



From: Wilson, John
Sent: Friday, August 22, 2008 10:08 AM
To: Gonzalez, Brandy L.
Cc: Saniter, David J.
Subject: RE: hurricane evac plan amendment

Brandy,

Thanks for sending this but is it possible to resend it in a word format document. We no longer maintain WordPerfect and our conversion to Word makes it difficult to read.

Also, I've attached a file listing pages out of two documents that help justify the change of the shelter standard from the current 21% to 10%. It lists, based on post storm behavioral surveys, the percentage of people that sheltered themselves in different places (public shelter, hotel/motel, friend/relative, etc.). It includes information from Hurricanes Andrew (1992), Georges (1998), Hurricane Charley and Ivan (2004) and Hurricane Wilma (2005). All point to a lower LOS standard for hurricane shelters.

Let me know if you need any help interpreting this information. Thanks for all your help.

John D. Wilson, Director
Lee County Public Safety
(239) 533-3911, Fax: (239) 482-2605
Cell: (239) 229-1117
wilsonjd@leegov.com

Mission: To provide help to those needing it, and the means by which to communicate that need.

NOTE: New Telephone and Fax Number

From: Gonzalez, Brandy L.
Sent: Thursday, August 21, 2008 4:52 PM
To: Wilson, John
Subject: hurricane evac plan amendment

Hello John –

Attached is DRAFT of the staff report for the evacuation/CHHA amendment. Please feel free to modify the document and send it back to me. I have no problem doing any word-smithing when it comes back. There are some sections that I will need some information added from your staff, you will see them as you read it. Also, if I have stated anything incorrectly. I will be out of the office tomorrow, back on Monday. I will be checking my e-mail while I'm out.

Thank you,

*Brandy Gonzalez
Principal Planner
Lee County Department of Community Development
Division of Planning
(239) 533-8805 phone
(239) 485-8319 fax*

Gonzalez, Brandy L.

From: Gonzalez, Brandy L.
Sent: Tuesday, September 02, 2008 1:33 PM
To: Wilson, John
Subject: RE: hurricane evac plan amendment

There were a couple of places in the report that had a "When?" or "How?" within a paragraph. I could use some help on those points. Also if you could provide a paragraph or two on how you and your staff interpreted the behavioral study you sent and how you concluded the policy should be changed to 10% for the County. DCA normally asks for a breakdown of how the percentage change was calculated.

Thanks.

From: Wilson, John
Sent: Tuesday, September 02, 2008 1:23 PM
To: Gonzalez, Brandy L.
Subject: RE: hurricane evac plan amendment

Brandy,

Believe it or not, I did look at it. I thought it read well. What additional information do you think you need from us, though?

John Wilson, Director Lee County Public Safety
NOTE NEW PHONE # 239-533-3911

From: Gonzalez, Brandy L.
Sent: Tue 9/2/2008 10:15
To: Wilson, John
Cc: Noble, Matthew A.
Subject: FW: hurricane evac plan amendment

Hi John –

I wanted to see if you have had a chance to look over the draft report and add any discussion?.....if you think the report is headed in the right direction? I printed the evacuation study information. We can include that as an attachment to the report. I think the report could use some discussion from your department's expertise. I'm hoping the more discussion we can provide the less we will have to cover later. Let me know what you think.

Thanks.

From: Gonzalez, Brandy L.
Sent: Monday, August 25, 2008 4:09 PM
To: Wilson, John
Subject: RE: hurricane evac plan amendment

John –

Attached is a Word version of the report.

9/2/2008

Gonzalez, Brandy L.

From: Wilson, John
Sent: Tuesday, September 09, 2008 8:13 AM
To: Gonzalez, Brandy L.
Subject: RE: CPA200759LPA

Brandy,

Works for me.

John Wilson, Director Lee County Public Safety
NOTE NEW PHONE # 239-533-3911

From: Gonzalez, Brandy L.
Sent: Tue 9/9/2008 8:05
To: Wilson, John
Subject: RE: CPA200759LPA

So if I add a sentence to that policy saying we will meet the 12 hour standard you are ok with that? We will be fine meeting that and it will address what the statute is requiring? I could add a quick discussion stating that we our shelter time is 1.1 hours, well below the requirement. Sound like a plan?

From: Wilson, John
Sent: Monday, September 08, 2008 5:44 PM
To: Gonzalez, Brandy L.
Subject: RE: CPA200759LPA

Brandy,

I don't have an answer for you on that one. They have one standard time for evacuation (out of the county) and one for shelter in county and I'm not sure I understand the need for having both times. If you want, you can put it in as a addition to the objective or policy that addresses the percentage change. According to Dan Trescott, out shelter time is way less than that.

John D. Wilson, Director
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Mission: To provide help to those needing it, and the means by which to communicate that need.

NOTE: New Telephone and Fax Number

From: Gonzalez, Brandy L.
Sent: Monday, September 08, 2008 12:49 PM
To: Wilson, John
Subject: RE: CPA200759LPA

Thanks John, that is a big help. I have one more question and then I think I can forward the report to Paul for review. The shelter time standard of 12 hours in the statute. We are changing the percentage. How are we addressing the shelter time standard? Sorry, I'm not sure that I completely understand this. Should we add a paragraph to the report explaining how we are addressing this? Does "clearance time" in Objective 109.1 mean both out-of-county and to shelter? Does the percentage change address this

9/9/2008

portion of the statute? I think we should add something about how we find that we will be meeting this.

Let me know and we should be able to move this report along to the copy machine.

Thanks again!

From: Wilson, John

Sent: Saturday, September 06, 2008 10:13 PM

To: Gonzalez, Brandy L.

Subject: CPA200759LPA

Brandy,

As requested, I've included language where I believe you wanted it (shown in red).

Let me know if you need anything else from me.

John Wilson, Director Lee County Public Safety

NOTE NEW PHONE # 239-533-3911

FLORIDA HOUSE OF REPRESENTATIVES

BILLS DOCUMENTS REPRESENTATIVES COUNCILS & COMMITTEES LE

Home » Bills » Selected Bill Detail

HB 1359 - Hazard Mitigation for Coastal Redevelopment

GENERAL BILL by Benson (CO-SPONSORS) Harrell

Hazard Mitigation for Coastal Redevelopment: Specifies entities that are authorized to install structures; requires the Division of Emergency Management to manage certain hurricane evacuation development policies shall be at the discretion of local government; provides a deadline for local elements and future land use maps, etc.

Effective Date: June 1, 2006.

Last Event: 06/01/06 Approved by Governor; Chapter No. 2006-68 on Friday, June 02, 2006 1:4

Date Available for Final Passage: Tuesday, May 02, 2006 2:05 PM

Referred Committees and Committee Actions:

- Environmental Regulation Committee

On agenda for: 04/05/06 1:30 PM

Notice

Favorable With Committee Substitute (*final action*)

See Votes

- Transportation & Economic Development Appropriations Committee

On agenda for: 04/17/06 3:00 PM

Notice

Favorable (*final action*)

See Votes

- State Resources Council

On agenda for: 04/21/06 3:30 PM

Notice

Favorable With Council Substitute (*final action*)

See Votes

Related Bills:

Bill #	Subject	Re
CS/CS/SB 2216	Hazard Mitigation	Si
CS/SB 1842	Coastal Resort Area Redevelopment	Co

Bill Text:

[Enrolled](#)

[Engrossed 2](#)

[Engrossed 1](#)

A 145417, Benson

Date Filed: 04/28/06, Page#: 0, Line#: 64

A 757541, Benson

Date Filed: 04/28/06, Page#: 0, Line#: 126

[Committee Substitute 2](#)

A 915075, Benson

Date Filed: 04/26/06, Page#: 0, Line#: 141

[Committee Substitute 1](#) Laid on the Table

[Original Filed Version](#)

Staff Analysis:

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Chamber Murals





Chamber	Committee
House	State Resources Council 4/25/2006 9:30:33 AM
House	State Resources Council 4/24/2006 9:09:13 PM
House	State Resources Council 4/20/2006 8:11:26 PM
House	Transportation & Economic Development Appropriations Committee 4/17/
House	Transportation & Economic Development Appropriations Committee 4/17/
House	Environmental Regulation Committee 4/12/2006 11:33:34 AM
House	Environmental Regulation Committee 4/3/2006 4:38:47 PM

Vote History:

Chamber	Date	Yeas	Nays	Actions	Barcode
House	04/28/2006 02:05 PM	114	0	Passage	Vote [Seq# 996]
Senate	05/01/2006 12:31 PM	39	0		Vote [Seq# 9]

Bill History:

Event	Time
06/01/06 Approved by Governor; Chapter No. 2006-68	Friday, June 02, 2006 1:47 PM
05/26/06 Signed by Officers and presented to Governor	Friday, May 26, 2006 12:36 PM
Ordered enrolled	Monday, May 01, 2006 8:35 PM
In Messages	Monday, May 01, 2006 8:35 PM
05/01/06 S Passed; YEAS 39 NAYS 0 -SJ 00729	Monday, May 01, 2006 12:31 PM
05/01/06 S Read third time -SJ 00729	Monday, May 01, 2006 12:31 PM
05/01/06 S Read second time -SJ 00729	Monday, May 01, 2006 12:30 PM
05/01/06 S Substituted for CS/CS/SB 2216 -SJ 00729	Monday, May 01, 2006 12:30 PM
05/01/06 S Withdrawn from Domestic Security; Environmental Preservation; General Government Appropriations -SJ 00728	Monday, May 01, 2006 12:30 PM
Message sent to senate	Friday, April 28, 2006 6:15 PM
04/28/06 S Received, referred to Domestic Security; Environmental Preservation; General Government Appropriations -SJ 00702	Friday, April 28, 2006 6:08 PM
04/28/06 S In Messages	Friday, April 28, 2006 5:58 PM
Passage on third reading	Friday, April 28, 2006 2:06 PM
Passed as amended; YEAS 114, NAYS 0	Friday, April 28, 2006 2:05 PM
Amendment 757541 adopted	Friday, April 28, 2006 2:05 PM
Amendment 145417 adopted	Friday, April 28, 2006 2:05 PM
Read 3rd time	Friday, April 28, 2006 2:03 PM
Amendment 145417 filed	Friday, April 28, 2006 11:32 AM
Amendment 757541 filed	Friday, April 28, 2006 9:39 AM
Added to Third Reading Calendar	Thursday, April 27, 2006 7:19 PM
Amendment 915075 adopted	Thursday, April 27, 2006 1:01 PM

Read 2nd time	Thursday, April 27, 2006 12:57 PM
Amendment 915075 filed	Wednesday, April 26, 2006 2:24 PM
Bill added to Special Order Calendar (4/27/2006)	Tuesday, April 25, 2006 6:23 PM
Added to Second Reading Calendar	Monday, April 24, 2006 9:18 PM
Bill released to House Calendar	Monday, April 24, 2006 9:18 PM
Pending review of CS under Rule 6.3	Monday, April 24, 2006 9:15 PM
Reported out of State Resources Council	Monday, April 24, 2006 9:04 PM
Favorable with CS by State Resources Council (Amended)	Friday, April 21, 2006 5:00 PM
Favorable with CS by State Resources Council	Friday, April 21, 2006 5:00 PM
Added to State Resources Council agenda	Thursday, April 20, 2006 3:39 PM
Now in State Resources Council	Monday, April 17, 2006 7:58 PM
Reported out of Transportation & Economic Development Appropriations Committee	Monday, April 17, 2006 7:58 PM
Favorable by Transportation & Economic Development Appropriations Committee	Monday, April 17, 2006 4:00 PM
Added to Transportation & Economic Development Appropriations Committee agenda	Thursday, April 13, 2006 4:20 PM
Now in Transportation & Economic Development Appropriations Committee	Thursday, April 13, 2006 2:15 PM
Remaining referral: State Resources Council	Thursday, April 13, 2006 2:15 PM
Pending review of CS under Rule 6.3	Thursday, April 13, 2006 9:26 AM
Reported out of Environmental Regulation Committee	Wednesday, April 12, 2006 11:34 AM
Favorable with CS by Environmental Regulation Committee(Amended)	Wednesday, April 05, 2006 3:00 PM
Favorable with CS by Environmental Regulation Committee	Wednesday, April 05, 2006 3:00 PM
Added to Environmental Regulation Committee agenda	Monday, April 03, 2006 4:04 PM
Now in Environmental Regulation Committee	Tuesday, March 14, 2006 12:40 PM
Referred to State Resources Council	Tuesday, March 14, 2006 12:40 PM
Referred to Transportation & Economic Development Appropriations Committee	Tuesday, March 14, 2006 12:40 PM
Referred to Environmental Regulation Committee	Tuesday, March 14, 2006 12:40 PM
1st Reading	Tuesday, March 07, 2006 11:59 PM

Filed

Tuesday, February 28, 2006 3:48
PM**Statutes Referenced by this Bill**

161.085
163.3178
381.0065
689.264
161.085
163.3178
163.3178
381.0065
161.085
163.3178
163.336
381.0065

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HOUSE OF REPRESENTATIVES STAFF ANALYSIS

BILL #: HB 1359 CS

Hazard Mitigation for Coastal Redevelopment

SPONSOR(S): Benson

TIED BILLS:

IDEN./SIM. BILLS: SB 2216

REFERENCE	ACTION	ANALYST	STAFF DIRECTOR
1) <u>Environmental Regulation Committee</u>	<u>6 Y, 0 N, w/CS</u>	<u>Kliner</u>	<u>Kliner</u>
2) <u>Transportation & Economic Development Appropriations Committee</u>	<u></u>	<u></u>	<u></u>
3) <u>State Resources Council</u>	<u></u>	<u></u>	<u></u>
4) <u></u>	<u></u>	<u></u>	<u></u>
5) <u></u>	<u></u>	<u></u>	<u></u>

SUMMARY ANALYSIS

The bill authorizes the Department of Environmental Protection (DEP) to revoke the authority for the emergency installation of a rigid coastal armoring structure by an agency, political subdivision, or municipality if such installation conflicts with certain public policies regarding adjacent properties, public access, or damage to vegetation or nesting turtle populations.

The bill defines Coastal High Hazard Area (CHHA), which is the area below the elevation of the category 1 storm surge line, and provides guidance for a local government that amends its comprehensive plan to increase population densities in a CHHA. The bill requires that the coastal management element of a local government's comprehensive plan contain a designation of a CHHA.

The bill provides a proposed comprehensive plan amendment shall be in compliance with state coastal high hazard standards if the adopted level of service for out-of-county hurricane evacuation is maintained; or the 12-hour evacuation time to a shelter is maintained and there is sufficient shelter space available; or appropriate mitigation will ensure that the level of service for out-of-county hurricane evacuation is maintained; or mitigation will ensure that the 12-hour evacuation time to a shelter is maintained and there is sufficient shelter space available. Mitigation shall not exceed the amount required for a developer to accommodate impacts reasonably attributable to the development, and shall include the payment of money, and contribution of land and construction of hurricane shelters and transportation facilities. For those local governments that have not established a level of service for out of county hurricane evacuation by July 1, 2008, the level of service shall be no greater than 16 hours

The bill places a moratorium on the construction of new adult congregate living facilities, community residential homes, group homes, homes for the aged, hospitals, mobile home parks, or nursing homes within the coastal high hazard area. Local governments shall amend their Future Land Use Map and coastal management element to include the new definition of coastal high hazard, the coastal high hazard map, and the appropriate mitigation strategies buy July 1, 2008. The bill requires for the Division of Emergency Management to manage the update of regional hurricane evacuation studies.

The bill prohibits the Department of Health from issuing a construction or repair permit for onsite sewage treatment and disposal systems located seaward of the coastal construction control line without receipt of a permit from the Department of Environmental Protection.

Fiscal Impact: No impact on General Revenue. Certain local governments may experience an indeterminate negative impact on their future tax base due to a moratorium on certain types of construction within the coastal high hazard area.

This document does not reflect the intent or official position of the bill sponsor or House of Representatives.

STORAGE NAME: h1359a.ENVR.doc

DATE: 4/10/2006

FULL ANALYSIS

I. SUBSTANTIVE ANALYSIS

A. HOUSE PRINCIPLES ANALYSIS:

Provide limited government. The bill authorizes the Department of Environmental Protection (DEP) to revoke the authority for the emergency installation of a rigid coastal armoring structure by an agency, political subdivision, or municipality if such installation conflicts with certain public policies regarding adjacent properties, public access, or damage to vegetation or nesting turtle populations.

