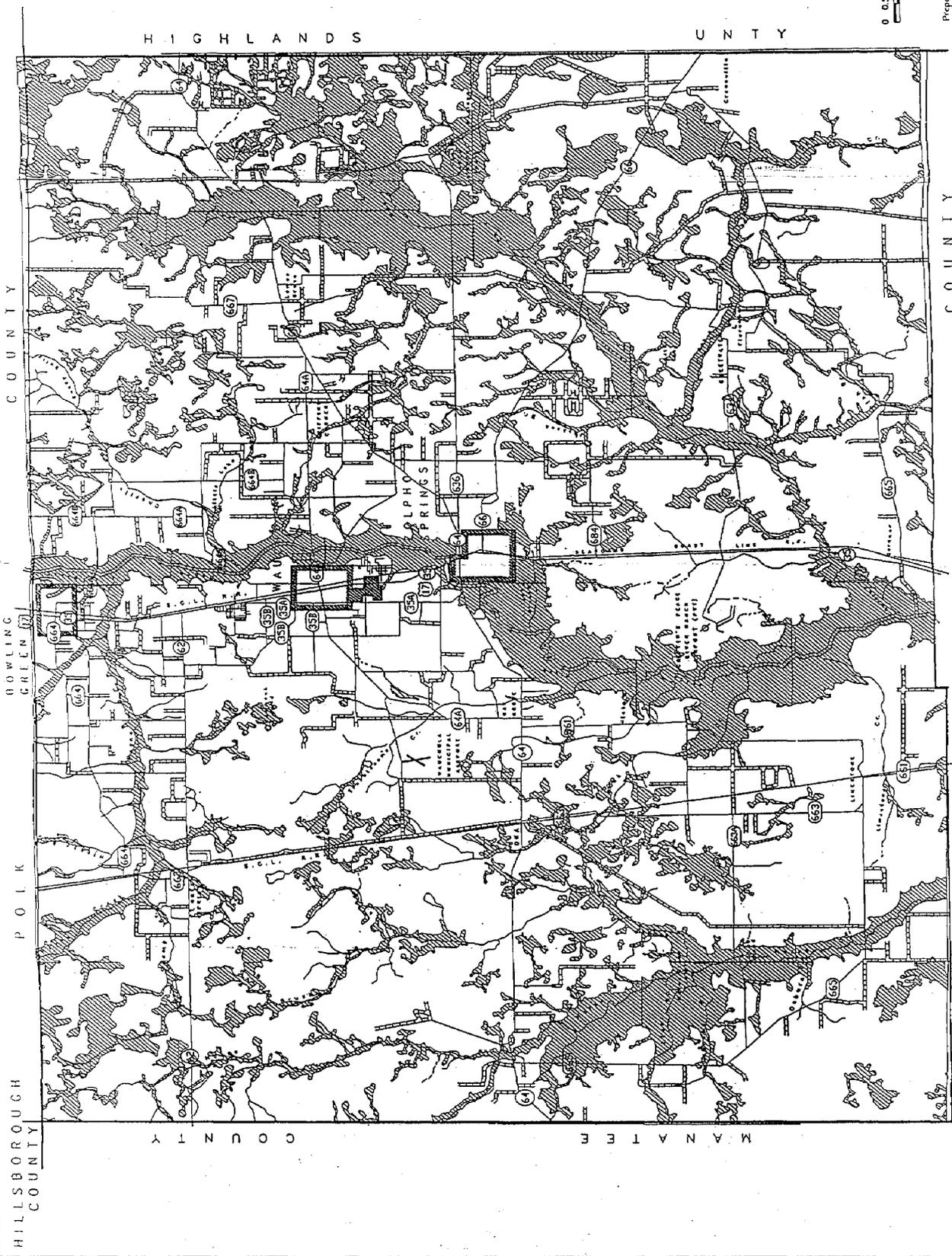
FLOOD MAP DESOTO COUNTY



MAP 1

MAY, 1968

SOURCE: Department of Housing
and Urban Development, Federal
Insurance Administration
Feb. 4, 1977.



HILLSBOROUGH COUNTY

POLK COUNTY

BOWLING GREEN

HIGHLANDS COUNTY

DE SOTO COUNTY

MANTATEE COUNTY

WALTON

ALPHONSO SPRINGS

HIGHLANDS

DE SOTO

MANTATEE

MAP 2

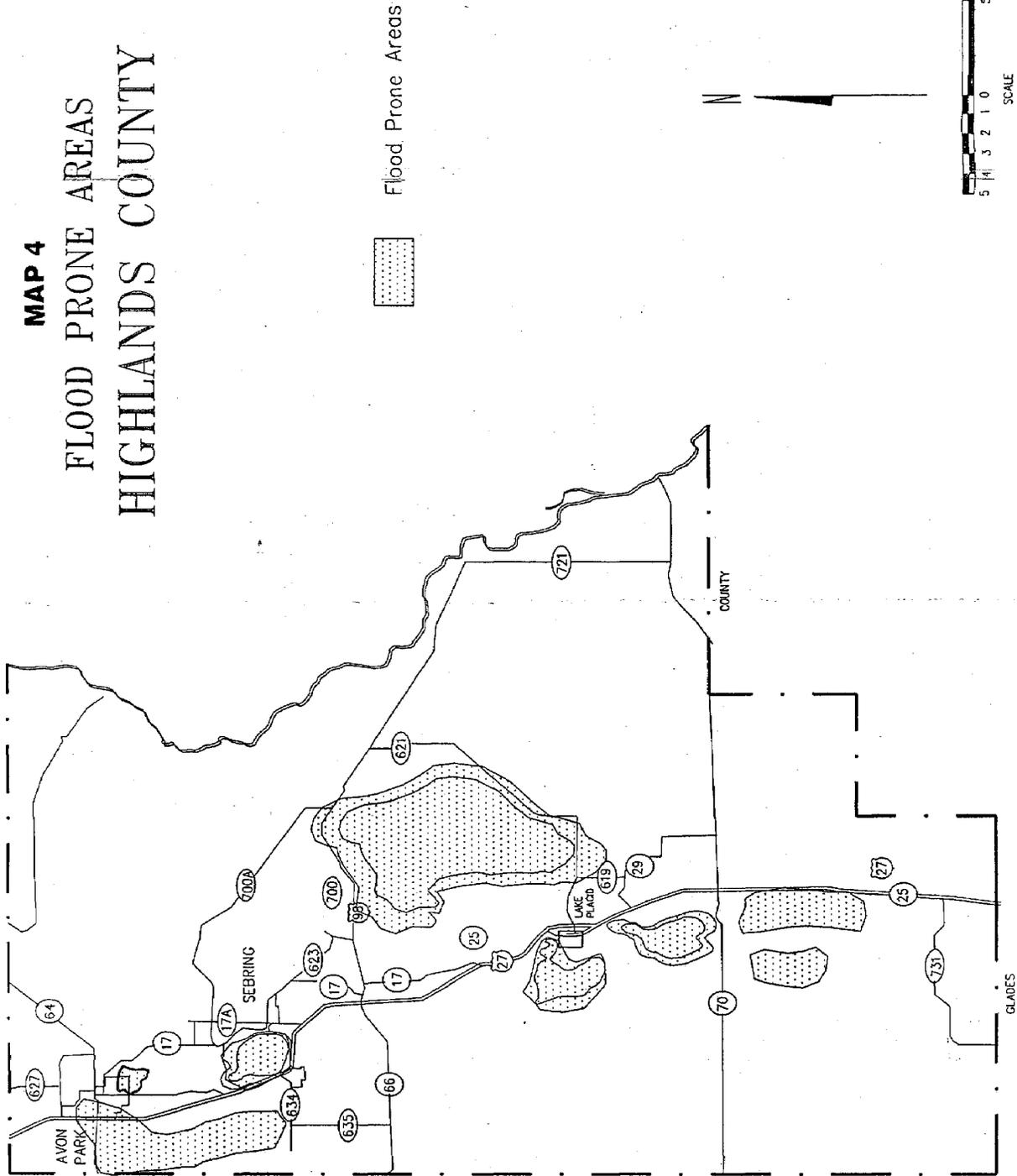
2000 0 2000 4000
SCALE IN FEET

0 0.5 1 2 3
SCALE IN MILES

Prepared by the CENTRAL FLORIDA REGIONAL PLANNING COUNCIL
April 1989
SOURCE: Department of Housing and Urban Development
Federal Insurance Administration
March 1, 1977

HARDEE COUNTY FLOOD HAZARD MAP

MAP 4 FLOOD PRONE AREAS HIGHLANDS COUNTY



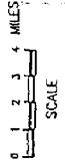
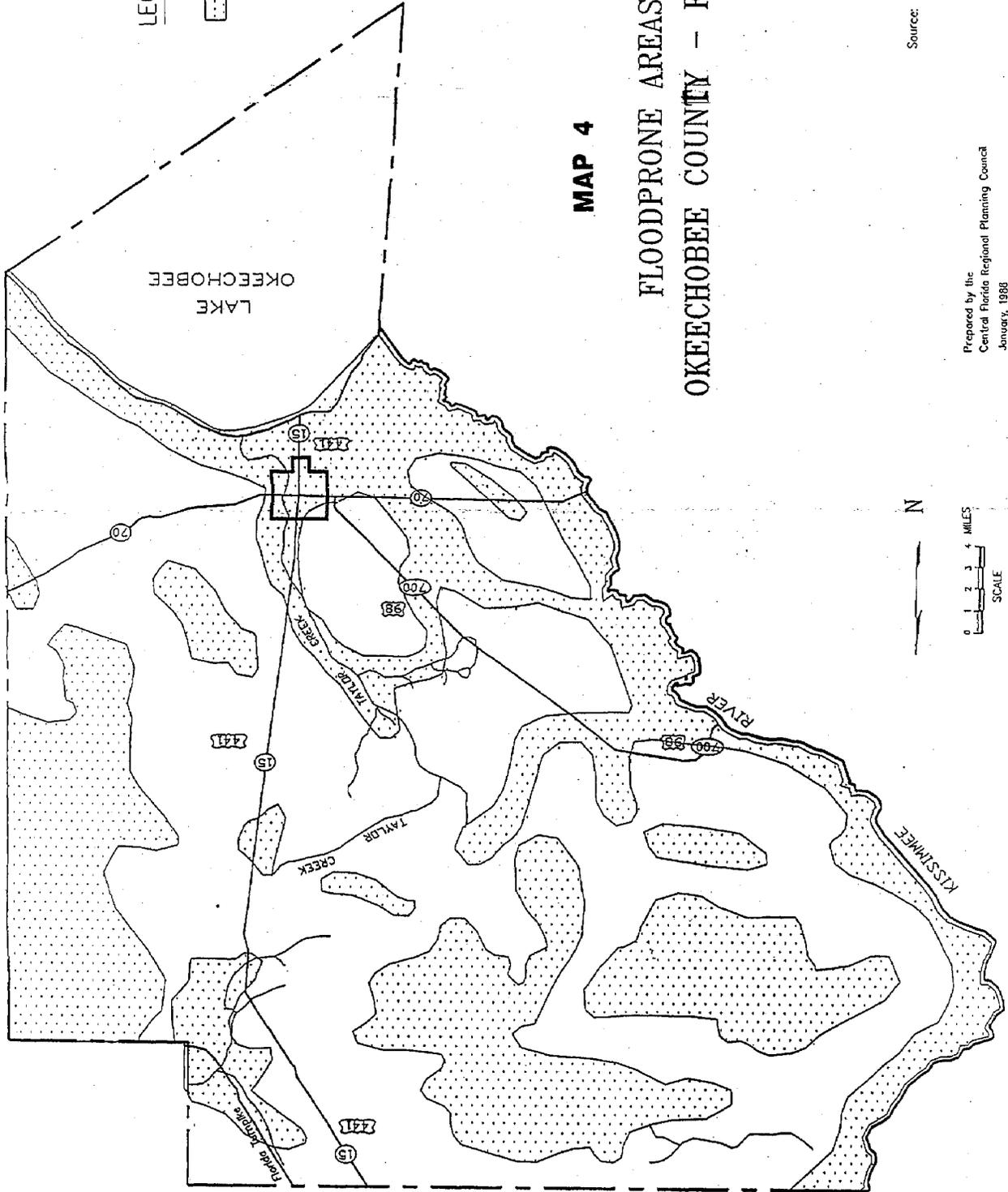
LEGEND

Floodprone Areas



MAP 4

FLOODPRONE AREAS
OKEECHOBEE COUNTY - FLORIDA



Source: Division of State Planning,
The Florida General Soils
Atlas For Regional Planning
Districts VII and VIII
1975.

Prepared by the
Central Florida Regional Planning Council
January, 1988

ROADWAY INUNDATION ANALYSIS

The majority of central Florida roadways/evacuation routes have two lanes, and a Level of Service (LOS) of "C" (LOS "C", on a scale of A to E, represents stable traffic flow. Flow, however, becomes susceptible to some congestion at this LOS. The main evacuation route from the West coast, Interstate 4, is classified in Polk County by The Florida Department of Transportation as having LOS "C". FDOT classifies this level of service as a roadway that within five (5) miles of a population between 50,000 and 500,000, accomodates 47,100 vehicles per day. Non-urbanized areas will accomodate 37,000 vehicles per day. Any addition in the numbers of vehicles would constitute a very heavy traffic situation. Some evacuation routes have particular segments of roadway that carry a LOS "D". (LOS "D" represents high density but stable flow of traffic. Speed and freedom to manuever become restricted. See Appendix A).

A 49 mile segment of the I-4 corridor, from Hillsborough County through Polk County to the Osceola County line is one of the oldest segments of interstate highway system in the state, being built in the late 1950's and early 1960's. This is the primary evacuation route from to Central Florida from the West Coast counties being the principal evacuation route for Hillsborough and Pinellas counties. A segment of I-4, near the Hillsborough and Polk County line flooded during the Fall of 1988 during a very heavy rain. I-4 was closed at SR 579 for eastbound traffic for several days.

A study being undertaken by the Florida Department of Transportation will evaluate I-4 and upgrade the system to 6 to 8 lanes in Polk County by the year 2010. However, in the meantime, if flooding were to occur again during a "wet" hurricane, or other period of heavy rain, rapid relocation of the evacuating population through Polk County would not be possible.

Other roadways/evacuation routes in the Central Florida Region have segments where flooding is possible (Table 3 and Maps 6-7). As of 1989, FDOT had no plans to upgrade these roadways. Alternate evacuation routes are designated for some of the primary evauation routes, although many of the routes would not have any other roads available in case of flooding. Civil Defense and law enforcement officials determine alternate routes in these circumstances.

In times of evacuation, direction of traffic is adjusted to facilitate movement of evacuees to the safest location inland, utilizing both lanes (or three of four lane roadways), in one direction. One lane is usually reserved for use by emergency vehicles. This increases the level of service and expedites traffic movement.

TABLE 3

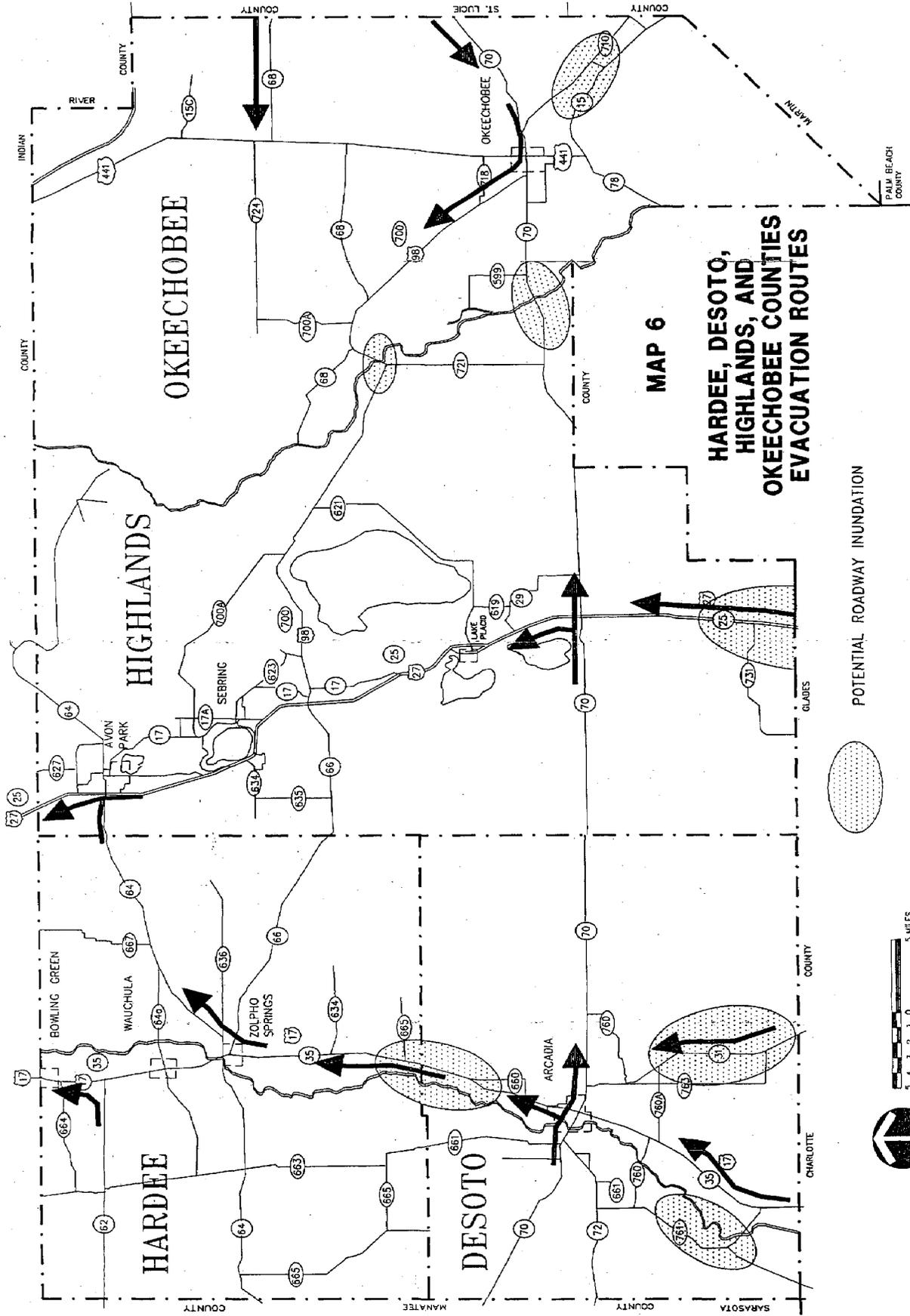
ROADS THAT HAVE HISTORICALLY FLOODED IN CENTRAL FL COUNTIES

| COUNTY | LOCATION | EVAC.ROUTE/SHELTER LOCATION |
|-----------|--|-----------------------------|
| DESOTO | HIDDEN ACRES - RR 2 Off HWY 72 West | No |
| DESOTO | RT.7 - North Masters Road At Peace River | No |
| DESOTO | KOA CAMPGROUND On HWY 70 West | No |
| HARDEE | S.R. 64 East Of S.R.17 | No |
| HIGHLANDS | S.R.700 (U.S.98) East Of Airport | YES - ROUTE |
| POLK | Meadowbrook Mobile Park | No |
| | New Tampa Hwy 4400-4700 blk | No |
| | New Tampa Hwy 3710 blk | No |
| | McCue Rd. and Harvey rd. | No |
| | U.S. HWY 92 East-4200 blk | YES - ROUTE |
| | Melody Acres MHP- Glades Ave. | No |
| | Twin Lakes MHP- New Tampa Hwy | No |
| | Village Lakeland- east side of canal | No |
| | Lori Lane S. | No |
| | Lagoon Rd.- 1600-1700 blk | No |
| | Rollingwood Lane- 1000 blk | No |
| | Country Bend Subdivision | No |
| | Old Salem Rd.-3800 blk | No |
| | Winchester Rd.- 3800-3900 blk | No |
| | Pinewood Village Cir.W | No |
| | Old Government Rd.-7400 blk | No |
| | Dubois Rd. | No |
| | Woodale Dr. | No |
| | Brook Loop/ Way | No |
| | Forestbrook Subdivision | No |
| | Reynolds Rd.- 3100 blk | No |
| | Woodhaven Dr.- 6200 blk | No |
| | Valley High Dr. | No |
| | Hamilton Rd.-3400-3500 blk | No |
| | Hidden Hills Dr. | No |
| | Colbert Rd. | No |
| | Creekwood Dr.-6100 blk | No |
| | Ewell Rd.- 3900 blk | No |
| | Edgewood S.Extension-2222-2310 | No |
| | West Beacon Rd.-500 blk | No |
| | Oak Dr. & Pablo St. | No |
| | Wilkenson Rd. | No |
| | Gary Road | No |
| | Wabash Road | No |
| | Southern Ave. | No |
| | Eva Ave. | No |
| | Faye Street | No |
| | Park St. below Poinsetta | No |
| | Satsuma St. & Rangpur | No |

TABLE 3 cont.

ROADS THAT HAVE HISTORICALLY FLOODED IN CENTRAL FL COUNTIES

| COUNTY | LOCATION | EVAC.ROUTE/SHELTER LOCATION |
|--------|-----------------------------------|-----------------------------|
| POLK | Lake Deeson Pt.-900-1400 blk | No |
| | Glenview Dr.-4200-4300 blk | No |
| | Meadowood Dr.-4300 blk | No |
| | Creekwood Run-2000 blk | No |
| | Ranchland Acres Rd.-2200 blk | No |
| | Ridge Meadow Dr.-2000 blk | No |
| | Trailwood Path-1800-1900 blk | No |
| | Rockridge Rd.-9900-10200 blk | No |
| | S.B.Marion Rd. | No |
| | Tom Moore Rd. | No |
| | Max Cash Rd. | No |
| | Britt Rd. | No |
| | Shadywood Rd. | No |
| | Ponderosa Trail | No |
| | Earnest Rd. | No |
| | Socrum Loop Rd.W -700 blk | No |
| | Banana Rd. -1400-1600 blk | No |
| | Brown Rd. | No |
| | Palm Rd. -3500 blk | No |
| | Sunnyside Dr.- 4200 blk | No |
| | Mt.Tabor Rd. -3200 blk | No |
| | Sleepyhill Rd. - 3000 blk | No |
| | Countryview Estates: | No |
| | NW 1st St. | No |
| | Dove Meadow Tr. | No |
| | Glen Meadow Loop | No |
| | Dove Crest Tr. | No |
| | Fernwood Dr. | No |
| | Brookridge Tr. | No |
| | Rollinglen Subdivision: | No |
| | Rollinglen Loop E/W | No |
| | Rollinglen Court | No |
| | Shadyglen Dr. | No |
| | Strickland Rd. | No |
| | Youngs Ridge Ct. | No |
| | Youngsway Dr. | No |
| | North Florida Ave. blk.600-700 | No |



MAP 6

**HARDEE, DESOTO, AND
HIGHLANDS, AND
OKEECHOBEE COUNTIES
EVACUATION ROUTES**

POTENTIAL ROADWAY INUNDATION

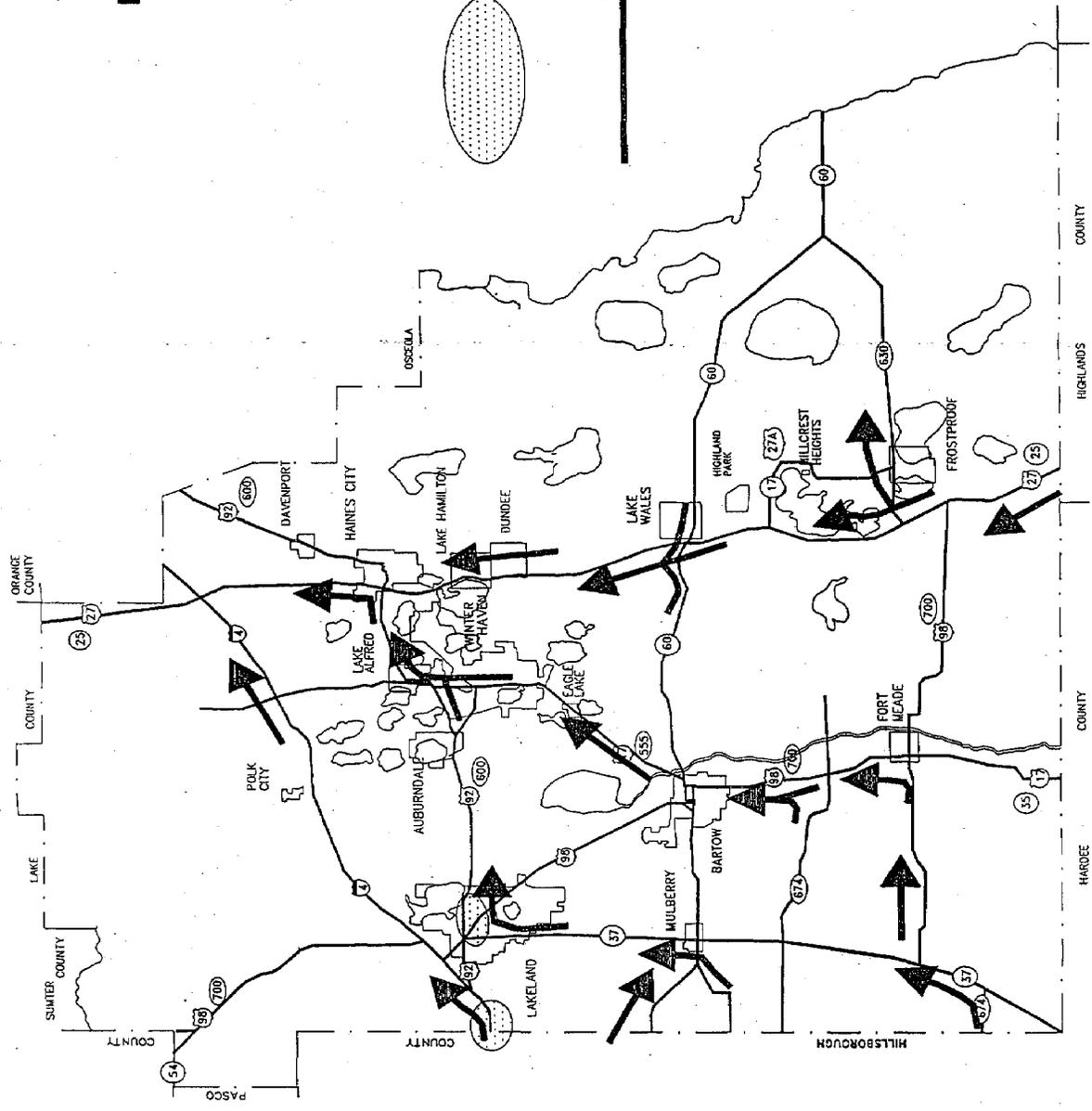
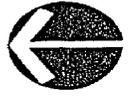
INTER-REGIONAL EVACUATION



MAP 7
POLK COUNTY
EVACUATION ROUTES

LEGEND

POTENTIAL ROADWAY INUNDATION
 INTER-REGIONAL EVACUATION



MECHANISM FOR INTER-COUNTY OR REGIONAL EVACUATION

The warning and response function associated with hurricane evacuation is carried out by several entities at the Federal, State, and local levels.

1. National Weather Service

There are two major elements of the National Weather Service directly involved in the hurricane evacuation process. These are the National Hurricane Center and the Local Weather Service Offices.

a) National Weather Center

The need for hurricane evacuation is determined from a warning system that originated from the detection and monitoring of tropical storm activity by the National Hurricane Center (NHC) of the National Weather Service. The NHC, located in Miami, identifies such activity as a tropical depression and monitors its development into a tropical storm. At this point, the disturbance is named. As the tropical storm intensifies and the maximum sustained surface winds exceed 74 miles per hour, the disturbance becomes a hurricane.

Throughout the monitoring of tropical cyclones, the NHC forwards information on the characteristics of the disturbance to a network of local National Weather Service offices throughout the country. This information is normally channeled in the form of advisory bulletins to the local offices at six-hour intervals. These bulletins include the location and characteristics of the storm, as well as forecast what can be expected over the next 12 to 24 hours.

As the hurricane comes closer to striking land, the six-hour interval advisories may be supplemented by intermediate advisories every three hours or less, as needed. In addition, local and state disaster preparedness agencies are provided with restricted information on the hazard potential of the hurricane as the storm moves within 72 hours of projected landfall.

This information is channeled over the National Warning System (NAWAS) and normally categorizes the hurricane based on a general description scale of hazard potential.

This scale, the Saffir/Simpson Scale, defines the "category" of a hurricane based on several measurable characteristics or parameters of the storm.

b) Local Weather Service Offices

As the NHC forwards information on the hurricane to local National Weather Service offices, each office records and interprets the information relative to how it could be expected to effect its areas of responsibility. DeSoto, Hardee, Highland, and Polk Counties fall under the responsibility of the Tampa Bay Office of the National Weather Service, located in Ruskin. Okeechobee County falls under the Palm Beach office.

As the hurricane approaches a particular coastal area, the local weather service adds local statements to the advisory bulletins from the NHC. These local statements are forwarded via NAWAS to those county disaster preparedness agency communication centers included in the area addressed by the advisory bulletin. Local statements include recommended precautionary and response actions to be carried out and estimated times by when they should be completed. They also include existing local conditions of winds and tides (where applicable) as monitored by local wind and tide gauge systems. Local statements from Tampa Bay office include a description of any areas recommended to be evacuated from the approaching hurricane.

Currently, such general descriptions entail the listing of estimated distances in blocks or miles from water bodies and defined in land elevations. The Tampa Bay office local statements would include one of two general lists or areas to be evacuated: (1) areas vulnerable to a 10 foot storm surge, or (2) areas vulnerable to a 20 foot storm surge.

2) State of Florida

The two major entities at the state level directly involved in the hurricane evacuation process are the Governor and the Florida Department of Community Affairs, Division of Emergency Management.

a) The Governor

Authority to order evacuation from approaching hurricane is conferred to the Governor by Chapter 252.36(5)(e), Florida Statutes, stating that the Governor may:

"Direct and compel the evacuation of all or part of the population from any stricken or threatened area within the state if he deems the action necessary for the preservation of life or other disaster mitigation, response, or recovery."

b) Division of Emergency Management

The Division of Emergency Management (DEM) within the Florida Department of Community Affairs, is responsible for directing and coordinating disaster mitigation, preparedness, response and recovery activities of the state. Included the DEM's many duties is the power to make official recommendations for prevention and preparedness measures designed to eliminate or reduce disasters or their impacts. Consequently, the DEM performs the primary staff function to the Governor as to the nature, extent and timing of the issuance of the evacuation order.

3) Local Government

At the local level, elected officials, local disaster preparedness agencies and other departments of local government all become involved in the evacuation process.

a) Elected Officials

The same power to order evacuation from an approaching hurricane conferred upon the Governor under Chapter 252.36(5)(e), Florida Statutes, is also delegated to the governing body of each political subdivision of the State by Chapter 252.32, Florida Statutes, and Executive Order 80-29. The term "political subdivision" is defined under the Statutes as "any county or municipality created pursuant to law." Therefore, the chief elected official of both county and municipality is delegated to order the evacuation from an approaching hurricane.

b) County Disaster Preparedness Agencies

Just as the Division of Emergency Management recommends emergency measures to be ordered by the Governor, county disaster preparedness agencies serve the same staff functions to the governing body of the political subdivision. Hurricane evacuation orders are normally issued by the chief elected official based on the recommendation of the director of the county disaster preparedness department or a previously established disaster advisory council/committee. Such recommendations should be based on previously formulated evacuation plans.

c) Municipal Disaster Preparedness Agencies

Although not mandated by Chapter 252, Florida Statutes, municipalities are authorized by the same Statutes to create and establish a local disaster agency for disaster operations and planning. Just as with counties, the decision of the governing body to order an evacuation normally results from a recommendation from the municipal disaster preparedness director or disaster advisory council.

d) Local Government Departments

The actual execution of an evacuation requires local resources normally based in several key county or city departments.

These key departments include law enforcement, fire, public works, utilities, health services, and traffic engineering. Disaster preparedness or response activities of the manpower and equipment of such departments are coordinated by the local disaster preparedness department upon declaration of emergency conditions. Although normally directing a department function in day-to-day governmental operations, the disaster preparedness director automatically assumes the direct line function as primary advisor to the governing body for disaster activities.

4) American Red Cross

The local chapters of the American Red Cross are responsible for the overall management of public natural disaster shelters as designated by local government. This includes the provision of trained staff, food supplies and registration procedures throughout the duration of the shelter stay.

American Red Cross responsibility has been delegated by Congressional charter under Public Law 58-4 and subsequent legislation. The American Red Cross and its local chapters is responsible for helping meet the human needs created by a disaster. In a hurricane situation, the ARC will provide food, clothing, shelter, blood and blood products on a mass care basis.

5) Coordination of Government Action In Emergency Evacuation Decisions

Decision-making and the power to issue an evacuation order has been conferred or delegated to three different levels of government; state, county, and municipal. Further, the advisory authority of the National Weather Service at the Federal level is an essential component of the warning and evacuation procedure. Such emergency powers at the various levels of government are innate responsibilities of the particular jurisdictions to safeguard the lives of their citizens. However, this diffusion of the authority to issue and evacuation order demands firm interjurisdictional coordination. An uncoordinated evacuation order could have a devastating impact of the safety of not only the citizens of the jurisdiction issuing the order, but also the surrounding jurisdiction or an urban region.

Chapter 252, Florida Statutes, and the Governor's Executive Order 80-29, empower any local political subdivision (county or municipality) to order an evacuation of its endangered population without prior order by other levels of government. Therefore, in the event that the state fails to order evacuation as early as required by local conditions, a county may order evacuation within its physical boundaries. However, evacuation orders issued by higher levels of government are binding upon lower levels of government. For example, a State order is binding upon counties and a county order is binding upon a municipality.

There is an obvious need for coordination of emergency action with other levels of government and private agencies to ensure the availability of adequate resources to support evacuation. As long as the evacuation decision-making forum includes all relevant jurisdictional entities communicating while analyzing the approaching hurricane hazard from a common data base, negative impacts of an evacuation should be minimized.

BEHAVIORAL DATA

Behavioral assumptions regarding the population's response to evacuation are at best, tenuous. The majority of the population of Florida has never experienced a hurricane. Hurricane Donna in the 1960's was the last hurricane to actually strike this region. A false sense of security is felt by the residents and it is difficult to convince the public of the possible threat.

Actual response of the population in a hurricane situation may be considerably different than in surveys administered when there is no threat. However, since there have been only limited situations to test the public, past surveys will be utilized for this hurricane shelter study update.

The behavioral study conducted by the University of South Florida for the 1983 Central Florida Regional Hurricane Plan remains valid and is incorporated in this 1989 Inland Hurricane Shelter Study Update (Appendix B). While the population of this region has grown considerably since the survey, it is felt that behavioral data have not changed to any great extent.

Information derived from the 13-item questionnaire is presented in both narrative and tabular form (broken down by county). Some of the most important highlights are as follows:

1. The population in general, especially those who live in mobile homes, is elderly.
2. Respondents cited the National Weather Service as the primary source of information influencing an individual's decision to evacuate.
3. Respondents indicated that if all family members are present, they could be ready to leave almost immediately.
4. Most people will evacuate when ordered to do so. Mobile home residents would tend to evacuate prior to the order.
5. If ordered to do so, most people will evacuate even if the weather is fine.
6. If those individuals who responded they "don't know" what they would do under an evacuation order did actually seek public shelter, the shelters would be overwhelmed.

EVACUATION ZONES AND SCENARIOS

INLAND EVACUATION

It is proposed that intra-regional evacuation in Central Florida will be structured around evacuation zones in order that residents may be evacuated to the closest available shelter in the most expedient and safest manner. Because public shelters are concentrated in the major cities of DeSoto, Hardee, and Okeechobee counties, each of these counties was designated as an evacuation zone unto itself. Polk and Highlands County shelters are more dispersed and multiple zones were delineated in those two counties. Maps 8 and 9 depict the evacuation zones for Highlands and Polk Counties.

Hurricane sheltering will be on a first-come, first-served basis. Evacuation routes will be the shortest routes from an evacuee's residence to a public shelter. Those evacuees who find inadequate space at the shelters in their zone must seek the next closest shelter in the next zone. Counties who do not have adequate space for their own residents will send local evacuees to the closest county for sheltering.

It is mandatory that all mobile homes evacuate in the event that winds are in excess of 74 miles per hour. Residents in flood-prone areas are dispersed throughout the region and evacuation would be at the discretion of each family according to their personal situation. Evacuation of the Central Florida Region cannot be relegated to strict zones or concentric areas as represented in the SLOSH models of the coastal areas. The Office of Civil Defense in each county will observe tropical storms from the time they form until there is no more danger to their area. Twenty-four to thirty-six hours prior to landfall, projected wind speeds are watched and the evacuation situation is calculated. If winds speeds are predicted to reach 70-90 mph or higher, mobile home residents will be evacuated. Shelters will be opened as evacuee influx from coastal counties and inland evacuation is warranted.

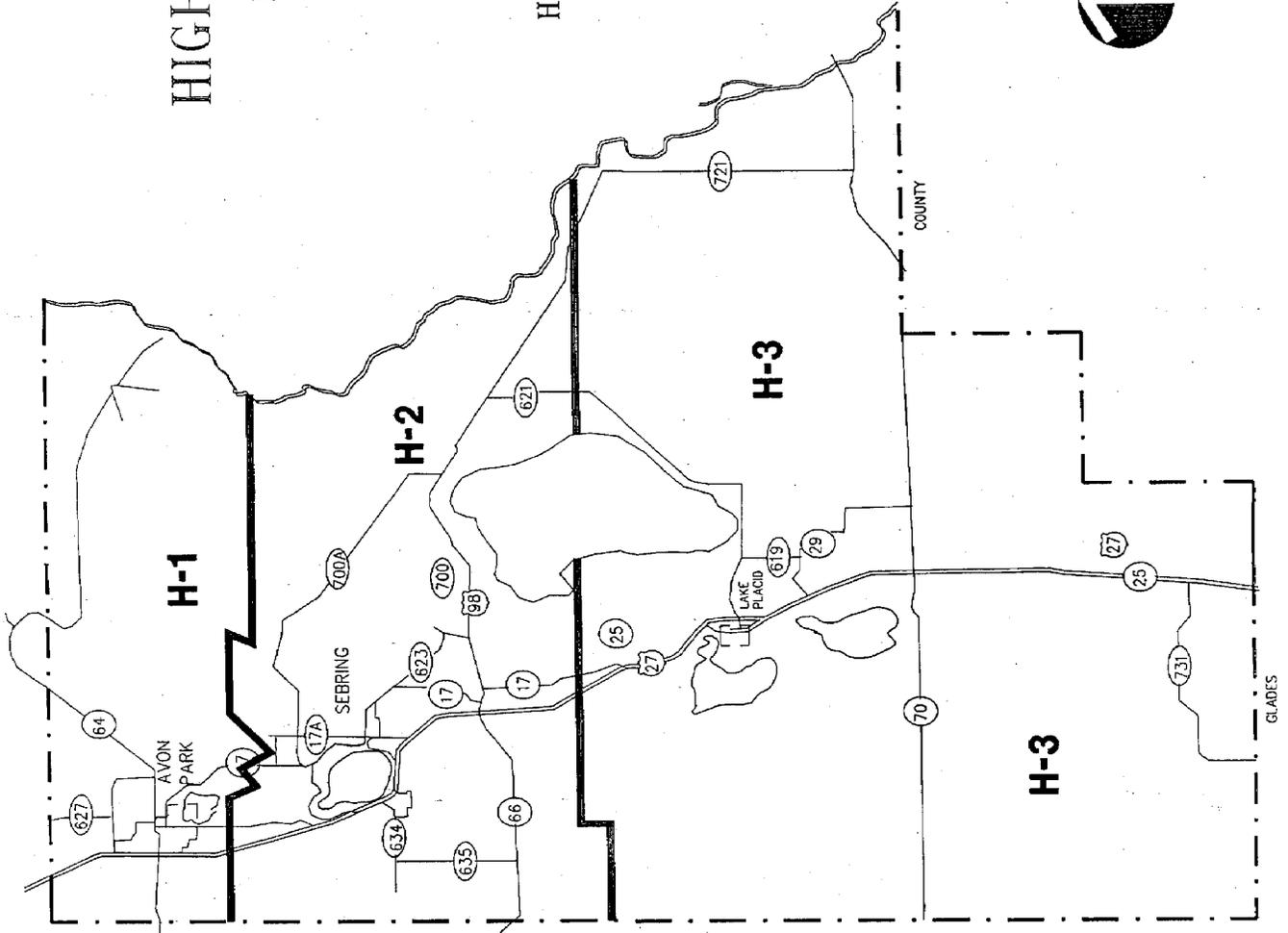
The track of the hurricane and projected eye landfall will determine which inland counties would be affected, thereby dictating evacuation routes used, shelter locations and number of potential evacuees to shelter (Appendix C).

MAP 8 HIGHLANDS COUNTY EVACUATION ZONES

EVACUATION ZONES

LEGEND

H-1 EVACUATION ZONE

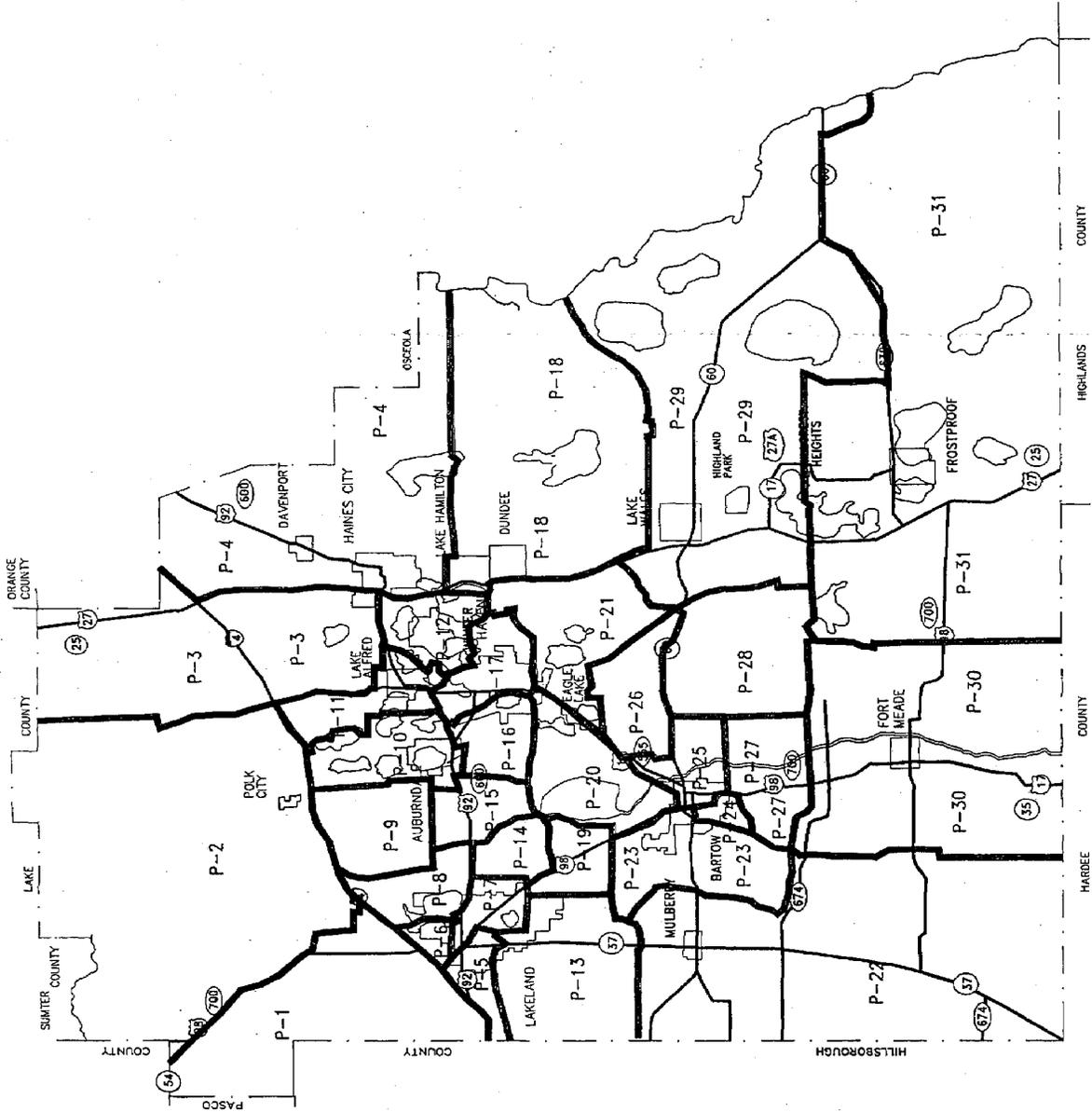


MAP 9 POLK COUNTY

EVACUATION ZONES

LEGEND

P-1 EVACUATION ZONE



INTRA- AND INTER-COUNTY EVACUATION ROUTES

Evacuation routes are designated to provide the quickest and safest ingress and egress into and through the counties during the hurricane evacuation process, and to facilitate the expedient transport of evacuees to shelters.

Maps 8 and 9 depict evacuation routes that have been designated for the Central Florida Region. Because of the rural nature of the region there are relatively few alternate routes.

Evacuation routes to be utilized by east and west coast counties are exhibited in Map 10. Appendix D, summarizes volumes and percentages of evacuees leaving Tampa Bay and Southwest Florida counties and were summarized by the Florida Department of Community Affairs. Incoming vehicles, coupled with inter-county evacuee traffic, will place a burden on most of the roadways of Central Florida.

Information on estimated travel conditions on state highways in the Central Florida Region (including the inter-regional evacuation routes) are exhibited in Table 4 and Appendix A. Map 10 illustrates those evacuation routes.

Designated evacuation routes are the same as those presented in the 1983 study. The Florida Department of Transportation has plans to re-build some of the bridges in the Central Florida Region, but most will remain two-lane.

- * SR 674 over Pierce Branch, Howard Prairie, Little Manatee Relief, and Little Manatee River: four two-lane bridges located in Hillsborough County between Wimauma and Polk County line. Proposed replacements are "in kind" (two-lane).
- * US 17 over Thornton Branch: two-lane bridge located in DeSoto County, two miles north of Charlotte County line and 13 miles south of Arcadia. Proposed replacement is in kind.
- * US 17 over Charlie Creek Overflow: two-lane bridge located in Hardee County, approx. 2.5 miles north of the DeSoto County line and 12 miles north of Arcadia. Bridge will be widened to add 10 ft. safety shoulder (no increase in lanes).

- * SR 37 over North prong Alafia River: two-lane bridge located in Polk County approximately nine miles south of Mulberry and 1.7 miles north of SR 630. Replacement in kind.
- * SR 37 over South prong Alafia River: two-lane bridge located in Polk County approximately nine miles south of Mulberry and 1.7 miles north of SR 630. Replacement in kind.
- * SR 60 over Peace Creek Drainage Canal: dual two-lane bridges located in Polk County approximately eight miles east of Bartow. Widening to 10 ft. safety shoulders (no lane increase).

Capacities of the roadway system will be strained with the influx of coastal evacuees. While most of the system is adequate to handle the traffic that is carried under "normal" conditions, an increase in volume would tax the carrying capacity of these roadways. Law enforcement officials will, wherever possible, utilize both lanes (or three of four lanes) in the direction of evacuation flow, leaving one lane free for emergency vehicles. While this will help to alleviate some of the burden, the number of potential vehicles from coastal counties, along with evacuating inter-county residents, would create a traffic situation that would not be conducive to rapid movement through the counties.

TABLE 4

INTERREGIONAL EVACUATION ROUTES - EAST COAST

| HWY NUMBER | FROM | TO | Possible number of Vehicles | Capacity for LOS C | Clearance Time-hrs. | Possibility of Flooding | Alternate Routes |
|-------------------|--------------|------------|-----------------------------|--------------------|---------------------|-------------------------|------------------|
| S.R.60 | Indian River | Okeechobee | 4897 | 870 | 5.6 | yes | none |
| S.R. 68 S.R.70 | St. Lucie | Okeechobee | 6372 | 870 870 | 7.3 | | U.S.91 S.R.60 |

INTRAREGIONAL EVACUATION ROUTES - CENTRAL FLORIDA

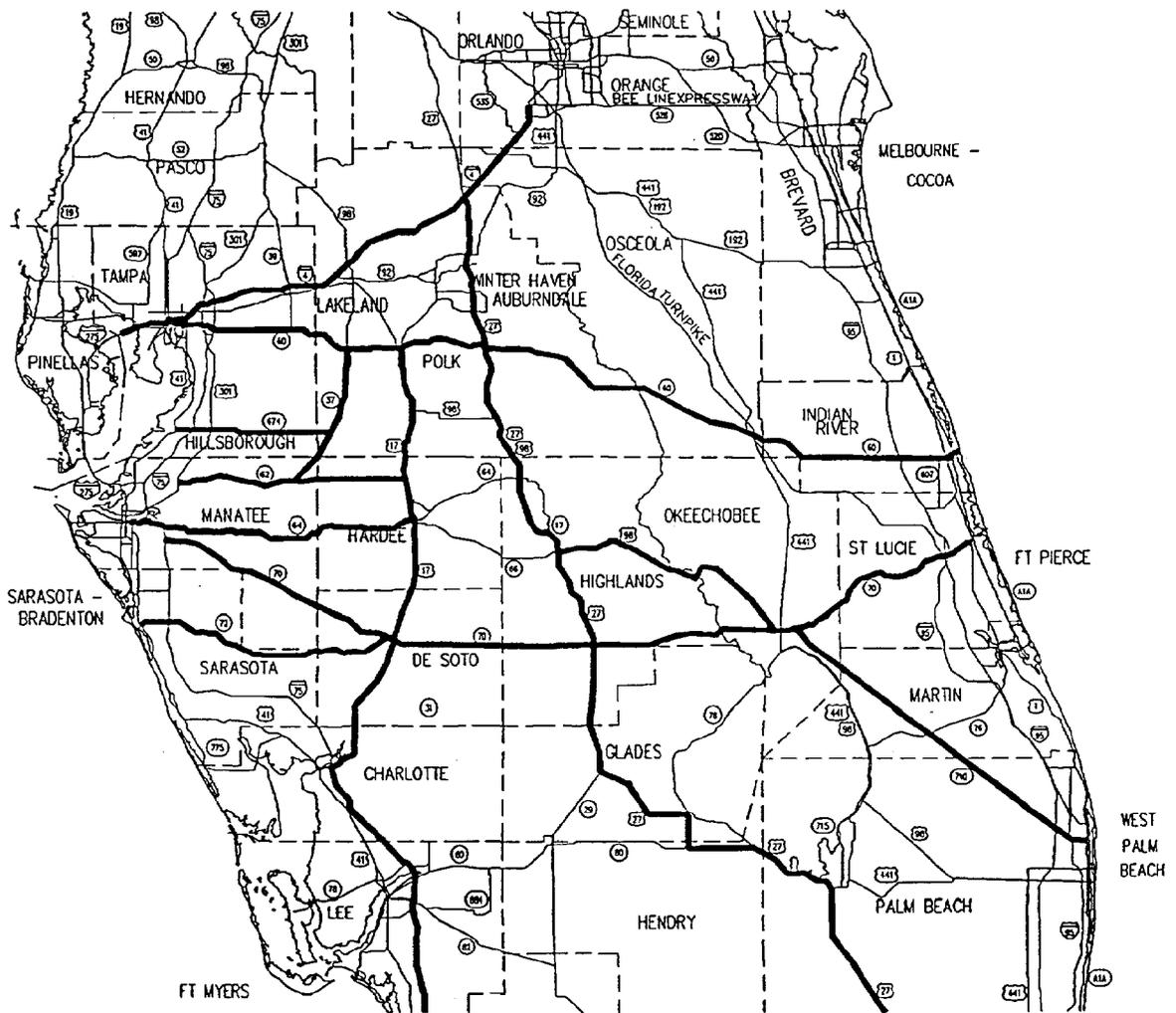
| HWY NUMBER | FROM | TO | Possible number of Vehicles | Capacity for LOS C | Clearance Time-hrs. | Possibility of Flooding | Alternate Routes |
|------------|------------|----|-----------------------------|--------------------|---------------------|-------------------------|------------------|
| S.R.31 | DeSoto | | | 870 | | yes | none |
| S.R.17 | DeSoto | | | 870 | | in three locations | none |
| S.R.64 | Hardee | | | 870 | | minimal | S.R.62 |
| S.R.62 | Hardee | | | 870 | | minimal | S.R.64 |
| S.R.17 | Hardee | | | 870 | | in three locations | none |
| U.S.27 | Highlands | | | 1750 | | near Glades county line | none |
| U.S.98 | Okeechobee | | | 870 | | yes | 441 |
| I-4 | Polk | | | 3990 | | near Plant City exit | U.S. 92 |
| U.S.92 | Polk | | | 1990 | | | |
| S.R.37 | Polk | | | 870 | | minimal | S.R.60 to U.S.17 |
| U.S.98 | Polk | | | 870 | | minimal | S.R.60 to U.S.27 |
| S.R.27 | Polk | | | 1750 | | minimal | S.R.60 to U.S.17 |
| S.R.60 | Polk | | | 1990 | | minimal | S.R.630,640 |
| S.R.640 | Polk | | | 870 | | minimal | S.R.60,630 |
| S.R.674 | Polk | | | 870 | | minimal | none |
| S.R.630 | Polk | | | 870 | | minimal | S.R.640,60 |

TABLE 4
CONT.

INTERREGIONAL EVACUATION ROUTES - WEST COAST

| HWY NUMBER | FROM | TO | Possible number of Vehicles | Capacity for LOS C | Clearance Time-hrs. | Possibility of Flooding | Alternate Routes |
|------------|--------------------------|-----------------|-----------------------------|--------------------|---------------------|----------------------------|------------------------|
| I-4 | Hillsborough Pinellas | Polk | 5783 | 3990 | 1.4 | near Plant City exit | 582 |
| | | | 7803 | 3990 | 2.0 | | U.S.92 |
| U.S.92 | Hillsborough | Polk | 3759 | 1990 | 1.9 | | I-4 |
| S.R. 60 | Hillsborough | Polk | 5873 | 870 | 6.8 | | S.R.542 [may flood] |
| S.R. 640 | Hillsborough | Polk | | 870 | | | S.R.640 |
| S.R.674 | Hillsborough | Polk | | 870 | | | S.R.60 |
| S.R. 674 | Hillsborough | Polk via 37 | | 870 | | | none |
| S.R. 674 | Hillsborough | Polk via 630 | | 870 | | | none |
| U.S. 37 | Manatee | Polk | 4690 | 940 | 5.0 | | none |
| U.S. 17 | Charlotte | DeSoto | 5273 | 1034 | 5.1 | in three locations | CR 630 to CR 555 |
| S.R. 31 | Charlotte | DeSoto | 3797 | 870 | 4.4 | yes | none |
| U.S. 27 | Glades | Highlands | 411 | 1369 | 0.3 | near Glades county line | none |

MAP 10 INTER-REGIONAL EVACUATION ROUTES



0 10 20 30 40 50
SCALE IN MILES



SHELTER FEASIBILITY ANALYSIS

The Florida Department of Community Affairs, Division of Emergency Management conducted a shelter survey during 1988 in Polk County. This survey was performed for those buildings that are designated as primary and secondary shelters at the request of the Polk County Chapter of the American Red Cross and Polk County Civil Defense.

The methodology used for this analysis compares each building, or building part, to a model standard. Wind resistance is the primary concern in this survey. Points are awarded or subtracted based on the building's performance at each step in the calculation and a cumulative score is assessed. The score is categorized on a scale of one to five, with one representing the most superior rating.

The results do not indicate which building is the best or second best in a county, but rather where each building falls in relation to the established criteria. Additionally, the data provided no conclusions regarding suitability of the shelters surveyed, but merely state the results of the relative wind impact calculations.

A wind resistance code is also provided for each building which illustrated the building's ability to resist wind loads. The resistance is coded from "A" to "E" with A as the best rating. A building's resistance rating does not change with a change in wind speed; however, it may improve with the addition of shutters.

The results of this survey will enable the counties to evaluate their shelters for potential safety problems related to wind damage in the event of hurricane force winds.

The other counties in the Central Florida Region will be completing more thorough surveys of their shelters to provide more accurate information for future use.

Designated shelters that may be located in flood-prone areas are not considered primary shelters by the American Red Cross. These facilities would only be utilized in a "worst case" situation if no other shelter was available, or for post-storm sheltering. The Central Florida Region has a total of approximately twelve (12) shelters located in flood-prone areas.

In the following months, as surveys are completed for the other counties in the Central Florida Region, the number of possible sheltering spaces may change from those presented in this Inland Hurricane Shelter Study Update.

SHELTER ASSIGNMENTS

Shelter surveys completed after Hurricane Elena indicated that people go to particular public shelters because: (1) they have friends or family that will be at that particular shelter, and (2) they are familiar with the school or church that is designated as the shelter.*

Evacuees are assumed to go to the nearest open shelter. Those evacuees entering the Central Florida Region from the coastal counties would be directed to the nearest shelter along that particular evacuation route.

Coastal evacuees will be sheltered in coastal counties as it becomes necessary in a concentric zone pattern, moving somewhat inland in progression. Inland counties do not have these concentric flood zones, therefore shelters are opened by the American Red Cross as needs of coastal and/or inland evacuees dictates.

It was felt by the local chapters of the American Red Cross and most of the emergency management directors that shelter assignment was not effective for the inland region because of the unpredictability of demand.

* Tampa Bay Regional Hurricane Study 1988, page 314.

SHELTER CHECKPOINT/RECEPTION CENTERS

The purpose of checkpoints/reception sites is to provide supporting services and guidance to evacuees seeking arrangements for shelter; to provide a control mechanism for officials keeping track of evacuees; and to distribute maps and directions to shelters.

Sites may be established in Polk, Highlands, and Okeechobee Counties and are based on those counties' Nuclear Civil Protection Plans. DeSoto County, because of its location (the primary point of ingress of Southwest Florida evacuees) will not establish checkpoint sites. Shelters in DeSoto County will reach capacity in a short period of time and establishing checkpoints would be superfluous. After absorbing as many evacuees as possible, directing evacuees through DeSoto to other counties will be the major concern of DeSoto County officials.

Related to this point is the assertion that the primary purpose of checkpoints is for local officials to communicate with those evacuees who do not know where to go and direct them to public shelters. Moreover, once shelters reach capacity, checkpoints will be dismantled and evacuees still on the regional road network will be directed to areas where shelter space is available. Thus, as shelters to which certain checkpoints have been directing evacuees reach capacity, these checkpoints will be closed. It is assumed then, that checkpoints in counties with limited shelter capacity, such as Hardee and Okeechobee will be opened for a relatively short period of time.

The following are the potential locations of shelter checkpoints and reception sites in the Central Florida Region.

- | | |
|--------|---|
| DeSoto | * None |
| Hardee | * Wauchula State Bank: Southeast corner of U.S.17 and Main Street |
| | * Ernest Plaza: Northeast corner of U.S.17 and Main Street |
| | * Wauchula State Bank: U.S.17, Bowling Green |

Shelter Checkpoint/Reception Centers cont.

- * Tropicana Company parking lot: SR 64, East of Ona
- * Ben Hill Griffin Ranch
- * Junction of SR 62 and Seaboard Coast Line Railroad Tracts
- * Lemon Grove: junction of SR 64 and SR 636
- Highlands
 - * Venus Post Office: junction of SR 731 and US 27
 - * St.Regis Co. Warehouse: SR 70 and U.S.27
 - * Avon Park Airport
 - * Springlake Shopping Center: junction of U.S.27 and Lakeview Blvd.
 - * South Florida Junior College: 1 1/2 miles south of Avon Park
- Okeechobee
 - * Rodeo Arena (Reception Center): north of Okeechobee City limits on U.S.441
 - * K-Mart Shopping Center: U.S.98/441 just south of city limits
- Polk
 - * Lake Wales Plaza: junction of SR 60 and U.S.27
 - * Lake Wales Shopping Center: SE corner of junction of U.S.60 and U.S.27

Shelter Checkpoint/Reception Centers cont.

* Golden Gate Shopping Center: SE corner of junction of U.S.60 by pass and U.S.98, Bartow

* Bartow Mall: NE corner of junction of S.R.60 by-pass and U.S.98, Bartow

* Lake Miriam Square Shopping Center: junction of SR 37 and Lake Miriam Dr., Lakeland

* 40 Acre Truck Stop: junction of Memorial Blvd. and Wabash Ave.

INVENTORY OF INLAND PUBLIC SHELTERS

The five inland counties of Central Florida have a total shelter capacity of approximately 65,000 spaces. This includes primary American Red Cross and county operated shelters, alternate shelters (churches, lodges, other public buildings). Space for hotels/motels is approximately 2,600. Space has been calculated at 20 sq.ft. per person for Red Cross shelters. Hotel/motel occupancy rates have been calculated at 50% for the hurricane months of June through November. This was based on telephone and/or written correspondence with the facilities, and an average was used for the region.

An updated inventory form has been developed for future use in evaluating possible hurricane shelters (Appendix E). Forms will be completed for buildings designated for use as public shelters and copies will be filed with American Red Cross chapters, Civil Defense and the Regional Planning Council. Schools in Hardee and Highlands Counties currently have the updated inventory forms on file with the Regional Planning Council. Polk and Okeechobee Counties will be completing the updated inventory form for 1990.

The majority of schools that are designated Red Cross shelters in this five county region do not have auxiliary power sources (generators). The cost of furnishing generators for schools in this region has been prohibitive. Similarly, most of the schools use a large percentage of glass in their construction, which reduces the structural integrity. Many schools have restroom facilities located outside of the main buildings, making accessibility a problem during the storm event. Kitchen facilities for some schools were not located in close proximity to the designated "safe" areas.

A list of shelter locations for each county, along with the capacities is listed in Appendix F. Shelter locations are pinpointed by streets for the inland county cities. Only those cities with at least three shelters were mapped (Maps 11-17). Some mobile home parks offer shelter spaces in their recreation facilities, and many of the newer parks have large multi-use buildings which could possibly be used for this purpose. However, these facilities may not be structurally adequate in a storm event due to the amount of window area.

Shelters in the inland region are limited due to the above mentioned reasons. However, storm category (wind intensity) and rainfall amounts during a storm would have a great bearing on which shelters were utilized.