The bill directs local governments to amend their Future Land Use Map and coastal management element to include the new definition of coastal high hazard, the coastal high hazard map, and the appropriate mitigation strategies by July 1, 2008.

The bill authorizes the Department of Health to contact the DEP prior to permitting work that may be performed on on-site sewage systems seaward of the Coastal Construction Control Line.

Safeguard individual liberty. The bill places a moratorium on the construction of new adult congregate living facilities, community residential homes, group homes, homes for the aged, hospitals, mobile home parks, or nursing homes within the coastal high hazard area.

B. EFFECT OF PROPOSED CHANGES:

Present Situation

Dune Armoring

Along with regulating construction along Florida's coastline, the DEP manages beach restoration projects to restore eroded shoreline in coordination with the federal and local governments. Subsequent maintenance of restored shorelines, referred to as nourishment, is also administered by the DEP.

Local governments are key players in beach management. All beach front communities are responsible for assuring compliance with zoning and building codes. Some play active roles in obtaining and maintaining beach access points, trash pickup and cleanup programs, dune vegetation regulation or maintenance, and water safety. Almost all counties, a number of cities, and several special districts now are involved in planning, implementing or maintaining a beach management activity such as inlet sand by-passing, beach restoration or dune restoration. The local government sponsor is responsible for planning the project, submitting information necessary to determine the priority of the proposal, obtaining necessary permits, bidding and contracting the work, and conducting subsequent monitoring.¹

Federal agencies are involved in the regulation of beach activities through United States Army Corps of Engineers permits required for activities conducted seaward of mean high water, and through consultation required under the National Environmental Policy Act, the Endangered Species Act, the Marine Mammals Protection Act, and others. Typically, close coordination will take place with the National Marine Fisheries Service, the United States Fish and Wildlife Service, and the Environmental Protection Agency. Primary issues include provisions to protect sea turtles and shore birds, beach mice in those areas where they are still located, and Essential Fish Habitat.²

The Coastal Construction Control Line Program (CCCL) purpose is protecting Florida's beaches and dunes while assuring reasonable use of private property. The Legislature initiated the CCCL Program

¹ Department of Environmental Protection Report for the Governor's Coastal High Hazard Study Committee on Chapter 161, Florida Statutes -- December, 2005, page 3.

² Ibid.

to protect the coastal system from improperly sited and designed structures which can destabilize or destroy the beach and dune system. Once destabilized, the valuable natural resources are lost, as are its important values for recreation, upland property protection, and environmental habitat. Adoption of a coastal construction control line establishes an area of jurisdiction in which special site and design criteria are applied for construction and related activities. These standards may be more stringent than those already applied in the rest of the coastal building zone because of the greater forces expected to occur in the more seaward zone of the beach during a storm event.

Under emergency conditions, local governments may authorize temporary armoring to immediately protect public and private infrastructure like homes, utilities and roads if those structures are threatened. In order to consider the armoring permanent, the property owner must submit a complete (CCCL) permit application to the DEP within 60 days of installing the armoring. Otherwise, the property owner must remove the temporary armoring structure.

The DEP permits the installation of "dune stabilization or restoration structures" and "beach stabilization or regeneration structures" only in limited circumstances and as temporary systems in order to evaluate (1) the structure's effectiveness, (2) the structure's effect on adjacent properties, and (3) the structure's environmental impact on the beach and dune system. If erosion occurs as a result of a storm event which threatens private structures or public infrastructure, the DEP, a municipality, or another political subdivision may install or have installed rigid coastal armoring structures so long as the following measures are considered with the emergency armoring:

- Protection of the beach-dune system.
- Siting and design criteria for the protective structure
- Impacts on adjacent structures
- Preservation of public beach access
- Protection of native coastal vegetation and nesting marine turtles and their hatchlings.

Onsite Sewage Treatment and Disposal Systems

According to the Florida Department of Health, 31 percent of the population is served by estimated 2.3 million onsite sewage treatment and disposal systems (OSTDS). These systems discharge over 426 million gallons of treated effluent per day into the subsurface soil environment.³

Onsite sewage treatment and disposal systems are facilities constructed on individual sites used to provide wastewater disposal. Such systems usually consist of a septic tank and a subsurface infiltration system. Within the septic tank, sedimentation and some anaerobic digestion of solids occur. Septic tanks contain bacteria that grow best in oxygen-poor conditions. These bacteria carry out a portion of the treatment process by converting most solids into liquids and gases. Bacteria that require oxygen thrive in the drainfield and complete the treatment process begun in the septic tank. If the septic tank is working well, the remaining partially treated wastewater, referred to as septic tank effluent, which flows out of the tank may be relatively clear, although it still has an odor and may carry disease organisms.⁴

Section 381.0065, F.S., states the intent of the Legislature that where a publicly owned or Investor owned sewerage system is not available, the Department of Health (DOH) shall issue permits for the construction, installation, modification, abandonment, or repair of onsite sewage treatment and disposal systems. The section requires that a person may not perform any of these actions without first obtaining a permit from the department. In issuing onsite system (septic tank) permits, the DOH has no statute or rule that specifically addresses designated coastal high hazard areas or DEP-established coastal construction control lines (CCCL), both of which are established to protect Florida's coastal system and coastal infrastructure and private property. Section 381.0065(4), F.S., states that DOH "shall not make the issuance of such [septic tank] permits contingent upon prior approval" by DEP. Because DOH has no authority to enforce DEP's statutes or rules about location of facilities in the

³ <http://www.doh.state.fl.us/environment/ostds/intro.htm>

⁴ <http://www.doh.state.fl.us/environment/OSTDS/pdf/files/forms/brochure.pdf>

coastal zone and has no authority of its own in this regard, onsite systems are often permitted seaward of structures, where they are most vulnerable to damage from storm surges.

Coastal High Hazard Study Committee

On September 7, 2005, the Governor issued Executive Order 05-178, appointing members to the Coastal High Hazard Study Committee, which was charged with studying and formulating recommendations for managing growth in Coastal High Hazard Areas, defined as the Category 1 hurricane evacuation zones. The Committee was appointed to evaluate and make recommendations to resolve problems exposed by the extraordinary hurricane seasons in 2004 and 2005.

As discussed below under the heading Effects of Proposed Changes, the bill reflects recommendations included in the Coastal High Hazard Study Committee's February 1, 2006 final report. Section 1 of the bill gives the Department of Environmental Protection (DEP) the power to revoke local authority to install or authorize installation of emergency coastal armoring structures when the local entity improperly exercises that authority and causes harm to the coastal system. Section 3 of the bill makes the issuance of a Department of Health (DOH) onsite system permit seaward of the DEP-established coastal construction control line (CCCL) contingent on issuance of a DEP CCCL permit.

Regional Hurricane Evacuation Studies

Section 252.35, F.S., assigns responsibility to the Division of Emergency Management (DEM) to maintain a comprehensive statewide program of emergency management. The division is required to prepare a comprehensive emergency management plan that is operations oriented. The plan must include specific regional and interregional planning provisions and promote intergovernmental coordination of evacuation activities. The division has the capability to conduct regional hurricane evacuation studies. Such studies include a computerized model run by the National Hurricane Center to estimate storm surge depths and winds resulting from historical, hypothetical, or predicted hurricanes taking into account:

- Pressure
- Size
- Forward speed
- Track
- Winds

This model is known as SLOSH (Sea, Lake, and Overland Surges from Hurricanes). Calculations are applied to a specific locale's shoreline, incorporating the unique bay and river configurations, water depths, bridges, roads, and other physical features to estimate storm surge.⁵

Another model utilized by the Division is The Arbiter of Storms model or TAOS. The TAOS model is an integrated hazards model that provides data at a higher resolution than the SLOSH model does for surge. According to DEM, the TAOS model enhances the local government's ability to do effective hazard mitigation planning. Currently, SLOSH model storm surge calculations are not available at the same resolution statewide, or in a standard Geographical Information System (GIS) format. The TAOS model can perform calculations of storm hazard risk for the entire state at one time, and the results are available for addition to the GIS data base.

The SLOSH model calculates storm surge for an area of coastline called a basin. In order to provide complete coverage for the state's coastline, 11 separate SLOSH basins and models must be created and run. Unlike the SLOSH model which only calculates for storm surge, the TAOS model will also calculate an estimate of storm surge, wave height, maximum winds, inland flooding, debris and structural damage for the entire state at once. Furthermore, the model resolution for TAOS with respect

⁵ http://www.nhc.noaa.gov/HAW2/english/surge/slosh_printer.shtml and
http://www.floridadisaster.org/hurricane_aware/english/surge/x_slosh.htm
STORAGE NAME: h1359a.ENVR.doc
DATE: 4/10/2006

to underwater and on-land data is much finer than for the SLOSH model. No computer model is perfectly accurate and calculations of storm surge from both TAOS and SLOSH contain some degree of uncertainty.⁶

Periodic hurricane evacuation studies are required because of changing population dynamics. Populations and the existing transportation network define the speed with which an evacuation may be conducted. Regional hurricane evacuation studies are able to determine recommended timing intervals used to control a sequenced evacuation by locality.

Effects of Proposed Changes

The bill authorizes the Department of Environmental Protection (DEP) to revoke the authority for the emergency installation of a rigid coastal armoring structure by an agency, political subdivision, or municipality if such installation conflicts with certain public policies regarding adjacent properties, public access, or damage to vegetation or nesting turtle populations.

The bill defines Coastal High Hazard Area (CHHA), which is the area below the elevation of the category 1 storm surge line, and provides guidance for a local government that amends its comprehensive plan to increase population densities in a CHHA. The bill requires that the coastal management element of a local government's comprehensive plan contain a designation of a CHHA.

The bill provides a proposed comprehensive plan amendment shall be in compliance with state coastal high hazard standards if the adopted level of service for out-of-county hurricane evacuation is maintained; or the 12-hour evacuation time to a shelter is maintained and there is sufficient shelter space available; or appropriate mitigation will ensure that the level of service for out-of-county hurricane evacuation is maintained; or mitigation will ensure that the 12-hour evacuation time to a shelter is maintained and there is sufficient shelter space available.

Mitigation shall not exceed the amount required for a developer to accommodate impacts reasonably attributable to the development, and shall include:

- Payment of money
- Contribution of land and construction of hurricane shelters and transportation facilities

For those local governments that have not established a level of service for out of county hurricane evacuation by July 1, 2008, the level of service shall be no greater than 16 hours

The bill places a moratorium on the construction of new adult congregate living facilities, community residential homes, group homes, homes for the aged, hospitals, mobile home parks, or nursing homes within the coastal high hazard area.

Local governments shall amend their Future Land Use Map and coastal management element to include the new definition of coastal high hazard, the coastal high hazard map, and the appropriate mitigation strategies by July 1, 2008.

The bill requires for the Division of Emergency Management to manage the update of regional hurricane evacuation studies.

The bill prohibits the Department of Health from issuing a construction or repair permit for onsite sewage treatment and disposal systems located seaward of the coastal construction control line without receipt of a permit from the Department of Environmental Protection.

⁶ http://www.floridadisaster.org/brm/lms/faq_taosslosh.htm

C. SECTION DIRECTORY:

Section 1. Amends subsection (3) of s. 161.085, F.S., providing that unless authority has been revoked by the DEP, an agency, political subdivision, or municipality having jurisdiction over the impacted area may install or authorize installation of a rigid coastal armoring structure. The DEP may revoke such authority if the DEP determines that the structure harms or interferes with the protection of the beach-dune system, adversely impacts adjacent properties, interferes with public beach access, or harms native coastal vegetation or nesting marine turtles or their hatchlings.

Section 2. Amends paragraph (h) of subsection (2) of section 163.3178, F.S. and adds subsection (9) to that section, to:

- Define Coastal High Hazard Area (CHHA), which is the area below the elevation of the category 1 storm surge line, and provides guidance for a local government that amends its comprehensive plan to increase population densities in a CHHA. The bill requires that the coastal management element of a local government's comprehensive plan contain a designation of a CHHA.
- Provide a proposed comprehensive plan amendment shall be in compliance with state coastal high hazard standards if the adopted level of service for out-of-county hurricane evacuation is maintained; or the 12-hour evacuation time to a shelter is maintained and there is sufficient shelter space available; or appropriate mitigation will ensure that the level of service for out-of-county hurricane evacuation is maintained; or mitigation will ensure that the 12-hour evacuation time to a shelter is maintained and there is sufficient shelter space available.
- Limit mitigation so that such shall not exceed the amount required for a developer to accommodate impacts reasonably attributable to the development. Mitigation shall include:
 - Payment of money
 - Contribution of land and construction of hurricane shelters and transportation facilities
- Provide that for those local governments that have not established a level of service for out of county hurricane evacuation by July 1, 2008, the level of service shall be no greater than 16 hours
- Place a moratorium on the construction of new adult congregate living facilities, community residential homes, group homes, homes for the aged, hospitals, mobile home parks, or nursing homes within the coastal high hazard area.
- Require local governments to amend their Future Land Use Map and coastal management element to include the new definition of coastal high hazard, the coastal high hazard map, and the appropriate mitigation strategies by July 1, 2008.
- Direct the Division of Emergency Management to manage the update of regional hurricane evacuation studies. Such studies shall be done in a consistent manner and using the methodology for modeling storm surge that is used by the National Hurricane Center.

Section 3. Amends subsection (4) of section 381.0065, F.S., to require the Department of Health to be in receipt of a coastal construction control line permit issued by the Department of Environmental Protection before issuing a permit for work on an onsite sewage treatment and disposal system seaward of the coastal construction control line.

Section 4. The bill provides for an effective date of July 1, 2006.

II. FISCAL ANALYSIS & ECONOMIC IMPACT STATEMENT

A. FISCAL IMPACT ON STATE GOVERNMENT:

1. Revenues:

None.

2. Expenditures:

Dune armoring: According to the DEP, the fiscal impact is indeterminate yet probably neutral overall. The legislation would save DEP staff resources and money expended on fixing the damage caused by improperly installed emergency armoring. Such armoring increases beach erosion and damages the beach and dune system, increasing the cost of restoration and recovery projects. The cost savings is impossible to estimate with any accuracy as the costs of beach recovery and restoration projects vary greatly depending on site-specific circumstances.

The DOH reports no fiscal impact to the agency.

Hurricane studies: The Division of Emergency Management currently conducts the type of studies required by this bill. Such studies are usually funded through federal sources and recurring state funding is not usually provided.

B. FISCAL IMPACT ON LOCAL GOVERNMENTS:

1. Revenues:

Certain local governments may experience an indeterminate negative impact on future tax base due to a moratorium on certain types of construction within the coastal high hazard area.

2. Expenditures:

According to the DEP, there would be no fiscal impact on local governments that properly use their authority to install or authorize emergency armoring. Local governments that improperly authorize armoring could face enforcement penalties. More significantly, they would have to bear a share of the additional recovery and restoration costs associated with erosion exacerbated by improper armoring and the insurance issues and public infrastructure repair and replacement costs related to beach and dune damage.

Certain local governments may spend an indeterminate amount of time and resources to amend their Future Land Use Map and coastal management element to include the new definition of coastal high hazard, the coastal high hazard map, and the appropriate mitigation strategies by July 1, 2008. According to the Association of Counties, the expense is not considered to be substantial.

C. DIRECT ECONOMIC IMPACT ON PRIVATE SECTOR:

Improved assurance of proper coastal armoring will save private property by preventing coastal erosion, likely saving insurance as well as property repair and replacement costs. These savings could be substantial but are indeterminate.

Indeterminate savings could accrue to homeowners whose onsite sewage systems are not washed away during storms because better consideration is given to proper siting.

If an amendment to a local government comprehensive plan raises the population density within a coastal high hazard area, developers will need to provide mitigation options for on-site sheltering or transportation out of harms way.

The bill places a moratorium on the construction of new adult congregate living facilities, community residential homes, group homes, homes for the aged, hospitals, mobile home parks, or nursing homes within the coastal high hazard area.

D. FISCAL COMMENTS:

None.

III. COMMENTS

A. CONSTITUTIONAL ISSUES:

1. Applicability of Municipality/County Mandates Provision:

Not applicable because this bill does not appear to: require cities or counties to spend funds or take actions requiring the expenditure of funds; reduce the authority that cities or counties have to raise revenues in the aggregate; or reduce the percentage of a state tax shared with cities or counties.

2. Other:

None.

B. RULE-MAKING AUTHORITY:

None.

C. DRAFTING ISSUES OR OTHER COMMENTS:

None.