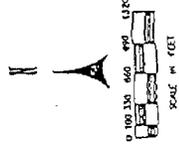
LEGEND

Complete list of shelters located
in Appendix F

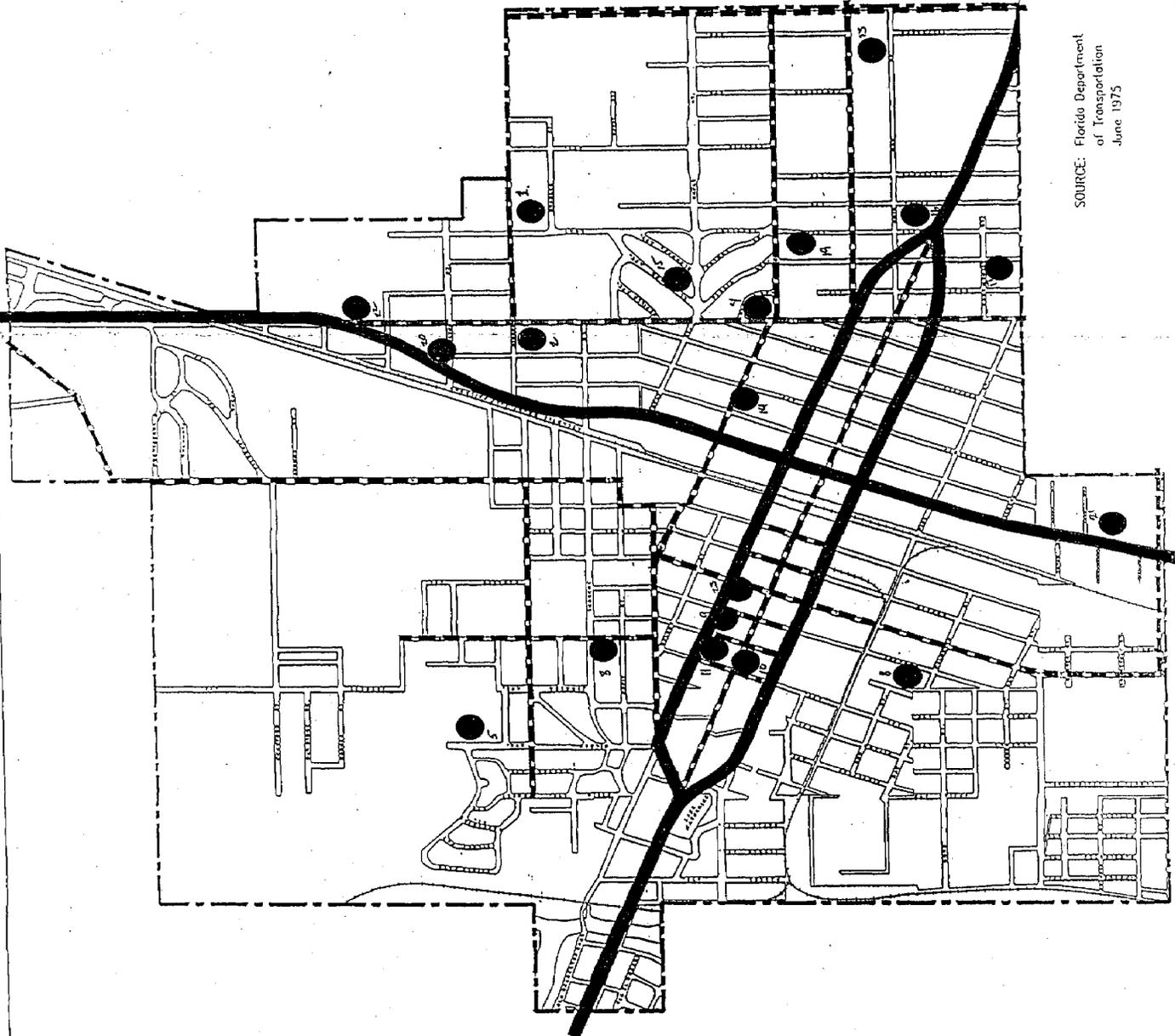
MAP 11

PUBLIC SHELTERS

CITY OF ARCADIA
DESOTO COUNTY - FLORIDA



Prepared by the
DESOTO COUNTY REGIONAL
PLANNING COUNCIL
APRIL, 1976
SCALE IN FEET



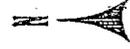
SOURCE: Florida Department
of Transportation
June 1975

MAP 12
SHELTER LOCATION MAP
CITY OF BARTOW
POLK COUNTY - FLORIDA

LEGEND

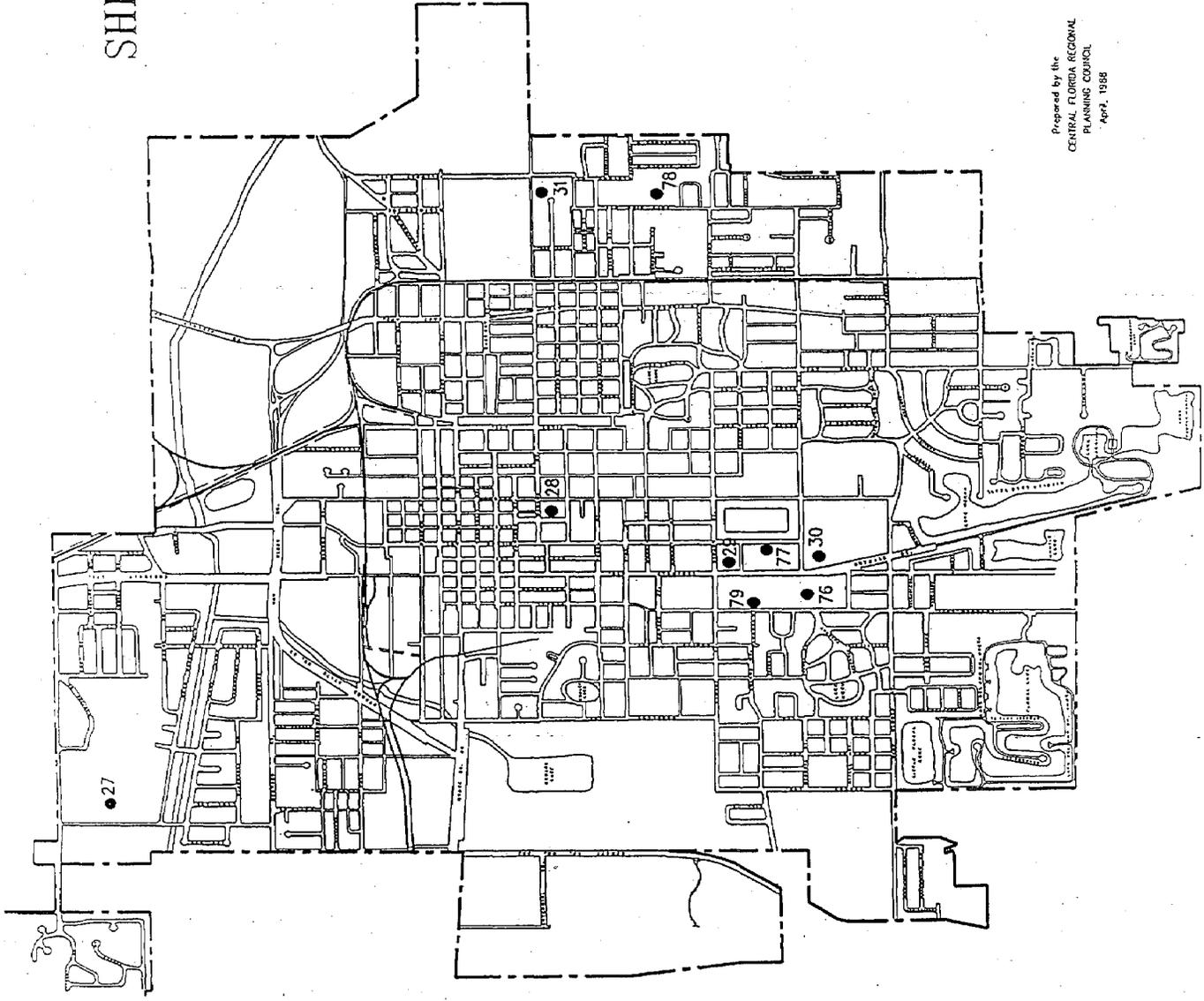
- 27 - STEPHENS ELEMENTARY
- 28 - BARTOW ELEMENTARY
- 29 - BARTOW SENIOR HIGH
- 30 - BARTOW JUNIOR HIGH
- 31 - UNION ACADEMY
- 76 - FLORAL AVENUE ELEMENTARY
- 77 - GUASE CAREER DEVELOPMENT CENTER
- 78 - SIBBONS STREET ELEMETARY
- 79 - POLK LIFE & LEARNING CENTER

SOURCE: Polk County Checker
 American Red Cross, 1988



0 750 500 1000 1500
 SCALE IN FEET

Prepared by the
 CENTRAL FLORIDA REGIONAL
 PLANNING COUNCIL
 April, 1988

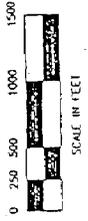


MAP 13

SHELTER LOCATION MAP
CITY OF FORT MEADE
POLK COUNTY - FLORIDA

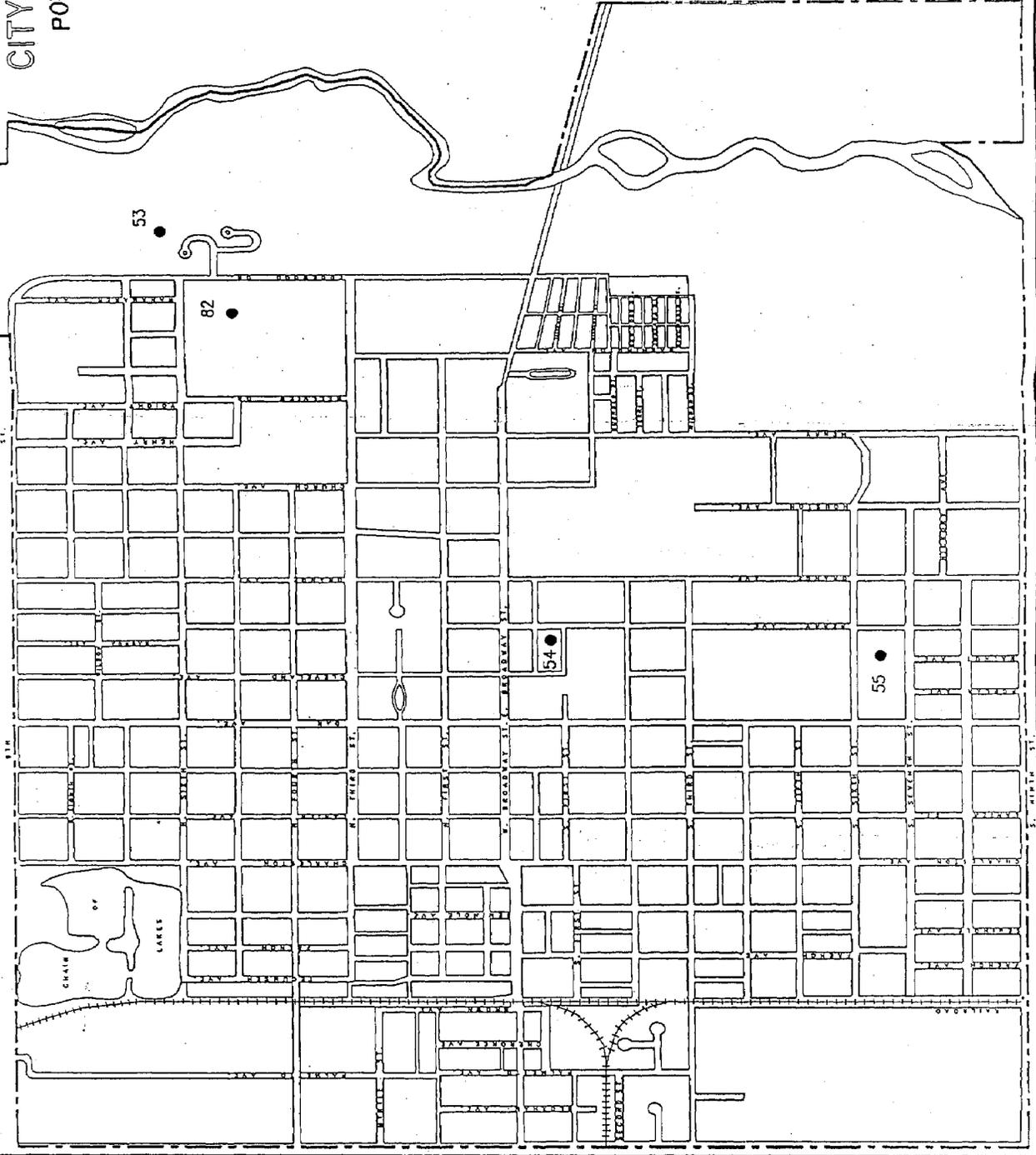
LEGEND

- 53 - FORT MEADE JUNIOR/SENIOR HIGH
- 54 - LEWIS ELEMENTARY
- 55 - FORT MEADE MIDDLE SCHOOL
- 82 - RIVERSIDE ELEMENTARY



SOURCE: Polk County Chapter
American Red Cross, 1989

Prepared by the
CENTRAL FLORIDA REGIONAL
PLANNING COUNCIL
April, 1988

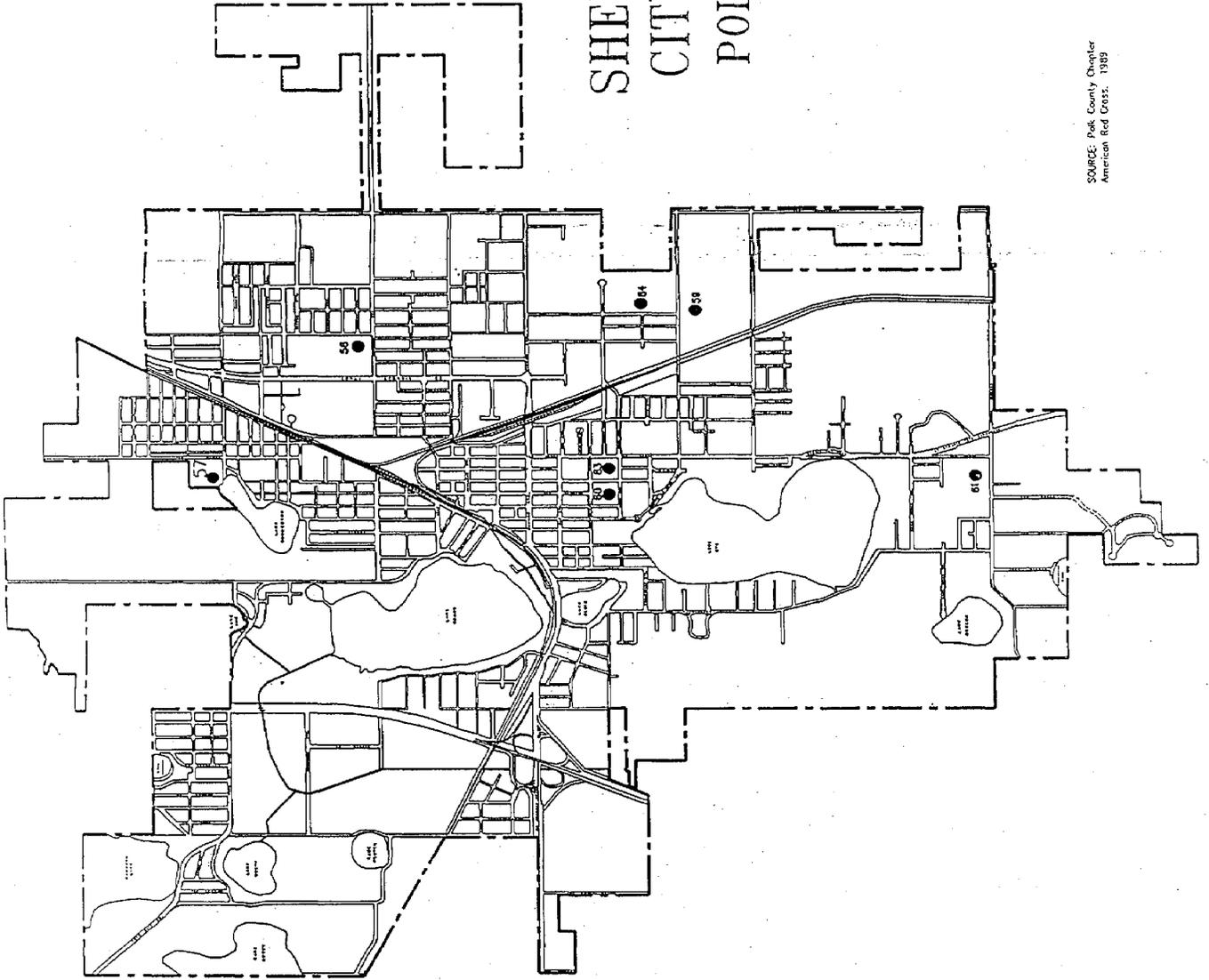


LEGEND

- 57 - BETHUNE ELEMENTARY
- 58 - EASTSIDE ELEMENTARY
- 59 - HAINES CITY HIGH
- 60 - HAINES CITY JUNIOR HIGH
- 61 - ALTA VISTA ELEMENTARY

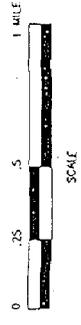
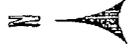
MAP 14

**SHELTER LOCATION MAP
CITY OF HAINES CITY
POLK COUNTY - FLORIDA**

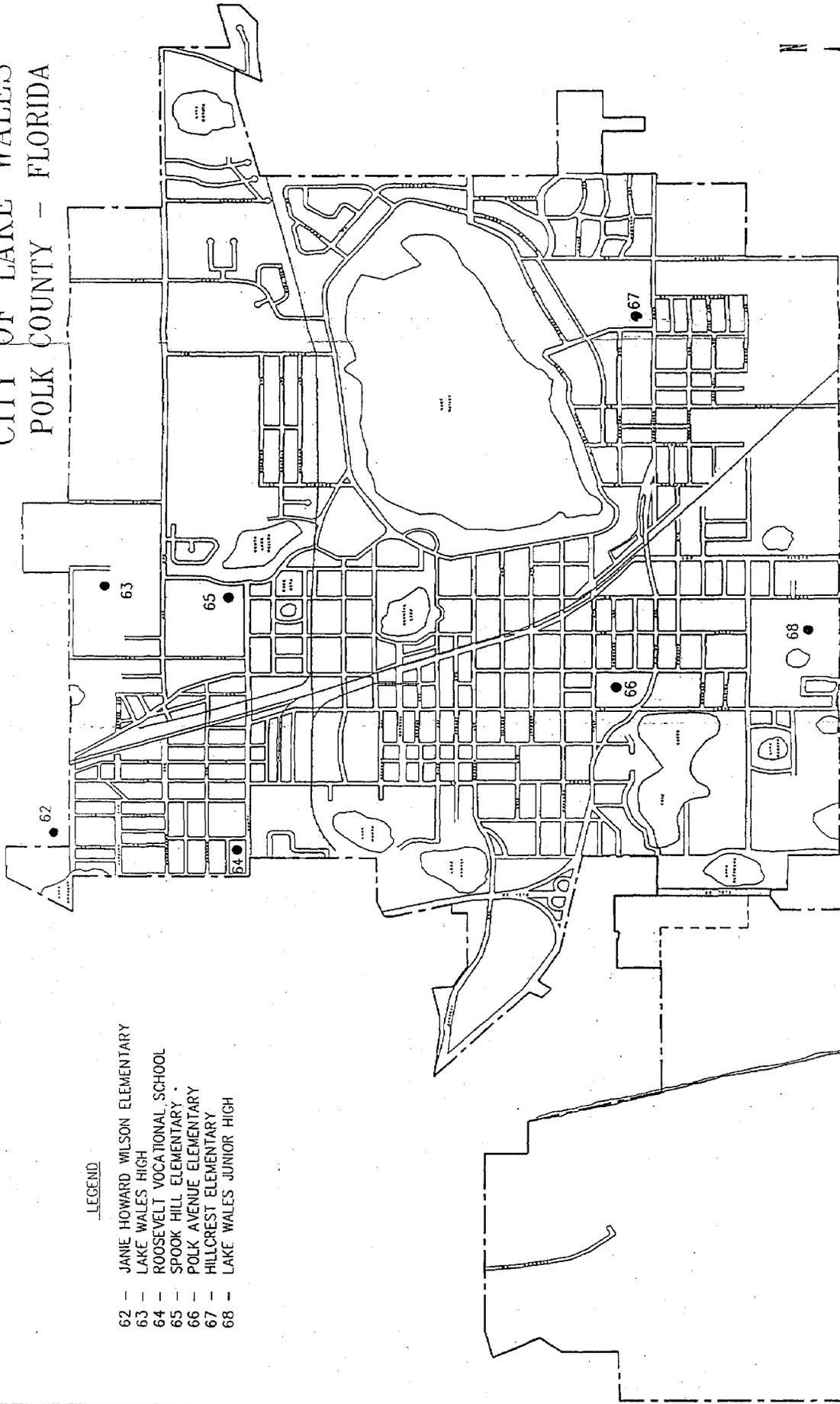


SOURCE: Polk County Charter
American Red Cross, 1988

Prepared by the
CENTRAL FLORIDA REGIONAL
PLANNING COUNCIL
April, 1988



MAP 15 SHELTER LOCATION MAP CITY OF LAKE WALES POLK COUNTY - FLORIDA



LEGEND

- 62 - JANIE HOWARD WILSON ELEMENTARY
- 63 - LAKE WALES HIGH
- 64 - ROOSEVELT VOCATIONAL SCHOOL
- 65 - SPOOK HILL ELEMENTARY
- 66 - POLK AVENUE ELEMENTARY
- 67 - HILLCREST ELEMENTARY
- 68 - LAKE WALES JUNIOR HIGH

0 300 600 1200
SCALE IN FEET

Prepared by the
CENTRAL FLORIDA REGIONAL
PLANNING COUNCIL
April, 1988

SOURCE: Polk County Chapter
American Red Cross, 1983

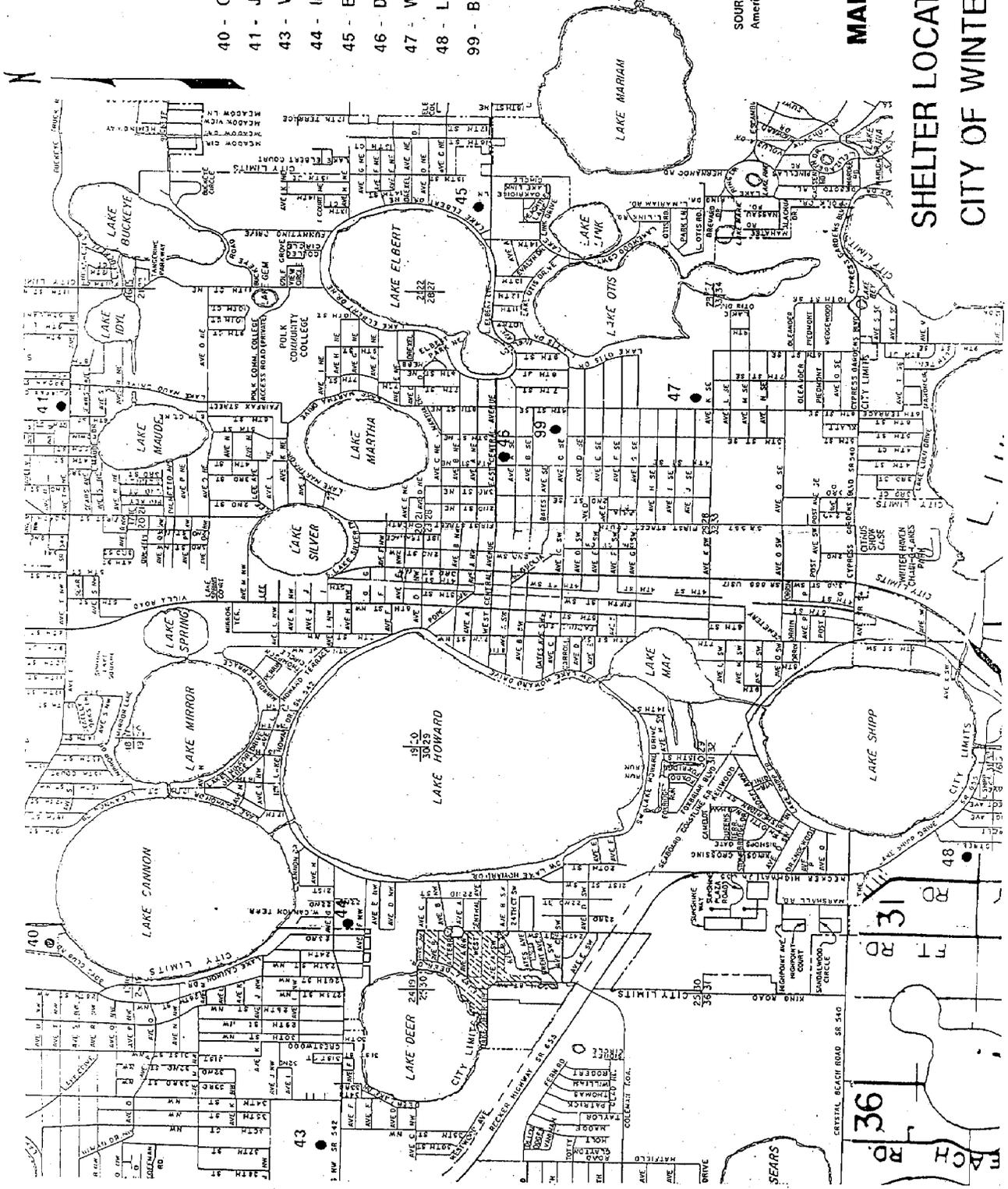
LEGEND

- 40 - GARNER ELEMENTARY
- 41 - JEWETT ELEMENTARY
- 43 - WESTWOOD JUNIOR HIGH
- 44 - INWOOD ELEMENTARY
- 45 - ELBERT ELEMENTARY
- 46 - DENISON JUNIOR HIGH
- 47 - WINTER HAVEN HIGH
- 48 - LAKE SHIPP ELEMENTARY
- 99 - BRIGHAM ELEMENTARY

SOURCE: Polk County Chapter
American Red Cross, 1989

MAP 17

**SHELTER LOCATION MAP
CITY OF WINTER HAVEN**



EVACUEES SEEKING SHELTER BY STORM CATEGORY (WORST CASE SCENARIOS) *

| Category | Region | County | Coastal Evacuees Leaving County | Unable to Shelter | Do Not Know | Central FLCo Vulnerable Population | Expected to Shelter [43%] | Total Evac. Seeking Shelter | Public Shelter Space | Availability/ (Deficit) of Shelter Space | |
|-------------------|--------------|---|---------------------------------|-------------------|-------------|------------------------------------|---------------------------|-----------------------------|----------------------|--|--|
| CATEGORY 1 | | | | | | | | | | | |
| TAMPA BAY REGION: | | | | | | | | | | | |
| | Pinellas | 25,749 [not provided] | | | | | | | | | |
| | Hillsborough | 14,193 [not provided for Tampa Bay region] | | | | | | | | | |
| | Manatee | 9,108 | | | | | | | | | |
| | TOTAL | 49,050 | | | | | NA | 49,050 | 64,698 | 15,648 | |
| SOUTHWEST REGION: | | | | | | | | | | | |
| | Charlotte | 20,942 | 2,429 | 12,935 | | | | | | | |
| | Sarasota | 30,124 | 1,169 | 18,606 | | | | | | | |
| | Lee | 76,592 | 0 | 44,507 | | | | | | | |
| | Collier | 31,972 | 10,368 | 19,747 | | | | | | | |
| | TOTAL | 159,630 | | | | | NA | 159,630 | 64,698 | (94,932) | |
| TREASURE COAST: | | | | | | | | | | | |
| | Martin | 17,377 [not provided] | | | | | | | | | |
| | St.Lucie | 18,400 [not provided for Treasure Coast region] | | | | | | | | | |
| | Indian River | 10,148 | | | | | | | | | |
| | TOTAL | 45,925 | | | | | NA | 45,925 | 64,698 | 18,773 | |
| CATEGORY 2 | | | | | | | | | | | |
| TAMPA BAY REGION: | | | | | | | | | | | |
| | Pinellas | 36,018 [not provided] | | | | | | | | | |
| | Hillsborough | 20,637 [not provided for Tampa Bay region] | | | | | | | | | |
| | Manatee | 9,911 | | | | | | | | | |
| | TOTAL | 66,556 | | | | | | 114,624 | 64,698 | (49,926) | |
| SOUTHWEST REGION: | | | | | | | | | | | |
| | Charlotte | 25,366 | 10,248 | 15,677 | | | | | | | |
| | Sarasota | 34,744 | 4,430 | 21,460 | | | | | | | |
| | Lee | 99,948 | 24,546 | 61,177 | | | | | | | |
| | Collier | 37,668 | 16,959 | 23,527 | | | | | | | |
| | TOTAL | 196,926 | | | | | | 250,008 | 64,698 | (185,310) | |
| TREASURE COAST: | | | | | | | | | | | |
| | Martin | 17,377 [not provided] | | | | | | | | | |
| | St.Lucie | 18,400 [not provided for Treasure Coast region] | | | | | | | | | |
| | Indian River | 10,148 | | | | | | | | | |
| | TOTAL | 45,925 | | | | | | 74,243 | 64,698 | (9,545) | |
| CATEGORY 3 | | | | | | | | | | | |
| TAMPA BAY REGION: | | | | | | | | | | | |
| | Pinellas | 43,812 [not provided] | | | | | | | | | |
| | Hillsborough | 26,559 [not provided for Tampa Bay region] | | | | | | | | | |
| | Manatee | 11,726 | | | | | | | | | |
| | TOTAL | 82,097 | | | | | | 130,155 | 64,698 | (65,457) | |
| SOUTHWEST REGION: | | | | | | | | | | | |
| | Charlotte | 31,039 | 18,638 | 19,171 | | | | | | | |
| | Sarasota | 43,828 | 10,842 | 27,070 | | | | | | | |
| | Lee | 103,549 | 49,515 | 63,957 | | | | | | | |
| | Collier | 49,723 | 33,298 | 30,711 | | | | | | | |
| | TOTAL | 228,139 | | | | | | 281,221 | 64,698 | (216,523) | |
| TREASURE COAST: | | | | | | | | | | | |
| | Martin | 20,685 [not provided] | | | | | | | | | |
| | St.Lucie | 31,860 [not provided for Treasure Coast region] | | | | | | | | | |
| | Indian River | 12,242 | | | | | | | | | |
| | TOTAL | 64,787 | | | | | | 95,199 | 64,698 | (30,501) | |
| CATEGORY 4 | | | | | | | | | | | |
| TAMPA BAY REGION: | | | | | | | | | | | |
| | Pinellas | 49,122 [not provided] | | | | | | | | | |
| | Hillsborough | 29,691 [not provided for Tampa Bay region] | | | | | | | | | |
| | Manatee | 13,783 | | | | | | | | | |
| | TOTAL | 92,596 | | | | | | | | | |
| SOUTHWEST REGION: | | | | | | | | | | | |
| | Charlotte | 32,002 | 19,337 | 19,766 | | | | | | | |
| | Sarasota | 51,098 | 15,974 | 31,560 | | | | | | | |
| | Lee | 104,030 | 64,701 | 64,254 | | | | | | | |
| | Collier | 51,967 | 34,882 | 32,097 | | | | | | | |
| | TOTAL | 239,097 | | | | | | | | | |
| TREASURE COAST: | | | | | | | | | | | |
| | Martin | 20,685 [not provided] | | | | | | | | | |
| | St.Lucie | 31,860 [not provided for Treasure Coast region] | | | | | | | | | |
| | Indian River | 12,242 | | | | | | | | | |
| | TOTAL | 64,787 | | | | | | | | | |
| CATEGORY 5 | | | | | | | | | | | |
| TAMPA BAY REGION: | | | | | | | | | | | |
| | Pinellas | 51,993 [not provided] | | | | | | | | | |
| | Hillsborough | 30,915 [not provided for Tampa Bay region] | | | | | | | | | |
| | Manatee | 13,004 | | | | | | | | | |
| | TOTAL | 97,912 | | | | | | | | | |
| SOUTHWEST REGION: | | | | | | | | | | | |
| | Charlotte | 32,012 | 19,345 | 19,772 | | | | | | | |
| | Sarasota | 78,232 | 35,177 | 48,320 | | | | | | | |
| | Lee | 108,730 | 76,750 | 67,157 | | | | | | | |
| | Collier | 52,722 | 35,416 | 32,544 | | | | | | | |
| | TOTAL | 271,696 | | | | | | | | | |
| TREASURE COAST: | | | | | | | | | | | |
| | Martin | 20,685 [not provided] | | | | | | | | | |
| | St.Lucie | 31,860 [not provided for Treasure Coast region] | | | | | | | | | |
| | Indian River | 12,242 | | | | | | | | | |
| | TOTAL | 64,787 | | | | | | | | | |

Table 5 cont.

* Footnotes

REGION - Combination of coastal counties that would probably be affected if a hurricane made landfall in that area.

Coastal Evacuees Leaving County - These figures were provided by the respective Regional Planning Councils and Florida Department of Community Affairs.

Unable to Shelter - These numbers are provided for the Southwest Florida evacuees only, and are not incorporated into evacuee totals.

Do Not Know - These numbers are provided for the Southwest Florida evacuees only, and are not incorporated into evacuee totals.

Central FL Counties Vulnerable Population - Includes inland counties most likely to be involved. Total includes each county's "at-risk" population minus seasonal vacancy rates for mobile homes. Seasonal occupancy for each county is assumed to be:

| | |
|------------|------|
| DeSoto | 100% |
| Hardee | 100% |
| Highlands | 50% |
| Okeechobee | 100% |
| Polk | 75% |

Expected to Shelter - [43%] - This figure was based on the results of the Behavioral Survey from the Central Florida Regional Hurricane Shelter Plan, 1983. An average was derived from data in Table 28 of that study (see Appendix B, p. B-47).

Tot.Evac.Seeking Shelter - This the total of coastal and inland evacuees that would potentially be seeking shelter in public shelters.

Public Shelter Space - This figure is the total inland public shelter space available. It includes primary and secondary shelters used by the American Red Cross and Civil Defense. Motel/Hotel space is not included in this number. The available space of hotels and/or motels for this region is 2286 (at 50% vacancy rate for the season).

Availability/Deficit of Shelter Space - The results of subtracting available spaces from potential evacuee numbers.

DETERMINATION OF ADDITIONAL SHELTER SPACE

Inland demand in worst case scenarios would tax available shelter space. The predicted influx of coastal evacuees would put the counties in a large deficit for the majority of hurricane scenarios.

The American Red Cross generally utilizes public schools as primary shelters. Alternate shelters include churches and in some instances, other public buildings such as civic centers. A great portion of these buildings may be structurally unsound for use as public shelters in a hurricane situation due to type of roof construction or the amount of glass windows. However, there are a limited number of facilities available for use as shelters, especially in the more rural counties, and evacuees must be housed in whatever shelter is available.

Hotels and motels may be utilized as shelters and would most likely be the first choice of those evacuees traveling through the counties from outside the region. There are approximately 72 hotels/motels along the evacuation routes in the five county region (Appendix G), having a total of 4,469 rooms. The occupancy rate* for hotels/motels during the hurricane months of June through November is an average of 50% for the region. Thus approximately 2,600 units will be available to evacuees. However, if the threat of a hurricane was present, there is the chance that occupants would leave the area prior to evacuation of the coastal and inland counties. Behavioral data show that an average of 8% of the evacuees would seek shelter in hotels/motels.

Use of shopping malls as shelters for this region would not be feasible during the storm event. There are only three enclosed shopping malls in the five county region: the Lakeland Square Mall, the Lakeland Mall, and the Winter Haven Mall. While these facilities are large enough to house many occupants, the following reasons would limit their use as shelters:

1. Lack of rest rooms in close proximity to designated shelter areas. Most rest rooms are located in the stores themselves, and not accessible if the stores were locked. Also, there are no shower facilities.
2. Structural soundness would be questionable, as roofs may contain skylights and/or would not be able to withstand gale force winds.

* Occupancy information was determined by telephone and written correspondence with the hotels/motels.

3. Security could prove to be a major problem for the stores located in the mall. The store locations are often in a "spread-out" arrangement and would make observation by security personnel difficult. There may be shopping areas located in the mall thoroughfares that are not enclosed and would make securing them impossible.

The State Division of Emergency Management and county agencies will be conducting in-depth engineering surveys during the next few years that will evaluate all buildings with regard to their use as public shelters. Current information for this region may be re-evaluated when this survey is completed. After the survey results are examined by the office of Civil Defense and the American Red Cross Chapters, the current shelters will be re-evaluated as to their potential use.

There is a potential for any building to be used as a public shelter when the need is clearly present. Actual use of a facility depends on its location, physical characteristics, and the location and capacity of safe areas within the facility. It is the task of government and the American Red Cross to locate, inventory and evaluate potential alternate public shelters.

APPENDIX A

APPENDIX A

ESTIMATED TRAVEL CONDITIONS ON STATE HIGHWAYS IN DISTRICT 1

| COUNTY | HIGHWAY | FROM | TO | THROUGH LANES | TRAFFIC VOLUME | LEVEL OF VIOLATE SERVICE DOT STD | |
|-----------|----------|-------------------|----------------------|---------------|----------------|----------------------------------|-----|
| DESOTO | US 17 | CHARLOTTE COUNTY | CR 760A | 2 | 7,300 | C | NO |
| | US 17 | CR 760A | ARCADIA | 2 | 7,300 | C | NO |
| | US 17 | ARCADIA | SR 70 | 2 | 12,300 | C | NO |
| | US 17 | SR 70 | ARCADIA AVE. | 2 | 11,900 | C | NO |
| | US 17 | ARCADIA AVE. | HARDEE COUNTY | 2 | 7,500 | C | NO |
| DESOTO | SR 31 | CHARLOTTE COUNTY | CR 763 | 2 | 2,900 | C | NO |
| | SR 31 | CR 763 | SR 70 | 2 | 5,600 | C | NO |
| DESOTO | SR 70 | MANATEE COUNTY | LILY GRADE RD. | 2 | 2,600 | C | NO |
| | SR 70 | LILY GRADE RD. | SR 72 | 2 | 4,900 | C | NO |
| | SR 70 | SR 72 | BEGINNING 4-LANES | 2 | 11,900 | D | YES |
| | SR 70 | BEGINNING 4-LANES | BEGINNING ONE-WAY | 4 | 11,900 | C | NO |
| | SR 70 | BEGINNING ONE-WAY | US 17 | 2 | 8,200 | C | NO |
| | SR 70 | US 17 | END ONE-WAY | 2 | 9,400 | C | NO |
| | SR 70 | US 17 | END ONE-WAY | 2 | 8,400 | C | NO |
| | SR 70 | BEGINNING ONE-WAY | US 17 | 2 | 7,500 | C | NO |
| | SR 70 | END ONE-WAY | AVE. 18th | 4 | 1,500 | C | NO |
| | SR 70 | AVE. 18th | SR 31 | 2 | 1,500 | C | NO |
| | SR 70 | SR 31 | HIGHLANDS COUNTY | 2 | 7,500 | C | NO |
| DESOTO | SR 72 | SARASOTA COUNTY | SR 70, ARCADIA | 2 | 4,100 | C | NO |
| HARDEE | US 17 | DESOTO COUNTY | SR 66 | 2 | 6,400 | C | NO |
| | US 17 | SR 66 | SR 64 | 2 | 10,800 | C | NO |
| | US 17 | SR 64 | WIL. DUKE (WAUCHULA) | 2 | 9,600 | C | NO |
| | US 17 | WILL DUKE | SR 636 | 4 | 16,500 | C | NO |
| | US 17 | SR 636 | TROPICANA RD. | 2 | 14,600 | C | NO |
| | US 17 | TROPICANA RD. | SR 62 | 2 | 14,600 | C | NO |
| | US 17 | SR 62 | HARDEE ST. | 2 | 9,200 | C | NO |
| | US 17 | HARDEE ST. | POLK COUNTY | 4 | 9,200 | C | NO |
| HARDEE | SR 62 | MANATEE COUNTY | US 17 | 2 | 2,600 | C | NO |
| HARDEE | SR 64 | MANATEE COUNTY | PEACE RIVER | 2 | 2,600 | C | NO |
| | SR 64 | PEACE RIVER | US 17 | 2 | 4,000 | C | NO |
| | SR 64 | US 17 | SR 636 | 2 | 3,400 | C | NO |
| | SR 64 | SR 636 | HIGHLANDS COUNTY | 2 | 5,500 | C | NO |
| HARDEE | SR 66 | US 17 | HIGHLANDS COUNTY | 2 | 3,500 | C | NO |
| HARDEE | SR 636 | US 17 (WAUCHULA) | AIRPORT ROAD | 2 | 7,200 | C | NO |
| | SR 636 | AIRPORT ROAD | SR 64 | 2 | 3,100 | C | NO |
| HIGHLANDS | US 27 | GLADES COUNTY | SR 70 | 4 | 9,500 | C | NO |
| | US 27 | SR 70 | CR 29 | 4 | 11,600 | C | NO |
| | US 27 | CR 29 | SR 66/US 98 | 4 | 18,300 | C | NO |
| | US 27/98 | SR 66/US 98 | SR 17 (SEBRING) | 4 | 22,600 | C | NO |
| | US 27/98 | SR 17 (SEBRING) | HAMMOCK ROAD | 4 | 38,500 | C | NO |

APPENDIX A
cont.

| | | | | | | | |
|------------|-------------|---------------------|----------------------|---|--------|---|-----|
| | US 27/98 | HAMMOCK ROAD | CR 634A | 4 | 30,500 | C | NO |
| | US 27/98 | CR 634A | SR 64(AVON PARK) | 4 | 30,500 | C | NO |
| | US 27/98 | SR 64(AVON PARK) | CR 17A | 4 | 29,700 | C | NO |
| | US 27/98 | CR 17A | POLK COUNTY | 4 | 25,600 | C | NO |
| HIGHLANDS | US 98 | OKEECHOBEE COUNTY | AIRPORT ROAD | 2 | 3,500 | C | NO |
| | US 98 | AIRPORT ROAD | US 27 | 2 | 5,700 | C | NO |
| HIGHLANDS | SR 17 | US 27 | KENIWORTH (SEBRING) | 2 | 13,900 | D | NO |
| | SR 17 | KENIWORTH (SEBRING) | PINE ROAD | 4 | 13,900 | D | NO |
| | SR 17 | PINE ROAD | EUCALPTUS | 2 | 13,900 | C | NO |
| | SR 17 | EUCALPTUS | MAIN ST. (AVON PARK) | 2 | 5,600 | C | NO |
| | SR 17 | HIGHLANDS | US 27 | 4 | 13,100 | C | NO |
| HIGHLANDS | SR 64 | HARDEE COUNTY | US 27 | 2 | 9,100 | C | NO |
| HIGHLANDS | SR 66 | HARDEE COUNTY | US 27 | 2 | 2,600 | C | NO |
| HIGHLANDS | SR 70 | DESOTO COUNTY | US 27 | 2 | 3,500 | C | NO |
| | SR 70 | US 27 | CR 29 | 2 | 4,400 | C | NO |
| | SR 70 | CR 29 | OKEECHOBEE COUNTY | 2 | 3,200 | C | NO |
| OKEECHOBEE | US 98/441 | MARTIN COUNTY | HODGES ROAD | 2 | 2,300 | C | NO |
| | US 98/441 | HODGES ROAD | SR 78 | 2 | 9,700 | C | NO |
| | US 98/441 | SR 78 | SR 70 | 4 | 22,900 | C | NO |
| | US 98/55R70 | US 441 | END OF 4 LANES | 4 | 17,200 | C | NO |
| | US 98/55R70 | END OF 4 LANES | SR 70 | 2 | 17,200 | C | NO |
| OKEECHOBEE | US 98 | SR 70 | CR 71B | 2 | 7,600 | C | NO |
| | US 98 | CR 71B | CR 700A | 2 | 2,300 | C | NO |
| | US 98 | CR 700A | HIGHLANDS COUNTY | 2 | 2,100 | C | NO |
| OKEECHOBEE | US 441 | SR 70 | CSX RAILROAD | 6 | 17,800 | C | NO |
| | US 441 | CSX RAILROAD | CEMETARY ROAD | 2 | 17,800 | C | NO |
| | US 441 | CEMETARY ROAD | CR 68 5 | 2 | 4,400 | C | NO |
| | US 441 | CR 68 5 | OSCEOLA COUNTY | 2 | 3,200 | C | NO |
| OKEECHOBEE | SR 70 | HIGHLANDS COUNTY | CR 70A | 2 | 4,600 | C | NO |
| | SR 70 | CR 70A | US 98 | 2 | 9,400 | C | NO |
| | SR 70 | US 98 (OKEE.) | END OF 4 LANES | 4 | 20,200 | C | NO |
| | SR 70 | END OF 4 LANES | SR 710 | 2 | 20,200 | F | YES |
| | SR 70 | SR 710 | ST. LUCIE COUNTY | 2 | 7,100 | C | NO |
| OKEECHOBEE | SR 78 | GLADES COUNTY | US 98/441 | 2 | 4,700 | C | NO |
| OKEECHOBEE | SR 710 | SR 70 | MARTIN COUNTY | 2 | 6,400 | C | NO |
| POLK | US 17 | HARDEE COUNTY | NORTH OF RAILROAD | 2 | 6,400 | C | NO |
| | US 17 | NORTH OF RAILROAD | SAND MOUNTAIN RD. | 2 | 6,400 | C | NO |
| | US 17 | SAND MOUNTIAN RD. | US 98 | 4 | 11,400 | C | NO |
| | US 17/98 | US 98 | STUART RD. (BARTOW) | 4 | 13,100 | C | NO |
| | US 17/98 | STUART RD. (BARTOW) | BUS. 60 | 4 | 20,200 | C | NO |
| | US 17/98 | BUS. 60 | SR 60 | 2 | 17,300 | C | NO |
| | US 17 | SR 60 | CRYSTAL BEACH RD. | 4 | 14,800 | C | NO |

APPENDIX A
cont.

| | | | | | | |
|----------|---------------------|-----------------|---|--------|---|-----|
| US 17 | CRSYTAL BEACH RD. | LAKE SHIPP DR. | 2 | 15,200 | C | NO |
| US 17 | LAKE SHIPP DR. | SR 540 | 2 | 29,800 | F | YES |
| US 17 | SR 540 | SR 542 | 4 | 18,400 | C | NO |
| US 17 | SR 542 | SR 544 | 4 | 22,500 | D | NO |
| US 17 | SR 544 | US 92 | 4 | 18,400 | C | NO |
| US 17/92 | US 92 | COLUMBIA STREET | 4 | 18,400 | C | NO |
| US 17/92 | COLUMBIA STREET | SR 557 | 2 | 15,700 | C | NO |
| US 17/92 | SR 557 | END OF 2 LANE | 2 | 15,700 | C | NO |
| US 17/92 | BEGINNING OF 4 LANE | US 27 | 4 | 15,700 | C | NO |
| US 17/92 | US 27 | SR 17 | 4 | 17,900 | C | NO |
| US 17/92 | SR 17 | ST. 17th | 2 | 16,600 | D | NO |
| US 17/92 | HINSON AVENUE | JOHNSON AVENUE | 2 | 11,700 | C | NO |
| US 17/92 | JOHNSON AVE. | WIGGER ROAD | 2 | 8,700 | C | NO |
| US 17/92 | WIGGER ROAD | OSCEOLA COUNTY | 2 | 5,100 | C | NO |

| | | | | | | | |
|------|----------|---------------------|--------------------|---|--------|---|----|
| POLK | US 27/98 | HIGHLANDS COUNTY | ALT. US 27 | 4 | 20,100 | C | NO |
| | US 27/98 | ALT. US 27 | US 98 | 4 | 19,100 | C | NO |
| | US 27 | US 98 | RAY MARTIN ROAD | 4 | 21,100 | C | NO |
| | US 27 | RAY MARTIN ROAD | SR 60 | 4 | 29,300 | C | NO |
| | US 27 | SR 60 | CYPRESS GARDENS RD | 4 | 22,100 | C | NO |
| | US 27 | CYPRESS GARDENS RD. | SR 542 (DUNDEE RD) | 4 | 21,100 | C | NO |
| | US 27 | DUNDEE ROAD | SR 544 (LUCERNE PK | 4 | 22,200 | C | NO |
| | US 27 | LUCERNE PARK | US 17/US 92 | 4 | 27,000 | C | NO |
| | US 27 | US 17/ US 92 | OLD POLK CITY RD. | 4 | 32,000 | C | NO |
| | US 27 | OLD POLK CITY RD. | I-4 | 4 | 26,400 | C | NO |
| | US 27 | I-4 | US 192 (LAKE CO.) | 4 | 14,000 | C | NO |

| | | | | | | | |
|------|------------|------------------|------------------|---|-------|---|----|
| POLK | ALT. US 27 | US 27 | CR 630 | 2 | 1,800 | C | NO |
| | ALT. US 27 | CR 630 | N. FROSTPROOF | 2 | 6,300 | C | NO |
| | ALT. US 27 | NO. FROSTPROOF | ROSS AVENUE | 2 | 2,300 | C | NO |
| | ALT. US 27 | ROSS AVENUE | SR 60 | 2 | 4,700 | C | NO |
| | ALT. US 27 | SR 60 | NO. RIDGE AVENUE | 2 | 8,600 | C | NO |
| | ALT. US 27 | NORTH RIDGE AVE. | SR 540 | 2 | 5,700 | C | NO |
| | ALT. US 27 | SR 540 | SR 542 | 2 | 4,000 | C | NO |
| | ALT. US 27 | SR 542 | SR 544 | 2 | 5,200 | C | NO |
| | ALT. US 27 | SR 544 | US 17/ US 92 | 2 | 9,700 | C | NO |

| | | | | | | | |
|------|-------|----------------------|--------------------|---|--------|---|-----|
| POLK | US 92 | HILLSBOROUGH CO. | SR 572 (AIRPORT RD | 2 | 9,800 | C | NO |
| | US 92 | AIRPORT ROAD | WABASH AVENUE | 2 | 19,600 | D | NO |
| | US 92 | NEW TAMPA HWY | MEMORIAL BLVD. | 4 | 23,200 | C | NO |
| | US 92 | WABASH AVE. | KATHLEEN ROAD | 4 | 33,500 | C | NO |
| | US 92 | KATHLEEN ROAD | LINCOLN AVENUE | 4 | 34,500 | D | NO |
| | US 92 | LINCOLN AVENUE | SR 563 | 6 | 34,500 | C | NO |
| | US 92 | SR 563 | US 98 (FL. AVE.) | 6 | 36,800 | C | NO |
| | US 92 | FLORIDA AVENUE | LAKELAND HILLS | 6 | 43,800 | D | NO |
| | US 92 | LAKELAND H. (SR 33) | US 98 (PARKER) | 4 | 42,600 | F | YES |
| | US 92 | PARKER | GARY (BUS. 92) | 4 | 32,100 | C | NO |
| | US 92 | GARY (BUS. 92) | RECKER HWY | 4 | 32,000 | C | NO |
| | US 92 | RECKER HWY | BARTOW AVENUE | 6 | 29,100 | C | NO |
| | US 92 | BARTOW AVE. (SR 559) | HAVENDALE BLVD | 6 | 31,600 | C | NO |
| | US 92 | HAVENDALE BLVD | US 17 | 4 | 17,700 | C | NO |

| | | | | | | | |
|------|------------|-------------------|-------------------|---|--------|---|----|
| POLK | BUS. US 92 | WABASH AVENUE | BEGINNING ONE-WAY | 4 | 17,300 | C | NO |
| | BUS. US 92 | BEGINNING ONE-WAY | SR 563 | 2 | 7,700 | C | NO |

APPENDIX A
cont.

| | | | | | | |
|-----------|--------------------|-----------------|---|--------|---|----|
| BUS.US 92 | SR 563 | SR 37 (FL.AVE.) | 2 | 9,600 | C | NO |
| BUS.US 92 | FLORIDA AVE. | MASS.AVENUE | 2 | 10,000 | C | NO |
| BUS.US 92 | MASSACHUSETTS AVE. | MAIN STREET | 2 | 10,400 | C | NO |
| BUS.US 92 | BEGINNIGN ONE-WAY | SR 37 | 2 | 11,800 | C | NO |
| BUS.US 92 | SR 37 | SR 563 | 2 | 9,600 | C | NO |
| BUS.US 92 | SR 563 | END OF ONE-WAY | 2 | 8,500 | C | NO |
| BUS.US 92 | END OF ONE-WAY | BARTOW ROAD | 4 | 21,200 | C | NO |
| BUS.US 92 | BARTOW ROAD | US 98 | 4 | 12,900 | C | NO |
| BUS.US 92 | US 98 | GARY ROAD | 4 | 15,500 | C | NO |
| BUS.US 92 | MAIN STREET | MEMORIAL | 4 | 11,400 | C | NO |

| | | | | | | | |
|------|-------|----------------|---------------------|---|--------|---|-----|
| POLK | US 98 | US 27 | EDGEWOOD (FT.MEADE) | 2 | 3,700 | C | NO |
| | US 98 | EDGEWOOD | US 17 | 2 | 7,400 | C | NO |
| | US 98 | SR 60A(BARTOW) | MCKINNEY ST. | 6 | 39,200 | C | NO |
| | US 98 | MCKINNEY ST. | PARKER AVE. | 4 | 32,700 | C | NO |
| | US 98 | BARTOW ROAD | BUS.92 (MAIN) | 4 | 26,900 | C | NO |
| | US 98 | MAIN STREET | US 92 (MEMORIAL) | 4 | 15,700 | C | NO |
| | US 98 | MEMORIAL | SR 563 | 2 | 21,500 | C | NO |
| | US 98 | SR 563 | I-4 | 2 | 25,600 | F | YES |
| | US 98 | I-4 | SHARON DRIVE | 4 | 35,900 | C | NO |
| | US 98 | SHARON DRIVE | END OF 4 LANE | 4 | 24,200 | C | NO |
| | US 98 | END OF 4 LANE | SR 471 | 2 | 12,600 | D | NO |
| | US 98 | SR 471 | PASCO COUNTY | 2 | 4,600 | C | NO |

| | | | | | | | |
|------|-----|------------------|------------------|---|--------|---|----|
| POLK | I-4 | HILLSBOROUGH CO. | IMPERIAL PARKWAY | 4 | 59,600 | D | NO |
| | I-4 | IMPERIAL PARKWAY | MEMORIAL | 4 | 59600 | D | NO |
| | I-4 | MEMORIAL | KATHLEEN RD. | 4 | 42200 | C | NO |
| | I-4 | KATHLEEN RD. | US 98 | 4 | 49300 | C | NO |
| | I-4 | US 98 | SOCRUM LOOP | 4 | 36700 | C | NO |
| | I-4 | SOCRUM LOOP | SR 33 | 4 | 40400 | C | NO |
| | I-4 | SR 33 | SR 559 | 4 | 44300 | C | NO |
| | I-4 | SR 559 | SR 557 | 4 | 44100 | C | NO |
| | I-4 | SR 557 | US 27 | 4 | 43000 | C | NO |
| | I-4 | US 27 | OSCEOLA COUNTY | 4 | 56600 | C | NO |

| | | | | | | | |
|------|-------|-------------------|--------------------|---|-------|---|-----|
| POLK | SR 33 | BUS.US 92 | MEMORIAL | 4 | 19700 | D | NO |
| | SR 33 | MEMORIAL | ROBSON STREET | 4 | 25000 | C | NO |
| | SR 33 | ROBSON STREET | I-4 & SOCRUM LOOP | 2 | 25000 | F | YES |
| | SR 33 | I-4 & SOCRUM LOOP | I-4 | 2 | 15000 | C | NO |
| | SR 33 | I-4 | SR 559 (POLK CITY) | 2 | 7100 | C | NO |
| | SR 33 | SR 559 | LAKE COUNTY | 2 | 4200 | C | NO |

| | | | | | | | |
|------|-------|-----------------|--------|---|-------|---|-----|
| POLK | SR 35 | BUS 60 (BARTOW) | SR 60A | 4 | 18800 | E | YES |
| | SR 35 | PARKER AVENUE | BUS.92 | 4 | 14900 | D | NO |
| | SR 35 | BUS.92 (MAIN) | US 98 | 4 | 17500 | D | NO |

| | | | | | | | |
|------|-------|----------------|-----------------|---|-------|---|-----|
| POLK | SR 37 | MANATEE COUNTY | WIMAUMA ROAD | 2 | 1400 | C | NO |
| | SR 37 | SR 674 | CR 640 | 2 | 4100 | C | NO |
| | SR 37 | CR 640 | DEAN (MULBERRY) | 2 | 7400 | C | NO |
| | SR 37 | DEAN | SR 60 | 4 | 13000 | C | NO |
| | SR 37 | SR 60 | SHEPARD ROAD | 4 | 16500 | C | NO |
| | SR 37 | SHEPARD ROAD | PIPKIN ROAD | 4 | 22800 | C | NO |
| | SR 37 | PIPKIN ROAD | DRANEFIELD | 6 | 41400 | C | NO |
| | SR 37 | DRANEFIELD | ARIANA STREET | 4 | 39300 | F | YES |

APPENDIX A
cont.

| | | | | | | | |
|------|--------|--------------------------|--------------------|---|-------|---|-----|
| | SR 37 | ARIANA STREET | BUS US 92 | 4 | 26200 | E | NO |
| POLK | SR 60 | HILLSBOROUGH CO. | SR 37 (MULBERRY) | 4 | 19900 | C | NO |
| | SR 60 | SR 37 | BUS.US 60 (BARTOW) | 4 | 22100 | C | NO |
| | SR 60 | BUS.US 60 (BARTOW) | US 98 | 2 | 18900 | D | NO |
| | SR 60 | US 98 | US 17 | 4 | 32800 | D | NO |
| | SR 60 | US 17 | BUS.US 60 | 2 | 17300 | C | NO |
| | SR 60 | BUS.US 60 | US 27 (LAKE WALES) | 4 | 21100 | C | NO |
| | SR 60 | US 27 | ALT 27 | 4 | 17300 | C | NO |
| | SR 60 | ALT 27 | ELEVENTH ST. | 4 | 22700 | C | NO |
| | SR 60 | ELEVENTH ST. | CAPPS ROAD | 2 | 8700 | C | NO |
| | SR 60 | CAPPS ROAD | LK.WALK-IN-WATER | 2 | 8700 | C | NO |
| | SR 60 | LK.WALK-IN-WATER | ST.ANNE SHRINE RD. | 2 | 7500 | C | NO |
| | SR 60 | ST.ANNE SHRINE RD. | FEDHAVEN | 2 | 5900 | C | NO |
| | SR 60 | FEDHAVEN | TIGER LAKE ROAD | 2 | 5900 | C | NO |
| | SR 60 | TIGER LAKE ROAD | CR 630 (INDIAN LK. | 2 | 6400 | C | NO |
| POLK | SR 471 | US 98 | SUMTER COUNTY | 2 | 3400 | C | NO |
| POLK | SR 539 | SR 563 | US 98 (MEMORIAL) | 4 | 13200 | C | NO |
| | SR 539 | MEMORIAL | I-4 | 4 | 15800 | C | NO |
| POLK | SR 540 | US 17 | NINTH STREET | 4 | 26400 | D | NO |
| | SR 540 | NINTH STREET | OVERLOOK DRIVE | 2 | 26400 | F | YES |
| | SR 540 | OVERLOOK DRIVE | US 27 | 4 | 9600 | C | NO |
| | SR 540 | US 27 | ALT 27 | 2 | 1900 | C | NO |
| POLK | SR 542 | US 17 | BUCKEYE LOOP ROAD | 2 | 29400 | C | NO |
| | SR 542 | BUCKEYE LOOP ROAD | US 27 | 2 | 12400 | C | NO |
| POLK | SR 544 | US 92 | US 17 | 6 | 29400 | C | NO |
| | SR 544 | US 17 | FIRST STREET | 2 | 22700 | F | YES |
| | SR 544 | FIRST STREET | US 27 | 2 | 9000 | C | NO |
| | SR 544 | US 27 | MYRTLE (HAINES CIT | 2 | 5700 | C | NO |
| | SR 544 | MYRTLE | ALT 27 | 4 | 5700 | C | NO |
| POLK | SR 550 | SR 540 | SR 542 | 2 | 5900 | C | NO |
| POLK | SR 557 | US 92/ US 17 | I-4 | 2 | 6000 | C | NO |
| POLK | SR 559 | US 92 (AUBURNDALE) | BOLENDER ROAD | 2 | 6100 | C | NO |
| | SR 559 | BOLENDER ROAD | I-4 | 2 | 3500 | C | NO |
| | SR 559 | I-4 | SR 33 (POLK CITY) | 2 | 2200 | C | NO |
| POLK | SR 563 | BUS.US 92 (MAIN) | KATHLEEN ROAD | 4 | 9800 | C | NO |
| | SR 563 | KATHLEEN ROAD | MEMORIAL | 4 | 9800 | C | NO |
| | SR 563 | MEMORIAL | US 98 (FLORIDA AVE | 4 | 9200 | C | NO |
| POLK | SR 572 | US 92 (NEW TAMPA HYDRANE | FIELD ROAD | 2 | 6600 | C | NO |
| | SR 572 | AIRPORT ROAD | SR 37 | 2 | 12500 | C | NO |
| POLK | SR 674 | HILLSBOROUGH CO. | SR 37 | 2 | 2200 | C | NO |

APPENDIX B

APPENDIX B

Development, Administration, and Analysis
of a Behavioral Survey for the
Central Florida Hurricane Shelter Plan

by
Carnot E. Nelson and Michael Kleiman
University of South Florida

Submitted to the Central Florida Regional Planning Council

June, 1982

INTRODUCTION

The purpose of this study was to provide the Central Florida Regional Planning Council with behavioral data concerning residents' evacuation plans in the event of a hurricane. Data from this study will be used by the Council in developing an evacuation plan for the five county region (Polk, Hardee, Okeechobee, Highlands, and De Soto counties). Although not a coastal region, hurricanes preparedness is necessary for the region because of: (1) the necessity to evacuate mobile home residents because of high winds and the possibility of tornadoes, (2) the need to evacuate residents from flood prone areas and (3) the large influx of coastal residents who would flee inland if a hurricane struck the coast.

METHODOLOGY

Questionnaire Design

The Request for Proposal specified nine questions that the study needed to answer. These questions were:

1. The tendency to evacuate immediately if officially ordered by authorities even if storm conditions do not appear threatening to the resident.
2. When residents would tend to evacuate.
3. From what sources would the resident seek advice on whether and when to evacuate?
4. The desired destination of the resident when evacuating.
5. Route the evacuee would take to reach desired destination.
6. Number and type of vehicles at the place of residence.
7. How many vehicles would the household use in an evacuation?
8. Household characteristics:
 - a. type of dwelling unit
 - b. number of persons in household
 - c. does household need transportation assistance?
 - d. number of handicapped persons

9. Previous hurricane experience of resident.

Based upon these questions and the study conducted by H. W. Lochner, Inc. for the Tampa Bay Regional Planning Council, a questionnaire was developed which formed part of the proposal to conduct the study. This draft was modified after consultation with CFRPC staff and a pretest of 20 randomly chosen residents of the five county area. The final questionnaire (see Appendix A), in addition to being designed to answer the specific questions of the Request for Proposal, contained questions relating to the age of the residents, the length of time they had lived in the five county area and where residents would go if evacuated.

Sampling Design and Data Collection

The sampling design employed involved systematic sampling of residence listings in the phone directories covering the five-county area. This type of sampling is considered a close approximation to random sampling for studies such as the present one, and provides a nearly complete coverage of households because the vast bulk of households nowadays have listed phones. Sampling was done separately for each county to help ensure a sufficient sample size from the less populous counties. To help ensure a sufficient numbers of mobile home households for analysis, a slight oversample of mobile homes was effected; it is estimated that the proportion of mobile home residences in the sample was 4.0% higher than in the population. The total number of completed interviews was 1257; the number of cases upon which each of the statistics presented in this report is based are indicated in the tables in which the data are displayed.

Interviewing was done by women from the Tampa Women's Survival Center, who were trained and supervised for accuracy by the principle investigators. Phone calls to sample members were made from 9:00 A.M. to 9:30 P.M. seven days

a week to help ensure variation in which household member answered the phone. Unless a particular phone number was not a working number or otherwise was unusable, an effort was made to make four attempts to reach someone at each number, to minimize bias which might occur by completing interviews only for persons who are easy to reach. The overall interview completion rate was 78.9%; that is, 21.1% of persons reached by phone refused to participate in the survey or the interview could not be completed because the individual being interviewed was hard of hearing or ill. This completion rate is within the range typically achieved for surveys of this type.

Information from the completed questionnaires was coded by the principle investigators and by trained assistants supervised by them. Coded data were keypunched by the University of South Florida's Key punch Services. Apparent mispunches (which were few) were identified through the use of appropriate computer analysis by the principal investigators, and those potential mispunches were checked against the survey forms and corrected if a keypunching error had occurred. The data are stored on magnetic tape so that further analyses can be undertaken to address any future questions planning agencies may have.

Several cautions which derive from the sampling methodology should be observed when interpreting the findings from the study. First, because of the oversample of mobile homes, analyses which aggregate mobile home with non-mobile home residences likely will include a larger proportion of mobile home households than is the case for the actual five-county population. However, this is not expected to be a major biasing factor for most analyses because the oversample of mobile homes was not large (see above). A second caution which should be observed in interpreting the findings involves results which are based on small numbers of cases (the numbers of cases are indicated

in the each of report's tables). Sampling error is likely to be larger when small numbers of cases are involved than when results are derived from analyses based upon a large number of survey respondents.

So that the reader will have a better idea of the accuracy of the sampling, Appendix B contains the means, standard errors, and 95% confidence intervals for selected study variables, by county. The standard error aids judgment of the accuracy of the sampling because it helps in determining the potential degree of discrepancy between the sample mean and the population mean; in our case, between the means calculated from the data we collected and the actual means one would be able to calculate if one had complete data on everyone, rather than just a sample of persons, from each county. Information on the exact statistical procedures for estimating standard errors for studies such as ours; that is, for which the researcher has data from one sample and does not know the true population means, can be found in most good texts — dealing with inferential statistics for survey research.

Another measure which helps in judging the accuracy of sampling is the 95% confidence interval. A 95% confidence interval is calculated from the sample mean and the standard error. This means that there is a 95% chance that the population mean lies within this interval.

Because of the possibility, in any sampling procedure, of discrepancy between the values observed in the sample and the true population values, users of this report or of any study based on sample data should proceed with caution when it appears that the sampling may introduce inaccuracies large enough to meaningfully bias conclusions drawn from the data. Due to the nature and complexity of the information contained in the present report, confidence intervals or related statistics are not presented for all findings in this report. However, the standard errors and confidence intervals

presented in Appendix B provide a useful guide to the degree of precision in the samples employed. Users of this report who have a need for information on the sampling accuracy relevant to particular report findings should contact the principal investigators of the study prior to employing the study results for planning decisions.

SURVEY RESULTS

This section of the report will present findings relevant to the nine questions specified in the Request for Proposal and restated under "Questionnaire Design," above. The findings are organized into two broad categories. First, demographic and household characteristics are presented. These are characteristics which help describe the nature of the people in the five-county area -- for example, what type of housing do people have, how many households consist of an elderly person living alone, and so forth. These demographic and household descriptions are important because they can help identify some of the special needs of the population in an evacuation. Second, evacuation-related findings are presented. These findings deal with such issues as individual's willingness to evacuate, the route they might take in an evacuation, and so forth.

Household Characteristics

Number of persons and age of oldest person in household. Information on household size and on the number of elderly residents is important because it can help pinpoint the number of people who would evacuate and the proportion of elderly residents who live alone. Household size varies somewhat from county to county (see Table 1). For example, about one in five (20.7%) households in Highlands county consists of a lone resident. The analogous

percentages for Polk and De Soto counties are 16.9 and 14.6, respectively, but in Hardee (9.9%) and Okeechobee (8.6%) counties less than one in ten households are comprised of a single person living alone. Breakdown of these data separately for mobile home and non-mobile home residents (Table 2) suggests only fairly small differences between these two types of residences with regard to the proportion of single person households.