IV. AMENDMENTS/COMMITTEE SUBSTITUTE & COMBINED BILL CHANGES

On April 5, 2006, the Committee on Environmental Regulation approved a strike all amendment offered by the bill sponsor. The strike all differs from the bill as originally filed as follows.

The bill defines Coastal High Hazard Area (CHHA), which is the area below the elevation of the category 1 storm surge line, and provides guidance for a local government that amends its comprehensive plan to increase population densities in a CHHA. The bill requires that the coastal management element of a local government's comprehensive plan contain a designation of a CHHA.

The bill provides a proposed comprehensive plan amendment shall be in compliance with state coastal high hazard standards if the adopted level of service for out-of-county hurricane evacuation is maintained; or the 12-hour evacuation time to a shelter is maintained and there is sufficient shelter space available; or appropriate mitigation will ensure that the level of service for out-of-county hurricane evacuation is maintained; or mitigation will ensure that the 12-hour evacuation time to a shelter is maintained and there is sufficient shelter space available.

Mitigation shall not exceed the amount required for a developer to accommodate impacts reasonably attributable to the development, and shall include:

- Payment of money
- Contribution of land and construction of hurricane shelters and transportation facilities

For those local governments that have not established a level of service for out of county hurricane evacuation by July 1, 2008, the level of service shall be no greater than 16 hours

The bill places a moratorium on the construction of new adult congregate living facilities, community residential homes, group homes, homes for the aged, hospitals, mobile home parks, or nursing homes within the coastal high hazard area.

Local governments shall amend their Future Land Use Map and coastal management element to include the new definition of coastal high hazard, the coastal high hazard map, and the appropriate mitigation strategies by July 1, 2008.

The bill no longer requires a real estate agent to disclosure that the property considered for purchase lies within a hurricane evacuation zone.

HOUSE OF REPRESENTATIVES STAFF ANALYSIS - Revised

BILL #: HB 1359 CS

Hazard Mitigation for Coastal Redevelopment

SPONSOR(S): Benson

TIED BILLS:

IDEN./SIM. BILLS: SB 2216

REFERENCE	ACTION	ANALYST	STAFF DIRECTOR
1) Environmental Regulation Committee	6 Y, 0 N, w/CS	Kliner	Kliner
2) Transportation & Economic Development Appropriations Committee	12 Y, 0 N	McAuliffe	Gordon
3) State Resources Council	8 Y, 0 N, w/CS	Kliner	Hamby
4) _____	_____	_____	_____
5) _____	_____	_____	_____

SUMMARY ANALYSIS

The bill authorizes the Department of Environmental Protection (DEP) to revoke the authority for the emergency installation of a rigid coastal armoring structure by an agency, political subdivision, or municipality if such installation conflicts with certain public policies regarding adjacent properties, public access, or damage to vegetation or nesting turtle populations. The bill also authorizes the installation of sand filled tube structures provided certain conditions are met.

The bill defines Coastal High Hazard Area (CHHA), which is the area below the elevation of the category 1 storm surge line, and provides guidance for a local government that amends its comprehensive plan to increase population densities in a CHHA. The bill requires that the coastal management element of a local government's comprehensive plan contain a designation of a CHHA.

The bill provides a proposed comprehensive plan amendment must be in compliance with state coastal high hazard standards if the adopted level of service for out-of-county hurricane evacuation is maintained; or the 12-hour evacuation time to a shelter is maintained and there is sufficient shelter space available; or appropriate mitigation will ensure that the level of service for out-of-county hurricane evacuation is maintained; or mitigation will ensure that the 12-hour evacuation time to a shelter is maintained and there is sufficient shelter space available. Mitigation may not exceed the amount required for a developer to accommodate impacts reasonably attributable to the development, and must include the payment of money, and contribution of land and construction of hurricane shelters and transportation facilities. For those local governments that have not established a level of service for out of county hurricane evacuation by July 1, 2008, the level of service shall be no greater than 16 hours

Local governments must amend their Future Land Use Map and coastal management element to include the new definition of coastal high hazard, the coastal high hazard map, and the appropriate mitigation strategies by July 1, 2008. The bill requires for the Division of Emergency Management to manage the update of regional hurricane evacuation studies.

The bill prohibits the Department of Health from issuing a construction or repair permit for onsite sewage treatment and disposal systems located seaward of the coastal construction control line without receipt of a permit from the Department of Environmental Protection.

The bill will not have a significant impact on state government or local government.

This document does not reflect the intent or official position of the bill sponsor or House of Representatives.

STORAGE NAME: h1359f.SRC.doc

DATE: 4/25/2006

FULL ANALYSIS

I. SUBSTANTIVE ANALYSIS

A. HOUSE PRINCIPLES ANALYSIS:

Provide limited government. The bill authorizes the Department of Environmental Protection (DEP) to revoke the authority for the emergency installation of a rigid coastal armoring structure by an agency, political subdivision, or municipality if such installation conflicts with certain public policies regarding adjacent properties, public access, or damage to vegetation or nesting turtle populations.

The bill directs local governments to amend their Future Land Use Map and coastal management element to include the new definition of coastal high hazard, the coastal high hazard map, and the appropriate mitigation strategies by July 1, 2008.

The bill authorizes the Department of Health to contact the DEP prior to permitting work that may be performed on on-site sewage systems seaward of the Coastal Construction Control Line.

Safeguard individual liberty. The bill places a moratorium on the construction of new adult congregate living facilities, community residential homes, group homes, homes for the aged, hospitals, mobile home parks, or nursing homes within the coastal high hazard area.

B. EFFECT OF PROPOSED CHANGES:

Present Situation

Dune Armoring

Along with regulating construction along Florida's coastline, the DEP manages beach restoration projects to restore eroded shoreline in coordination with the federal and local governments. Subsequent maintenance of restored shorelines, referred to as nourishment, is also administered by the DEP.

Local governments are key players in beach management. All beach front communities are responsible for assuring compliance with zoning and building codes. Some play active roles in obtaining and maintaining beach access points, trash pickup and cleanup programs, dune vegetation regulation or maintenance, and water safety. Almost all counties, a number of cities, and several special districts now are involved in planning, implementing or maintaining a beach management activity such as inlet sand by-passing, beach restoration or dune restoration. The local government sponsor is responsible for planning the project, submitting information necessary to determine the priority of the proposal, obtaining necessary permits, bidding and contracting the work, and conducting subsequent monitoring.¹

Federal agencies are involved in the regulation of beach activities through United States Army Corps of Engineers permits required for activities conducted seaward of mean high water, and through consultation required under the National Environmental Policy Act, the Endangered Species Act, the Marine Mammals Protection Act, and others. Typically, close coordination will take place with the National Marine Fisheries Service, the United States Fish and Wildlife Service, and the Environmental Protection Agency. Primary issues include provisions to protect sea turtles and shore birds, beach mice in those areas where they are still located, and Essential Fish Habitat.²

The purpose of the Coastal Construction Control Line Program (CCCL) is to protect Florida's beaches and dunes while assuring reasonable use of private property. The Legislature initiated the CCCL Program to protect the coastal system from improperly sited and designed structures which can destabilize or destroy the beach and dune system. Once destabilized, the valuable natural resources are lost, as are its important values for recreation, upland property protection, and environmental

¹ Department of Environmental Protection Report for the Governor's Coastal High Hazard Study Committee on Chapter 161, Florida Statutes -- December, 2005, page 3.

² Ibid.

habitat. Adoption of a coastal construction control line establishes an area of jurisdiction in which special site and design criteria are applied for construction and related activities. These standards may be more stringent than those already applied in the rest of the coastal building zone because of the greater forces expected to occur in the more seaward zone of the beach during a storm event.

Under emergency conditions, local governments may authorize temporary armoring to immediately protect public and private infrastructure like homes, utilities and roads if those structures are threatened. In order to consider the armoring permanent, the property owner must submit a complete (CCCL) permit application to the DEP within 60 days of installing the armoring. Otherwise, the property owner must remove the temporary armoring structure.

The DEP permits the installation of "dune stabilization or restoration structures" and "beach stabilization or regeneration structures" only in limited circumstances and as temporary systems in order to evaluate (1) the structure's effectiveness, (2) the structure's effect on adjacent properties, and (3) the structure's environmental impact on the beach and dune system. If erosion occurs as a result of a storm event which threatens private structures or public infrastructure, the DEP, a municipality, or another political subdivision may install or have installed rigid coastal armoring structures so long as the following measures are considered with the emergency armoring:

- Protection of the beach-dune system.
- Siting and design criteria for the protective structure
- Impacts on adjacent structures
- Preservation of public beach access
- Protection of native coastal vegetation and nesting marine turtles and their hatchlings.

Onsite Sewage Treatment and Disposal Systems

According to the Florida Department of Health, 31 percent of the population is served by estimated 2.3 million onsite sewage treatment and disposal systems (OSTDS). These systems discharge over 426 million gallons of treated effluent per day into the subsurface soil environment.³

Onsite sewage treatment and disposal systems are facilities constructed on individual sites used to provide wastewater disposal. Such systems usually consist of a septic tank and a subsurface infiltration system. Within the septic tank, sedimentation and some anaerobic digestion of solids occur. Septic tanks contain bacteria that grow best in oxygen-poor conditions. These bacteria carry out a portion of the treatment process by converting most solids into liquids and gases. Bacteria that require oxygen thrive in the drainfield and complete the treatment process begun in the septic tank. If the septic tank is working well, the remaining partially treated wastewater, referred to as septic tank effluent, which flows out of the tank may be relatively clear, although it still has an odor and may carry disease organisms.⁴

Section 381.0065, F.S., states it is the intent of the Legislature that where a publicly owned or Investor owned sewerage system is not available, the Department of Health (DOH) shall issue permits for the construction, installation, modification, abandonment, or repair of onsite sewage treatment and disposal systems. The section requires that a person may not perform any of these actions without first obtaining a permit from the department. In issuing onsite system (septic tank) permits, the DOH has no statute or rule that specifically addresses designated coastal high hazard areas or DEP-established coastal construction control lines (CCCL), both of which are established to protect Florida's coastal system and coastal infrastructure and private property. Section 381.0065(4), F.S., states that DOH "shall not make the issuance of such [septic tank] permits contingent upon prior approval" by DEP. Because DOH has no authority to enforce DEP's statutes or rules about location of facilities in the coastal zone and has no authority of its own in this regard, onsite systems are often permitted seaward of structures, where they are most vulnerable to damage from storm surges.

Coastal High Hazard Study Committee

³ <http://www.doh.state.fl.us/environment/ostds/intro.htm>

⁴ <http://www.doh.state.fl.us/environment/OSTDS/pdfiles/forms/brochure.pdf>

On September 7, 2005, the Governor issued Executive Order 05-178, appointing members to the Coastal High Hazard Study Committee, which was charged with studying and formulating recommendations for managing growth in Coastal High Hazard Areas, defined as the Category 1 hurricane evacuation zones. The Committee was appointed to evaluate and make recommendations to resolve problems exposed by the extraordinary hurricane seasons in 2004 and 2005.

Regional Hurricane Evacuation Studies

Section 252.35, F.S., assigns responsibility to the Division of Emergency Management (DEM) to maintain a comprehensive statewide program of emergency management. The division is required to prepare a comprehensive emergency management plan that is operations oriented. The plan must include specific regional and interregional planning provisions and promote intergovernmental coordination of evacuation activities. The division has the capability to conduct regional hurricane evacuation studies. Such studies include a computerized model run by the National Hurricane Center to estimate storm surge depths and winds resulting from historical, hypothetical, or predicted hurricanes taking into account:

- Pressure
- Size
- Forward speed
- Track
- Winds

This model is known as SLOSH (Sea, Lake, and Overland Surges from Hurricanes). Calculations are applied to a specific locale's shoreline, incorporating the unique bay and river configurations, water depths, bridges, roads, and other physical features to estimate storm surge.⁵

Another model utilized by the Division is The Arbiter of Storms model or TAOS. The TAOS model is an integrated hazards model that provides data at a higher resolution than the SLOSH model does for surge. According to DEM, the TAOS model enhances the local government's ability to do effective hazard mitigation planning. Currently, SLOSH model storm surge calculations are not available at the same resolution statewide, or in a standard Geographical Information System (GIS) format. The TAOS model can perform calculations of storm hazard risk for the entire state at one time, and the results are available for addition to the GIS data base.

The SLOSH model calculates storm surge for an area of coastline called a basin. In order to provide complete coverage for the state's coastline, 11 separate SLOSH basins and models must be created and run. Unlike the SLOSH model which only calculates for storm surge, the TAOS model will also calculate an estimate of storm surge, wave height, maximum winds, inland flooding, debris and structural damage for the entire state at once. Furthermore, the model resolution for TAOS with respect to underwater and on-land data is much finer than for the SLOSH model. No computer model is perfectly accurate and calculations of storm surge from both TAOS and SLOSH contain some degree of uncertainty.⁶

Periodic hurricane evacuation studies are required because of changing population dynamics. Populations and the existing transportation network define the speed with which an evacuation may be conducted. Regional hurricane evacuation studies are able to determine recommended timing intervals used to control a sequenced evacuation by locality.

⁵ http://www.nhc.noaa.gov/HAW2/english/surge/slosh_printer.shtml and
http://www.floridadisaster.org/hurricane_aware/english/surge/x_slosh.htm
⁶ http://www.floridadisaster.org/brm/lms/faq_taosslosh.htm

Effects of Proposed Changes

The bill authorizes the Department of Environmental Protection (DEP) to revoke the authority for the emergency installation of a rigid coastal armoring structure by an agency, political subdivision, or municipality if such installation conflicts with certain public policies regarding adjacent properties, public access, or damage to vegetation or nesting turtle populations.

The bill defines Coastal High Hazard Area (CHHA), which is the area below the elevation of the category 1 storm surge line, and provides guidance for a local government that amends its comprehensive plan to increase population densities in a CHHA. The bill requires that the coastal management element of a local government's comprehensive plan contain a designation of a CHHA.

The bill provides a proposed comprehensive plan amendment must be in compliance with state coastal high hazard standards if the adopted level of service for out-of-county hurricane evacuation is maintained; or the 12-hour evacuation time to a shelter is maintained and there is sufficient shelter space available; or appropriate mitigation will ensure that the level of service for out-of-county hurricane evacuation is maintained; or mitigation will ensure that the 12-hour evacuation time to a shelter is maintained and there is sufficient shelter space available.

Mitigation may not exceed the amount required for a developer to accommodate impacts reasonably attributable to the development, and must include:

- Payment of money
- Contribution of land and construction of hurricane shelters and transportation facilities

For those local governments that have not established a level of service for out of county hurricane evacuation by July 1, 2008, the level of service may be no greater than 16 hours for a category 5 storm event as measured on the Saffir-Simpson scale.

Local governments must amend their Future Land Use Map and coastal management element to include the new definition of coastal high hazard, the coastal high hazard map, and the appropriate mitigation strategies by July 1, 2008.

The bill requires for the Division of Emergency Management to manage the update of regional hurricane evacuation studies.

The bill prohibits the Department of Health from issuing a construction or repair permit for onsite sewage treatment and disposal systems located seaward of the coastal construction control line without receipt of a permit from the Department of Environmental Protection.

C. SECTION DIRECTORY:

Section 1. Amends subsection (3) of s. 161.085, F.S., providing that unless authority has been revoked by the DEP, an agency, political subdivision, or municipality having jurisdiction over the impacted area may install or authorize installation of a rigid coastal armoring structure. The DEP may revoke such authority if the DEP determines that the structure harms or interferes with the protection of the beach-dune system, adversely impacts adjacent properties, interferes with public beach access, or harms native coastal vegetation or nesting marine turtles or their hatchlings.

This section also authorizes the installation of sand-filled tubes or similar structures provided the US Fish and Wildlife service issues an incidental take permit, adequate sand cover be maintained so that the dune structure is not adversely affected or turtle nesting is not impaired, and assurances that the structures will be removed if the second condition is not met.