The potentially critical nature of the above information is highlighted when one examines the age data. As can be seen in Table 3, for example, between 28.9% (Okeechobee county) and 44.4% (DeSoto county) of households in the five-county region include a household member age 65 or over. Furthermore, in each county a large proportion of these households consists of an elderly (over age 65) person living alone or with one other person also age 65 or older (Table 4). Combining the above information from Table 3 with that from Table 4 allows us to calculate the percentage of total households in each county which consist of an aged individual living alone or with one other person who is elderly also. These percentages are 26 for Polk, 18.3 for Hardee, 12.6 for Okeechobee county, 32.8 for Highlands, and 27.5 for DeSoto. The large number of families which contain at least one elderly individual, and especially the high proportion of households which consist of an aged person living alone or with one other person over 65, suggests that planners may wish to give extra consideration to the special needs of the aged when designing evacuation programs, planning for the operation of public shelters, and so forth. (See the discussion on special needs and Tables 7, 8, and 9 below.)

One additional aspect of households with an aged resident or residents should be mentioned. In each county, mobile homes are more likely to contain an elderly household member than are non-mobile home households (Table 5).

That this dwelling type (mobile homes) which is especially susceptible to wind damage is also especially likely to house the aged further complicates the evacuation planning. An estimate of the proportion of households in each county which are mobile homes is shown in Table 6; these percentages range from 50.0 for Okeechobee county to 16.2 for Hardee county. The reader should keep in mind, however, that these figures are slight overestimates because of the required oversampling of mobile homes.

Need for special evacuation assistance. In order to help determine the independent ability of people to evacuate, we asked whether anyone in the household would need special assistance to travel, whether outside assistance would be required to evacuate those persons, and whether transportation such as a bus or taxi would be needed. Data relevant to these questions are presented in Tables 7, 8, and 9.

Shown in Table 7 are both the proportions of households which contain someone who needs special assistance to travel, as well as the specific reasons given for the need for assistance. The percentages of households with such needs are 8.6 for Polk, 11.3 for Hardee, 5.3 for Okeechobee county, 9.2 for Highlands, and 5.1 for DeSoto. The percentages of households for which outside assistance would be needed, due to the handicaps in Table 7, for evacuation are 5.5 for Polk, 7.7 for Hardee, 3.3 for Okeechobee county, 7.5 for Highlands, and 2.2 for DeSoto (Table 8). Outside assistance in the form of bus or taxi transportation will also be needed for some households; the percentages of households which need assistance of this type are, for the above counties, respectively, 2.8, 2.8, 3.3, 5.2, and 1.5 (Table 8). These data are disaggregated in Table 9 so that the percentages are calculated separately for mobile home and non-mobile home dwellers.

Transportation resources. Survey respondents were asked to specify the number of cars and trucks in the household, and to indicate the types of vehicles owned (sedan, station wagon, jeep, pickup truck, or van). This information is presented in Table 10 and is decomposed for mobile home and non-mobile home residents in Table 11.

The data from this portion of the survey are consistent with that regarding needs for evacuation assistance (see above) in suggesting that only a small proportion of households is without household-owned transportation. For example, the proportions of households with no vehicle range from 5.2% in Highlands county to 2.6% in Okeechobee county. Furthermore, these percentages are, for each county except Highlands, higher than those indicating the proportion of persons needing transportation such as a bus or taxi (see Table 8). These results imply that members of some households with no vehicle may be able to get transportation from a neighbor or friend. In any event, the vast bulk of households have at least one vehicle, and when one considers that few households contain more members (see Table 1) than can fit in a typical car or truck, it becomes clear why so few households specify a need for bus or taxi transportation.

Length of residence in area, seasonal residence, and previous hurricane experience. Length of residence in the area can be an important factor in a hurricane because persons who are relative newcomers may not be familiar with the local civil defense system, public shelter network, roads, and other elements crucial to a successful evacuation effort. As can be seen in Table 12 at least one out of ten persons in each county has lived in the region for four years or less; for Okeechobee county and Highlands county the proportions are almost one in four (23.7%) and close to one in three (29.9%), respectively. Inspection of Table 13 reveals that the "typical" mobile home

dweller is likely to have more recently settled in the area than is the case for his non-mobile home counterpart. In each county, the median number of years in the area is lower for mobile home residents than for non-mobile home residents.

It will also be useful in developing an evacuation plan to know how many persons have experienced a hurricane previously, and how many have been evacuated. This type of information provides yet another indication of the extent of the public's inexperience with hurricane evacuations. As can be seen in Table 14, the vast majority of the region's residents have never been evacuated due to a hurricane. The county with the highest proportion (21.7%) of residents which have experienced an evacuation is Okeechobee. And, about one in three (32.9%) of Okeechobee respondents said they had experienced Hurricane Frederick in 1979. With regard to the other counties, much smaller percentages of residents than is the case for Okeechobee have been evacuated, and the most common hurricane experience involved Hurricane Donna, which occurred more than twenty years ago, in 1960. It would seem, then, that experience with previous hurricanes and hurricane evacuations is not widespread in the five-county region, and thus planners will not be dealing with a populace which has had widespread direct familiarity with hurricane conditions.

The breakdown of these results by residence type (Table 15) shows some interesting patterns. In all counties except De Soto, mobile home residents are less likely than non-mobile home residents to have been in a hurricane. Yet in three of the five counties, mobile home residents are more likely to have been evacuated. These data are consistent with findings to be presented later (Tables 21 and 23) which will show that mobile home residents are more likely than non-mobile home residents to say they will evacuate, will evacuate

immediately upon an evacuation order if the weather were fine, and will leave before an official order if a hurricane were to make landfall. These various findings suggest that mobile home residents may be aware of the particular dangers a hurricane will pose for them and are by and large willing to evacuate, and to do so in short order, if the need arises.

Tables 16 and 17 show that most residents of the region are year-round residents. It is important to note, however, that for several counties the proportion of mobile home residents who are seasonal is high. For example, 20.1% of mobile home residents in Polk county are seasonal, and the analogous figures for Highlands and De Soto counties are 17.9% and 15.1%, respectively. As might be expected, the bulk of these seasonal residents are "snowbirds" who are here from November/December to April/May.

Evacuation Behavior

The information presented thus far has concerned the household and demographic characteristics of the residents of the five county region. Of more direct concern is the anticipated behavior of those residents in an evacuation. The present section of this report will present selected findings relevant to the prediction of evacuation behavior. These findings will address the issues of (1) the sources from which individuals will seek evacuation advice, (2) if and when residents will evacuate, (3) the vehicles they will use to evacuate, and (4) the desired and anticipated shelters, and their locations, to which evacuation will occur, as well the roadways which evacuees will use to travel to those locations.

Anticipated sources of evacuation advice. Survey respondents were asked from whom they would seek advice on whether and when to evacuate. Four sources--neighbor, friend, local government or law enforcement officials, and

National Weather Service advisories on radio or television -- were presented to the persons interviewed, who were encouraged to specify all sources from which they would seek information. As can be seen in Table 18, for each county more than 9 out of every 10 respondents specified National Weather Service advisories as a source from which they would seek evacuation advice. These percentages are high for both non-mobile home and mobile home residents (Table 19). These results suggest that, while ideally all available media should be employed to ensure that publicity of an evacuation reaches as many persons as possible, from the standpoint of efficiency or in a situation of limited resources National Weather Service advisories may provide the most effective single source for disseminating evacuation information.

Anticipated time respondent would evacuate. Persons interviewed were asked, "If a hurricane were to hit the coast when, if ever, would you evacuate: (a) before an official order to do so, (b) when given the official order to do so, or (c) would not evacuate." Individuals who indicated that they would evacuate before an official order to do so were asked how soon before the hurricane was expected to hit the coast they would leave, and persons who said they would leave when given the official order to do so were asked how soon, assuming everyone were home, they would be ready to leave.

Results for these survey items are presented in Table 20 for all types of residences combined, and separately for mobile homes and non-mobile homes in Table 21. The percentages of respondents who would not evacuate even if given an official order to do so range from 9.9 (for Okeechobee county) to 24.1 (for Hardee county), although in each county the proportion of mobile home residents who say they would not evacuate is much lower than the analogous percentage for non-mobile home residents (Table 21). The fact that at least roughly one in ten respondents, and as high as almost one in four persons

interviewed (in Hardee county), said they would not evacuate suggests that evacuation orders should stress the necessity of evacuating and perhaps be worded in such a way that persons understand the risks involved in failing to evacuate.

In this regard, one important factor which helps identify those persons who are reluctant to evacuate is long-term residence in the five county area (Table 22). In three of the five counties studied, respondents who have resided in the area for 30 years or more are substantially more likely than are their neighbors who are more recent arrivals to say they will not evacuate. For those three counties (Polk, Hardee, and Highlands) evacuation personnel may wish to try to orient evacuation announcements toward these "old timers," if possible.

Most respondents, however, indicated that they would evacuate, and the most frequently stated time of evacuation, for both mobile home and non-mobile home dwellers, is when given the official evacuation order rather than before such an order is issued. Yet, it should be stressed that in general mobile home residents exhibit substantially greater evacuation readiness than do their non-mobile home counterparts (Table 21). As stated above, mobile home dwellers are more likely to evacuate, and they also are more likely to evacuate before an official order than are non-mobile home residents. Regardless of residence type, the data suggest that, typically, individuals will be ready to leave almost immediately, assuming everyone is home. In no category in Table 20 or Table 21 is the median time needed to be ready to leave over one hour. These results suggest that residents of the five-county region do not feel that they will need a long time period to pack up or otherwise put things in order, and that delays of this type are not likely to be a problem in a hurricane evacuation in this area. The reader should

remember, however, that the survey question assumes that all household members are home, and that a substantial proportion of individuals surveyed say they will not evacuate at all (see discussion above).

The information in Tables 20 and 21 can serve as a rough guide for planners and others in estimating the time sequencing of demands on roadways, shelters, and the like in the event of an evacuation. What these data provide is a means for estimating the numbers of people who will evacuate before an evacuation order, and how long before that order those persons will evacuate; the numbers of individuals who will leave when the evacuation order is forthcoming and how soon those persons would be ready to leave; and the numbers of individuals who would not evacuate at all. This type of information can be critical in judging the gradualness or suddenness of the "phase-in" of traffic build-up, need for special evacuation assistance, influx to public shelters, and so forth. However, it should be stressed that these data should be employed in a judgmental sense rather than as an exact predictive model. The reason for this is that the phase-in may diverge from that suggested by Tables 20 and 21 as the conditions associated with the particular hurricane vary. For example, it seems reasonable to assume that more people would evacuate before an official evacuation order if the order were given very late and the weather appeared very ominous, than if the evacuation were given early on and the weather were fine.

To get a perspective on this particular issue, we asked what respondents would do if told to evacuate but the weather were fine. Between 62.7% and 78.4% of persons in each county said they would leave immediately (Table 23), and, except for Okeechobee county, mobile home residents are more likely than non-mobile home residents to do so (Table 24). Additional details are available from Tables 23 and 24.

Vehicles to be used for evacuation. Data concerning the number and types of vehicles which survey respondents anticipate they would use if they were to evacuate are shown in Tables 25 and 26. Perhaps the most relevant point here relates to the proportions of respondents who specified that two or more vehicles would be employed. These proportions are generally low for both mobile home and non-mobile home dwellers. This finding jibes with the information on household size (Tables 1 and 2) presented earlier, and that regarding number of vehicles per household (Tables 10 and 11), which suggests that the vast bulk of households have a vehicle and are small enough that all household residents probably can fit in that vehicle. The likelihood that the overwhelming majority of households will use one vehicle to evacuate can be used in conjunction with data from Tables 20 and 21 (when they would evacuate) to help judge the extent of traffic in an evacuation. Again, however, this information should be used in a judgmental sense because such factors as the number of persons who would not evacuate may change with specific conditions (for example, the weather) associated with a particular hurricane.

Anticipated evacuation destinations, locations, and routes to be taken. Persons interviewed were asked both where they would like to go if evacuated and where they would go. Responses were sought both in terms of the type of evacuation destination (public shelter, friend or relative, or motel), its geographic location, and the major streets and highways respondents would use to travel to the destination.

Data on respondents' desired evacuation destinations are given in Table 27. The most frequently mentioned such destination is a public shelter. Around half the persons interviewed from each of the three counties Polk (49.4%), Hardee (51.2%), and Highlands (54.4%) specified this type of facility; the analogous percentages for Okeechobee and De Soto counties are

39.6 and 58.5, respectively. Planners thus should keep in mind that in an evacuation in these five counties, demand for public shelter space may be very high, and that the public shelter system may well be asked to accommodate between four and six out of every ten households. In this regard, it should also be noted that the vast bulk of households (between 89.6% and 98.6%) may want to use a public shelter in the county of residence rather than in another county.

Besides public shelters, the next most frequently mentioned desired evacuation destinations, in order of frequency of mention, are "friend" and "motel". Roughly one-fifth to one-third of respondents specified friend, and about one-tenth to one-fifth of persons interviewed mentioned motel. It is worth noting that evacuees are more likely to desire to travel out of county to reach these two types of destinations; this is especially true for Hardee county residents desiring to go to a motel. It should also be mentioned that between 8.1% (for Hardee county) and 16.6% (for Polk county) of survey respondents indicated that they do not know what type of shelter they would like to travel to in an evacuation. Additional details on desired evacuation destinations and locations are available from Table 27.

It is perhaps worth stressing again the heavy demand on public shelters which may be likely to occur in an evacuation. Not only do many people state outright they would want to go to a public shelter (see above), it is also true that among respondents who said they would want to go to a friend or relative, for each county more than half specified the location of the friend or relative as within the same county as that in which the person being interviewed resides. Of course, it is possible or perhaps even likely that the friend or relative that the survey respondent had in mind when answering would himself have to evacuate. In such a case, the friend or relative would

not constitute a viable evacuation destination, and such evacuees may show up at a public shelter (a motel may also not be a suitable location for the same reason).

The above data on persons' desired destinations parallel those regarding where respondents feel they would go (Tables 28 and 29), at least as far as the ordering of frequency of mention of destinations is concerned. That is, the most frequently mentioned destination remains public shelter, followed by friend or relative and motel in that order. This pattern holds both for all residents and separately for mobile home dwellers and non-mobile home residents. However, mobile home residents (except those in Polk county) are somewhat more likely to say they would go to a public shelter than are their non-mobile home counterparts, and are somewhat more likely to know what shelter type (public shelter, friend or relative, or motel) they would seek (again, Polk county is the exception). In general, as might be expected, respondents were more likely to say they don't know where they would go (Tables 28 and 29) than to say they don't know where they would like to go (Table 27).

If we assume that respondents who indicate they do not know where they would go will end up at a public shelter, the proportion of evacuees who will have to be taken care of by public shelters ranges from 82.1% in Highlands to 59.9% in Okeechobee County.

One finding from Table 28 which planners will want to heed involves the large proportions of persons who say they would go to a public shelter, who do not know where that public shelter is located. These proportions range from 38.8% (Polk) to 83.6% (De Soto). One possibility here is that individuals know which facilities are likely to be used as public shelters but do not know which particular shelter they would use. But another possibility is that

people do not know the locations of their public shelters or likely public shelters at all. Thus, planners fruitfully might give some thought to providing clear and intensive information about public shelter locations prior to a potential hurricane landfall, to ensure that confusion about where the public shelters are located is kept to a minimum during the actual evacuation. As a possible aid in such publicity efforts, Table 30 disaggregates information on where people would go by number of years of residence in the five-county area.

In addition to knowing the types of facilities people would seek out in an evacuation, it will be useful to know how many individuals feel they will travel out-of-county or out-of-state. Information of this sort for each facility type and with regard to where individuals would like to go is presented in Table 27 and was summarized briefly above. Tables 31 and 32 show these results aggregated for all facilities and with regard to where persons say they would go. All three of the tables just mentioned suggest that people generally will travel within their county of residence rather than going out-of-state or out-of-county. This pattern holds both for all dwelling types as a group, and separately for mobile homes and non-mobile homes. But, between 31.9% (Okeechobee county) and 12.2% (De Soto county) of residents do expect to travel beyond their county line, and evacuation personnel may wish to use the information in Tables 31 and 32 to estimate the amount and directions of inter-county travel. However, these data should be used as a rough guide only, in conjunction with the specifics of the particular threatening hurricane. For example, although 11.0% of Hardee respondents said they would evacuate to Polk county, that figure may be lessened if weather reports are forecasting extensive damage in the Polk area. As a last observation regarding Tables 31 and 32, it is interesting to note how many

respondents specified they would go out-of-state (including Georgia) or "north". For all counties except De Soto, roughly one out of ten persons interviewed so responded. Interestingly, for DeSoto the comparable figure is only 2.4%.

Tables 33 and 34 show the most frequently mentioned routes respondents said they would take in an evacuation. For Polk county residents, routes 60 (18.0% mentioned this route) and 27 (22.8%) may experience heavy travel, as to a lesser extent may route 98 (8.8%), I-4 (6.0%) and I-75 (11.2%). Hardee county residents say they will use routes 17 (31.3%), 64 (11.9%) and 27 (8.9%). For Okeechobee county, a variety of roadways were mentioned, most commonly routes 441 (37.4%) and 70 (18.7%). Highlands county residents overwhelmingly say they will use route 27 (45.9%), along with local roads (43.2%), and some will use I-75 (9.4%). De Soto county residents mentioned two routes most frequently: 17 (35.2%) and 70 (25.3%). It should be noted that in addition to the routes mentioned above, in all counties local roads are likely to be fairly heavily traveled. The percentages of respondents who mentioned local roads are 28.8 for Polk, 47.8 for Hardee, 12.1 for Okeechobee, 43.2 for Highlands, and 30.1 for De Soto.

In using these results for planning purposes, two things should be kept in mind. First, as with some of the other data presented in this report (see above), road usage may vary somewhat with the particulars of the hurricane involved. Second, it is likely that many individuals mentioned the most major routes they might use. Planners should be sensitive as well to the possibilities for heavy traffic problems on more minor routes, such as short access roads leading from population centers to the more major thoroughfares shown in Tables 33 and 34.

General Conclusions

In this section we will present some of the most important highlights for planning purposes.

1. The population in general and especially those who live in mobile homes is elderly.
2. Although a relatively small percentage of the residents need special assistance to evacuate or are without transportation, in absolute numbers this could be a substantial amount of people.
3. Although a substantial percentage of the respondents indicated experience with hurricanes, this experience except for Okeechobee county was with Donna in 1960.
4. The National Weather Service is the source of advice most frequently mentioned.
5. Although most people will evacuate when ordered to do so, a substantial proportion would never evacuate and mobile home dwellers would tend to evacuate prior to the order to do so.
6. If family members are home, respondents indicated they could be ready to leave almost immediately.
7. In general only one vehicle per residence will be used.
8. Most people would evacuate to public shelters within their own county. Based on these data, there will be a great demand placed on public shelters.
9. A substantial proportion of respondents do not know where their public shelter is.

Table 1

Number Persons in Household By County (Percentage)

| Number | County | | | | |
|-----------|-----------------|-------------------|-----------------------|----------------------|-------------------|
| | Polk (N=650) | Hardee (N=142) | Okeechobee (N=152) | Highlands (N=174) | DeSoto (N=137) |
| 1 | 16.9 | 9.9 | 8.6 | 20.7 | 14.6 |
| 2 | 42.0 | 33.8 | 44.7 | 51.1 | 45.3 |
| 3 | 18.6 | 23.2 | 21.2 | 11.5 | 17.5 |
| 4 | 13.5 | 13.4 | 16.4 | 13.8 | 13.9 |
| 5 | 6.0 | 11.3 | 5.9 | 1.1 | 5.8 |
| 6 or more | 2.9 | 8.4 | 2.8 | 1.7 | 2.9 |

Table 2

Number of Persons in Household for
Mobile Homes and Non-Mobile Homes by County

| Number | County | | | | | | | | | |
|-----------|---------------|----------------|--------------|----------------|--------------|---------------|--------------|----------------|--------------|---------------|
| | Polk | | Hardee | | Okeechobee | | Highlands | | DeSoto | |
| | MH (N=159) | NMH (N=491) | MH (N=23) | NMH (N=119) | MH (N=76) | NMH (N=76) | MH (N=39) | NMH (N=135) | MH (N=53) | NMH (N=84) |
| 1 | 15.7 | 17.3 | 13.0 | 9.2 | 9.2 | 7.9 | 17.9 | 21.5 | 13.2 | 15.5 |
| 2 | 50.3 | 39.3 | 43.5 | 31.9 | 56.6 | 32.9 | 64.1 | 47.4 | 60.4 | 35.7 |
| 3 | 12.6 | 20.6 | 30.4 | 21.8 | 17.1 | 26.3 | 10.3 | 11.9 | 15.1 | 19.0 |
| 4 | 12.6 | 13.8 | 8.7 | 14.3 | 10.5 | 22.4 | 5.1 | 16.3 | 7.5 | 17.9 |
| 5 | 5.7 | 6.1 | ---- | 13.4 | 3.9 | 7.9 | 2.6 | 1.5 | 1.9 | 8.3 |
| 6 or more | 3.2 | 2.8 | 4.3 | 9.2 | 2.6 | 2.6 | ---- | 1.5 | 1.9 | 3.6 |
| Median | 2.18 | 2.33 | 2.35 | 2.90 | 2.22 | 2.85 | 2.00 | 2.1 | 2.11 | 2.47 |

Table 3

Age of Oldest Resident By County (Percentage)

| | County | | | | |
|---|-----------------|-------------------|-----------------------|----------------------|-------------------|
| | Polk (N=641) | Hardee (N=141) | Okeechobee (N=152) | Highlands (N=170) | DeSoto (N=137) |
| 24 and Under | 1.2 | 2.1 | 2.6 | 4.2 | 2.2 |
| 25 - 34 | 11.9 | 10.7 | 7.9 | 8.8 | 8.7 |
| 35 - 44 | 15.1 | 18.4 | 13.2 | 8.8 | 13.2 |
| 45 - 54 | 14.2 | 19.9 | 21.7 | 5.9 | 15.3 |
| 55 - 64 | 17.4 | 14.1 | 18.7 | 18.8 | 16.1 |
| 65 - 74 | 26.5 | 19.9 | 19.0 | 24.7 | 29.9 |
| 75 - 84 | 11.5 | 10.6 | 7.9 | 15.9 | 12.4 |
| 85 and Over | 1.2 | 4.3 | 2.0 | 2.9 | 2.2 |
| Median | 59.8 | 53.4 | 50.0 | 65.0 | 60.7 |
| Percentage of residences with at least one per- son 65 and over | 39.2 | 34.8 | 28.9 | 43.5 | 44.5 |

Table 4

Number of Residents in Homes Where Oldest Resident
65 or Older by County (Percentage)

| Number | County | | | | |
|-----------|-----------------|------------------|----------------------|---------------------|------------------|
| | Polk (N=258) | Hardee (N=49) | Okeechobee (N=54) | Highlands (N=94) | DeSoto (N=61) |
| 1 | 30.2 | 18.4 | 13.0 | 28.7 | 21.3 |
| 2 | 56.2 | 57.1 | 59.3 | 62.8 | 67.2 |
| 3 | 9.3 | 10.2 | 14.8 | 4.3 | 6.6 |
| 4 or more | 4.3 | 14.3 | 13.0 | 4.3 | 4.9 |

Note: Percentage of cases where second older resident also 65 or over

| | | | | |
|------|------|------|------|------|
| 64.2 | 60.0 | 56.5 | 74.6 | 60.4 |
|------|------|------|------|------|

Note: Percentage of either alone or with person 65 or over

| | | | | |
|------|------|------|------|------|
| 66.3 | 52.7 | 43.5 | 75.5 | 61.9 |
|------|------|------|------|------|

Table 5

Age of Oldest Resident for Mobile Homes and Non-Mobile Homes by County

| Age | County | | | | | | | | | |
|--------------|---------------|----------------|--------------|----------------|--------------|---------------|--------------|----------------|--------------|---------------|
| | Polk | | Hardee | | Okeechobee | | Highlands | | DeSoto | |
| | MH (N=159) | NMH (N=483) | MH (N=22) | NMH (N=119) | MH (N=76) | NMH (N=76) | MH (N=38) | NMH (N=132) | MH (N=53) | NMH (N=51) |
| 34 and under | 12.7 | 13.3 | 18.2 | 11.8 | 7.9 | 13.2 | 7.9 | 12.1 | 13.2 | 9.1 |
| 35 - 64 | 38.6 | 49.2 | 40.9 | 54.6 | 47.4 | 60.5 | 13.2 | 38.7 | 35.0 | 51.0 |
| 65 and over | 48.7 | 37.5 | 40.9 | 33.6 | 45.7 | 26.3 | 78.9 | 49.2 | 52.8 | 39.0 |
| Median | 62.2 | 58.1 | 56.5 | 52.9 | 60.5 | 53.0 | 68.2 | 64.2 | 64.8 | 59.0 |

Table 6

Type of Residence By County (Percentage)

| Type | County | | | | |
|---------------|-----------------|-------------------|-----------------------|----------------------|-------------------|
| | Polk (N=651) | Hardee (N=142) | Okeechobee (N=152) | Highlands (N=174) | DeSoto (N=137) |
| Single Family | 67.7 | 80.3 | 46.7 | 70.7 | 55.5 |
| Two Family | 2.0 | 2.1 | 2.6 | 3.4 | 4.4 |
| Apartment | 5.7 | 1.4 | 0.7 | 2.9 | 1.5 |
| Mobile Home | 24.4 | 16.2 | 50.0 | 22.4 | 38.7 |
| Other | 0.2 | ---- | ---- | 0.6 | ---- |

Table 7

Special Needs of Residents By County (Percentage)

| Need | County | | | | |
|-------------------------|-----------------|-------------------|-----------------------|----------------------|-------------------|
| | Polk (N=645) | Hardee (N=142) | Okeechobee (N=152) | Highlands (N=174) | DeSoto (N=137) |
| Elderly | 1.8 | 3.5 | 2.6 | 1.1 | 1.5 |
| No Car or Doesn't Drive | 1.1 | 1.4 | --- | 2.8 | 0.7 |
| Blind | 0.3 | 0.7 | --- | 0.6 | 0.7 |
| Walks With Cane | 0.5 | --- | --- | --- | --- |
| Arthritis | 0.5 | --- | --- | 0.6 | --- |
| Parkinson's Disease | 0.2 | --- | --- | --- | --- |
| Retirement Home | 0.2 | --- | --- | --- | --- |
| Retarded | 0.3 | 1.4 | --- | --- | --- |
| Paralyzed | 0.2 | --- | --- | --- | --- |
| Bad Knees or Legs | 0.3 | --- | --- | --- | --- |
| Wheel Chair Bound | 0.5 | 0.7 | 1.3 | 0.6 | 0.7 |
| Invalid | 0.2 | 0.7 | --- | 1.1 | --- |
| Heart Trouble & Stroke | 0.5 | 1.4 | 0.7 | 1.7 | 0.7 |
| Brain Tumor | --- | --- | --- | --- | 0.7 |
| Bad Sight & Hearing | --- | --- | --- | 0.6 | --- |
| Multiple Sclerosis | 0.2 | --- | --- | --- | --- |
| Mentally Ill | 0.2 | --- | --- | --- | --- |
| Emphysema | 0.2 | --- | --- | --- | --- |
| Diabetes | 0.2 | --- | --- | --- | --- |
| Doesn't Want to Travel | 0.2 | --- | --- | --- | --- |
| Need Oxygen | --- | --- | 0.7 | --- | --- |
| Handicapped | --- | 0.7 | --- | --- | --- |
| Not Specified | 0.5 | 0.7 | --- | --- | --- |
| No Need | 91.4 | 88.7 | 94.7 | 90.8 | 94.9 |

Table 8

Assistance Needed By County (Percent)

| | County | | | | |
|--|-----------------|-------------------|-----------------------|----------------------|-------------------|
| | Polk (N=651) | Hardee (N=142) | Okeechobee (N=152) | Highlands (N=174) | DeSoto (N=137) |
| Assistance Because of Handicap | 5.5% | 7.7% | 3.3% | 7.5% | 2.2% |
| Assistance Because Need Bus or Taxi | 2.8% | 2.8% | 3.3% | 5.2% | 1.5% |
| <u>Number of People Who Need Assistance and Have <u>No</u> Car</u> | 19 | 4 | ----- | 6 | 1 |

Table 9

Special Needs of Residents and Mobile Home, Non-Mobile Homes
Residence by County

| | County | | | | | | | | | |
|--|----------------|----------------|--------------|----------------|--------------|---------------|--------------|----------------|--------------|--------------|
| | Polk | | Hardee | | Okeechobee | | Highlands | | DeSoto | |
| | MH. (N=159) | NMH (N=492) | MH (N=23) | NMH (N=119) | MH (N=76) | NMH (N=76) | MH (N=39) | NMH (N=132) | MH (N=53) | NMH (N=8) |
| Percent with Special Needs | 8.2 | 7.5 | 13.0 | 14.3 | 3.9 | 5.3 | 10.3 | 7.4 | ---- | 9 |
| Assistance Needed Because of Handicap | 6.3 | 5.3 | 13.0 | 6.7 | 3.9 | 2.6 | 7.7 | 7.4 | ---- | 2 |
| Need Bus or Taxi | 1.9 | 3.0 | ---- | 3.4 | 2.6 | 3.9 | 5.1 | 5.2 | ---- | 0 |

Table 10

Type of Vehicles and Number by County (Percentage)

| Number | County | | | | |
|-----------------------|-----------------|-------------------|-----------------------|----------------------|-------------------|
| | Polk (N=650) | Hardee (N=139) | Okeechobee (N=152) | Highlands (N=122) | DeSoto (N=137) |
| <u>Total</u> | | | | | |
| 0 | 4.5 | 3.6 | 2.6 | 5.2 | 2.9 |
| 1 | 37.4 | 33.8 | 33.6 | 55.8 | 51.1 |
| 2 | 42.4 | 38.1 | 38.8 | 26.2 | 32.8 |
| 3 | 11.8 | 15.8 | 21.1 | 8.7 | 8.0 |
| 4 | 3.1 | 6.5 | 2.6 | 2.3 | 2.9 |
| 5 or more | 1.1 | 2.1 | 1.4 | 1.7 | 2.1 |
| <u>Sedans</u> | | | | | |
| 0 | 13.7 | 27.1 | 20.4 | 17.3 | 19.7 |
| 1 | 58.2 | 49.3 | 54.6 | 69.4 | 68.6 |
| 2 | 23.1 | 20.7 | 23.0 | 10.4 | 9.5 |
| 3 | 4.0 | 2.9 | 2.0 | 2.3 | 2.2 |
| 4 | 0.6 | ---- | ---- | 0.6 | ---- |
| 5 or more | 0.3 | ---- | ---- | ---- | ---- |
| <u>Station Wagons</u> | | | | | |
| 0 | 90.9 | 81.0 | 88.2 | 88.4 | 86.1 |
| 1 | 8.9 | 17.6 | 11.2 | 10.4 | 13.9 |
| 2 or more | 0.2 | ---- | 0.7 | 1.2 | ---- |
| <u>Jeeps</u> | | | | | |
| 0 | 98.0 | 92.9 | 96.7 | 99.4 | 97.8 |
| 1 or more | 2.0 | 7.1 | 3.3 | 0.6 | 2.2 |
| <u>Pick Up Trucks</u> | | | | | |
| 0 | 70.3 | 50.0 | 52.0 | 75.1 | 64.2 |
| 1 | 26.3 | 41.4 | 41.4 | 22.0 | 33.6 |
| 2 or more | 3.5 | 8.5 | 6.6 | 2.9 | 2.2 |
| <u>Vans</u> | | | | | |
| 0 | 95.4 | 95.0 | 93.4 | 93.6 | 92.7 |
| 1 or more | 4.6 | 5.0 | 6.6 | 6.4 | 7.3 |

Table 11

Type of Vehicles, Number and Mobile Home, Non-Mobile
Home Resident by County

| Number | County | | | | | | | | | |
|-----------------------|---------------|----------------|--------------|----------------|--------------|---------------|--------------|----------------|--------------|--------------|
| | Polk | | Hardee | | Okeechobee | | Highlands | | DeSoto | |
| | MH (N=159) | NMH (N=491) | MH (N=23) | NMH (N=116) | MH (N=76) | NMH (N=76) | MH (N=39) | NMH (N=133) | MH (N=53) | NMH (N=8) |
| <u>Total</u> | | | | | | | | | | |
| 0 | 1.3 | 5.5 | ---- | 4.3 | 2.6 | 2.6 | 5.1 | 5.3 | 1.9 | 3 |
| 1 | 50.9 | 33.0 | 56.5 | 29.3 | 47.4 | 19.7 | 69.2 | 51.9 | 69.8 | 39. |
| 2 | 34.6 | 44.6 | 34.8 | 38.8 | 35.5 | 42.1 | 23.1 | 27.1 | 20.8 | 40. |
| 3 | 11.3 | 12.0 | 8.7 | 17.2 | 10.5 | 31.6 | 2.6 | 10.5 | 3.8 | 10. |
| 4 or more | 1.8 | 4.9 | ---- | 7.8 | 3.9 | 3.9 | ---- | 5.3 | 3.8 | 6. |
| <u>Sedans</u> | | | | | | | | | | |
| 0 | 13.8 | 13.7 | 34.8 | 25.6 | 25.0 | 15.8 | 20.5 | 16.4 | 28.3 | 14 |
| 1 | 67.3 | 55.3 | 52.2 | 48.7 | 57.9 | 51.3 | 74.4 | 67.9 | 66.0 | 70 |
| 2 | 15.7 | 25.5 | 13.0 | 22.2 | 14.5 | 31.6 | 5.1 | 11.9 | 5.7 | 11. |
| 3 or more | 3.1 | 5.5 | ---- | 3.4 | 2.6 | 1.3 | ---- | 3.7 | ---- | 3 |
| <u>Station Wagons</u> | | | | | | | | | | |
| 0 | 90.6 | 91.0 | 73.9 | 83.8 | 92.1 | 84.2 | 89.7 | 88.1 | 84.9 | 86. |
| 1 or more | 9.4 | 8.8 | 26.1 | 16.2 | 7.9 | 14.5 | 10.3 | 11.9 | 15.1 | 13. |
| <u>Jeeps</u> | | | | | | | | | | |
| 0 | 99.4 | 97.6 | 100.0 | 91.5 | 96.1 | 97.4 | 100.0 | 99.3 | 100.0 | 96 |
| 1 or more | 0.6 | 2.4 | ---- | 8.5 | 3.9 | 2.6 | ---- | 0.7 | ---- | 3 |
| <u>Pick Up Trucks</u> | | | | | | | | | | |
| 0 | 73.0 | 69.4 | 60.9 | 47.9 | 51.3 | 52.6 | 87.2 | 71.6 | 66.0 | 63 |
| 1 or more | 27.0 | 30.6 | 39.1 | 52.1 | 48.7 | 47.4 | 12.8 | 28.4 | 34.0 | 36 |
| <u>Vans</u> | | | | | | | | | | |
| 0 | 93.1 | 96.1 | 95.7 | 94.9 | 96.1 | 90.8 | 92.3 | 94.0 | 94.3 | 91 |
| 1 or more | 6.9 | 3.9 | 4.3 | 5.1 | 3.9 | 9.2 | 7.7 | 6.0 | 5.7 | 8. |

Table 12

Years Living In Five County Area By County (Percentage)

| Years | County | | | | |
|------------|-----------------|-------------------|-----------------------|----------------------|-------------------|
| | Polk (N=647) | Hardee (N=140) | Okeechobee (N=152) | Highlands (N=174) | DeSoto (N=137) |
| 0 - 4 | 15.8 | 10.0 | 23.7 | 29.9 | 17.5 |
| 5 - 9 | 16.2 | 12.9 | 22.4 | 17.2 | 27.0 |
| 10 - 14 | 13.7 | 10.7 | 18.4 | 19.5 | 17.5 |
| 15 - 19 | 8.2 | 11.4 | 7.2 | 3.4 | 9.5 |
| 20 - 24 | 8.1 | 12.1 | 4.0 | 7.5 | 9.5 |
| 25 - 29 | 7.9 | 4.3 | 3.9 | 5.2 | 4.4 |
| 30 - 34 | 6.5 | 7.2 | 3.3 | 4.6 | 6.1 |
| 35 - 39 | 6.3 | 3.5 | 3.3 | 4.0 | 0.7 |
| 40 - 44 | 5.4 | 4.3 | 2.6 | 2.3 | 2.2 |
| 45 - 49 | 2.4 | 4.3 | 3.3 | 0.6 | 1.5 |
| 50 or more | 9.7 | 19.3 | 7.9 | 5.7 | 5.1 |
| Median | 16.6 | 21.5 | 10.0 | 9.8 | 10.2 |

Table 13

Years Living in Area and Mobile Home, Non-Mobile Home Residence by County

| Years | County | | | | | | | | | |
|------------|---------------|----------------|--------------|----------------|--------------|---------------|--------------|----------------|--------------|--------------|
| | Polk | | Hardee | | Okeechobee | | Highlands | | DeSoto | |
| | MH (N=159) | NMH (N=488) | MH (N=22) | NMH (N=118) | MH (N=76) | NMH (N=76) | MH (N=39) | NMH (N=135) | MH (N=53) | NMH (N=8) |
| 0 - 9 | 56.6 | 24.0 | 36.4 | 20.3 | 56.6 | 35.5 | 71.8 | 40.0 | 43.4 | 45.2 |
| 10 - 19 | 20.8 | 22.3 | 27.2 | 21.2 | 27.6 | 23.7 | 23.1 | 23.0 | 28.3 | 26.2 |
| 20 - 29 | 11.3 | 17.2 | 18.2 | 16.1 | 6.6 | 9.2 | ---- | 16.3 | 18.9 | 10.7 |
| 30 - 39 | 7.5 | 14.6 | ---- | 12.7 | 5.3 | 7.9 | 2.6 | 10.3 | 7.5 | 4.8 |
| 40 - 49 | 1.9 | 9.6 | 4.5 | 9.4 | 1.3 | 10.5 | ---- | 3.7 | ---- | 6.0 |
| 50 or more | 1.9 | 12.3 | 16.6 | 20.3 | 2.6 | 13.2 | 2.6 | 6.7 | 1.9 | 7.1 |
| Median | 7.4 | 20.4 | 15.0 | 22.3 | 7.3 | 12.5 | 4.9 | 11.6 | 9.9 | 11.0 |

Table 14

Previous Hurricane Experience By County (Percentage)

| Percent | County | | | | |
|----------------|-----------------|-------------------|-----------------------|----------------------|-------------------|
| | Polk (N=651) | Hardee (N=142) | Okeechobee (N=152) | Highlands (N=174) | DeSoto (N=137) |
| Yes | 64.7 | 67.6 | 80.3 | 67.8 | 67.2 |
| Donna 1960 | 29.3 | 39.4 | 6.6 | 22.4 | 29.2 |
| Frederick 1979 | 4.1 | 2.1 | 32.9 | 12.6 | 2.2 |
| 1938 Storm | ---- | ---- | ---- | 1.1 | 6.6 |
| 1964 Storm | ---- | ---- | 4.6 | ---- | ---- |
| 1969 Storm | ---- | 7.0 | ---- | ---- | ---- |
| Several | 1.1 | 4.9 | 9.9 | 5.7 | 4.4 |
| Evacuated | 9.1 | 11.3 | 21.7 | 10.9 | 12.4 |

Table 15

Previous Hurricane Experience of Mobile and Non-Mobile Home Residents by County (Percentage)

| | County | | | | | | | | | |
|----------------|---------------|----------------|--------------|----------------|--------------|---------------|--------------|----------------|--------------|---------------|
| | Polk | | Hardee | | Okeechobee | | Highlands | | DeSoto | |
| | MH (N=159) | NMH (N=490) | MH (N=23) | NMH (N=118) | MH (N=76) | NMH (N=76) | MH (N=39) | NMH (N=135) | MH (N=53) | NMH (N=84) |
| Percent Yes | 54.1 | 68.1 | 56.5 | 70.3 | 78.9 | 81.6 | 43.6 | 74.8 | 71.7 | 64.3 |
| Donna 1960 | 20.8 | 32.1 | 34.8 | 40.3 | 3.9 | 9.2 | 7.7 | 26.7 | 20.8 | 34.5 |
| Frederick 1979 | 5.0 | 3.9 | 8.7 | 0.8 | 34.2 | 31.6 | 12.8 | 12.6 | 3.8 | 1.2 |
| Several | 1.3 | 1.0 | ---- | 0.8 | 6.6 | 13.2 | 10.3 | 4.4 | 3.8 | 1.2 |
| Evacuated | 10.1 | 8.7 | 4.3 | 12.6 | 31.1 | 13.3 | 7.7 | 11.9 | 13.2 | 11.9 |

Table 16

Year Around Residents By County (Percentage)

| Live Year Around | County | | | | |
|------------------|-----------------|-------------------|-----------------------|----------------------|-------------------|
| | Polk (N=649) | Hardee (N=141) | Okeechobee (N=151) | Highlands (N=174) | DeSoto (N=137) |
| Yes | 91.7 | 96.5 | 94.0 | 90.8 | 94.2 |
| No | 8.3 | 2.8 | 6.0 | 9.2 | 5.8 |

Table 17

Year Around Residency and Mobile Home, Non-Mobile Home by County

| Live Year Around | County | | | | | | | | | |
|------------------|---------------|----------------|--------------|----------------|--------------|---------------|--------------|----------------|--------------|---------------|
| | Polk | | Hardee | | Okeechobee | | Highlands | | DeSoto | |
| | MH (N=159) | NMH (N=490) | MH (N=23) | NMH (N=118) | MH (N=76) | NMH (N=75) | MH (N=39) | NMH (N=135) | MH (N=53) | NMH (N=84) |
| Yes | 79.9 | 95.5 | 91.3 | 98.3 | 90.8 | 97.3 | 82.1 | 93.3 | 84.9 | 100.0 |
| No | 20.1 | 4.5 | 8.7 | 1.7 | 9.2 | 2.7 | 17.9 | 6.7 | 15.1 | ---- |

Table 18

From Whom Seek Evacuation Advice By County (Percent Yes)

| Whom | County | | | | |
|---|-----------------|-------------------|-----------------------|----------------------|-------------------|
| | Polk (N=633) | Hardee (N=139) | Okeechobee (N=149) | Highlands (N=168) | DeSoto (N=131) |
| Neighbor | 29.1 | 23.0 | 18.8 | 20.2 | 17.4 |
| Friend | 32.0 | 35.0 | 26.4 | 25.1 | 19.0 |
| Local Government or Law Enforcement Official | 66.0 | 72.7 | 60.8 | 58.3 | 56.5 |
| National Weather Service on Radio or TV | 92.7 | 94.2 | 94.0 | 92.3 | 91.7 |

Table 20

When Residents Would Evacuate By County (Percentage)

| When | County | | | | |
|---|-----------------|-------------------|-----------------------|----------------------|-------------------|
| | Polk (N=647) | Hardee (N=138) | Okeechobee (N=152) | Highlands (N=172) | DeSoto (N=135) |
| Before Official Order | 16.1% | 13.9% | 27.0% | 13.9% | 17.0% |
| Median Time Before Hit Coast | 2.0 Hrs | 4.2 Hrs | 2.3 Hrs | 2.5 Hrs | 2.5 Hrs |
| When Given Official Order | 68.9% | 59.9% | 61.2% | 62.2% | 66.7% |
| Median Time After Order | 0.3 Hrs | 0.2 Hrs | 0.2 Hrs | 0.2 Hrs | 0.1 Hrs |
| Percent Leaving Within 1 Hour of Receiving Order | 94.1% | 92.6% | 94.6% | 95.3% | 94.4% |
| Would Not Evacuate | 10.9% | 24.1% | 9.9% | 18.6% | 15.6% |
| Use Own Judgment | 1.5% | 2.2% | ---- | ---- | ---- |
| Do Not Know | 2.6% | 0.7% | 2.0% | 5.2% | 0.7% |

Table 21

When Mobile Home and Non-Mobile Home Residents Would Evacuate by County

| When | County | | | | | | | | | |
|----------------------------------|---------------|----------------|---------------|----------------|---------------|---------------|---------------|----------------|---------------|---------------|
| | Polk | | Hardee | | Okeechobee | | Highlands | | DeSoto | |
| | MH (N=159) | NMH (N=492) | MH (N=22) | NMH (N=116) | MH (N=76) | NMH (N=76) | MH (N=39) | NMH (N=133) | MH (N=53) | NMH (N=82) |
| Before Official Order | 32.7 | 10.6 | 27.3 | 11.2 | 34.2 | 19.7 | 20.5 | 12.9 | 20.8 | 14.6 |
| Median Time Before Hit Coast | 2.0 Hours | 1.8 Hours | 8.0 Hours | 3.5 Hours | 3.25 Hours | 1.5 Hours | 1.5 Hours | 3.0 Hours | 2.5 Hours | 2.5 Hours |
| When Given Official Order | 62.3 | 70.5 | 63.7 | 58.6 | 57.9 | 64.5 | 74.4 | 62.9 | 67.9 | 65.9 |
| Median Time After | 0.30 Hours | 0.29 Hours | 0.14 Hours | 0.26 Hours | 0.17 Hours | 0.20 Hours | 0.10 Hours | 0.24 Hours | 0.17 Hours | 0.1 Hours |
| Percentage Leaving With One Hour | 91.9 | 94.1 | 100.0 | 91.0 | 97.7 | 91.8 | 100.0 | 93.6 | 97.2 | 92.6 |
| Would Not Evacuate | 3.1 | 13.4 | 4.5 | 27.6 | 5.3 | 14.5 | 5.1 | 24.2 | 9.4 | 19.5 |
| Use Own Judgment | 1.2 | 0.2 | ---- | 2.8 | ---- | ---- | ---- | ---- | ---- | ---- |
| Do Not Know | 0.6 | 4.1 | 4.5 | ---- | 2.6 | 1.3 | ---- | ---- | 1.3 | ---- |

Table 22

Years Living In Area And Would Not Evacuate By County

| Years In Area | County | | | | |
|---------------|-----------------|----------------|----------------|----------------|----------------|
| | Polk | Hardee | Okeechobee | Highlands | DeSoto |
| 5 or less | 2.2 (N=136) | 16.7 (N=18) | 8.3 (N=48) | 16.4 (N=55) | 16.2 (N=37) |
| 6 - 14 | 11.2 (N=152) | 10.7 (N=28) | 12.5 (N=48) | 17.0 (N=53) | 16.7 (N=48) |
| 15 - 29 | 8.1 (N=149) | 13.9 (N=36) | 4.5 (N=22) | 15.4 (N=26) | 13.3 (N=30) |
| 30 and over | 19.8 (N=192) | 40.7 (N=54) | 12.9 (N=31) | 34.5 (N=29) | 15.8 (N=19) |

Entries: Percentage Not Evacuating
 N= Total N for Particular Years in Area

Table 24

What Mobile Home and Non-Mobile Home Residents Would do if
Ordered to Evacuate But Weather Fine

| What Do | County | | | | | | | | | |
|------------------------------------|---------------|----------------|--------------|----------------|--------------|---------------|--------------|----------------|--------------|---------------|
| | Polk | | Hardee | | Okeechobee | | Highlands | | DeSoto | |
| | MH (N=151) | NMH (N=444) | MH (N=21) | NMH (N=103) | MH (N=75) | NMH (N=71) | MH (N=38) | NMH (N=111) | MH (N=51) | NMH (N=82) |
| Leave Immediately | 77.5 | 67.6 | 73.9 | 60.2 | 62.7 | 67.6 | 76.3 | 64.0 | 78.7 | 70.7 |
| Wait One Hour | 5.3 | 4.3 | 4.3 | 4.8 | 10.7 | 9.9 | 2.6 | 5.4 | 3.9 | 8.5 |
| Wait Two or More Hours | 2.6 | 0.9 | 8.7 | 6.8 | 1.3 | 5.6 | --- | 6.3 | 10.2 | 4.9 |
| Use Own Judgment or Do Not Know | 16.0 | 26.6 | 8.7 | 28.1 | 25.3 | 16.9 | 21.1 | 24.3 | 8.1 | 6.1 |

Table 25

Vehicles Used To Evacuate By County

| Vehicle | County | | | | |
|---------------|-----------------|-------------------|-----------------------|----------------------|-------------------|
| | Polk (N=588) | Hardee (N=127) | Okeechobee (N=141) | Highlands (N=160) | DeSoto (N=129) |
| Sedan | 72.8 | 52.8 | 46.2 | 72.5 | 65.9 |
| Station Wagon | 7.8 | 12.6 | 9.8 | 5.6 | 9.3 |
| Jeep | 1.4 | 2.4 | 0.7 | 0.6 | ---- |
| Pick Up Truck | 9.7 | 18.9 | 25.2 | 10.6 | 14.7 |
| Van | 2.6 | 3.1 | 2.8 | 3.8 | 4.6 |
| Other | 1.7 | 3.1 | 2.8 | 3.1 | 1.6 |
| Two or More | 4.1 | 7.1 | 12.6 | 3.8 | 3.9 |

Table 26

Vehicles Used to Evacuate and Mobile Home,
Non-Mobile Home Residence by County

| Vehicle | County | | | | | | | | | |
|---------------|---------------|----------------|--------------|----------------|--------------|---------------|--------------|----------------|--------------|---------------|
| | Polk | | Hardee | | Okeechobee | | Highlands | | DeSoto | |
| | MH (N=159) | NMH (N=437) | MH (N=23) | NMH (N=104) | MH (N=72) | NMH (N=71) | MH (N=39) | NMH (N=126) | MH (N=53) | NMH (N=76) |
| Sedan | 71.5 | 73.2 | 47.8 | 53.8 | 45.8 | 46.5 | 74.3 | 71.4 | 66.0 | 65.8 |
| Station Wagon | 7.3 | 8.0 | 21.7 | 10.6 | 6.9 | 12.7 | 5.7 | 5.6 | 11.3 | 7.9 |
| Jeep | 0.7 | 1.6 | ---- | 2.9 | 1.4 | ---- | ---- | 0.8 | ---- | ---- |
| Pick Up Truck | 9.3 | 9.8 | 17.4 | 19.2 | 27.8 | 22.5 | 8.6 | 11.1 | 13.2 | 15.8 |
| Van | 2.6 | 2.5 | 4.3 | 2.9 | 2.8 | 2.8 | 5.7 | 3.2 | 3.8 | 5.3 |
| Other | 4.6 | 0.7 | 4.3 | 2.9 | 2.8 | 2.8 | 2.9 | 3.2 | 1.9 | 1.1 |
| Two or More | 4.0 | 4.1 | 4.3 | 7.7 | 12.5 | 12.7 | 2.9 | 4.0 | 3.8 | 3.9 |

Table 27

Where Residents Would Like To Go By County (Percentage)

| | County | | | | |
|----------------|-----------------|-------------------|-----------------------|----------------------|-------------------|
| | Polk (N=609) | Hardee (N=123) | Okeechobee (N=144) | Highlands (N=149) | DeSoto (N=123) |
| Public Shelter | 49.4 | 51.2 | 39.6 | 54.4 | 58.5 |
| <u>Where</u> | (N=291) | (N=64) | (N=54) | (N=80) | (N=71) |
| Polk | 89.6 | 3.1 | ---- | ---- | 1.4 |
| Hardee | 0.3 | 90.6 | ---- | ---- | ---- |
| Okeechobee | ---- | 1.6 | 90.7 | ---- | ---- |
| Highlands | 0.3 | 3.1 | ---- | 91.2 | ---- |
| DeSoto | 0.7 | 1.6 | ---- | 1.2 | 98.6 |
| Other | 1.0 | ---- | ---- | 1.2 | ---- |
| Do Not Know | 7.9 | ---- | 9.3 | 6.2 | ---- |
| Friend | 21.7 | 31.7 | 31.9 | 18.1 | 21.1 |
| <u>Where</u> | (N=105) | (N=30) | (N=27) | (N=20) | (N=22) |
| Polk | 64.7 | 13.3 | ---- | 5.0 | 13.6 |
| Hardee | 1.9 | 53.3 | ---- | ---- | ---- |
| Okeechobee | ---- | 3.3 | 51.8 | 5.0 | ---- |
| Highlands | 1.0 | 3.3 | 3.7 | 70.0 | ---- |
| DeSoto | ---- | ---- | ---- | ---- | 72.3 |
| Other | 14.3 | 3.3 | 22.2 | 10.0 | 4.5 |
| Do Not Know | 18.1 | 20.0 | 22.2 | 10.0 | 9.1 |
| Motel | 12.3 | 8.9 | 19.4 | 13.4 | 9.8 |
| <u>Where</u> | (N=60) | (N=7) | (N=19) | (N=17) | (N=6) |
| Polk | 48.3 | 14.3 | ---- | 5.9 | 16.7 |
| Hardee | ---- | 14.3 | ---- | 5.9 | ---- |
| Okeechobee | ---- | ---- | 36.8 | ---- | ---- |
| Highlands | ---- | ---- | 10.5 | 35.3 | ---- |
| DeSoto | ---- | ---- | ---- | ---- | 33.3 |
| Other | 16.7 | 28.6 | 5.2 | 11.8 | ---- |
| Do Not Know | 35.0 | 42.8 | 47.4 | 41.2 | 50.0 |
| Do Not Know | 16.6 | 8.1 | 9.0 | 14.1 | 10.6 |

Table 28

Where Would Residents Go By County (Percent)

| Where | County | | | | |
|------------------|-----------------|-------------------|-----------------------|----------------------|-------------------|
| | Polk (N=542) | Hardee (N=119) | Okeechobee (N=137) | Highlands (N=129) | DeSoto (N=119) |
| Public Shelter | 47.2 | 36.8 | 35.8 | 52.7 | 46.2 |
| Know Where It Is | 38.8 | 67.4 | 57.8 | 56.3 | 83.6 |
| Friend | 13.8 | 25.2 | 21.9 | 11.6 | 16.0 |
| Know Where It Is | 73.6 | 69.6 | 81.5 | 61.5 | 70.6 |
| Motel | 9.6 | 4.2 | 18.2 | 5.4 | 5.0 |
| Know Where It Is | 67.4 | 60.0 | 68.2 | 66.7 | 66.7 |
| Other | 3.1 | 7.6 | ---- | 1.6 | 4.2 |
| Do Not Know | 25.6 | 26.0 | 24.1 | 29.4 | 28.6 |

Table 29

Where Would Mobile Home and Non-Mobile Home
Evacuate to by County

| Where | County | | | | | | | | | |
|----------------|---------------|----------------|--------------|---------------|--------------|---------------|--------------|---------------|--------------|---------------|
| | Polk | | Hardee | | Okeechobee | | Highlands | | DeSoto | |
| | MH (N=137) | NMH (N=405) | MH (N=22) | NMH (N=97) | MH (N=67) | NMH (N=70) | MH (N=31) | NMH (N=98) | MH (N=49) | NMH (N=70) |
| Public Shelter | 31.4 | 52.6 | 54.5 | 33.0 | 38.8 | 32.9 | 58.1 | 51.0 | 49.0 | 44.0 |
| Friend | 21.2 | 11.1 | 22.7 | 25.8 | 14.9 | 28.6 | 12.9 | 11.2 | 18.4 | 14.0 |
| Motel | 12.4 | 8.6 | ---- | 5.1 | 26.9 | 10.0 | 3.2 | 6.1 | 6.1 | 4.0 |
| Other | 5.1 | 3.2 | 4.5 | 8.2 | ---- | ---- | 3.2 | 1.0 | 2.0 | 5.0 |
| Do. Not Know | 29.2 | 24.4 | 18.2 | 27.8 | 19.4 | 28.6 | 22.6 | 30.6 | 24.5 | 31.0 |

Table 30

Time in Area and Where Would Go by County

| Years | County | | | | | | | | | |
|-------------|-----------------|------|----------------|------|----------------|------|----------------|------|----------------|------|
| | Polk | | Hardee | | Okeechobee | | Highlands | | DeSoto | |
| | PS | DKN | PS | DKN | PS | DKN | PS | DKN | PS | DKN |
| 5 or less | 44.3 (N=115) | 29.6 | 38.9 (N=18) | 5.6 | 35.6 (N=45) | 20.0 | 46.8 (N=47) | 34.0 | 30.0 (N=34) | 29.4 |
| 6 - 14 | 35.7 (N=126) | 32.5 | 32.0 (N=25) | 24.0 | 31.0 (N=42) | 26.2 | 51.2 (N=41) | 34.1 | 50.0 (N=42) | 31.0 |
| 15 - 29 | 45.9 (N=133) | 26.3 | 38.2 (N=34) | 32.4 | 47.6 (N=21) | 23.8 | 50.0 (N=20) | 15.0 | 44.0 (N=25) | 20.0 |
| 30 and over | 54.0 (N=166) | 16.9 | 39.0 (N=41) | 29.3 | 34.5 (N=29) | 27.6 | 68.2 (N=22) | 18.2 | 33.3 (N=18) | 22.2 |

N = Total N for particular years in area.

PS - Public shelter.

DKN - Do not know where they would go.

Table 31

County Would Go To By County

| County or State Go To | County In | | | | |
|-----------------------|-----------------|------------------|----------------------|----------------------|------------------|
| | Polk (N=361) | Hardee (N=82) | Okeechobee (N=94) | Highlands (N=104) | DeSoto (N=82) |
| Polk | 77.0 | 11.0 | 1.1 | 1.0 | 3.6 |
| Hardee | 0.3 | 69.5 | ---- | ---- | ---- |
| Okeechobee | ---- | ---- | 68.1 | 1.0 | ---- |
| Highlands | ---- | 2.4 | 3.2 | 81.7 | ---- |
| DeSoto | 0.6 | ---- | ---- | 1.1 | 87.8 |
| Georgia | 5.0 | 6.1 | 6.4 | ---- | 2.4 |
| Out of State North | 5.3 | 4.9 | 5.3 | 9.6 | ---- |
| Orange | 1.4 | 2.4 | ---- | 1.9 | ---- |
| Alachua | ---- | ---- | ---- | 1.9 | ---- |
| Central Florida | ---- | ---- | 2.1 | ---- | ---- |
| Far Away | 1.1 | ---- | 2.1 | ---- | ---- |
| Palm Beach | ---- | ---- | 2.1 | ---- | ---- |
| North Carolina | 0.8 | ---- | ---- | ---- | ---- |
| Marion | 0.8 | ---- | ---- | ---- | ---- |
| Illinois | 1.1 | ---- | ---- | ---- | ---- |
| Oceola | 0.8 | ---- | ---- | ---- | ---- |

Table 32

County Would Evacuate to and
Mobile Home, Non-Mobile Home by County

| County or State Go To | County | | | | | | | | | |
|--------------------------|--------------|----------------|--------------|---------------|--------------|---------------|--------------|---------------|--------------|---------------|
| | Polk | | Hardee | | Okcechobee | | Highlands | | DeSoto | |
| | MH (N=95) | NMH (N=266) | MH (N=14) | NMH (N=68) | MH (N=55) | NMH (N=39) | MH (N=31) | NMH (N=73) | MH (N=34) | NMH (N=49) |
| Polk | 75.8 | 77.4 | 14.3 | 10.3 | 1.8 | ---- | ---- | 1.4 | 2.4 | 4.1 |
| Hardee | ---- | 0.4 | 78.6 | 67.6 | ---- | ---- | ---- | ---- | ---- | ---- |
| Okeechobee | ---- | ---- | ---- | ---- | 70.9 | 64.1 | ---- | 1.4 | ---- | ---- |
| Highlands | ---- | ---- | ---- | 2.9 | 1.8 | 5.1 | 80.6 | 82.2 | ---- | ---- |
| DeSoto | ---- | ---- | ---- | ---- | ---- | ---- | ---- | 1.4 | 85.3 | 87.1 |
| Georgia | 3.2 | 5.6 | 7.1 | 5.9 | 5.5 | 7.7 | ---- | ---- | ---- | 4.1 |
| Out of State | 3.2 | 6.0 | ---- | 5.9 | 5.5 | 5.1 | 12.9 | 8.2 | 4.5 | ---- |
| North | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- |

Table 33

Most Frequently Mentioned Routes By County

| Route | County | | | | |
|---------------|-----------------|------------------|----------------------|---------------------|------------------|
| | Polk (N=250) | Hardee (N=67) | Okeechobee (N=91) | Highlands (N=74) | DeSoto (N=71) |
| 60 | 18.0 | ---- | ---- | ---- | ---- |
| 27 | 22.8 | 8.9 | 12.1 | 45.9 | ---- |
| I-4 | 6.0 | ---- | ---- | ---- | ---- |
| Local Streets | 28.8 | 47.8 | 12.1 | 43.2 | 30.1 |
| I-75 | 11.2 | ---- | 7.7 | 9.4 | 7.0 |
| 98 | 8.8 | ---- | 8.9 | ---- | ---- |
| 37 | 4.0 | ---- | ---- | ---- | ---- |
| 64 | ---- | 11.9 | ---- | ---- | ---- |
| 17 | ---- | 31.3 | ---- | ---- | 35.2 |
| 70 | ---- | ---- | 18.7 | ---- | 25.3 |
| 441 | ---- | ---- | 37.4 | ---- | ---- |
| Turnpike | ---- | ---- | 6.6 | ---- | ---- |
| 710 | ---- | ---- | 6.6 | ---- | ---- |
| 31 | ---- | ---- | ---- | ---- | 7.0 |

Table 34

Most Frequently Mentioned Routes and
Mobile Home, Non-Mobile Home by County

| Route | County | | | | | | | | | |
|---------------|--------------|----------------|--------------|---------------|--------------|---------------|--------------|---------------|--------------|---------------|
| | Polk | | Hardee | | Okeechobee | | Highlands | | DeSoto | |
| | MH (N=68) | NMH (N=182) | MH (N=14) | NMH (N=53) | MH (N=46) | NMH (N=45) | MH (N=22) | NMH (N=52) | MH (N=29) | NMH (N=38) |
| 60 | 25.0 | 15.4 | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- |
| 27 | 27.9 | 20.8 | ---- | 9.4 | 13.0 | 17.7 | 45.5 | 46.1 | ---- | ---- |
| I-4 | 4.4 | 6.0 | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- |
| Local Streets | 25.0 | 29.1 | 35.7 | 50.9 | 8.7 | 15.5 | 54.5 | 38.5 | 34.4 | 36.8 |
| I-75 | 11.7 | 11.0 | ---- | ---- | 8.7 | ---- | ---- | ---- | ---- | 7.5 |
| 98 | ---- | ---- | ---- | ---- | 10.9 | 6.7 | ---- | ---- | ---- | ---- |
| 37 | 2.9 | 4.4 | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- |
| 64 | ---- | ---- | 14.3 | 11.3 | ---- | ---- | ---- | 5.8 | ---- | ---- |
| 17 | 5.8 | 2.2 | 28.6 | 32.1 | ---- | 4.4 | ---- | ---- | 27.6 | 44.7 |
| 70 | ---- | ---- | ---- | ---- | 26.0 | 11.1 | ---- | ---- | 37.9 | 18.4 |
| 441 | ---- | ---- | ---- | ---- | 34.8 | 40.0 | ---- | ---- | ---- | ---- |
| Turnpike | ---- | ---- | ---- | ---- | ---- | 13.3 | ---- | ---- | ---- | ---- |
| 710 | ---- | ---- | ---- | ---- | 10.9 | ---- | ---- | ---- | ---- | ---- |
| 31 | ---- | ---- | ---- | ---- | 6.5 | ---- | ---- | ---- | ---- | ---- |

Appendix A

HURRICANE PREPAREDNESS QUESTIONNAIRE

Name _____ Interviewer Code No. _____
Address _____ Respondent Code No. _____
Phone No. _____

1 2 3 4

Date of Attempt _____

Time of Attempt _____

Result of Attempt _____

Person and Time to call back _____

Hello, I am _____ of the University of South Florida. We are doing a study for the Central Florida Regional Planning Council regarding peoples' plans for hurricane evacuation. I hope that you will answer the few questions we need to ask so that evacuation plans can be developed. All your responses will remain anonymous in that after the data are coded all identifying information will be destroyed.

Is this Mr. or Ms. _____ ?
If no, do you live at this residence? yes__ no__
If yes, continue. If no, find out when residents will be there.

1. What type of home do you live in?

__single family house

__two family house

__apartment

__mobile home

2. How many persons live in your house or apartment? _____

What are their ages? _____

Does anyone in your home have special transportation needs or need special assistance to travel . . . for example is anyone handicapped or elderly?

yes no

If yes, why do they have special needs? _____

Would you need outside assistance to evacuate them?

yes no

3. How many cars or trucks are there in your household? _____

What kinds of vehicles are they?

sedan__ station wagon__ Jeep__ pickup truck__ van__

other (specify) _____.

(If zero to question 3): Would you need transportation such as a bus or taxi?

yes__ no__

4. If you were to evacuate, which of the vehicles would you use?

Specify _____.

5. From whom would you seek advice on whether and when to evacuate?

Neighbor:

yes__ no__

Friend:

yes__ no__

Local government or law enforcement officials:

yes__ no__

National Weather Service advisories on radio or TV:

yes__ no__.