Sections 2. Amends paragraphs (d) and (h) of subsection (2) of section 163.3178, F.S. and adds subsection (9) to that section, to:

- Define Coastal High Hazard Area (CHHA), which is the area below the elevation of the category 1 storm surge line, and provides guidance for a local government that amends its comprehensive plan to increase population densities in a CHHA. The bill requires that the coastal management element of a local government's comprehensive plan contain a designation of a CHHA.
- Provide a proposed comprehensive plan amendment must be in compliance with state coastal high hazard standards if the adopted level of service for out-of-county hurricane evacuation is maintained; or the 12-hour evacuation time to a shelter is maintained and there is sufficient shelter space available; or appropriate mitigation will ensure that the level of service for out-of-county hurricane evacuation is maintained; or mitigation will ensure that the 12-hour evacuation time to a shelter is maintained and there is sufficient shelter space available.
- Limit mitigation so that such may not exceed the amount required for a developer to accommodate impacts reasonably attributable to the development. Mitigation must include:
 - Payment of money
 - Contribution of land and construction of hurricane shelters and transportation facilities
- Provide that for those local governments that have not established a level of service for out of county hurricane evacuation by July 1, 2008, the level of service shall be no greater than 16 hours
- Require local governments to amend their Future Land Use Map and coastal management element to include the new definition of coastal high hazard, the coastal high hazard map, and the appropriate mitigation strategies by July 1, 2008.
- Direct the Division of Emergency Management to manage the update of regional hurricane evacuation studies. Such studies must be done in a consistent manner and using the methodology for modeling storm surge that is used by the National Hurricane Center.

Section 3. Amends subsections (2) and (3) of section 163.336, F.S., extending the coastal resort area redevelopment pilot project until 2014 (8 years), providing flexibility to consider placing the sand on adjacent properties under certain circumstances, and requiring the DEP to report to Legislature regarding the analysis of the economic and environmental value of the project on or before February 1, 2008.

Section 4. Amends subsection (4) of section 381.0065, F.S., to require the Department of Health to be in receipt of a coastal construction control line permit issued by the Department of Environmental Protection before issuing a permit for work on an onsite sewage treatment and disposal system seaward of the coastal construction control line.

Section 5. The bill provides for an effective date of July 1, 2006.

II. FISCAL ANALYSIS & ECONOMIC IMPACT STATEMENT

A. FISCAL IMPACT ON STATE GOVERNMENT:

1. Revenues:

None.

2. Expenditures:

Dune armoring: According to the DEP, the fiscal impact is indeterminate yet probably neutral overall. The legislation would save DEP staff resources and money expended on fixing the damage caused by improperly installed emergency armoring. Such armoring increases beach erosion and damages the beach and dune system, increasing the cost of restoration and recovery projects. The cost savings is impossible to estimate with any accuracy as the costs of beach recovery and restoration projects vary greatly depending on site-specific circumstances.

The DOH reports no fiscal impact to the agency.

Hurricane studies: The Division of Emergency Management currently conducts the type of studies required by this bill. Such studies are usually funded through federal sources and recurring state funding is not usually provided.

B. FISCAL IMPACT ON LOCAL GOVERNMENTS:

1. Revenues:

None.

2. Expenditures:

According to the DEP, there would be no fiscal impact on local governments that properly use their authority to install or authorize emergency armoring.

Certain local governments may spend an indeterminate amount of time and resources to amend their Future Land Use Map and coastal management element to include the new definition of coastal high hazard, the coastal high hazard map, and the appropriate mitigation strategies by July 1, 2008. According to the Association of Counties, the expense is not considered to be substantial.

C. DIRECT ECONOMIC IMPACT ON PRIVATE SECTOR:

Improved assurance of proper coastal armoring will save private property by preventing coastal erosion, likely saving insurance as well as property repair and replacement costs. These savings could be substantial but are indeterminate.

Indeterminate savings could accrue to homeowners whose onsite sewage systems are not washed away during storms because better consideration is given to proper siting.

If an amendment to a local government comprehensive plan raises the population density within a coastal high hazard area, developers will need to provide mitigation options for on-site sheltering or transportation out of harms way.

D. FISCAL COMMENTS:

None.

III. COMMENTS

A. CONSTITUTIONAL ISSUES:

1. Applicability of Municipality/County Mandates Provision:

Not applicable because this bill does not appear to: require cities or counties to spend funds or take actions requiring the expenditure of funds; reduce the authority that cities or counties have to raise revenues in the aggregate; or reduce the percentage of a state tax shared with cities or counties.

2. Other:

None.

B. RULE-MAKING AUTHORITY:

None.

C. DRAFTING ISSUES OR OTHER COMMENTS:

None.

IV. AMENDMENTS/COMMITTEE SUBSTITUTE & COMBINED BILL CHANGES

On April 5, 2006, the Committee on Environmental Regulation approved a strike all amendment offered by the bill sponsor. The strike all differs from the bill as originally filed as follows.

The amendment defines Coastal High Hazard Area (CHHA), which is the area below the elevation of the category 1 storm surge line, and provides guidance for a local government that amends its comprehensive plan to increase population densities in a CHHA. The amendment requires that the coastal management element of a local government's comprehensive plan contain a designation of a CHHA.

The amendment provides a proposed comprehensive plan amendment must be in compliance with state coastal high hazard standards if the adopted level of service for out-of-county hurricane evacuation is maintained; or the 12-hour evacuation time to a shelter is maintained and there is sufficient shelter space available; or appropriate mitigation will ensure that the level of service for out-of-county hurricane evacuation is maintained; or mitigation will ensure that the 12-hour evacuation time to a shelter is maintained and there is sufficient shelter space available.

Mitigation may not exceed the amount required for a developer to accommodate impacts reasonably attributable to the development, and must include:

- Payment of money
- Contribution of land and construction of hurricane shelters and transportation facilities

For those local governments that have not established a level of service for out of county hurricane evacuation by July 1, 2008, the level of service shall be no greater than 16 hours

The amendment places a moratorium on the construction of new adult congregate living facilities, community residential homes, group homes, homes for the aged, hospitals, mobile home parks, or nursing homes within the coastal high hazard area.

Local governments must amend their Future Land Use Map and coastal management element to include the new definition of coastal high hazard, the coastal high hazard map, and the appropriate mitigation strategies by July 1, 2008.

The amendment removes the provision in the original bill that required a real estate agent to disclosure that the property considered for purchase lies within a hurricane evacuation zone.

On April 21, 2006, the State Resources Council adopted three amendments which:

- Amends provisions of the coastal resort area redevelopment pilot project, extending the pilot project until 2014 (8 years), providing flexibility to consider placing the sand on adjacent properties under certain circumstances, and requiring the DEP to report to Legislature regarding the analysis of the economic and environmental value of the project on or before February 1, 2008.
- Removing language from the bill prohibiting the new construction of certain structures, including group homes, hospitals, or nursing homes within the coastal high hazard area.
- Authorizing the installation of sand-filled tubes or similar structures provided certain conditions are met:
 - The US Fish and Wildlife service issues an incidental take permit
 - Adequate sand cover be maintained so that the dune structure is not adversely affected or turtle nesting is not impaired, and
 - The structures will be removed if condition 2 is not met.

The analysis has been changed to reflect the amendments adopted by the Council.

ENROLLED

HB 1359, Engrossed 2

2006 Legislature

1 A bill to be entitled

2 An act relating to hazard mitigation for coastal

3 redevelopment; amending s. 161.085, F.S.; specifying

4 entities that are authorized to install or authorize

5 installation of rigid coastal armoring structures;

6 authorizing the Department of Environmental Protection to

7 revoke certain authority; authorizing the installation of

8 certain structures as the core of a restored dune feature

9 under specified conditions; amending s. 163.3178, F.S.;

10 requiring the Division of Emergency Management to manage

11 certain hurricane evacuation studies; requiring that such

12 studies be performed in a specified manner; defining the

13 term "coastal high-hazard area"; providing that the

14 application of development policies shall be at the

15 discretion of local government; authorizing local

16 governments to amend comprehensive plans to increase

17 residential densities for certain properties; providing

18 criteria for certain comprehensive plan compliance;

19 requiring local governments to adopt a certain level of

20 service for out-of-county hurricane evacuation under

21 certain circumstances; requiring local governments and

22 developers to enter into certain agreements; providing a

23 deadline for local governments to amend coastal management

24 elements and future land use maps; amending 163.336, F.S.,

25 relating to the coastal resort area redevelopment pilot

26 project; revising the requirements for placement of

27 certain coastal redevelopment materials; authorizing the

ENROLLED

HB 1359, Engrossed 2

2006 Legislature

28 Department of Environmental Protection to consider certain
29 information during certain permit review; deferring the
30 expiration date of the pilot project; requiring the
31 department and local governments to provide a specified
32 analysis of certain projects and to provide a report to
33 the Legislature by a certain date; amending s. 381.0065,
34 F.S.; requiring the issuance of certain permits by the
35 Department of Health to be contingent upon the receipt of
36 certain permits issued by the Department of Environmental
37 Protection; providing an effective date.

38

39 Be It Enacted by the Legislature of the State of Florida:

40

41 Section 1. Subsection (3) of section 161.085, Florida
42 Statutes, is amended, and subsections (8) and (9) are added to
43 that section, to read:

44 161.085 Rigid coastal armoring structures.--

45 (3) If erosion occurs as a result of a storm event which
46 threatens private structures or public infrastructure and a
47 permit has not been issued pursuant to subsection (2), unless
48 the authority has been revoked by order of the department
49 pursuant to subsection (8), an the agency, political
50 subdivision, or municipality having jurisdiction over the
51 impacted area may install or authorize installation of rigid
52 coastal armoring structures for the protection of private
53 structures or public infrastructure, or take other measures to
54 relieve the threat to private structures or public

ENROLLED

HB 1359, Engrossed 2

2006 Legislature

55 infrastructure as long as the following items are considered and
56 incorporated into such emergency measures:

57 (a) Protection of the beach-dune system.

58 (b) Siting and design criteria for the protective
59 structure.

60 (c) Impacts on adjacent properties.

61 (d) Preservation of public beach access.

62 (e) Protection of native coastal vegetation and nesting
63 marine turtles and their hatchlings.

64 (8) If a political subdivision or municipality installs or
65 authorizes installation of a rigid coastal armoring structure
66 that does not comply with subsection (3), and if the department
67 determines that the action harms or interferes with the
68 protection of the beach-dune system, adversely impacts adjacent
69 properties, interferes with public beach access, or harms native
70 coastal vegetation or nesting marine turtles or their
71 hatchlings, the department may revoke by order the authority of
72 the political subdivision or municipality under subsection (3)
73 to install or authorize the installation of rigid coastal
74 armoring structures.

75 (9) The department, or an agency, political subdivision,
76 or municipality described in subsection (3), may authorize sand-
77 filled tubes or similar structures proposed as the core of a
78 restored dune feature if the applicant meets the requirements of
79 this section and:

ENROLLED

HB 1359, Engrossed 2

2006 Legislature

80 (a) Demonstrates that the United States Fish and Wildlife
81 Service has approved a habitat conservation plan that includes
82 the shoreline where each structure will be placed;

83 (b) Provides reasonable assurance that adequate sand cover
84 will be maintained over the structure such that the structure
85 will not interact with the beach dune system as rigid coastal
86 armoring or adversely affect marine turtle nesting and provides
87 for a responsible entity to conduct such maintenance; and

88 (c) Provides reasonable assurance that each structure will
89 be removed if the maintenance required by paragraph (b) proves
90 to be not feasible.

91 Section 2. Paragraphs (d) and (h) of subsection (2) of
92 section 163.3178, Florida Statutes, are amended, and subsection
93 (9) is added to that section, to read:

94 163.3178 Coastal management.--

95 (2) Each coastal management element required by s.
96 163.3177(6)(g) shall be based on studies, surveys, and data; be
97 consistent with coastal resource plans prepared and adopted
98 pursuant to general or special law; and contain:

99 (d) A component which outlines principles for hazard
100 mitigation and protection of human life against the effects of
101 natural disaster, including population evacuation, which take
102 into consideration the capability to safely evacuate the density
103 of coastal population proposed in the future land use plan
104 element in the event of an impending natural disaster. The
105 Division of Emergency Management shall manage the update of the
106 regional hurricane evacuation studies, ensure such studies are

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done in a consistent manner, and ensure that the methodology used for modeling storm surge is that used by the National Hurricane Center.

(h) Designation of coastal high-hazard ~~coastal~~ areas and the criteria for mitigation for a comprehensive plan amendment in a coastal high-hazard area as defined in subsection (9), ~~which for uniformity and planning purposes herein, are defined as category 1 evacuation zones. The coastal high-hazard area is the area below the elevation of the category 1 storm surge line as established by a Sea, Lake and Overland Surges from Hurricanes (SLOSH) computerized storm surge model. However,~~ Application of mitigation and the application of development and redevelopment policies, pursuant to s. 380.27(2), and any rules adopted thereunder, shall be at the discretion of local government.

(9) (a) Local governments may elect to comply with rules 9J-5.012(3) (b) (6) and 9J-5.012(3) (b) (7), Florida Administrative Code, through the process provided in this section. A proposed comprehensive plan amendment shall be found in compliance with state coastal high-hazard provisions pursuant to rules 9J-5.012(3) (b) (6) and 9J-5.012(3) (b) (7), Florida Administrative Code, if:

1. The adopted level of service for out-of-county hurricane evacuation is maintained for a category 5 storm event as measured on the Saffir-Simpson scale;

2. A 12-hour evacuation time to shelter is maintained for a category 5 storm event as measured on the Saffir-Simpson scale

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and shelter space reasonably expected to accommodate the
residents of the development contemplated by a proposed
comprehensive plan amendment is available; or

3. Appropriate mitigation is provided that will satisfy
the provisions of subparagraph 1. or subparagraph 2. Appropriate
mitigation shall include, without limitation, payment of money,
contribution of land, and construction of hurricane shelters and
transportation facilities. Required mitigation shall not exceed
the amount required for a developer to accommodate impacts
reasonably attributable to development. A local government and a
developer shall enter into a binding agreement to memorialize
the mitigation plan.

(b) For those local governments that have not established
a level of service for out-of-county hurricane evacuation by
July 1, 2008, but elect to comply with rules 9J-5.012(3)(b)(6)
and 9J-5.012(3)(b)(7), Florida Administrative Code, by following
the process in paragraph (a), the level of service shall be no
greater than 16 hours for a category 5 storm event as measured
on the Saffir-Simpson scale.

(c) This subsection shall become effective immediately and
shall apply to all local governments. No later than July 1,
2008, local governments shall amend their future land use map
and coastal management element to include the new definition of
coastal high-hazard area and to depict the coastal high-hazard
area on the future land use map.

Section 3. Subsections (2) and (3) of section 163.336,
Florida Statutes, are amended to read:

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161 163.336 Coastal resort area redevelopment pilot project.--

162 (2) PILOT PROJECT ADMINISTRATION.--

163 (a) To be eligible to participate in this pilot project,
164 all or a portion of the area must be within:

165 1. The coastal building zone as defined in s. 161.54; and

166 2. A community redevelopment area, enterprise zone,
167 brownfield area, empowerment zone, or other such economically
168 deprived areas as designated by the county or municipality with
169 jurisdiction over the area.

170 (b) Local governments are encouraged to use the full range
171 of economic and tax incentives available to facilitate and
172 promote redevelopment and revitalization within the pilot
173 project areas.

174 (c) The Office of the Governor, Department of
175 Environmental Protection, and the Department of Community
176 Affairs are directed to provide technical assistance to expedite
177 permitting for redevelopment projects and construction
178 activities within the pilot project areas consistent with the
179 principles, processes, and timeframes provided in s. 403.973.

180 (d) The Department of Environmental Protection shall
181 exempt construction activities within the pilot project area in
182 locations seaward of a coastal construction control line and
183 landward of existing armoring from certain siting and design
184 criteria pursuant to s. 161.053. However, such exemption shall
185 not be deemed to exempt property within the pilot project area
186 from applicable local land development regulations, including
187 but not limited to, setback, side lot line, and lot coverage

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188 requirements. Such exemption shall apply to construction and
189 redevelopment of structures involving the coverage, excavation,
190 and impervious surface criteria of s. 161.053, and related
191 adopted rules, as follows:

192 1. This review by the department of applications for
193 permits for coastal construction within the pilot project area
194 must apply to construction and redevelopment of structures
195 subject to the coverage, excavation, and impervious surface
196 criteria of s. 161.053, and related adopted rules. It is the
197 intent of these provisions that the pilot project area be
198 enabled to redevelop in a manner which meets the economic needs
199 of the area while preserving public safety and existing
200 resources, including natural resources.