6. If a hurricane were to hit the coast when, if ever, would you evacuate?

- a. ___ Before an official order to do so.
- b. ___ When given the official order to do so.
- c. ___ Would not evacuate.

(If a.) How soon before the hurricane was expected to hit the coast would you leave? _____ hours.

(If b.) Assuming everyone is home, how soon would you be ready to leave? _____ hours.

7. What would you do if told to evacuate but the weather was fine outside? (e.g., wait, leave immediately). If wait, when would you leave? _____ hours (0 hours for leave immediately)

8. If you evacuated, where would you like to go?
- ___ Public shelter in the five-county area (DeSoto, Hardee, Polk, Highlands, Okeechobee) (If yes, in which county? _____)
- ___ Friend or relative (if yes, where do they live? _____ city and county)
- ___ Motel (if yes, where _____ city and county)
- ___ Don't know (Do not say this)
9. If you evacuated, where would you go? _____
(city and county, also record don't know)
Do you know where that is?
yes___ no___ (If no, go to question 11).
10. What route would you take to get there, especially major streets and highways? _____

11. How long have you lived in the five-county area? _____
12. Do you live here all year round?
yes___ no___
If no, during what months do you live here? _____

13. Have you ever been in a hurricane?

yes__ no__

If yes, where and when _____

Have you ever been evacuated because of a hurricane?

yes__ no__

Thank you for your help.

Appendix B

TABLE 1

Means, Standard Errors, and 95% Confidence Intervals
for Selected Variables, Polk County

| Variable | \bar{X} | Standard Error | Confidence Interval |
|--|-----------|----------------|---------------------|
| Number of household residents | 2.60 | 0.05 | 2.50- 2.70 |
| Age of oldest household resident | 56.45 | 0.66 | 55.16-57.74 |
| Total number of vehicles in household | 1.75 | 0.04 | 1.67- 1.83 |
| Time in hours would leave before expected landfall | 8.31 | 1.89 | 4.61-12.01 |
| Time in hours to be ready to leave, assuming everyone home | 0.84 | 0.27 | 0.30- 1.38 |
| Time to leave if told to evacuate but weather fine | 0.91 | 0.10 | 0.71- 1.11 |
| Years of residence in the five-county area | 21.46 | 0.68 | 20.13-22.80 |

Appendix B

TABLE 2

Means, Standard Errors, and 95% Confidence Intervals
for Selected Variables, Hardee County

| Variable | \bar{X} | Standard Error | Confidence Interval |
|--|-----------|----------------|---------------------|
| Number of household residents | 3.14 | 0.13 | 2.89- 3.39 |
| Age of oldest household resident. | 55.03 | 1.44 | 52.21-57.85 |
| Total number of vehicles in household | 1.96 | 0.09 | 1.78- 2.14 |
| Time in hours would leave before expected landfall | 14.77 | 7.2 | 0.66-28.88 |
| Time in hours to be ready to leave, assuming everyone home | 0.40 | 0.07 | 0.26- 0.54 |
| Time to leave if told to evacuate, but weather fine | 1.69 | 0.26 | 1.18- 2.20 |
| Years of residence in the five-county area | 27.01 | 1.74 | 23.60-30.42 |

Appendix B

TABLE 3

Means, Standard Errors, and 95% Confidence Intervals
for Selected Variables, Okeechobee County

| Variable | \bar{X} | Standard Error | Confidence Interval |
|--|-----------|----------------|---------------------|
| Number of household residents | 2.80 | 0.11 | 2.58- 3.02 |
| Age of oldest household resident | 55.70 | 1.28 | 53.19-58.21 |
| Total number of vehicles in household | 1.93 | 0.08 | 1.77- 2.09 |
| Time in hours would leave before expected landfall | 6.57 | 1.73 | 3.18- 9.96 |
| Time in hours to be ready to leave, assuming everyone home | 0.33 | 0.06 | 0.21- 0.45 |
| Time to leave if told to evacuate but weather fine | 1.14 | 0.21 | 0.73- 1.55 |
| Years of residence in the five-county area | 16.68 | 1.37 | 13.99-19.37 |

Appendix B

TABLE 4

Means, Standard Errors, and 95% Confidence Intervals
for Selected Variables, Highlands County

| Variable | \bar{X} | Standard Error | Confidence Interval |
|--|-----------|----------------|---------------------|
| Number of household residents | 2.39 | 0.14 | 2.12- 2.66 |
| Age of oldest household resident | 67.08 | 1.27 | 58.59-63.57 |
| Total number of vehicles in household | 1.52 | 0.07 | 1.45- 1.59 |
| Time in hours would leave before expected landfall | 8.15 | 2.23 | 3.78-12.52 |
| Time in hours to be ready to leave, assuming everyone home | 1.04 | 0.65 | 0.00- 2.31 |
| Time to leave if told to evacuate but weather fine | 1.59 | 0.23 | 1.14- 2.04 |
| Years of residence in the five-county area | 15.17 | 1.14 | 12.94-16.31 |

Appendix B

TABLE 5

Means, Standard Errors, and 95% Confidence Intervals
for Selected Variables, DeSoto County

| Variable | \bar{X} | Standard Error | Confidence Interval |
|--|-----------|----------------|---------------------|
| Number of household residents | 2.61 | 0.11 | 2.39- 2.83 |
| Age of oldest household resident | 57.45 | 1.40 | 54.71-60.19 |
| Total number of vehicles in household | 1.66 | 0.09 | 1.48- 1.84 |
| Time in hours would leave before expected landfall | 6.67 | 2.08 | 2.59-10.75 |
| Time in hours to be ready to leave, assuming everyone home | 0.29 | 0.06 | 0.17- 0.41 |
| Time to leave if told to evacuate but weather fine | 0.66 | 0.16 | 0.35- 0.97 |
| Years of residence in the five-county area | 15.62 | 1.29 | 13.09-18.15 |

APPENDIX C

APPENDIX C

EVACUATION ROUTES

| ZONE NUMBERS | ZONE BOUNDARIES | EVACUATION ROUTES | SHELTERS |
|--------------|---|--|---|
| P-1 | <p>North: Pasco Co. line & US 98</p> <p>East: US 98, SR 582 (W. Socrum Loop Rd), Polk City Rd, McDonald Rd.</p> <p>South: I-4</p> <p>West: Hillsborough and Pasco County lines.</p> | <p>W. Socrum Loop Rd(SR 35A and SR 582) Banana/Wilder Rd</p> <p>W. Campbell Rd, Duff Rd, Daughtery Rd, Deeson Rd, Knight Station/Griffin Rd, (SR 582), Bella Vista St., Kathleen Rd (SR 35A) Providence Rd (US 98)</p> | <p>Kathleen Elementary</p> <p>Kathleen Jr. High</p> <p>Griffin Elementary</p> <p>Winston Elementary</p> |
| P-2 | <p>North: Sumter and Lake Co. line</p> <p>East: Hickman Rd (graded Rd extension of SR 557A)</p> <p>South: I-4, Socrum Loop/Polk City Rd.</p> <p>West: Socrum Loop Rd, US 98</p> | <p>Old Polk City Rd, SR 33, SR 559A, SR 559</p> | <p>Polk City Elementary</p> |
| P-3 | <p>North: Lake County Line</p> <p>East: Osceola County Line</p> <p>South: I-4</p> <p>West: Hickman Rd (graded Rd extension of 557A)</p> | <p>US 27, Dean Still Rd (graded) SR 54, Vaughn Beauchamp Rd.</p> | <p>Polk City Elementary</p> |

P = Polk County

APPENDIX C
EVACUATION ROUTES
(continued)

| ZONE NUMBERS | ZONE BOUNDARIES | EVACUATION ROUTES | SHELTERS |
|--------------|--|--|--|
| P-4 | North and East: Osceola Co. line South: US 17/92, US 27, North City limit of Lake Hamilton, SR 546, and a line extending east from SR 546 to the Polk/Osceola County line. West: SR 557A, SR 557, Creek Rd, Evenhouse Rd, Jackson Rd, Old Haines City-Lake Alfred Rd, Fletchers Cut-off, North and East Shorelines of Lake Haines, East and South Shorelines of Lake Rochelle. | US 17/92, County Rd 17, US 27, SR 574, SR 580, SR 544, Hinson Ave, (Haines City), Peninsular Dr (Haines City), Polk City Rd/ Minnie Ave, (Haines City) 10th St/Kingham Rd, (Haines City) Jackson Hwy. (Davenport). | Davenport Elementary Bethune Elementary Eastside Elementary Haines City Sr. High Haines City Jr. High Alta Vista Elementary |
| P-5 | North: I-4 East: SR 35A (Kathleen Rd) SR 37. South: Cresap St/Lake Hunter Dr. Bennett/Highland St, SR 542. West: Polk/Hillsborough County line. | SR 35A, US 92 Business, SR 600A (Memorial Blvd), Galloway Rd. | Kathleen Sr. High Seth McKeel Jr. High Jesse Keen Elementary |
| P-6 | North: I-4 East: SR 33 to Lakeland City limit. South: 10th St/Parkview Place West: SR 35A | US 98, SR 582, SR 700 (N. Florida Ave.) SR 33 (Lakeland Hills Blvd.) | North Lakeland Elementary |

APPENDIX C
EVACUATION ROUTES
(continued)

| ZONE NUMBERS | ZONE BOUNDARIES | EVACUATION ROUTES | SHELTERS |
|--------------|---|---|---|
| P-7 | North: 10th St/Parkview Place, south shoreline of Lake Parker, US 92 East: SR 33A (Combee Rd.) South: SR 33A (Edgewood Dr.) West: SR 37 (S. Fla Ave.) SR 35A (Kathleen Rd.) | SR 37 (S. Florida Ave.) SR 600A (Memorial Blvd) US 92 (Lake Parker Dr.) US 92 Business (Gary Rd.) US 98, US 98 Business SR 33 (Massachusetts Ave/ Lakeland Hills Blvd. SR 33A (Edgewood Dr.) Crystal Lake Dr. | Lime Street Elementary Lakeland Sr. High Crystal Lake Elementary Crystal Lake Jr. High Cleveland Court Elementary |
| P-8 | North: I-4 East: SR 33, Seaboard Coast- line R.R. Right-of-way, SR 546, Saddle Creek South: US 92, South shoreline of Lake Parker West: SR 33 from Lakeland City limit to I-4, I-4 | Old Combee Rd, Tenoroc Mine Rd, SR 33A (Combee Rd), SR 546 (Saddle Creek Rd) Lake Parker Dr, East Lake Parker Dr. | Combee Elementary |
| P-9 | North: I-4 East: SR 655/Seaboard C.L.R.R. South: SR 546 West: Seaboard Coastline R.R., SR 33 | Same as boundaries | Combee Elementary Lena Vista Elementary |

APPENDIX C
EVACUATION ROUTES

(continued)

| ZONE NUMBERS | ZONE BOUNDARIES | EVACUATION ROUTES | SHELTERS |
|--------------|--|--|---|
| P-10 | <p>North: I-4</p> <p>East: East shore of Lake Mattie, Lake Mattie Rd, Adams Grove Rd, Lynchburg Rd.</p> <p>South: US 92, west shoreline of Lake Jessie, SR 544A/ Derby Rd.</p> <p>West: SR 655/Seaboard C.L.R.R.</p> | <p>SR 559, SR 559A, SR 655, US 92, Ariana Blvd, Plaklakaha Ave, Bridgers Ave, US 92 (Magnolia Ave) SR 544A</p> | <p>Auburndale Sr. High Auburndale Jr. High Auburndale Middle School Bridgers Ave. Elementary Auburndale Central Elem. Lena Vista Elementary</p> |
| P-11 | <p>North: I-4</p> <p>East: SR 557A, SR 557, Creek Rd, Evenhouse Rd, Jackson Rd, Old Haines City-Lake Alfred Rd, Fletchers cut-off, north and east shorelines of Lake Haines, east and south shorelines of Lake Rochelle.</p> <p>South: US 92</p> <p>West: Lynchburg Rd, Adams Grove Rd, Lake Mattie Rd, east shoreline of Lake Mattie.</p> | <p>SR 557A, SR 557, SR 555, US 17/92</p> | <p>Lake Alfred Primary School Lake Alfred Elementary</p> |
| P-12 | <p>North: US 17/92</p> <p>East: US 27, West city limits of Lake Hamilton & Dundee.</p> <p>South: Country Club Dr, Buckeye Loop Rd.</p> <p>West: West city limits of Winter Haven, west shoreline of Lake Smart, east shoreline of Lake Rochelle, south city limits of Lake Alfred, east shoreline of Lake Haines.</p> | <p>SR 544, Old Lucerne Park Rd.</p> | <p>Ridge Vocational Technical Center</p> |

APPENDIX C
EVACUATION ROUTES

| ZONE NUMBERS | ZONE BOUNDARIES | (continued) EVACUATION ROUTES | SHELTERS |
|--------------|--|--|--|
| P-13 | North: SR 542, Bennett/Highland St., Lake Hunter Dr, Cresap St. East: SR 37 (Florida Ave), SR 33A (Edgewood Dr), SR 37B (Lake-land Highlands Rd). South: SR 540A (Central Barn Rd) Carter Rd, Shepherd Rd. West: Hillsborough County line. | SR 542, Airport Rd, Drane Field Rd, Medulla/Pipkin Rd/Lake Miriam Dr, SR 540A, SR 37A (Scott Lake Rd), SR 37B (Lakeland Highlands Rd) | Southwest Jr. High Carlton Palmore Elementary Lakeland Highlands Jr. High Medulla Elementary Scott Lake Elementary |
| P-14 | North: US 92 East: Saddle Creek South: SR 540, US 98 West: SR 33A (Combee Rd) | Maine Ave, Reynolds Rd, US 98, SR 540 | Oscar J. Pope Elementary Polk Vocational Technical Center |
| P-15 | North: SR 546 (Saddle Creek Rd/ Old Dixie Hwy. East: Phillips Rd, Howard Dr, US 92, Thornhill Rd. South: SR 540 West: Saddle Creek | SR 542, US 92 | Westwood Jr. High |
| P-16 | North: SR 544A East: W. shoreline of Lake Jessie, Lk Jessie/Lk Idylwild Canal, Lk Idylwild/Lk Cannon Canal, Lk Cannon/Lk Howard Canal, Lk Howard/Lk May Canal, Lk May/Lk Shipp Canal. South: Lk Shipp Dr, Ave Q SW, SR 540 West: Thornhill Rd, US 92, Howard Dr, Phillips Rd. | Recker Hwy, SR 542, Spirit Lake Rd/42nd St., NW Jersey Rd, 26th St NW, 34th St NW, Coleman Rd, 20th St NW, 21st St. NW, Lk Howard Dr NW, 24th St NW. | Garner Elementary Inwood Elementary Westwood Jr. High |

APPENDIX C
EVACUATION ROUTES

| ZONE NUMBERS | ZONE BOUNDARIES | (continued) EVACUATION ROUTES | SHELTERS |
|--------------|---|--|---|
| P-17 | North: US 92, W. shoreline of Lk Rochelle, Hilltop/Conine Dr, W. Shoreline of Lk Smart, 11th St NW, Buckeye Loop Rd/N. Country Dr./S. Country Club Dr. East: S. Country Club Dr, Lk Daisy Rd. South: SR 542/SR 540, Ave R SW. West: Lk May/Lk Shipp Canal, Lk Howard/Lk May Canal, Lk Cannon/Lk Howard Canal, Lk Idylwild/Lk Cannon Canal, Lk Jessie/Lk Idylwild Canal, west shoreline of Lk Jessie. | US 17, SR 542(E. Central Ave), Cypress Gardens Blvd, 1st St SW, 6th St SW. | Jewett Elementary Northeast Jr. High Elbert Elementary Denison Jr. High Winter Haven Sr. High |
| P-18 | North: North city limit of Lake Hamilton, SR 546 and a line extending east from SR 546 to the Polk/Osceola county line. East: Polk/Osceola county line. South: Old Mammouth Grove Rd/Camp Mack Rd. West: US 27, West city limits of Dundee and Lake Hamilton. | SR 546, SR 542, US 27, US 27A, SR 17A, SR 540. | Dundee Elementary |
| P-19 | North: SR 33A (Edgewood Dr), US 98, SR 540. East: West shoreline of Lake Hancock. South: SR 540A. West: SR 37B | US 98, SR 540, SR 540A, SR 37B | Polk Vocational Technical Center Highland City Elementary |

APPENDIX C
EVACUATION ROUTES

| ZONE NUMBERS | ZONE BOUNDARIES | (continued) EVACUATION ROUTES | SHELTERS |
|--------------|--|---|---|
| P-20 | <p>North: SR 540, Lk Shipp Dr, Ave Q SW.</p> <p>East & South: North City Limit of Bartow US 17 South/and east city limits of Eagle Lake.</p> <p>West: US 98 to SR 540, west shoreline of Lake Hancock.</p> | <p>SR 17, Old Bartow-Winter Haven Rd, Thornhill Rd, Eagle Lake Loop Rd.</p> | <p>Eagle Lake Elementary Lake Shipp Elementary</p> |
| P-21 | <p>North: Ave A SW, SR 542/540, S Country Club Rd, Crump Rd.</p> <p>East: West City limits of Lake Hamilton and Dundee, US 27</p> <p>South: Peace Creek drainage canal, Seaboard Coastline R.R., right-of-way SR 540A/Eagle Lake Loop Rd, Rifle Range Rd, SR 559</p> | <p>US 17, SR 655, SR 540, SR 542</p> | <p>Snively Elementary Garden Grove Elementary</p> |
| P-22 | <p>North: Shepherd Rd, Carter Rd.</p> <p>East: Seaboard Coastline R.R. right-of-way, Bonney Mine Rd, SR 640, SR 555.</p> <p>South: Hardee County line.</p> <p>West: Hillsborough County line.</p> | <p>SR 60, SR 37, SR 640, SR 630, SR 674.</p> | <p>Mulberry Jr-Sr High Kingsford Elementary Mulberry Elementary</p> |

APPENDIX C
EVACUATION ROUTES

| ZONE NUMBERS | ZONE BOUNDARIES | (continued) EVACUATION ROUTES | SHELTERS |
|--------------|--|--|---|
| P-23 | North: SR 540A East: US 98/Broadway Ave, SR 60W (Main St.), SR 555 South: SR 640 West: Bonney Mine Rd, SR 60 Seaboard Coastline R.R. right-of-way, SR 37A | US 98, Broadway Ave, Van Fleet Dr, SR 60, E.F. Griffin Rd/Old Lakeland Rd. | Stephens Elementary Bartow Middle School |
| P-24 | North: SR 60 (Main St.) East: Broadway Ave, Stuart Ave, South: Six Mile Creek/Cedar Branch West: SR 555 | Main St, Broadway Ave, Stuart St, Clower St, SR 555, Kissingen Ave. | Bartow Civic Center Bartow High Bartow Jr. High |
| P-25 | North: North city limit of Bartow, US 17, 91 Mine Rd, SR 60. East: SR 655A South: Mann Rd and a line extending from Mann Rd to SR 559. West: Kissingen Ave, Stuart St, Broadway Ave. | SR 60 By-pass, Main St, US 17, Kissingen Ave. | Bartow Elementary Bartow Jr. High Bartow Sr. High |
| P-26 | North: SR 555, SR 559, Rifle Range Rd, Eagle Lake Loop Rd/SR 540A. East: Seaboard Coastline R.R. right-of-way. South: SR 60 West: 91 Mine Rd. | SR 559, SR 655, SR 60, Old Bartow-Lake Wales Rd. | Eagle Lake Elementary |

APPENDIX C
EVACUATION ROUTES

| ZONE NUMBERS | ZONE BOUNDARIES | (continued) EVACUATION ROUTES | SHELTERS |
|--------------|---|--|---|
| P-27 | North: Cedar Branch/Sixmile Creek, US 17, Mann Rd and a line extending from Mann Rd to SR 559. East: SR 559 South: SR 640 West: SR 555 | Same as Boundaries | Bartow Civic Center Bartow Jr. High Bartow Sr. High |
| P-28 | North: SR 60 East: Seaboard Coastline right-of-way, Lake Burrum Rd. South: Lake Buffum Rd, Sinkhole Rd, SR 640. West: SR 559 | SR 60, SR 655A, Alturas-Babson Park cut-off Rd. | Alturas Elementary |
| P-29 | North: Peace Creek Drainage Canal, US 27, Old Mamouth Grove Rd, Camp Mack Rd. East: Osceola County Line South: River Ranch Blvd, SR 60/SR 630, Lake Walk-in-the-water Rd, Lake Buffum Rd, the south town limit of Hillcrest Heights, Alico Rd, and Lake Walk-in-the-water Rd. West: Lake Buffum-West Lake Wales Rd/Seaboard Coastline R.R. | SR 60, US 27, SR 17A, SR 17B, US 27A | Lake Wales Sr. High Lake Wales Jr. High Hillcrest Elementary Janie Howard Wilson Elem. Polk Ave. Elementary Roosevelt Elementary Spook Hill Elementary Lake Wales Adult School |
| P-30 | North: SR 640, Sinkhole Rd. East: A line from Grassy Lake south to Hardee Co. line. South: Hardee County Line. West: District Line Rd/SR 555 | US 17, SR 630, District Line Rd, SR 555, Lake Hendry Rd, Lake Buffum Rd. | Ft. Meade Jr-Sr High Riverside Elementary Ft. Meade Middle School |

APPENDIX C
EVACUATION ROUTES

| ZONE NUMBERS | ZONE BOUNDARIES | (continued) EVACUATION ROUTES | SHELTERS |
|--------------|--|--|---|
| P-31 | <p>North: Lake Buffum Rd, a line connecting Lake Buffum Rd, the south Town of Hillcrest Heights, Alico Rd and Lake Walk-in-the-water Rd, SR 630/SR 60, River Ranch Blvd.</p> <p>East: Osceola County Rd.</p> <p>South: Hardee/Highlands County line.</p> <p>West: A line from Grassy Lake south to Hardee County Line.</p> | <p>Lake Buffum Rd, SR 700, US 27, SR 630A, SR 630, US 27A</p> | <p>Frostproof Elementary Frostproof Jr-Sr High</p> |
| H-1 | <p>North: Polk County Line.</p> <p>East: Okeechobee County Line.</p> <p>South: A line from Hardee County line south of Lake Glenda, including the southern shoreline of Lake Letta and Altwater Rd, the south boundary of Avon Park Bombing Range to Okeechobee County Line.</p> <p>West: Hardee County Line.</p> | <p>SR 64, US 27, SR 17A, SR 17, SR 627</p> | <p>Avon Park High Missionary Church 1ST Baptist Church Old Armory Building Avon Park City Hall Walker Memorial Jr. Academy So. Florida Jr. College</p> |
| H-2 | <p>North: A line from Hardee County line, south of Lake Glenda, including the southern shoreline of Lake Letta and Atwater Rd, the South boundary of Avon Park Bombing Range to Okeechobee County Line.</p> <p>East: Okeechobee County Line.</p> <p>South: W. Josephine Rd/Lk Josephine Rd and a line from Lk Josephine Rd to Okeechobee County Line.</p> <p>West: Hardee County Line.</p> | <p>US 27, US 98, SR 66, SR 17, SR 17A, SR 634, SR 635, SR 623.</p> | <p>Sebring Middle School Agri-Civic Center Fred Wild Elementary 1ST Presbyterian Church Education Building City Pier Youth Center Highlands County Courthouse</p> |

APPENDIX C
EVACUATION ROUTES

| ZONE NUMBERS | ZONE BOUNDARIES | (continued) EVACUATION ROUTES | SHELTERS |
|--------------|---|---|---|
| H-3 | North: West Josephine Rd/Lk Josephine Rd and a line from Lake Josephine Rd to Okeechobee County Line. East: Okeechobee County Line. South: Glades County Line. West: DeSoto County Line. | US 17, SR 621, SR 29, SR 731 SR 619, SR 70 | Lake Placid Grove Warehouse St. Regis Warehouse Lake Placid High School |

H = Highlands County

APPENDIX D

APPENDIX D

POSSIBLE NUMBER OF VEHICLES LEAVING TAMPA BAY REGIONAL PLANNING COUNCIL DUE TO A HURRICANE EVACUATION

Daily Evacuation Volume X Percentage Leaving Region = Possible Number of Vehicles

Storm Category: 3
Response Time: Short

| No. | County | Name | From | To | Daily Evac. Volume | X | % Leaving Region | = | Possible # of Vehicles |
|--------------|--------------|--------------|-------------------|-------------|--------------------|---|------------------|---|------------------------|
| 1 | Pasco | SR-52 | US-19 | I-75N | 10,375 | X | .11 | = | 1,141 |
| 2 | Pasco | SR-54 | US-19 | I-75N | 10,750 | X | .11 | = | 1,183 |
| 3 | Pinellas | CR-582/I-75 | US-19A | I-75N | 9,600 | X | .09 | = | 864 |
| 4 | Pinellas | CR-584/US-92 | US-19A | I-4E | 9,250 | X | .09 | = | 833 |
| 5 | Pinellas | SR-60/I-275 | US-19A | I-4E | 10,500 | X | .09 | = | 945 |
| 6 | Pinellas | CR-688/I-275 | US-19A | I-4E | 47,500 | X | .09 | = | 4,275 |
| 7 | Pinellas | CR-694/US-92 | US-19A | I-4E | 18,750 | X | .09 | = | 1,688 |
| 8 | Pinellas | US-19A/I-275 | CR-699 | I-4E | 7,250 | X | .09 | = | 653 |
| 9 | Hillsborough | I-275/I-4 | Westshore Road | I-4E | 59,000 | X | .09 | = | 5,310 |
| 10 | Hillsborough | US-92 | Gandy Bridge | I-4E | 13,750 | X | .09 | = | 1,238 |
| 11 | Manatee | SR-64 | Anna Maria Bridge | Manatee C/L | 8,280 | X | .11 | = | 911 |
| 12 | Manatee | CR-684 | Cortez Bridge | SR-64W | 16,500 | X | .11 | = | 1,815 |
| TOTAL | | | | | | | | | 20,856 |

1988 Tampa Bay Region Hurricane Study provided hurricane scenarios for category 1, 3, and 5 storms only.

APPENDIX D

cont.

POSSIBLE NUMBER OF VEHICLES LEAVING TAMPA BAY REGIONAL PLANNING COUNCIL DUE TO A HURRICANE EVACUATION

Daily Evacuation Volume X Percentage Leaving Region = Possible Number of Vehicles

Storm Category: 5
Response Time: Short

| No. | County | Name | From | To | Daily Evac. Volume | X | % Leaving Region | = | Possible # of Vehicles |
|--------------|--------------|--------------|-------------------|-------------|--------------------|---|------------------|---|------------------------|
| 1 | Pasco | SR-52 | US-19 | I-75N | 14,500 | X | .11 | = | 1,595 |
| 2 | Pasco | SR-54 | US-19 | I-75N | 14,700 | X | .11 | = | 1,617 |
| 3 | Pinellas | CR-582/I-75 | US-19A | I-75N | 12,500 | X | .09 | = | 1,125 |
| 4 | Pinellas | CR-584/US-92 | US-19A | I-4E | 10,000 | X | .09 | = | 900 |
| 5 | Pinellas | SR-60/I-275 | US-19A | I-4E | 13,500 | X | .09 | = | 1,215 |
| 6 | Pinellas | CR-688/I-275 | US-19A | I-4E | 59,000 | X | .09 | = | 5,310 |
| 7 | Pinellas | CR-694/US-92 | US-19A | I-4E | 22,000 | X | .09 | = | 1,980 |
| 8 | Pinellas | US-19A/I-275 | CR-699 | I-4E | 7,250 | X | .09 | = | 653 |
| 9 | Hillsborough | I-275/I-4 | Westshore Road | I-4E | 64,250 | X | .09 | = | 5,783 |
| 10 | Hillsborough | US-92 | Gandy Bridge | I-4E | 15,000 | X | .09 | = | 1,350 |
| 11 | Manatee | SR-64 | Anna Maria Bridge | Manatee C/L | 9,000 | X | .11 | = | 990 |
| 12 | Manatee | CR-684 | Cortez Bridge | SR-64W | 16,500 | X | .11 | = | 1,815 |
| TOTAL | | | | | | | | | 24,333 |

1988 Tampa Bay Region Hurricane Study provided hurricane scenarios for category 1, 3, and 5 storms only.

APPENDIX D

cont.

POSSIBLE NUMBER OF VEHICLES LEAVING TAMPA BAY REGIONAL PLANNING COUNCIL DUE TO A HURRICANE EVACUATION

Daily Evacuation Volume X Percentage Leaving Region = Possible Number of Vehicles

Storm Category: 3
 Response Time: Average

| No. | County | Name | From | To | Daily Evac. Volume | | % Leaving Region | | Possible # of Vehicles |
|-------|--------------|--------------|-------------------|-------------|--------------------|---|------------------|---|------------------------|
| 1 | Pasco | SR-52 | US-19 | I-75N | 10,500 | X | .11 | = | 1,155 |
| 2 | Pasco | SR-54 | US-19 | I-75N | 10,800 | X | .11 | = | 1,188 |
| 3 | Pinellas | CR-582/I-75 | US-19A | I-75N | 10,600 | X | .09 | = | 1,166 |
| 4 | Pinellas | CR-584/US-92 | US-19A | I-4E | 9,300 | X | .09 | = | 837 |
| 5 | Pinellas | SR-60/I-275 | US-19A | I-4E | 10,600 | X | .09 | = | 954 |
| 6 | Pinellas | CR-688/I-275 | US-19A | I-4E | 47,900 | X | .09 | = | 4,311 |
| 7 | Pinellas | CR-694/US-92 | US-19A | I-4E | 18,900 | X | .09 | = | 1,701 |
| 8 | Pinellas | US-19A/I-275 | CR-699 | I-4E | 7,300 | X | .09 | = | 657 |
| 9 | Hillsborough | I-275/I-4 | Westshore Road | I-4E | 59,500 | X | .09 | = | 5,355 |
| 10 | Hillsborough | US-92 | Gandy Bridge | I-4E | 13,900 | X | .09 | = | 1,251 |
| 11 | Manatee | SR-64 | Anna Maria Bridge | Manatee C/L | 8,400 | X | .11 | = | 924 |
| 12 | Manatee | CR-684 | Cortez Bridge | SR-64W | 16,800 | X | .11 | = | 1,848 |
| TOTAL | | | | | | | | | 21,347 |

1988 Tampa Bay Region Hurricane Study provided hurricane scenarios for category 1, 3, and 5 storms only.

APPENDIX D

cont.

POSSIBLE NUMBER OF VEHICLES LEAVING TAMPA BAY REGIONAL PLANNING COUNCIL DUE TO A HURRICANE EVACUATION

Daily Evacuation Volume X Percentage Leaving Region = Possible Number of Vehicles

Storm Category: 5
Response Time: Average

| No. | County | Name | From | To | Daily Evac. Volume | | % Leaving Region | | Possible # of Vehicles |
|--------------|--------------|--------------|-------------------|-------------|--------------------|---|------------------|---|------------------------|
| 1 | Pasco | SR-52 | US-19 | I-75N | 14,600 | X | .11 | = | 1,606 |
| 2 | Pasco | SR-54 | US-19 | I-75N | 14,800 | X | .11 | = | 1,628 |
| 3 | Pinellas | CR-582/I-75 | US-19A | I-75N | 12,600 | X | .09 | = | 1,134 |
| 4 | Pinellas | CR-584/US-92 | US-19A | I-4E | 10,080 | X | .09 | = | 907 |
| 5 | Pinellas | SR-60/I-275 | US-19A | I-4E | 13,600 | X | .09 | = | 1,224 |
| 6 | Pinellas | CR-688/I-275 | US-19A | I-4E | 59,500 | X | .09 | = | 5,355 |
| 7 | Pinellas | CR-694/US-92 | US-19A | I-4E | 22,200 | X | .09 | = | 1,998 |
| 8 | Pinellas | US-19A/I-275 | CR-699 | I-4E | 7,300 | X | .09 | = | 657 |
| 9 | Hillsborough | I-275/I-4 | Westshore Road | I-4E | 64,800 | X | .09 | = | 5,832 |
| 10 | Hillsborough | US-92 | Gandy Bridge | I-4E | 15,100 | X | .09 | = | 1,359 |
| 11 | Manatee | SR-64 | Anna Maria Bridge | Manatee C/L | 9,100 | X | .11 | = | 1,001 |
| 12 | Manatee | CR-684 | Cortez Bridge | SR-64W | 16,800 | X | .11 | = | 1,848 |
| TOTAL | | | | | | | | | 24,549 |

1988 Tampa Bay Region Hurricane Study provided hurricane scenarios for category 1, 3 and 5 storms only.

APPENDIX D

cont.

POSSIBLE NUMBER OF VEHICLES LEAVING SOUTHWEST FLORIDA REGIONAL
PLANNING COUNCIL DUE TO A HURRICANE EVACUATION

Route Capacity X County Clearance Time = Possible Number of Vehicles

Storm Category: 3

| No. | County | Route | Capacity | | Clearance Times | = | Possible Number of Vehicles | |
|-------|-----------|--------|----------|---|--------------------|---|-----------------------------------|---------|
| 1 | Collier | I-75 | 2,432 | X | 15.7 | = | 38,214 | |
| 2 | Collier | SR-29 | 698 | X | 15.7 | = | 10,959 | |
| 3 | Lee | US-41 | 2,260 | X | 20.0 | = | 45,200 | |
| 4 | Lee | I-75 | 2,432 | X | 20.0 | = | 48,640 | |
| 5 | Lee | SR-31 | 620 | X | 20.0 | = | 12,400 | |
| 6 | Lee | SR-80 | 1,043 | X | 20.0 | = | 20,860 | |
| 7 | Charlotte | US-41 | 2,034 | X | 8.5 | = | 17,289 | |
| 8 | Charlotte | SR-776 | 1,489 | X | 8.5 | = | 12,657 | |
| 9 | Charlotte | US-17 | 1,034 | X | 8.5 | = | 8,789 | |
| 10 | Charlotte | CR-74 | 751 | X | 8.5 | = | 6,384 | |
| 11 | Sarasota | I-75 | 3,647 | X | 12.4 | = | 45,223 | |
| 12 | Hendry | SR-80 | 848 | X | .7 | = | 594 | |
| 13 | Hendry | US-27 | 2,300 | X | .2 | = | 460 | |
| 14 | Glades | US-27 | 1,369 | X | .3 | = | 411 | |
| 15 | Glades | CR-721 | 471 | X | .3 | = | 141 | |
| 16 | Glades | SR-708 | 506 | X | .3 | = | 152 | |
| TOTAL | | | | | | | | 268,373 |

source: Department of Community Affairs

APPENDIX E

APPENDIX E

INVENTORY CRITERIA OF FACILITIES FOR USE AS PUBLIC SHELTERS

I. GENERAL INFORMATION

Name of Facility: _____

Address: _____

Telephone number: _____

City: _____ County: _____

Name of facility administrator (principal, if a school): _____

Office phone: _____ Home phone: _____

Public Safety Jurisdiction

Police: _____ Fire: _____

II. SHELTER AMENITIES

A. Designated shelter area/areas _____

Capacity of safety area/areas (at 20 sq. ft. per person) _____

Number of paved parking spaces: _____

Size and location of any additional accessible parking areas: _____

What power company provides service to your facility? _____

Alternate power source: Generator: yes _____ no _____

Battery powered lights: yes _____ no _____

What areas of facility does alternate source service? _____

If alternate power source available, does it require an operator?

If yes, name of person to initiate alternate power source _____

B. Feeding Capability

Kitchen facilities: yes _____ no _____

Number of people that can be fed based on three meals per day (from food normally on hand) _____

How long can food service be provided without a new supply of food? _____

Where are nearest alternate food suppliers _____

Sources of power for meal preparation: electric _____
gas _____ propane _____

Could food service be carried out if commercial electrical power source failed?

C. Sanitary Facilities

1. Toilet facilities:

number of restrooms: _____ men _____ women
number of showers: _____ men _____ women

Are restrooms located inside safety area/areas of shelter? yes _____

no _____

2. Type of wastewater treatment facilities:

Is this facility connected to a county or municipal sewer system?

Is this facility connected to an on-site self-contained "package" sewer system?

3. Potable water supply furnished through (check applicable item(s)):

- a. city system _____
- b. private company (name) _____
- c. county system _____
- d. has own well _____

4. Communication Devices

Are there two-way radios at your facility? _____

If yes, specify type and number of units _____

Do you have radio contact with a school bus network or other radio network? _____ If so, please specify _____

How many telephone lines does your facility have? _____

5. First Aid Facilities

Is a First Aid Room accessible to the safety area/areas of shelter?

yes _____ no _____

How many beds/cots does it contain? _____

III. STRUCTURE

Elevation of site: _____

Is site floodprone? yes _____ no _____

Type of structure:

Roof: _____

Walls: _____

Date of construction: _____

Number of stories/levels: _____

Appendages (awnings, covered walks, etc.) _____

Percentage of glass/windows in safety area/areas. _____

Date of last code inspection: _____

APPENDIX F

APPENDIX F
INLAND PUBLIC SHELTERS

DESOTO COUNTY PUBLIC SHELTERS

| <u>LOCATION</u> | <u>CAPACITY</u> (20sq.ft.per person) |
|--|---|
| 1. DeSoto County High School 1710 E. Gibson Avenue | 2,124 |
| 2. DeSoto County Middle School 420 E. Gibson Avenue | 1,688 |
| 3. West Elementary School 310 W. Whidden Street | 849 |
| 4. Memorial Grammar School 150 N. Mills Avenue | 469 |
| 5. First Christian School 518 Wilson Avenue | 43 |
| 6. Nocatee Elementary School Nocatee | 150 |
| 7. Brownville School Brownville | 179 |
| 8. First Presbyterian Church 209 W. Hickory | 242 |
| 9. Trinity Methodist Church 14 W. Oak Street | 708 |
| 10. Episcopal Church 18 N. Manatee Avenue | 85 |
| 11. St. Paul's Catholic Church 1208 E. Oak Street | 91 |
| 12. Church of God 1423 N.E. Oak Street | 77 |

APPENDIX F
cont.

| | | |
|----------------|--|---------------------------|
| 13. | Hillsboro Baptist Church North Hillsboro Avenue | 52 |
| 14. | First Christian Church Maple Street | 47 |
| 15. | Central Missionary Church 10th Avenue | 63 |
| 16. | Apostilic Church of Jesus Christ 205 S. Luther | 88 |
| 17. | Calvery Baptist Church 15th Avenue | 195 |
| 18. | First Assembly of God 10th Avenue | 109 |
| 19. | Temple Baptist Church North Mills Avenue | 41 |
| 20. | Southside Baptist Church South Hillsboro Avenue | 71 |
| 21. | First Baptist Church Hwy 17 North | Used as Medical Center |
| 22. | Heritage Baptist Church 27 N. Polk Avenue | 430 |
| TOTAL CAPACITY | | <hr/> 7,801 |

APPENDIX F
cont.

HARDEE COUNTY PUBLIC SHELTERS

| | <u>LOCATION</u> | <u>CAPACITY</u> (20sq.ft.per person) |
|-----|--|---|
| 1. | Bowling Green Inn 101 North Oak Bowling Green | 100 |
| 2. | Bowling Green Elementary School House Road Bowling Green | 200 |
| 3. | Zolfo Springs Civic Center Highway 17 Zolfo Springs | 50 |
| 4. | Zolfo Springs Elementary School House Road Zolfo Springs | 200 |
| 5. | Hardee Manor Nursing Home 401 Orange Place Wauchula | 50 |
| 6. | New Zion African Baptist Church New York Avenue Wauchula | 50 |
| 7. | Hardee Junior High 200 South FL Avenue Wauchula | 500 |
| 8. | Hardee Senior High Altman Road Wauchula | 500 |
| 9. | Resthaven Rt.2, Box 71 Zolfo Springs | 50 |
| 10. | Baptist Church Corner of Grape & Dixiana Bowling Green | 50 |
| | TOTAL CAPACITY | <u>1,750</u> |

APPENIDIX F
cont.

HIGHLANDS COUNTY PUBLIC SHELTERS

| | <u>LOCATION</u> | <u>CAPACITY</u> (20sq.ft.per person) |
|-----|---|---|
| 1. | Sebring High School 3514 Kenilworth Sebring | 3,000 |
| 2. | Avon Park High School 700 East Main Street Avon Park | 1,866 |
| 3. | Sebring Middle School 500 East Center Street Sebring | 2,970 |
| 4. | Avon Park Middle School 401 South Lake Avenue Avon Park | 2,245 |
| 5. | Lake Placid High School 202 Lake Drive West Lake Placid | 2,285 |
| 6. | Lake Placid Elementary 101 Lake Drive Lake Placid | 1,135 |
| 7. | Fred Wild Elementary 1910 South Highlands Ave. Sebring | 750 |
| 8. | Apostilic Church of Jesus 920 Carolina Avenue Avon Park | 65 |
| 10. | Lake Avenue County Building South Lake Avenue Avon Park | 60 |
| 11. | Fellowship Baptist Church West Thomas Street Avon Park | 60 |

APPENDIX F
cont.

| | | |
|-----|---|-----|
| 15. | First Baptist Church 100 North Lake Avenue Avon Park | 90 |
| 16. | First Christian Church 101 West Walnut Street Avon Park | 70 |
| 17. | National Guard Armory U.S.Hwy 27 South Avon Park | 90 |
| 18. | Our Lady of Grace Church 595 East Main Street AvonPark | 60 |
| 19. | Reflection Club House U.S. Hwy 27 South Avon Park | 76 |
| 20. | Resurrection Lutheran Church 324 East Main Street Avon Park | 100 |
| 21. | Seventh Day Adventist Church Lake Lillian Avon Park | 475 |
| 22. | South FL Community College West College Drive Avon Park | 885 |
| 23. | Walker Memorial Jr. Academy 1525 Avon Blvd. Avon Park | 315 |
| 24. | Agricultural Center U.S. Hwy 27 South Sebring | 522 |
| 25. | Church of the Nazarene 318 S.Commerce Sebring | 170 |
| 26. | Covenant Presbyterian Church 4500 Sun n' Lake Blvd. Sebring | 118 |

APPENDIX F
cont.

| | | |
|----------------|---|--------------|
| 27. | Jack and Jill Nursery Highlands Ave. Sebring | 67 |
| 28. | Lake Josephine Church 117 Lake Josephine Sebring | 115 |
| 29. | Lorida Community Center U.S. Hwy 98 Lorida | 60 |
| 30. | Presbyterian Church Poinsettia Street Sebring | 130 |
| 31. | St. Catherine Catholic Church 820 Hickory Sebring | 200 |
| 32. | Whispering Pines Church 303 White Pines Drive Sebring | 117 |
| 33. | Youth Center Highlands Drive Sebring | 95 |
| 34. | American Legion Post #25 U.S. Hwy 27 North Sebring | 255 |
| 35. | Lake Placid Elks Club 2661 North Tower Sebring | 120 |
| 36. | United Methodist Church SR 731 Venus | 60 |
| 38. | Venus Baptist Church SR 731 Venus | 85 |
| 39. | Venus Community Center Club House Road Venus | 45 |
| TOTAL CAPACITY | | <hr/> 18,756 |

APPENDIX F
cont.

OKEECHOBEE COUNTY PUBLIC SHELTERS

| <u>LOCATION</u> | <u>CAPACITY</u> (20sq.ft.per person) |
|--|---|
| 1. South Elementary 575 SW 28th St. | 1,606 |
| 2. Fort Drum Community Church 32415 Hwy 441 North Ft. Drum | 90 |
| 3. Fifth/Sixth Grade Center 610 SW 2nd Ave. | 1,241 |
| 4. First Baptist Church 401 SW 4th St. | 250 |
| 5. First United Methodist Church 200 NW 2nd St. | 464 |
| 6. Sacred Heart Catholic Parish 701 SW 6th St. | 350 |
| 7. Central Elementary 610 SW 5th Ave. | 896 |
| 8. North Elementary 3000 NW 10th Terr. | 956 |
| 9. Okeechobee High School 2800 Hwy 441 North | 3,090 |
| 10. Okeechobee Junior High School 925 NW 23rd. Lane | 1,912 |
| 11. Northside Baptist Church Okeechobee Little Farms | 75 |
| 12. Elks Lodge Hwy 70 East | 250 |
| 13. Everglades Elementary 650 SE 2nd Ave. | 1,710 |
| 14. Moose Lodge NW 36th St. | 100 |
| TOTAL CAPACITY | <u>12,034</u> |

APPENDIX F
cont.

POLK COUNTY PUBLIC SHELTERS

| | <u>LOCATION</u> | <u>CAPACITY</u> (20sq.ft.per person) |
|----|---|---|
| 1. | Kathleen Elementary School (F) 3515 Sheretz Road Lakeland, FL 33809 858-4487, 858-2264, 858-3450 | 750 |
| 2. | Lake Gibson Junior High * 6901 N. Socrum Loop Rd. Lakeland, FL 33809 858-8785 | 175 |
| 3. | Padgett Elementary School (F) 110 Leelon Road Lakeland, FL 33805 858-4461 | 60 |
| 4. | Griffin Elementary School 3315 Kathleen Road Lakeland, FL 33809 859-1454 | 200 |
| 5. | North Lakeland Elementary 410 Robson Street Lakeland, FL 33805 688-5437 | 65 |
| 6. | Winston Elementary School 3415 Swindell Road Lakeland, FL 33801 683-0471 | 150 |
| 7. | Kathleen High School * 2600 N.Crutchfield Road Lakeland, FL 33801 665-1129, 665-7077 | 500 |
| 8. | John Cox Elementary 1005 N. Massachusetts Lakeland, FL 33805 688-9577, 688-9669 | 280 |

APPENDIX F
cont.

| | | |
|-----|--|-----|
| 9. | Combee Elementary 2805 Morgan Combee Road Lakeland, FL 33801 665-1455 | 300 |
| 10. | Seth McKeel Junior High (F) 1810 W. Parker Lakeland, FL 688-6605 | 646 |
| 11. | Jesse Keen Elementary 815 Plateau Avenue Lakeland, FL 33801 688-1005 | 231 |
| 12. | Lakeland High School * 726 Hollingsworth Lakeland, FL 33801 682-5163 | 670 |
| 13. | Crystal Lake Jr. High * (F) 2410 N. Crystal Lake Dr. Lakeland, Fl 33801 665-1129, 665-7077 | 300 |
| 14. | Southwest Jr. High 2815 South Eden Parkway Lakeland, FL 33803 683-6461 | 629 |
| 15. | Cleveland Court Elementary 328 Edgewood Drive Lakeland, FL 33803 686-8663, 688-6275 | 44 |
| 16. | Oscar Pope Elementary (F) 2730 Maine Avenue Eaton Park 665-6341 | 439 |
| 17. | Carlton Palmore Elementary 3725 Cleveland Heights Blvd. Lakeland, FL 33803 644-0445, 646-2737 | 200 |

APPENDIX F
cont.

| | | |
|-----|---|------------|
| 18. | Polk School Opportunity Center 400 N. Florida Avenue Lakeland, Fl 33805 688-1208 | (see Note) |
| 19. | Crystal Lake Elementary (F) 700 Galvin Drive Lakeland, FL 33801 665-4251 | 75 |
| 20. | Travis Vo-Tech * 3225 Winter Lake Rd. (Rt.540) Eaton Park, FL 33840 665-1220 | 150 |
| 21. | Lakeland Highlands Jr, High * 740 Lake Miriam Dr. Lakeland, FL 33813 644-2441 | 200 |
| 22. | Medulla Elementary 850 Schoolhouse Road Lakeland, FL 33811 646-1221 | 83 |
| 23. | Scott Lake Elementary 1140 East State Road 540-A Lakeland, FL 33803 644-8449, 644-8440 | 250 |
| 24. | Kingsford Elementary 1400 Dean Street Mulberry, FL 33860 425-3056 | 150 |
| 25. | Mulberry High School * N.E. Fourth Circlce Mulberry, FL 33860 646-1884 | 100 |
| 26. | Highland City Elementary 9th and Bay Streets Highland City, FL 33846 644-8478 | 50 |

APPENDIX F
cont.

| | | |
|-----|--|------------|
| 27. | Stephens Elementary 1350 Maple Avenue Bartow, FL 33830 533-1544 | 50 |
| 28. | Bartow Elementary 590 S. Wilson Avenue Bartow, FL 33830 533-0456 | 250 |
| 29. | Bartow Senior High 1270 S. Broadway Bartow, FL 33830 533-3125, 533- 3251 | 200 |
| 30. | Bartow Jr, High School * 550 E. Clower Street Bartow, FL 33830 533-0547, 533-4417, 533-3269 | 300 |
| 31. | Union Academy 1795 E. Wabash Bartow, FL 33830 533-7185 | 200 |
| 32. | Polk City Elementary 125 S. Bouganvillea Ave. Polk City, FL 33868 984-1332, 984-1859 | (see Note) |
| 33. | Lena Vista Elementary 208 South Berkley Road Auburndale, FL 33823 967-8598 | 150 |
| 34. | Auburndale High School * 125 Prado Auburndale, FL 33823 967-4173 | 500 |
| 33. | Auburndale Jr.High * 121 Ohio Avenue Auburndale, FL 33823 967-1191 | 250 |
| 36. | Caldwell Elementary 141 Dairy Road Auburndale, FL 33823 967-8534 | 500 |

APPENDIX F
cont.

| | | |
|-----|--|-----|
| 37. | Central Elementary 320 Lemon Street Auburndale, FL 33823 967-7581 | 53 |
| 38. | Lake Alfred Elementary 550 E. Cummings Lake Alfred, FL 33850 956-1472. 956-1870 | 628 |
| 39. | Ridge Vo-Tech * 770 State Road 544 Winter Haven, FL 33880 294-5151 | 200 |
| 40. | Garner Elementary 2500 Havendale Blvd. Winter Haven, FL 33881 294-7657 | 250 |
| 41. | Jewett Elementary 601 Avenue T, N.E. Winter Haven, FL 33881 294-1538, 299-5200 | 450 |
| 43. | Westwood Jr. High * 3520 Avenue J, N.W. Winter Haven, FL 33881 967-0673 | 300 |
| 44. | Inwood Elementary 2200 Avenue G, N.W. Winter Haven, FL 33880 293-6370, 299-8040 | 53 |
| 45. | Elbert Elementary 205 15th Street, N.E. Winter Haven. FL 33880 299-5222, 293-2559 | 450 |
| 46. | Denison Jr. High * 400 Avenue A, S.E. Winter Haven, FL 33880 294-5151 | 150 |
| 47. | Winter Haven High School * 600 6th Street, S.E. Winter Haven, Fl 33880 294-7631 | 600 |

APPENDIX F
cont.

| | | |
|-----|--|-------|
| 48. | Lake Shipp Elementary 250 Camillia Drive. Winter Haven, FL 33880 293-8874, 299-5073, 293-8873 | 150 |
| 49. | Snively Elementary 1004 Snively Avenue Winter Haven, FL 33880 294-1475 | 300 |
| 50. | Garden Grove Elementary 4599 Cypress Gardens Rd. Winter Haven, FL 33880 324-6557 | 150 |
| 51. | Eagle Lake Elementary 400 Crystal Beach Road Eagle Lake, FL 33839 293-2971, 299-4341 | 500 |
| 52. | Alturas Elementary 4th and Oak Alturas, FL 33820 537-1357 | 90 |
| 53. | Fort Meade Jr./Sr.High * 700 Edgewood Drive Fort Meade, FL 33841 285-8174 | 375 |
| 54. | Lewis Elementary 115 S. Oak Avenue Fort Meade, FL 33841 285-7104 | 400 |
| 55. | Fort Meade Middle School 610 S. Charleston Ave. Fort Meade, FL 33841 285-8128 | 75 |
| 56. | Davenport Elementary 8 Palmetto Street Davenport, FL 33837 422-2257, 422-5389 | 1,321 |

APPENDIX F
cont.

| | | |
|-----|--|------------|
| 57. | Bethune Elementary 900 Avenue F Haines City, FL 33844 422-1307, 422-4763, 422-1997 | 52 |
| 58. | Eastside Elementary 1820 E. Johnson Avenue Haines City, FL 33844 422-1464, 422-7111 | 50 |
| 59. | Haines City High School * 2800 Grace Avenue Haines City, FL 33844 422-6415 | 200 |
| 60. | Shelly Boone Middle School 225 S. 2nd St. Haines City 422-5956 | 375 |
| 61. | Alta Vista Elementary 801 S. Scenic Highway Haines City, FL 33844 422-2889 | 70 |
| 62. | Janie Howard Wilson Elementary 604 North Franklin Lake Wales, FL 33853 | (see Note) |
| 63. | Lake Wales High School * 1009 N. 6th Street Lake Wales, FL 33853 676-8545 | 125 |
| 64. | Roosevelt Vocational School 115 "E" Street Lake Wales, FL 33853-3599 6776-9402 | 500 |
| 65. | Spook Hill Elementary 321 E. Worth Avenue Lake Wales, FL 33853 676-8568 | 40 |
| 66. | Polk Avenue Elementary 110 E. Polk Avenue Lake Wales, FL 33953 676-9491 | 460 |

APPENDIX F
cont.

| | | |
|-----|---|-------|
| 67. | Hillcrest Elementary 1051 Hisperides Road Lake Wales, FL 33853 676-6437 | 200 |
| 68. | Lake Wales Jr.High Lake Wales, FL 33853 676-3427 | 1,004 |
| 69. | Babson Park Elementary 815 Hwy Alt.27 Babson Park, FL 33827 638-1483 | 513 |
| 70. | Frostproof Jr./Sr. High * 1000 N. Palm Ave. Frostproof, FL 33843 635-2221 | 276 |
| 71. | Frostproof Elementary 118 West 3rd Street Frostproof, FL 33843 635-4841 | 50 |
| 72. | Sikes Elementary 2727 Shepherd Road Lakeland, FL 33811 646-9208 | 50 |
| 73. | Clarence A. Boswell Elementary 2820 K-Ville Avenue Auburndale, FL 33823 666-2758, 666-6996 | 680 |
| 74. | North Central Adult & Community School 300 E. Brodgers Ave. Auburndale, FL 33823 965-2507 | 100 |
| 75. | Stambaugh Middle School * 226 N. Bartow Avenue 967-8781, 967-8782 | 500 |
| 76. | Floral Avenue Elementary 1530 S. Floral Avenue Bartow, FL 33830 533-0484 | 72 |

APPENDIX F
cont.

| | | |
|-----|---|-----|
| 77. | Gause Career Development Center 1395 W. Polk Street Auburndale, Fl 33823 533-8898 | 250 |
| 78. | Gibbons Street Elementary 1860 E. Gibbons Street Bartow, FL 33830 533-7524 | 72 |
| 79. | Polk Life & Learning Center 1310 S. Floral Avenue Bartow, FL 33830 533-2279 | 110 |
| 80. | Dundee Elementary 215 Frederick Avenue Dundee, FL 33838 422-5533 | 300 |
| 81. | Dundee ESE Center 213 E.Lake Avenue Dundee, FL 33838 439-4017, 439-2548 | 19 |
| 82. | Riverside Elementary 1002 N.E. 6th Street Fort Meade, FL 33841 295-9151, 285-8753 | 200 |
| 83. | Jenkins Middle School 701 Ledwith Avenue Haines City, FL 33844 | 85 |
| 84. | Boone Middle School 225 S.22nd Street Haines City, FL 33844 422-5956 | 136 |
| 85. | Fruitland Park Learning Center 690 North Third Street Lake Alfred, FL 33850 956-1131 | 244 |
| 86. | Career Development Center 455 E.Cummings Street Lake Alfred, FL 956-1473, 956-1870 | 100 |

APPENDIX F
cont.

| | | |
|-----|---|-----|
| 87. | Lake Gibson High School * 7007 N. Socrum Loop Rd. Lakeland, FL 33805 858-4436 | 600 |
| 88. | Central Avenue Elementary 604 South Central Avenue Lakeland, FK 33801 688-0266, 688-0369 | 150 |
| 89. | Churchwell Elementary 8201 Park Byrd Road Lakeland, FL 33809 858-1402 | 550 |
| 90. | Dixieland Elementary 416 Ariana Street Lakeland, FL 33801 682-5101 | 100 |
| 91. | Doris A.Sanders Learning Center 1201 Enchanted Drive Lakeland, Fl 33801 666-1070, 666-1163, 665-3874 | 175 |
| 92. | Kathleen Jr.High (F) 3627 Kathleen Pines Road Lakeland, FL 33809 858-3881 | 100 |
| 93. | Lincoln Avenue Elementary 1330 N.Lincoln Avenue Lakeland, FL 33805 688-2347 | 150 |
| 94. | Lime Steet Elementary 1225 E.Lime Street Lakeland, FL 33801 688-5200, 687-2630, 688-3346 | 500 |
| 95. | Rochell Elementary (F) 1501 Martin Luther King Ave. Lakeland, FL 33801 688-3881 | 400 |

APPENDIX F
cont.

| | | |
|----------------|---|--------------|
| 96. | Southwest Elementary 2650 Southwest Avenue Lakeland, FL 33803 688-2331 | 110 |
| 97. | McLaughlin Jr.High South 4th St. & Winston Ave. Lake Wales, FL 33853 676-3427 | 210 |
| 98. | Purcell Elementary 305 N.E. First Avenue Mulberry, FL 33860 425-4542 | 70 |
| 99. | Brigham Elementary 6th Street & Avenue C, S.E. Winter Haven, FL 33880 293-3206, 293-3966, 293-9746 | 250 |
| 100. | Wahneta Elementary Fourth Street East Wahneta, FL 234-5210 | 40 |
| TOTAL CAPACITY | | <hr/> 25,750 |

* - denotes primary shelters

(F) - denotes shelters located in flood-prone areas

Note - these locations will be utilized as post-storm shelters only

APPENDIX F
cont.

POLK COUNTY ALTERNATE SHELTERS

| | <u>LOCATION</u> | <u>CAPACITY</u> |
|----|---|-----------------|
| 1. | Bartow Civic Center 2250 S. Floral Avenue Bartow, FL 33830 533-0773 | 365 |
| 2 | Carver Recreation Center 520 S. Idlewood Avenue Bartow, FL 33830 533-9516 | 335 |
| 3. | Polk Street Community Center 1255 W. Polk Street Bartow, FL 33830 533-5713 | 194 |
| 4. | Mulberry Civic Center 901 N.E. Fifth Street Mulberry, FL 33960 425-2412 | 75 |
| 5. | American Legion 614 E. Orange Lakeland, FL 683-8710 | 100 |
| 6. | Calvary Baptist Church 1945 N. Florida Ave. Lakeland, FL 683-6781 | 250-300 |
| 7. | First Church of the Nazarene 950 Floral Avenue Bartow, FL 33830 533-3915 | 50 |
| 8. | Eastside Baptist Church 217 Pike Street Auburndale, FL 967-1089 | 50-100 |
| 9. | Polk Community College 999 Avenue H, S.E. Winter Haven, FL 297-1098 | 400 |

APPENDIX F
cont.

| | | |
|-----|--|-------------|
| 10. | First Baptist Church 3800 N. Oak Avenue Frostproof, FL 635-3603 | 150-300 |
| 11. | First Baptist Church First and Ledweth Street Haines City, FL 422-4488 | 150 |
| 12. | Wahneta Church of God 647 S. Rifle Range Road Winter Haven. FL 324-5594 | 105 |
| | TOTAL CAPACITY | <hr/> 2,474 |

APPENDIX G

APPENDIX G

HOTELS/MOTELS ALONG POLK COUNTY EVACUATION ROUTES

BEST WESTERN
508 E. MEMORIAL BLVD.
LAKELAND

BEST WESTERN
1504 US HWY 27 S.
HAINES CITY

BOWEN MOTOR LODGE
2854 US HWY 17 N.
WINTER HAVEN

BUDGET MOTEL
1418 US HWY 27 S.
LAKE WALES

CATALINA MOTEL
US US HWY 27 N.
DUNDEE

DAVIS BROTHERS MOTOR LODGE
1035 N. BROADWAY
BARTOW

DAYS INN
3223 US HWY. 98 N.
LAKELAND

HOWARD JOHNSONS
US HWY 98 N.
LAKELAND

IMPERIAL MOTEL
740 E. MAIN
LAKELAND

RAMADA MOTEL
601 E. MEMORIAL BLVD.
LAKELAND

IMPERIAL MOTEL
740 E. MAIN
LAKELAND

LAKE IDA MOTEL
2524 US HWY 17 N.
WINTER HAVEN

LAKE PARKER MOTEL
1539 MEMORIAL BLVD.
LAKELAND

LANDMARK MOTOR LODGE
1965 US HWY 17 N.
WINTER HAVEN

LANTERN MOTEL AAA
3949 US HWY 27 S.
LAKE WALES

MEMORIAL MOTOR LODGE
508 E. MEMORIAL BLVD.
LAKELAND

MONTICELLO MOTEL
US HWY 27 S.
DUNDEE

LAKELAND MOTEL
1224 MEMORIAL BLVD.
LAKELAND

QUALITY INN
3311 US HWY 98 N.
LAKELAND

RAMADA HOTEL
3320 US HWY 98 N.
LAKELAND

APPENDIX G
cont.

RED CARPET INNS
3410 US HWY 98 N.
LAKELAND

SCOTTISH INNS
244 N. FLORIDA AVE.
LAKELAND

SCOTTISH INNS
3525 US HWY 17 N.
LAKELAND

SHERATON
4141 S. FLORIDA AVE.
LAKELAND

STATE MOTEL
905 US HWY 27 N.
HAINES CITY

SUNNY'S MOTEL
35 US HWY 17-92
HAINES CITY

SUNSHINE MOTEL
3560 US HWY 17 N.
LAKELAND

SUSSE MOTOR LODGE
5620 US HWY 27 N.
HAINES CITY

TRAVELER'S VIEW MOTEL
830 US HWY 27 N.
LAKE WALES

ECONO LODGE
1817 MEMORIAL BLVD.
LAKELAND

ECONO LODGE
501 US HWY 27 S.
LAKE WALES

ECONOMY MOTOR LODGE
329 US HWY 27 S.
DUNDEE

AMIGO
US HWY 17-92
LAKE ALFRED

FORTY ACRE MOTEL
2025 W. MEMORIAL BLVD.
LAKELAND

HOLIDAY INN
910 E. MEMORIAL BLVD.
LAKELAND

HOLIDAY INN
3405 S. FLORIDA AVE.
LAKELAND

HOLIDAY MOTEL
915 US HWY 27 S.
LAKE WALES

WIS-FLO HOTEL
635 CENTRAL AVE.
WINTER HAVEN

APPENDIX G
cont.

HOTELS/MOTELS ALONG DESOTO COUNTY EVACUATION ROUTES

ARCADIA MOTEL
US HWY 17 S.
ARCADIA

DESOTO MOTEL
1021 N. BREVARD AVE.
ARCADIA

BEST WESTERN
504 S. BREVARD AVE.
ARCADIA

WATERS MOTEL
NOCATEE ROAD
ARCADIA

CITY MOTEL
324 BREVARD AVE.
ARCADIA

HI-WAY MOTEL
US HWY 17 S.
ARCADIA

COLONIAL ARMS MOTEL
US HWY 17 N.
ARCADIA

HOTELS/MOTELS ALONG HARDEE COUNTY EVACUATION ROUTES

TROPICANA MOTEL
US HWY 17 N.
WAUCHULA

WAUCHULA MOTEL
US HWY 17 N.
WAUCHULA

COLONIAL ARMS MOTEL
US HWY 17 N.
WAUCHULA

APPENDIX G
cont.

HOTELS/MOTELS ALONG HIGHLANDS COUNTY EVACUATION ROUTES

REED'S MOTEL
US HWY 27
AVON PARK

SAFARI INN
1406 US HWY 27 N.
SEBRING

SHARON MOTEL
US HWY 27 N.
AVON PARK

SOUTHERNAIRE MOTEL
US HWY 27 AND 98
AVON PARK

WHATLEY MOTEL
3620 US HWY 27 S.
SEBRING

INTER-SET MOTEL
5272 US HWY 27 S.
SEBRING

GETTINGS HIGHLANDER MOTEL
US HWY 27 S.
SEBRING

AVON MOTEL
US HWY 27 N.
AVON PARK

HOLIDAY MOTEL
2919 US HWY 27 S.
SEBRING

ISIS SHORES MOTEL
1300 US HWY 27 N.
AVON PARK

LAKE BRENTWOOD MOTEL
2060 US HWY 27 N.
AVON PARK

MILLER MOTEL
3751 US HWY 27 S.
SEBRING

ORANGE BLOSSOM MOTEL
US HWY 27 N.
AVON PARK

APPENDIX G
cont.

HOTELS/MOTELS ALONG OKEECHOBEE COUNTY EVACUATION ROUTES

PALM MOTEL
US HWY 441 S.
OKEECHOBEE

PIER II
2200 US HWY 441 S.
OKEECHOBEE

PLAZA MOTEL
621 US HWY 27 S.
CLEWISTON

PORTERHOUSE EAST
US HWY 27 E.
OKEECHOBEE

PORTERHOUSE WEST
US HWY 27 W.
OKEECHOBEE

TREASURE ISLAND MOTEL
3525 US HWY 441 S.
OKEECHOBEE

OKEECHOBEE MOTEL
312 US HWY 441 S.
OKEECHOBEE

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