201 2. The criteria for review under s. 161.053 are applicable
202 within the pilot project area, except that the structures within
203 the pilot project area shall not be subject to specific shore
204 parallel coverage requirements and are allowed to exceed the 50
205 percent impervious surface requirement. In no case shall
206 stormwater discharge be allowed onto, or seaward of, the frontal
207 dune. Structures are also not bound by the restrictions on
208 excavation unless the construction will adversely affect the
209 integrity of the existing seawall or rigid coastal armoring
210 structure or stability of the existing beach and dune system. It
211 is specifically contemplated that underground structures,
212 including garages, will be permitted. All beach-compatible
213 material excavated under this subparagraph must be maintained on
214 site seaward of the coastal construction control line. However,

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215 during the permit review process under s. 161.053, the
 216 department may favorably consider authorized sand placement on
 217 adjacent properties if the permittee has demonstrated every
 218 reasonable effort to effectively use all beach-quality material
 219 on site to enhance the beach and dune system and has prepared a
 220 comprehensive plan for beach and dune nourishment for the
 221 adjoining area.

222 3. The review criteria in subparagraph 2. will apply to
 223 all construction within the pilot project area lying seaward of
 224 the coastal construction control line and landward of an
 225 existing viable seawall or rigid coastal armoring structure, if
 226 such construction is fronted by a seawall or rigid coastal
 227 armoring structure extending at least 1,000 feet without any
 228 interruptions other than beach access points. For purposes of
 229 this section, a viable seawall or rigid coastal armoring
 230 structure is a structure that has not deteriorated, dilapidated,
 231 or been damaged to such a degree that it no longer provides
 232 adequate protection to the upland property when considering the
 233 following criteria, including, but not limited to:

234 a. The top must be at or above the still water level,
 235 including setup, for the design storm of 30-year return storm
 236 plus the breaking wave calculated at its highest achievable
 237 level based on the maximum eroded beach profile and highest
 238 surge level combination, and must be high enough to preclude
 239 runup overtopping;

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240 b. The armoring must be stable under the design storm of
241 30-year return storm including maximum localized scour, with
242 adequate penetration; and

243 c. The armoring must have sufficient continuity or return
244 walls to prevent flooding under the design storm of 30-year
245 return storm from impacting the proposed construction.

246 4. Where there exists a continuous line of rigid coastal
247 armoring structure on either side of unarmored property and the
248 adjacent line of rigid coastal armoring structures are having an
249 adverse effect on or threaten the unarmored property, and the
250 gap does not exceed 100 feet, the department may grant the
251 necessary permits under s. 161.085 to close the gap.

252 5. Structures approved pursuant to this section shall not
253 cause flooding of or result in adverse impacts to existing
254 upland structures or properties and shall comply with all other
255 requirements of s. 161.053 and its implementing rules.

256 6. Where there exists a continuous line of viable rigid
257 coastal armoring structure on either side of a nonviable rigid
258 coastal armoring structure, the department shall grant the
259 necessary permits under s. 161.085 to replace such nonviable
260 rigid coastal armoring structure with a viable rigid coastal
261 armoring structure as defined in this section. This shall not
262 apply to rigid coastal armoring structures constructed after May
263 1, 1998, unless such structures have been permitted pursuant to
264 s. 161.085(2).

265 (3) PILOT PROJECT EXPIRATION.--The authorization for the
266 pilot project and the provisions of this section expire December

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267 31, 2014 ~~2006~~. The department and affected local governments
 268 shall provide for an independent analysis of the economic value
 269 and environmental impact of the pilot project and provide a
 270 report to the Speaker of the House of Representatives and the
 271 President of the Senate on or before February 1, 2008 ~~The~~
 272 ~~Legislature shall review these requirements before their~~
 273 ~~scheduled expiration.~~

274 Section 4. Subsection (4) of section 381.0065, Florida
 275 Statutes, is amended to read:

276 381.0065 Onsite sewage treatment and disposal systems;
 277 regulation.--

278 (4) PERMITS; INSTALLATION; AND CONDITIONS.--A person may
 279 not construct, repair, modify, abandon, or operate an onsite
 280 sewage treatment and disposal system without first obtaining a
 281 permit approved by the department. The department may issue
 282 permits to carry out this section, but shall not make the
 283 issuance of such permits contingent upon prior approval by the
 284 Department of Environmental Protection, except that the issuance
 285 of a permit for work seaward of the coastal construction control
 286 line established under s. 161.053 shall be contingent upon
 287 receipt of any required coastal construction control line permit
 288 from the Department of Environmental Protection. A construction
 289 permit is valid for 18 months from the issuance date and may be
 290 extended by the department for one 90-day period under rules
 291 adopted by the department. A repair permit is valid for 90 days
 292 from the date of issuance. An operating permit must be obtained
 293 prior to the use of any aerobic treatment unit or if the

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294 establishment generates commercial waste. Buildings or
295 establishments that use an aerobic treatment unit or generate
296 commercial waste shall be inspected by the department at least
297 annually to assure compliance with the terms of the operating
298 permit. The operating permit for a commercial wastewater system
299 is valid for 1 year from the date of issuance and must be
300 renewed annually. The operating permit for an aerobic treatment
301 unit is valid for 2 years from the date of issuance and must be
302 renewed every 2 years. If all information pertaining to the
303 siting, location, and installation conditions or repair of an
304 onsite sewage treatment and disposal system remains the same, a
305 construction or repair permit for the onsite sewage treatment
306 and disposal system may be transferred to another person, if the
307 transferee files, within 60 days after the transfer of
308 ownership, an amended application providing all corrected
309 information and proof of ownership of the property. There is no
310 fee associated with the processing of this supplemental
311 information. A person may not contract to construct, modify,
312 alter, repair, service, abandon, or maintain any portion of an
313 onsite sewage treatment and disposal system without being
314 registered under part III of chapter 489. A property owner who
315 personally performs construction, maintenance, or repairs to a
316 system serving his or her own owner-occupied single-family
317 residence is exempt from registration requirements for
318 performing such construction, maintenance, or repairs on that
319 residence, but is subject to all permitting requirements. A
320 municipality or political subdivision of the state may not issue

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321 a building or plumbing permit for any building that requires the
322 use of an onsite sewage treatment and disposal system unless the
323 owner or builder has received a construction permit for such
324 system from the department. A building or structure may not be
325 occupied and a municipality, political subdivision, or any state
326 or federal agency may not authorize occupancy until the
327 department approves the final installation of the onsite sewage
328 treatment and disposal system. A municipality or political
329 subdivision of the state may not approve any change in occupancy
330 or tenancy of a building that uses an onsite sewage treatment
331 and disposal system until the department has reviewed the use of
332 the system with the proposed change, approved the change, and
333 amended the operating permit.

334 (a) Subdivisions and lots in which each lot has a minimum
335 area of at least one-half acre and either a minimum dimension of
336 100 feet or a mean of at least 100 feet of the side bordering
337 the street and the distance formed by a line parallel to the
338 side bordering the street drawn between the two most distant
339 points of the remainder of the lot may be developed with a water
340 system regulated under s. 381.0062 and onsite sewage treatment
341 and disposal systems, provided the projected daily sewage flow
342 does not exceed an average of 1,500 gallons per acre per day,
343 and provided satisfactory drinking water can be obtained and all
344 distance and setback, soil condition, water table elevation, and
345 other related requirements of this section and rules adopted
346 under this section can be met.

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(b) Subdivisions and lots using a public water system as defined in s. 403.852 may use onsite sewage treatment and disposal systems, provided there are no more than four lots per acre, provided the projected daily sewage flow does not exceed an average of 2,500 gallons per acre per day, and provided that all distance and setback, soil condition, water table elevation, and other related requirements that are generally applicable to the use of onsite sewage treatment and disposal systems are met.

(c) Notwithstanding the provisions of paragraphs (a) and (b), for subdivisions platted of record on or before October 1, 1991, when a developer or other appropriate entity has previously made or makes provisions, including financial assurances or other commitments, acceptable to the Department of Health, that a central water system will be installed by a regulated public utility based on a density formula, private potable wells may be used with onsite sewage treatment and disposal systems until the agreed-upon densities are reached. The department may consider assurances filed with the Department of Business and Professional Regulation under chapter 498 in determining the adequacy of the financial assurance required by this paragraph. In a subdivision regulated by this paragraph, the average daily sewage flow may not exceed 2,500 gallons per acre per day. This section does not affect the validity of existing prior agreements. After October 1, 1991, the exception provided under this paragraph is not available to a developer or other appropriate entity.

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373 (d) Paragraphs (a) and (b) do not apply to any proposed
374 residential subdivision with more than 50 lots or to any
375 proposed commercial subdivision with more than 5 lots where a
376 publicly owned or investor-owned sewerage system is available.
377 It is the intent of this paragraph not to allow development of
378 additional proposed subdivisions in order to evade the
379 requirements of this paragraph.

380 (e) Onsite sewage treatment and disposal systems must not
381 be placed closer than:

- 382 1. Seventy-five feet from a private potable well.
- 383 2. Two hundred feet from a public potable well serving a
384 residential or nonresidential establishment having a total
385 sewage flow of greater than 2,000 gallons per day.
- 386 3. One hundred feet from a public potable well serving a
387 residential or nonresidential establishment having a total
388 sewage flow of less than or equal to 2,000 gallons per day.
- 389 4. Fifty feet from any nonpotable well.
- 390 5. Ten feet from any storm sewer pipe, to the maximum
391 extent possible, but in no instance shall the setback be less
392 than 5 feet.
- 393 6. Seventy-five feet from the mean high-water line of a
394 tidally influenced surface water body.
- 395 7. Seventy-five feet from the mean annual flood line of a
396 permanent nontidal surface water body.
- 397 8. Fifteen feet from the design high-water line of
398 retention areas, detention areas, or swales designed to contain
399 standing or flowing water for less than 72 hours after a

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400 rainfall or the design high-water level of normally dry drainage
401 ditches or normally dry individual lot stormwater retention
402 areas.

403 (f) Except as provided under paragraphs (e) and (t), no
404 limitations shall be imposed by rule, relating to the distance
405 between an onsite disposal system and any area that either
406 permanently or temporarily has visible surface water.

407 (g) All provisions of this section and rules adopted under
408 this section relating to soil condition, water table elevation,
409 distance, and other setback requirements must be equally applied
410 to all lots, with the following exceptions:

411 1. Any residential lot that was platted and recorded on or
412 after January 1, 1972, or that is part of a residential
413 subdivision that was approved by the appropriate permitting
414 agency on or after January 1, 1972, and that was eligible for an
415 onsite sewage treatment and disposal system construction permit
416 on the date of such platting and recording or approval shall be
417 eligible for an onsite sewage treatment and disposal system
418 construction permit, regardless of when the application for a
419 permit is made. If rules in effect at the time the permit
420 application is filed cannot be met, residential lots platted and
421 recorded or approved on or after January 1, 1972, shall, to the
422 maximum extent possible, comply with the rules in effect at the
423 time the permit application is filed. At a minimum, however,
424 those residential lots platted and recorded or approved on or
425 after January 1, 1972, but before January 1, 1983, shall comply
426 with those rules in effect on January 1, 1983, and those

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residential lots platted and recorded or approved on or after January 1, 1983, shall comply with those rules in effect at the time of such platting and recording or approval. In determining the maximum extent of compliance with current rules that is possible, the department shall allow structures and appurtenances thereto which were authorized at the time such lots were platted and recorded or approved.

2. Lots platted before 1972 are subject to a 50-foot minimum surface water setback and are not subject to lot size requirements. The projected daily flow for onsite sewage treatment and disposal systems for lots platted before 1972 may not exceed:

a. Two thousand five hundred gallons per acre per day for lots served by public water systems as defined in s. 403.852.

b. One thousand five hundred gallons per acre per day for lots served by water systems regulated under s. 381.0062.

(h)1. The department may grant variances in hardship cases which may be less restrictive than the provisions specified in this section. If a variance is granted and the onsite sewage treatment and disposal system construction permit has been issued, the variance may be transferred with the system construction permit, if the transferee files, within 60 days after the transfer of ownership, an amended construction permit application providing all corrected information and proof of ownership of the property and if the same variance would have been required for the new owner of the property as was originally granted to the original applicant for the variance.

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454 There is no fee associated with the processing of this
455 supplemental information. A variance may not be granted under
456 this section until the department is satisfied that:

457 a. The hardship was not caused intentionally by the action
458 of the applicant;

459 b. No reasonable alternative, taking into consideration
460 factors such as cost, exists for the treatment of the sewage;
461 and

462 c. The discharge from the onsite sewage treatment and
463 disposal system will not adversely affect the health of the
464 applicant or the public or significantly degrade the groundwater
465 or surface waters.

466

467 Where soil conditions, water table elevation, and setback
468 provisions are determined by the department to be satisfactory,
469 special consideration must be given to those lots platted before
470 1972.

471 2. The department shall appoint and staff a variance
472 review and advisory committee, which shall meet monthly to
473 recommend agency action on variance requests. The committee
474 shall make its recommendations on variance requests at the
475 meeting in which the application is scheduled for consideration,
476 except for an extraordinary change in circumstances, the receipt
477 of new information that raises new issues, or when the applicant
478 requests an extension. The committee shall consider the criteria
479 in subparagraph 1. in its recommended agency action on variance
480 requests and shall also strive to allow property owners the full

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481 use of their land where possible. The committee consists of the
482 following:

483 a. The Division Director for Environmental Health of the
484 department or his or her designee.

485 b. A representative from the county health departments.

486 c. A representative from the home building industry
487 recommended by the Florida Home Builders Association.

488 d. A representative from the septic tank industry
489 recommended by the Florida Onsite Wastewater Association.

490 e. A representative from the Department of Environmental
491 Protection.

492 f. A representative from the real estate industry who is
493 also a developer in this state who develops lots using onsite
494 sewage treatment and disposal systems, recommended by the
495 Florida Association of Realtors.

496 g. A representative from the engineering profession
497 recommended by the Florida Engineering Society.

498
499 Members shall be appointed for a term of 3 years, with such
500 appointments being staggered so that the terms of no more than
501 two members expire in any one year. Members shall serve without
502 remuneration, but if requested, shall be reimbursed for per diem
503 and travel expenses as provided in s. 112.061.

504 (i) A construction permit may not be issued for an onsite
505 sewage treatment and disposal system in any area zoned or used
506 for industrial or manufacturing purposes, or its equivalent,
507 where a publicly owned or investor-owned sewage treatment system

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508 is available, or where a likelihood exists that the system will
509 receive toxic, hazardous, or industrial waste. An existing
510 onsite sewage treatment and disposal system may be repaired if a
511 publicly owned or investor-owned sewerage system is not
512 available within 500 feet of the building sewer stub-out and if
513 system construction and operation standards can be met. This
514 paragraph does not require publicly owned or investor-owned
515 sewerage treatment systems to accept anything other than
516 domestic wastewater.

517 1. A building located in an area zoned or used for
518 industrial or manufacturing purposes, or its equivalent, when
519 such building is served by an onsite sewage treatment and
520 disposal system, must not be occupied until the owner or tenant
521 has obtained written approval from the department. The
522 department shall not grant approval when the proposed use of the
523 system is to dispose of toxic, hazardous, or industrial
524 wastewater or toxic or hazardous chemicals.

525 2. Each person who owns or operates a business or facility
526 in an area zoned or used for industrial or manufacturing
527 purposes, or its equivalent, or who owns or operates a business
528 that has the potential to generate toxic, hazardous, or
529 industrial wastewater or toxic or hazardous chemicals, and uses
530 an onsite sewage treatment and disposal system that is installed
531 on or after July 5, 1989, must obtain an annual system operating
532 permit from the department. A person who owns or operates a
533 business that uses an onsite sewage treatment and disposal
534 system that was installed and approved before July 5, 1989, need

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535 not obtain a system operating permit. However, upon change of
536 ownership or tenancy, the new owner or operator must notify the
537 department of the change, and the new owner or operator must
538 obtain an annual system operating permit, regardless of the date
539 that the system was installed or approved.

540 3. The department shall periodically review and evaluate
541 the continued use of onsite sewage treatment and disposal
542 systems in areas zoned or used for industrial or manufacturing
543 purposes, or its equivalent, and may require the collection and
544 analyses of samples from within and around such systems. If the
545 department finds that toxic or hazardous chemicals or toxic,
546 hazardous, or industrial wastewater have been or are being
547 disposed of through an onsite sewage treatment and disposal
548 system, the department shall initiate enforcement actions
549 against the owner or tenant to ensure adequate cleanup,
550 treatment, and disposal.

551 (j) An onsite sewage treatment and disposal system for a
552 single-family residence that is designed by a professional
553 engineer registered in the state and certified by such engineer
554 as complying with performance criteria adopted by the department
555 must be approved by the department subject to the following:

556 1. The performance criteria applicable to engineer-
557 designed systems must be limited to those necessary to ensure
558 that such systems do not adversely affect the public health or
559 significantly degrade the groundwater or surface water. Such
560 performance criteria shall include consideration of the quality
561 of system effluent, the proposed total sewage flow per acre,

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wastewater treatment capabilities of the natural or replaced soil, water quality classification of the potential surface-water-receiving body, and the structural and maintenance viability of the system for the treatment of domestic wastewater. However, performance criteria shall address only the performance of a system and not a system's design.

2. The technical review and advisory panel shall assist the department in the development of performance criteria applicable to engineer-designed systems.

3. A person electing to utilize an engineer-designed system shall, upon completion of the system design, submit such design, certified by a registered professional engineer, to the county health department. The county health department may utilize an outside consultant to review the engineer-designed system, with the actual cost of such review to be borne by the applicant. Within 5 working days after receiving an engineer-designed system permit application, the county health department shall request additional information if the application is not complete. Within 15 working days after receiving a complete application for an engineer-designed system, the county health department either shall issue the permit or, if it determines that the system does not comply with the performance criteria, shall notify the applicant of that determination and refer the application to the department for a determination as to whether the system should be approved, disapproved, or approved with modification. The department engineer's determination shall prevail over the action of the county health department. The

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589 applicant shall be notified in writing of the department's
590 determination and of the applicant's rights to pursue a variance
591 or seek review under the provisions of chapter 120.

592 4. The owner of an engineer-designed performance-based
593 system must maintain a current maintenance service agreement
594 with a maintenance entity permitted by the department. The
595 maintenance entity shall obtain a biennial system operating
596 permit from the department for each system under service
597 contract. The department shall inspect the system at least
598 annually, or on such periodic basis as the fee collected
599 permits, and may collect system-effluent samples if appropriate
600 to determine compliance with the performance criteria. The fee
601 for the biennial operating permit shall be collected beginning
602 with the second year of system operation. The maintenance entity
603 shall inspect each system at least twice each year and shall
604 report quarterly to the department on the number of systems
605 inspected and serviced.

606 5. If an engineer-designed system fails to properly
607 function or fails to meet performance standards, the system
608 shall be re-engineered, if necessary, to bring the system into
609 compliance with the provisions of this section.

610 (k) An innovative system may be approved in conjunction
611 with an engineer-designed site-specific system which is
612 certified by the engineer to meet the performance-based criteria
613 adopted by the department.

614 (l) For the Florida Keys, the department shall adopt a
615 special rule for the construction, installation, modification,

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616 operation, repair, maintenance, and performance of onsite sewage
617 treatment and disposal systems which considers the unique soil
618 conditions and which considers water table elevations,
619 densities, and setback requirements. On lots where a setback
620 distance of 75 feet from surface waters, saltmarsh, and
621 buttonwood association habitat areas cannot be met, an injection
622 well, approved and permitted by the department, may be used for
623 disposal of effluent from onsite sewage treatment and disposal
624 systems.

625 (m) No product sold in the state for use in onsite sewage
626 treatment and disposal systems may contain any substance in
627 concentrations or amounts that would interfere with or prevent
628 the successful operation of such system, or that would cause
629 discharges from such systems to violate applicable water quality
630 standards. The department shall publish criteria for products
631 known or expected to meet the conditions of this paragraph. In
632 the event a product does not meet such criteria, such product
633 may be sold if the manufacturer satisfactorily demonstrates to
634 the department that the conditions of this paragraph are met.

635 (n) Evaluations for determining the seasonal high-water
636 table elevations or the suitability of soils for the use of a
637 new onsite sewage treatment and disposal system shall be
638 performed by department personnel, professional engineers
639 registered in the state, or such other persons with expertise,
640 as defined by rule, in making such evaluations. Evaluations for
641 determining mean annual flood lines shall be performed by those
642 persons identified in paragraph (2)(i). The department shall

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accept evaluations submitted by professional engineers and such other persons as meet the expertise established by this section or by rule unless the department has a reasonable scientific basis for questioning the accuracy or completeness of the evaluation.

(o) The department shall appoint a research review and advisory committee, which shall meet at least semiannually. The committee shall advise the department on directions for new research, review and rank proposals for research contracts, and review draft research reports and make comments. The committee is comprised of:

1. A representative of the Division of Environmental Health of the Department of Health.
2. A representative from the septic tank industry.
3. A representative from the home building industry.
4. A representative from an environmental interest group.
5. A representative from the State University System, from a department knowledgeable about onsite sewage treatment and disposal systems.
6. A professional engineer registered in this state who has work experience in onsite sewage treatment and disposal systems.
7. A representative from the real estate profession.
8. A representative from the restaurant industry.
9. A consumer.

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669 Members shall be appointed for a term of 3 years, with the
670 appointments being staggered so that the terms of no more than
671 four members expire in any one year. Members shall serve without
672 remuneration, but are entitled to reimbursement for per diem and
673 travel expenses as provided in s. 112.061.

674 (p) An application for an onsite sewage treatment and
675 disposal system permit shall be completed in full, signed by the
676 owner or the owner's authorized representative, or by a
677 contractor licensed under chapter 489, and shall be accompanied
678 by all required exhibits and fees. No specific documentation of
679 property ownership shall be required as a prerequisite to the
680 review of an application or the issuance of a permit. The
681 issuance of a permit does not constitute determination by the
682 department of property ownership.

683 (q) The department may not require any form of subdivision
684 analysis of property by an owner, developer, or subdivider prior
685 to submission of an application for an onsite sewage treatment
686 and disposal system.

687 (r) Nothing in this section limits the power of a
688 municipality or county to enforce other laws for the protection
689 of the public health and safety.

690 (s) In the siting of onsite sewage treatment and disposal
691 systems, including drainfields, shoulders, and slopes, guttering
692 shall not be required on single-family residential dwelling
693 units for systems located greater than 5 feet from the roof drip
694 line of the house. If guttering is used on residential dwelling

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695 units, the downspouts shall be directed away from the
696 drainfield.

697 (t) Notwithstanding the provisions of subparagraph (g)1.,
698 onsite sewage treatment and disposal systems located in
699 floodways of the Suwannee and Aucilla Rivers must adhere to the
700 following requirements:

701 1. The absorption surface of the drainfield shall not be
702 subject to flooding based on 10-year flood elevations. Provided,
703 however, for lots or parcels created by the subdivision of land
704 in accordance with applicable local government regulations prior
705 to January 17, 1990, if an applicant cannot construct a
706 drainfield system with the absorption surface of the drainfield
707 at an elevation equal to or above 10-year flood elevation, the
708 department shall issue a permit for an onsite sewage treatment
709 and disposal system within the 10-year floodplain of rivers,
710 streams, and other bodies of flowing water if all of the
711 following criteria are met:

712 a. The lot is at least one-half acre in size;

713 b. The bottom of the drainfield is at least 36 inches
714 above the 2-year flood elevation; and

715 c. The applicant installs either: a waterless,
716 incinerating, or organic waste composting toilet and a graywater
717 system and drainfield in accordance with department rules; an
718 aerobic treatment unit and drainfield in accordance with
719 department rules; a system approved by the State Health Office
720 that is capable of reducing effluent nitrate by at least 50
721 percent; or a system approved by the county health department

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722 pursuant to department rule other than a system using
723 alternative drainfield materials. The United States Department
724 of Agriculture Soil Conservation Service soil maps, State of
725 Florida Water Management District data, and Federal Emergency
726 Management Agency Flood Insurance maps are resources that shall
727 be used to identify flood-prone areas.

728 2. The use of fill or mounding to elevate a drainfield
729 system out of the 10-year floodplain of rivers, streams, or
730 other bodies of flowing water shall not be permitted if such a
731 system lies within a regulatory floodway of the Suwannee and
732 Aucilla Rivers. In cases where the 10-year flood elevation does
733 not coincide with the boundaries of the regulatory floodway, the
734 regulatory floodway will be considered for the purposes of this
735 subsection to extend at a minimum to the 10-year flood
736 elevation.

737 (u) The owner of an aerobic treatment unit system shall
738 maintain a current maintenance service agreement with an aerobic
739 treatment unit maintenance entity permitted by the department.
740 The maintenance entity shall obtain a system operating permit
741 from the department for each aerobic treatment unit under
742 service contract. The maintenance entity shall inspect each
743 aerobic treatment unit system at least twice each year and shall
744 report quarterly to the department on the number of aerobic
745 treatment unit systems inspected and serviced. The owner shall
746 allow the department to inspect during reasonable hours each
747 aerobic treatment unit system at least annually, and such
748 inspection may include collection and analysis of system-

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749 effluent samples for performance criteria established by rule of
750 the department.

751 (v) The department may require the submission of detailed
752 system construction plans that are prepared by a professional
753 engineer registered in this state. The department shall
754 establish by rule criteria for determining when such a
755 submission is required.

756 Section 5. This act shall take effect upon becoming a law.

**Behavioral Assumptions for
Hurricane Evacuation Planning in the
Southwest Florida Region**

Prepared by

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Florida Department of Community Affairs
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Tallahassee, FL

September 2001

Introduction

Evacuation outcomes depend upon many factors, including how the public responds. The public responses having the greatest impact upon an evacuation are:

1. The number of households which evacuate.
2. How promptly evacuees leave.
3. The number of evacuees who seek refuge in public shelters.
4. The number of evacuees who leave or attempt to leave the local area and where they go.
5. The number of vehicles used.

Deriving Correct Assumptions

There are at least three basic ways to derive behavioral assumptions:

Type of Refuge

Response in Georges

Except in Glades and Hendry Counties public shelter use was low in Georges (Table 40). Among evacuees from category 1 surge areas (which accounted for 76% of the evacuees) only 2% said they went to public shelters. In other locations in the coastal counties just 10% of the evacuees said they used public shelters. As in most locations the majority of evacuees (except those in the non-coastal counties) went to the homes of friends and relatives. About a fourth went to hotels and motels.

Table 40. Type of refuge used by evacuees in Georges, by county (percent of evacuees)

	Sarasota (N=82)	Charlotte (N=54)	Lee (N=66)	Collier (N=79)	Hendry (N=20)	Glades (N=17)
Public Shelter	4	6	8	3	25	18
Friend/Relative	67	54	58	61	25	41
Hotel/Motel	23	28	23	30	20	18
Other	6	13	12	6	30	24

Table 41. Type of refuge used by evacuees in Georges, by risk area (percent of evacuees)

	Cat 1 (N=205)	Cat 2/3 (2/5) (N=47)	Inland of Cat 2/3 (2/5) (N=29)	Non-Coastal (N=37)
Public Shelter	2	11	10	22
Friend/Relative	61	60	62	32
Hotel/Motel	27	23	21	19
Other	10	6	7	27

Of those evacuees who went to public shelters the great majority (81%) went to a shelter in their own neighborhood, and the remainder went to one in their own county (Table 42). More than half the homes of friends and families to which evacuees went were in their own county, but most of the hotel and motels used were out of county.

Table 42. Location of refuges in Georges (percent of evacuees by refuge)

	Public Shelter (N=21)	Friend/Relative (N=181)	Hotel/Motel (N=80)	Other (N=35)
Neighborhood	81	25	14	51
Own County	19	39	19	12
Other Florida	0	33	64	26
Out of State	0	3	4	11

Response in Andrew

Responses in Andrew in 1992 were similar to those in Georges. Most of the evacuation came from category 1 risk areas in Andrew, and just 2% of the evacuees in Collier and 9% in Lee said they went to public shelters.

Table 43. Location of refuges in Andrew (percent of evacuees by refuge)

	Public Shelter	Friend/Relative	Hotel/Motel	Other
Collier	2	63	29	6
Lee	9	48	33	9

Hypothetical Responses

Interviewees were asked what sort of refuge they would use in each of the four hypothetical hurricane threat scenarios described above. The percentages of respondents saying they would go to public shelters are indicated in Table 44 by risk area and in Table 45 by county. There was only slight variation among storm intensity scenarios. That is, in a given location, the percentage of intended evacuees saying they would go to public shelters was very similar in each storm scenario. It is likely, however, that the availability of public shelters in southwest Florida will decrease in stronger storms.



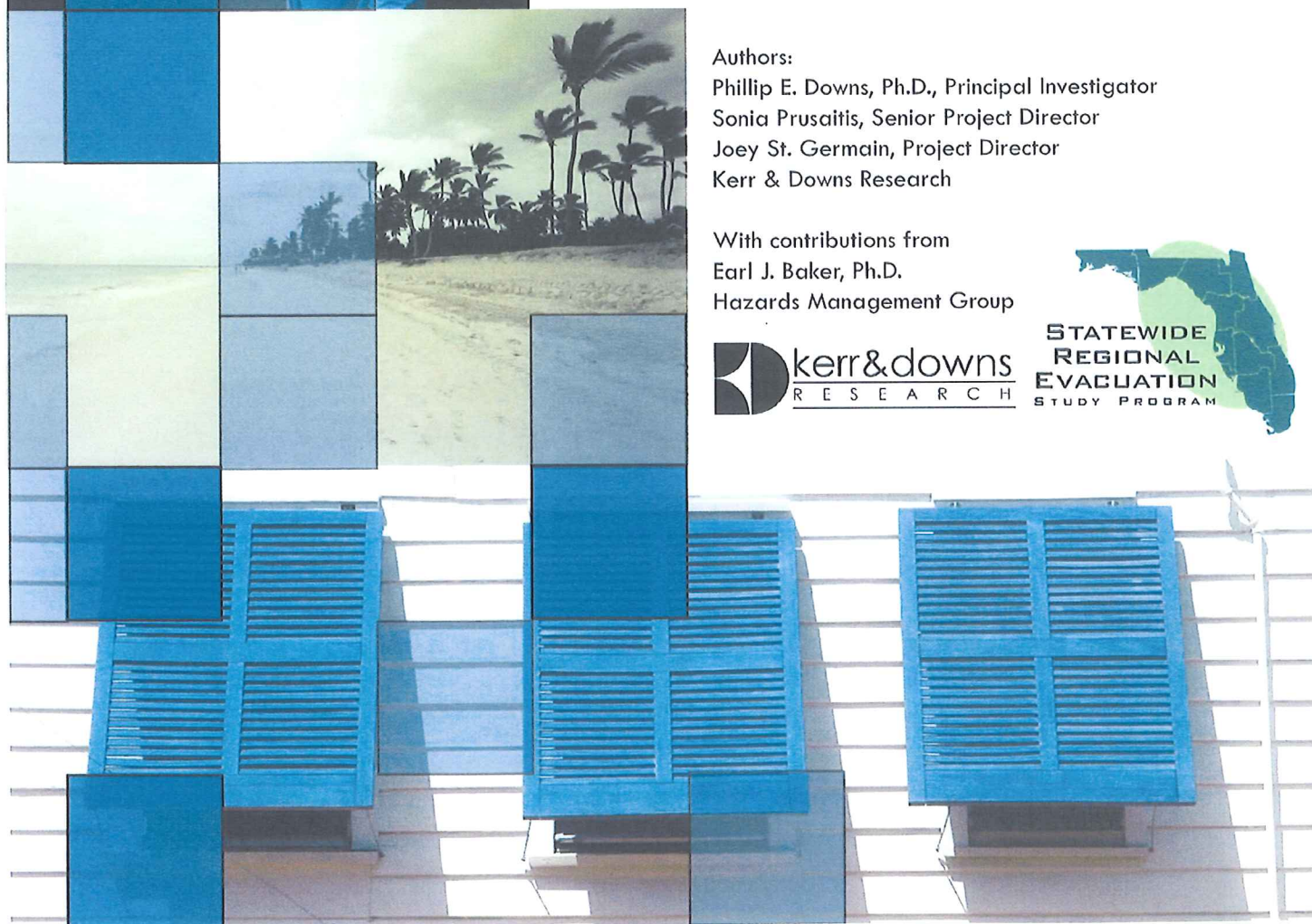
2008

Florida Department of Community Affairs
& Regional Planning Councils of Florida
STATEWIDE REGIONAL
EVACUATION STUDY PROGRAM:
Southwest Behavioral Survey Report

Authors:

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9. Historical Evacuation Behavior

Where did you evacuate to during Hurricane Charley?

It should be noted that relatively few residents in some evacuation zones answered this question, so responses should be interpreted cautiously. Six in ten residents (60%) of the Southwest region who evacuated during Hurricane Charley report going to friends or relatives, while 17% report going to a public shelter.

Where did you evacuate to during Hurricane Charley?

	n	Public shelter	Friend/relative	Hotel/motel	Other	Don't know
Southwest	331	17%	60%	14%	9%	0%
Category 1	103	16%	50%	23%	11%	0%
Category 2	70	11%	68%	18%	2%	1%
Category 3	43	8%	78%	11%	3%	0%
Category 4	11	40%	46%	9%	4%	0%
Category 5	12	40%	46%	9%	4%	0%
Non-Surge	16	29%	35%	13%	22%	0%
Inland	76	18%	66%	7%	9%	0%
Charlotte	57	17%	69%	4%	10%	0%
Category 1	22	21%	46%	11%	21%	0%
Category 2	14	0%	91%	0%	9%	0%
Category 3	10	7%	89%	0%	4%	0%
Category 4	8	43%	57%	0%	0%	0%
Category 5	8	43%	57%	0%	0%	0%
Non-Surge	3	0%	100%	0%	0%	0%
Collier	67	17%	49%	26%	8%	0%
Category 1	35	8%	47%	33%	12%	0%
Category 2	23	10%	69%	21%	0%	0%
Category 3	23	10%	69%	21%	0%	0%
Category 4	2	0%	51%	0%	49%	0%
Category 5	2	0%	51%	0%	49%	0%
Non-Surge	7	47%	21%	21%	11%	0%
Lee	81	19%	56%	14%	10%	1%
Category 1	24	25%	48%	18%	9%	0%
Category 2	33	16%	59%	21%	2%	2%
Category 3	14	0%	93%	0%	7%	0%
Category 4	7	71%	11%	12%	6%	0%
Category 5	7	71%	11%	12%	6%	0%
Non-Surge	3	0%	46%	0%	54%	0%
Sarasota	50	11%	60%	26%	3%	0%
Category 1	22	5%	64%	31%	0%	0%
Category 2	11	15%	60%	25%	0%	0%
Category 3	8	21%	71%	8%	0%	0%
Category 4	6	0%	66%	34%	0%	0%
Category 5	6	0%	66%	34%	0%	0%
Non-Surge	3	36%	0%	15%	49%	0%
Glades	37	14%	63%	13%	9%	1%
Hendry	39	22%	69%	1%	8%	0%

County Level Results

Hendry County residents (22%) are more likely to report going to public shelters during Hurricane Charley, while Hendry and Charlotte residents are more likely to report going to friends and relatives (69%).

9. Historical Evacuation Behavior

Where did you evacuate to during Hurricane Jeanne?

Over six in ten households (64%) that report evacuating during Hurricane Jeanne say they went to friends and relatives. Only 19% report evacuating to a public shelter.

County-Level Results

Proportionately more residents in Hendry County (28%) report going to a public shelter.

Where did you evacuate to during Hurricane Jeanne?

	n	Public shelter	Friend/relative	Hotel/motel	Other	Don't know
Southwest	67	19%	64%	7%	10%	0%
Glades	38	14%	63%	11%	13%	0%
Hendry	29	28%	64%	1%	6%	0%

Where did you evacuate to during Hurricane Frances?

Over six in ten residents in the Southwest region (62%) went to friends or relatives when they evacuated during Hurricane Frances. Only 16% report evacuating to a public shelter during Hurricane Frances, and only 12% went to a hotel or motel to escape Hurricane Frances.

County-Level Results

One in four residents of Hendry County (25%) report going to a public shelter during Hurricane Frances.

Where did you evacuate to during Hurricane Frances?

	n	Public shelter	Friend/relative	Hotel/motel	Other	Don't know
Southwest	102	16%	62%	12%	10%	0%
Category 1	12	0%	57%	8%	35%	0%
Category 2	5	27%	73%	0%	0%	0%
Category 3	4	45%	16%	39%	0%	0%
Category 4	1	0%	100%	0%	0%	0%
Category 5	1	0%	100%	0%	0%	0%
Non-Surge	2	70%	0%	30%	0%	0%
Inland	77	15%	63%	13%	9%	0%
Sarasota	25	19%	56%	10%	15%	0%
Category 1	12	0%	57%	8%	35%	0%
Category 2	5	27%	73%	0%	0%	0%
Category 3	4	45%	16%	39%	0%	0%
Category 4	2	0%	100%	0%	0%	0%
Category 5	2	0%	100%	0%	0%	0%
Non-Surge	2	70%	0%	30%	0%	0%
Glades	38	7%	58%	20%	15%	0%
Hendry	39	25%	69%	4%	2%	0%

Where did you evacuate to during Hurricane Ivan?

Residents of the Southwest region who report evacuating for Hurricane Ivan are equally likely to say they went to friends and relatives (35%) or to a hotel or motel (32%), while 15% went to public shelters.

County Level Results

Evacuating to public shelters was more prevalent in Collier County (30%), while evacuating to friends and relatives was most frequent in Charlotte County (49%).

Where did you evacuate to during Hurricane Ivan?

	n	Public shelter	Friend/relative	Hotel/motel	Other	Don't know
Southwest	118	15%	35%	32%	16%	2%
Category 1	45	15%	27%	43%	12%	3%
Category 2	29	4%	41%	38%	15%	2%
Category 3	14	2%	41%	49%	7%	0%
Category 4	7	4%	63%	18%	15%	0%
Category 5	12	4%	63%	18%	15%	0%
Non-Surge	11	51%	21%	0%	28%	0%
Charlotte	44	3%	49%	38%	7%	3%
Category 1	16	0%	40%	48%	4%	8%
Category 2	7	12%	59%	22%	7%	0%
Category 3	7	0%	45%	55%	0%	0%
Category 4	12	6%	52%	24%	18%	0%
Category 5	12	6%	52%	24%	18%	0%
Non-Surge	2	0%	100%	0%	0%	0%
Collier	37	30%	29%	28%	12%	1%
Category 1	19	24%	25%	34%	16%	2%
Category 2	10	5%	48%	47%	0%	0%
Category 3	10	5%	48%	47%	0%	0%
Category 4	2	0%	100%	0%	0%	0%
Category 5	2	0%	100%	0%	0%	0%
Non-Surge	6	69%	10%	0%	21%	0%
Lee	37	11%	28%	30%	29%	2%
Category 1	10	16%	16%	52%	16%	0%
Category 2	15	0%	27%	35%	32%	5%
Category 3	4	0%	10%	41%	49%	0%
Category 4	5	0%	80%	7%	13%	0%
Category 5	5	0%	80%	7%	13%	0%
Non-Surge	3	33%	22%	0%	45%	0%

9. Historical Evacuation Behavior

Where did you evacuate to during Hurricane Wilma?

Over half of evacuees in Hurricane Wilma (52%) report going to friends and relatives, while 11% report evacuating to a public shelter.

County-Level Results

Incidence of evacuating to public shelters is highest in Sarasota (15%) and Collier (14%) counties. Reported evacuation to hotels/motels is greatest in Charlotte County (41%).

Where did you evacuate to during Hurricane Wilma?

	n	Public shelter	Friend/relative	Hotel/motel	Other	Don't know
Southwest	245	11%	52%	28%	8%	0%
Category 1	101	10%	54%	30%	5%	0%
Category 2	74	10%	55%	25%	10%	0%
Category 3	35	7%	60%	25%	8%	0%
Category 4	10	2%	57%	37%	4%	0%
Category 5	7	2%	57%	37%	4%	0%
Non-Surge	18	29%	18%	31%	18%	4%
Charlotte	25	2%	46%	41%	12%	0%
Category 1	8	0%	22%	62%	17%	0%
Category 2	10	0%	95%	0%	5%	0%
Category 3	3	0%	65%	0%	35%	0%
Category 4	4	6%	6%	88%	0%	0%
Category 5	4	6%	6%	88%	0%	0%
Non-Surge	0	-	-	-	-	-
Collier	130	14%	52%	28%	6%	1%
Category 1	70	11%	58%	28%	3%	0%
Category 2	39	8%	54%	29%	9%	0%
Category 3	39	8%	54%	29%	9%	0%
Category 4	6	0%	63%	31%	6%	0%
Category 5	6	0%	63%	31%	6%	0%
Non-Surge	15	37%	21%	29%	8%	5%
Lee	66	8%	53%	26%	14%	0%
Category 1	15	10%	46%	34%	10%	0%
Category 2	32	14%	47%	25%	14%	0%
Category 3	12	0%	86%	14%	0%	0%
Category 4	5	0%	84%	8%	8%	0%
Category 5	5	0%	84%	8%	8%	0%
Non-Surge	2	0%	0%	42%	58%	0%
Sarasota	24	15%	63%	22%	0%	0%
Category 1	8	10%	79%	10%	0%	0%
Category 2	7	21%	55%	25%	0%	0%
Category 3	6	19%	42%	39%	0%	0%
Category 4	2	0%	100%	0%	0%	0%
Category 5	2	0%	100%	0%	0%	0%
Non-Surge	1	0%	100%	0%	0%	0%

HB 1359 - Hazard Mitigation for Coastal Redevelopment

GENERAL BILL by Benson (CO-SPONSORS) Harrell

Hazard Mitigation for Coastal Redevelopment: Specifies entities that are authorized to install or authorize installation of rigid coastal armoring structures; requires the Division of Emergency Management to manage certain hurricane evacuation studies; provides that the application of development policies shall be at the discretion of local government; provides a deadline for local governments to amend coastal management elements and future land use maps, etc.

Effective Date: June 1, 2006.

Last Event: 06/01/06 Approved by Governor; Chapter No. 2006-68 on Friday, June 02, 2006 1:47 PM

Date Available for Final Passage: Tuesday, May 02, 2006 2:05 PM

Referred Committees and Committee Actions:

- **Environmental Regulation Committee**
 - On agenda for: 04/05/06 1:30 PM [Notice](#)
 - Favorable With Committee Substitute (*final action*) [See Votes](#)
- **Transportation & Economic Development Appropriations Committee**
 - On agenda for: 04/17/06 3:00 PM [Notice](#)
 - Favorable (*final action*) [See Votes](#)
- **State Resources Council**
 - On agenda for: 04/21/06 3:30 PM [Notice](#)
 - Favorable With Council Substitute (*final action*) [See Votes](#)

Related Bills:

Bill #	Subject	Relationship
CS/CS/SB 2216	Hazard Mitigation	Similar
CS/SB 1842	Coastal Resort Area Redevelopment	Compare

Bill Text:

[Enrolled](#)

[Engrossed 2](#)

[Engrossed 1](#)

A [145417](#), Benson Date Filed: 04/28/06, Page#: 0, Line#: 64

House: Adopted 04/28/06

A [757541](#), Benson Date Filed: 04/28/06, Page#: 0, Line#: 126

House: Adopted 04/28/06

[Committee Substitute 2](#)

A [915075](#), Benson Date Filed: 04/26/06, Page#: 0, Line#: 141

House: Adopted 04/27/06

[Committee Substitute 1](#) Laid on the Table

[Original Filed Version](#)

Staff Analysis:

Chamber	Committee
House	State Resources Council 4/25/2006 9:30:33 AM
House	State Resources Council 4/24/2006 9:09:13 PM
House	State Resources Council 4/20/2006 8:11:26 PM
House	Transportation & Economic Development Appropriations Committee 4/17/2006 7:38:12 PM
House	Transportation & Economic Development Appropriations Committee 4/17/2006 11:05:09 AM
House	Environmental Regulation Committee 4/12/2006 11:33:34 AM

House

[Environmental Regulation Committee 4/3/2006 4:38:47 PM](#)**Vote History:**

Chamber	Date	Yeas	Nays	Actions	Barcode
House	04/28/2006 02:05 PM	114	0	Passage	Vote [Seq# 996]
Senate	05/01/2006 12:31 PM	39	0		Vote [Seq# 9]

Bill History:

Event	Time	Member	Committee
06/01/06 Approved by Governor; Chapter No. 2006-68	Friday, June 02, 2006 1:47 PM		
05/26/06 Signed by Officers and presented to Governor	Friday, May 26, 2006 12:36 PM		
Ordered enrolled	Monday, May 01, 2006 8:35 PM		
In Messages	Monday, May 01, 2006 8:35 PM		
05/01/06 S Passed; YEAS 39 NAYS 0 -SJ 00729	Monday, May 01, 2006 12:31 PM		
05/01/06 S Read third time -SJ 00729	Monday, May 01, 2006 12:31 PM		
05/01/06 S Read second time -SJ 00729	Monday, May 01, 2006 12:30 PM		
05/01/06 S Substituted for CS/CS/SB 2216 -SJ 00729	Monday, May 01, 2006 12:30 PM		
05/01/06 S Withdrawn from Domestic Security; Environmental Preservation; General Government Appropriations -SJ 00728	Monday, May 01, 2006 12:30 PM		
Message sent to senate	Friday, April 28, 2006 6:15 PM		
04/28/06 S Received, referred to Domestic Security; Environmental Preservation; General Government Appropriations -SJ 00702	Friday, April 28, 2006 6:08 PM		
04/28/06 S In Messages	Friday, April 28, 2006 5:58 PM		
Passage on third reading	Friday, April 28, 2006 2:06 PM		
Passed as amended; YEAS 114, NAYS 0	Friday, April 28, 2006 2:05 PM		
Amendment 757541 adopted	Friday, April 28, 2006 2:05 PM		
Amendment 145417 adopted	Friday, April 28, 2006 2:05 PM		
Read 3rd time	Friday, April 28, 2006 2:03 PM		
Amendment 145417 filed	Friday, April 28, 2006 11:32 AM		
Amendment 757541 filed	Friday, April 28, 2006 9:39 AM		
Added to Third Reading Calendar	Thursday, April 27, 2006 7:19 PM		
Amendment 915075 adopted	Thursday, April 27, 2006 1:01 PM		
Read 2nd time	Thursday, April 27, 2006 12:57 PM		

	PM	
Amendment 915075 filed	Wednesday, April 26, 2006 2:24 PM	
Bill added to Special Order Calendar (4/27/2006)	Tuesday, April 25, 2006 6:23 PM	
Added to Second Reading Calendar	Monday, April 24, 2006 9:18 PM	
Bill released to House Calendar	Monday, April 24, 2006 9:18 PM	
Pending review of CS under Rule 6.3	Monday, April 24, 2006 9:15 PM	
Reported out of State Resources Council	Monday, April 24, 2006 9:04 PM	State Resources Council
Favorable with CS by State Resources Council (Amended)	Friday, April 21, 2006 5:00 PM	State Resources Council
Favorable with CS by State Resources Council	Friday, April 21, 2006 5:00 PM	State Resources Council
Added to State Resources Council agenda	Thursday, April 20, 2006 3:39 PM	State Resources Council
Now in State Resources Council	Monday, April 17, 2006 7:58 PM	State Resources Council
Reported out of Transportation & Economic Development Appropriations Committee	Monday, April 17, 2006 7:58 PM	Transportation & Economic Development Appropriations Committee
Favorable by Transportation & Economic Development Appropriations Committee	Monday, April 17, 2006 4:00 PM	Transportation & Economic Development Appropriations Committee
Added to Transportation & Economic Development Appropriations Committee agenda	Thursday, April 13, 2006 4:20 PM	Transportation & Economic Development Appropriations Committee
Now in Transportation & Economic Development Appropriations Committee	Thursday, April 13, 2006 2:15 PM	Transportation & Economic Development Appropriations Committee
Remaining referral: State Resources Council	Thursday, April 13, 2006 2:15 PM	State Resources Council
Pending review of CS under Rule 6.3	Thursday, April 13, 2006 9:26 AM	
Reported out of Environmental Regulation Committee	Wednesday, April 12, 2006 11:34 AM	Environmental Regulation Committee
Favorable with CS by Environmental Regulation Committee(Amended)	Wednesday, April 05, 2006 3:00 PM	Environmental Regulation Committee
Favorable with CS by Environmental Regulation Committee	Wednesday, April 05, 2006 3:00 PM	Environmental Regulation Committee
Added to Environmental Regulation Committee agenda	Monday, April 03, 2006 4:04 PM	Environmental Regulation Committee
Now in Environmental Regulation Committee	Tuesday, March 14, 2006 12:40 PM	Environmental Regulation Committee
Referred to State Resources Council	Tuesday, March 14, 2006 12:40 PM	State Resources Council
Referred to Transportation & Economic Development	Tuesday, March 14, 2006 12:40	Transportation & Economic

Appropriations Committee

PM

Development Appropriations
Committee

Referred to Environmental Regulation Committee

Tuesday, March 14, 2006 12:40
PM

Environmental Regulation
Committee

1st Reading

Tuesday, March 07, 2006 11:59
PM

Filed

Tuesday, February 28, 2006
3:48 PM

Benson

Statutes Referenced by this Bill

161.085
163.3178
381.0065
689.264
161.085
163.3178
163.3178
381.0065
161.085
163.3178
163.336
381.0065

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HB 1359

2006

1 A bill to be entitled
2 An act relating to hazard mitigation for coastal
3 redevelopment; amending s. 161.085, F.S.; specifying
4 entities that are authorized to install or authorize
5 installation of rigid coastal armoring structures;
6 authorizing the Department of Environmental Protection to
7 revoke certain authority; amending s. 163.3178, F.S.;
8 requiring the Division of Emergency Management to manage
9 certain hurricane evacuation studies; requiring that such
10 studies be performed in a specified manner; amending s.
11 381.0065, F.S.; requiring the issuance of certain permits
12 by the Department of Health to be contingent upon the
13 receipt of certain permits issued by the Department of
14 Environmental Protection; creating s. 689.264, F.S.;
15 requiring disclosure of property location within a
16 hurricane evacuation zone to prospective purchaser;
17 providing an effective date.

18
19 Be It Enacted by the Legislature of the State of Florida:

20
21 Section 1. Subsection (3) of section 161.085, Florida
22 Statutes, is amended, and subsection (8) is added to that
23 section, to read:

24 161.085 Rigid coastal armoring structures.--

25 (3) If erosion occurs as a result of a storm event which
26 threatens private structures or public infrastructure and a
27 permit has not been issued pursuant to subsection (2), unless
28 the authority has been revoked by order of the department

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29 pursuant to subsection (8), an ~~the~~ agency, political
30 subdivision, or municipality having jurisdiction over the
31 impacted area may install or authorize installation of rigid
32 coastal armoring structures for the protection of private
33 structures or public infrastructure, or take other measures to
34 relieve the threat to private structures or public
35 infrastructure as long as the following items are considered and
36 incorporated into such emergency measures:

37 (a) Protection of the beach-dune system.

38 (b) Siting and design criteria for the protective
39 structure.

40 (c) Impacts on adjacent properties.

41 (d) Preservation of public beach access.

42 (e) Protection of native coastal vegetation and nesting
43 marine turtles and their hatchlings.

44 (8) If an agency, political subdivision, or municipality
45 installs or authorizes installation of a rigid coastal armoring
46 structure that does not comply with subsection (3), and if the
47 department determines that the action harms or interferes with
48 the protection of the beach-dune system, adversely impacts
49 adjacent properties, interferes with public beach access, or
50 harms native coastal vegetation or nesting marine turtles or
51 their hatchlings, the department may revoke by order the
52 authority of the agency, political subdivision, or municipality
53 under subsection (3) to install or authorize the installation of
54 rigid coastal armoring structures.

55 Section 2. Paragraph (h) of subsection (2) of section
56 163.3178, Florida Statutes, is amended to read:

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163.3178 Coastal management.--

(2) Each coastal management element required by s. 163.3177(6)(g) shall be based on studies, surveys, and data; be consistent with coastal resource plans prepared and adopted pursuant to general or special law; and contain:

(h) Designation of high-hazard coastal areas, which for uniformity and planning purposes herein, are defined as category 1 evacuation zones. Category 1 evacuation zones are based on the regional hurricane evacuation studies. The Division of Emergency Management is responsible for managing the update of the regional hurricane evacuation studies and ensuring that such studies are done in a consistent manner using the methodology for modeling storm surge that is used by the National Hurricane Center. ~~However,~~ Application of mitigation and redevelopment policies, pursuant to s. 380.27(2), and any rules adopted thereunder, shall be at the discretion of local government.

Section 3. Subsection (4) of section 381.0065, Florida Statutes, is amended to read:

381.0065 Onsite sewage treatment and disposal systems; regulation.--

(4) PERMITS; INSTALLATION; AND CONDITIONS.--A person may not construct, repair, modify, abandon, or operate an onsite sewage treatment and disposal system without first obtaining a permit approved by the department. The department may issue permits to carry out this section, but shall not make the issuance of such permits contingent upon prior approval by the Department of Environmental Protection, except that the issuance of a permit for work seaward of the coastal construction control

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85 line established under s. 161.053 shall be contingent upon
86 receipt of any required coastal construction control line permit
87 from the Department of Environmental Protection. A construction
88 permit is valid for 18 months from the issuance date and may be
89 extended by the department for one 90-day period under rules
90 adopted by the department. A repair permit is valid for 90 days
91 from the date of issuance. An operating permit must be obtained
92 prior to the use of any aerobic treatment unit or if the
93 establishment generates commercial waste. Buildings or
94 establishments that use an aerobic treatment unit or generate
95 commercial waste shall be inspected by the department at least
96 annually to assure compliance with the terms of the operating
97 permit. The operating permit for a commercial wastewater system
98 is valid for 1 year from the date of issuance and must be
99 renewed annually. The operating permit for an aerobic treatment
100 unit is valid for 2 years from the date of issuance and must be
101 renewed every 2 years. If all information pertaining to the
102 siting, location, and installation conditions or repair of an
103 onsite sewage treatment and disposal system remains the same, a
104 construction or repair permit for the onsite sewage treatment
105 and disposal system may be transferred to another person, if the
106 transferee files, within 60 days after the transfer of
107 ownership, an amended application providing all corrected
108 information and proof of ownership of the property. There is no
109 fee associated with the processing of this supplemental
110 information. A person may not contract to construct, modify,
111 alter, repair, service, abandon, or maintain any portion of an
112 onsite sewage treatment and disposal system without being

113 registered under part III of chapter 489. A property owner who
114 personally performs construction, maintenance, or repairs to a
115 system serving his or her own owner-occupied single-family
116 residence is exempt from registration requirements for
117 performing such construction, maintenance, or repairs on that
118 residence, but is subject to all permitting requirements. A
119 municipality or political subdivision of the state may not issue
120 a building or plumbing permit for any building that requires the
121 use of an onsite sewage treatment and disposal system unless the
122 owner or builder has received a construction permit for such
123 system from the department. A building or structure may not be
124 occupied and a municipality, political subdivision, or any state
125 or federal agency may not authorize occupancy until the
126 department approves the final installation of the onsite sewage
127 treatment and disposal system. A municipality or political
128 subdivision of the state may not approve any change in occupancy
129 or tenancy of a building that uses an onsite sewage treatment
130 and disposal system until the department has reviewed the use of
131 the system with the proposed change, approved the change, and
132 amended the operating permit.

133 (a) Subdivisions and lots in which each lot has a minimum
134 area of at least one-half acre and either a minimum dimension of
135 100 feet or a mean of at least 100 feet of the side bordering
136 the street and the distance formed by a line parallel to the
137 side bordering the street drawn between the two most distant
138 points of the remainder of the lot may be developed with a water
139 system regulated under s. 381.0062 and onsite sewage treatment
140 and disposal systems, provided the projected daily sewage flow

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141 does not exceed an average of 1,500 gallons per acre per day,
142 and provided satisfactory drinking water can be obtained and all
143 distance and setback, soil condition, water table elevation, and
144 other related requirements of this section and rules adopted
145 under this section can be met.

146 (b) Subdivisions and lots using a public water system as
147 defined in s. 403.852 may use onsite sewage treatment and
148 disposal systems, provided there are no more than four lots per
149 acre, provided the projected daily sewage flow does not exceed
150 an average of 2,500 gallons per acre per day, and provided that
151 all distance and setback, soil condition, water table elevation,
152 and other related requirements that are generally applicable to
153 the use of onsite sewage treatment and disposal systems are met.

154 (c) Notwithstanding the provisions of paragraphs (a) and
155 (b), for subdivisions platted of record on or before October 1,
156 1991, when a developer or other appropriate entity has
157 previously made or makes provisions, including financial
158 assurances or other commitments, acceptable to the Department of
159 Health, that a central water system will be installed by a
160 regulated public utility based on a density formula, private
161 potable wells may be used with onsite sewage treatment and
162 disposal systems until the agreed-upon densities are reached.
163 The department may consider assurances filed with the Department
164 of Business and Professional Regulation under chapter 498 in
165 determining the adequacy of the financial assurance required by
166 this paragraph. In a subdivision regulated by this paragraph,
167 the average daily sewage flow may not exceed 2,500 gallons per
168 acre per day. This section does not affect the validity of

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existing prior agreements. After October 1, 1991, the exception provided under this paragraph is not available to a developer or other appropriate entity.

(d) Paragraphs (a) and (b) do not apply to any proposed residential subdivision with more than 50 lots or to any proposed commercial subdivision with more than 5 lots where a publicly owned or investor-owned sewerage system is available. It is the intent of this paragraph not to allow development of additional proposed subdivisions in order to evade the requirements of this paragraph.

(e) Onsite sewage treatment and disposal systems must not be placed closer than:

1. Seventy-five feet from a private potable well.
2. Two hundred feet from a public potable well serving a residential or nonresidential establishment having a total sewage flow of greater than 2,000 gallons per day.
3. One hundred feet from a public potable well serving a residential or nonresidential establishment having a total sewage flow of less than or equal to 2,000 gallons per day.
4. Fifty feet from any nonpotable well.
5. Ten feet from any storm sewer pipe, to the maximum extent possible, but in no instance shall the setback be less than 5 feet.
6. Seventy-five feet from the mean high-water line of a tidally influenced surface water body.
7. Seventy-five feet from the mean annual flood line of a permanent nontidal surface water body.

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196 8. Fifteen feet from the design high-water line of
197 retention areas, detention areas, or swales designed to contain
198 standing or flowing water for less than 72 hours after a
199 rainfall or the design high-water level of normally dry drainage
200 ditches or normally dry individual lot stormwater retention
201 areas.

202 (f) Except as provided under paragraphs (e) and (t), no
203 limitations shall be imposed by rule, relating to the distance
204 between an onsite disposal system and any area that either
205 permanently or temporarily has visible surface water.

206 (g) All provisions of this section and rules adopted under
207 this section relating to soil condition, water table elevation,
208 distance, and other setback requirements must be equally applied
209 to all lots, with the following exceptions:

210 1. Any residential lot that was platted and recorded on or
211 after January 1, 1972, or that is part of a residential
212 subdivision that was approved by the appropriate permitting
213 agency on or after January 1, 1972, and that was eligible for an
214 onsite sewage treatment and disposal system construction permit
215 on the date of such platting and recording or approval shall be
216 eligible for an onsite sewage treatment and disposal system
217 construction permit, regardless of when the application for a
218 permit is made. If rules in effect at the time the permit
219 application is filed cannot be met, residential lots platted and
220 recorded or approved on or after January 1, 1972, shall, to the
221 maximum extent possible, comply with the rules in effect at the
222 time the permit application is filed. At a minimum, however,
223 those residential lots platted and recorded or approved on or

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224 after January 1, 1972, but before January 1, 1983, shall comply
225 with those rules in effect on January 1, 1983, and those
226 residential lots platted and recorded or approved on or after
227 January 1, 1983, shall comply with those rules in effect at the
228 time of such platting and recording or approval. In determining
229 the maximum extent of compliance with current rules that is
230 possible, the department shall allow structures and
231 appurtenances thereto which were authorized at the time such
232 lots were platted and recorded or approved.

233 2. Lots platted before 1972 are subject to a 50-foot
234 minimum surface water setback and are not subject to lot size
235 requirements. The projected daily flow for onsite sewage
236 treatment and disposal systems for lots platted before 1972 may
237 not exceed:

238 a. Two thousand five hundred gallons per acre per day for
239 lots served by public water systems as defined in s. 403.852.

240 b. One thousand five hundred gallons per acre per day for
241 lots served by water systems regulated under s. 381.0062.

242 (h)1. The department may grant variances in hardship cases
243 which may be less restrictive than the provisions specified in
244 this section. If a variance is granted and the onsite sewage
245 treatment and disposal system construction permit has been
246 issued, the variance may be transferred with the system
247 construction permit, if the transferee files, within 60 days
248 after the transfer of ownership, an amended construction permit
249 application providing all corrected information and proof of
250 ownership of the property and if the same variance would have
251 been required for the new owner of the property as was

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originally granted to the original applicant for the variance.
There is no fee associated with the processing of this
supplemental information. A variance may not be granted under
this section until the department is satisfied that:

a. The hardship was not caused intentionally by the action
of the applicant;

b. No reasonable alternative, taking into consideration
factors such as cost, exists for the treatment of the sewage;
and

c. The discharge from the onsite sewage treatment and
disposal system will not adversely affect the health of the
applicant or the public or significantly degrade the groundwater
or surface waters.

Where soil conditions, water table elevation, and setback
provisions are determined by the department to be satisfactory,
special consideration must be given to those lots platted before
1972.

2. The department shall appoint and staff a variance
review and advisory committee, which shall meet monthly to
recommend agency action on variance requests. The committee
shall make its recommendations on variance requests at the
meeting in which the application is scheduled for consideration,
except for an extraordinary change in circumstances, the receipt
of new information that raises new issues, or when the applicant
requests an extension. The committee shall consider the criteria
in subparagraph 1. in its recommended agency action on variance
requests and shall also strive to allow property owners the full

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280 use of their land where possible. The committee consists of the
281 following:

282 a. The Division Director for Environmental Health of the
283 department or his or her designee.

284 b. A representative from the county health departments.

285 c. A representative from the home building industry
286 recommended by the Florida Home Builders Association.

287 d. A representative from the septic tank industry
288 recommended by the Florida Onsite Wastewater Association.

289 e. A representative from the Department of Environmental
290 Protection.

291 f. A representative from the real estate industry who is
292 also a developer in this state who develops lots using onsite
293 sewage treatment and disposal systems, recommended by the
294 Florida Association of Realtors.

295 g. A representative from the engineering profession
296 recommended by the Florida Engineering Society.

297
298 Members shall be appointed for a term of 3 years, with such
299 appointments being staggered so that the terms of no more than
300 two members expire in any one year. Members shall serve without
301 remuneration, but if requested, shall be reimbursed for per diem
302 and travel expenses as provided in s. 112.061.

303 (i) A construction permit may not be issued for an onsite
304 sewage treatment and disposal system in any area zoned or used
305 for industrial or manufacturing purposes, or its equivalent,
306 where a publicly owned or investor-owned sewage treatment system
307 is available, or where a likelihood exists that the system will

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308 receive toxic, hazardous, or industrial waste. An existing
309 onsite sewage treatment and disposal system may be repaired if a
310 publicly owned or investor-owned sewerage system is not
311 available within 500 feet of the building sewer stub-out and if
312 system construction and operation standards can be met. This
313 paragraph does not require publicly owned or investor-owned
314 sewerage treatment systems to accept anything other than
315 domestic wastewater.

316 1. A building located in an area zoned or used for
317 industrial or manufacturing purposes, or its equivalent, when
318 such building is served by an onsite sewage treatment and
319 disposal system, must not be occupied until the owner or tenant
320 has obtained written approval from the department. The
321 department shall not grant approval when the proposed use of the
322 system is to dispose of toxic, hazardous, or industrial
323 wastewater or toxic or hazardous chemicals.

324 2. Each person who owns or operates a business or facility
325 in an area zoned or used for industrial or manufacturing
326 purposes, or its equivalent, or who owns or operates a business
327 that has the potential to generate toxic, hazardous, or
328 industrial wastewater or toxic or hazardous chemicals, and uses
329 an onsite sewage treatment and disposal system that is installed
330 on or after July 5, 1989, must obtain an annual system operating
331 permit from the department. A person who owns or operates a
332 business that uses an onsite sewage treatment and disposal
333 system that was installed and approved before July 5, 1989, need
334 not obtain a system operating permit. However, upon change of
335 ownership or tenancy, the new owner or operator must notify the

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336 department of the change, and the new owner or operator must
337 obtain an annual system operating permit, regardless of the date
338 that the system was installed or approved.

339 3. The department shall periodically review and evaluate
340 the continued use of onsite sewage treatment and disposal
341 systems in areas zoned or used for industrial or manufacturing
342 purposes, or its equivalent, and may require the collection and
343 analyses of samples from within and around such systems. If the
344 department finds that toxic or hazardous chemicals or toxic,
345 hazardous, or industrial wastewater have been or are being
346 disposed of through an onsite sewage treatment and disposal
347 system, the department shall initiate enforcement actions
348 against the owner or tenant to ensure adequate cleanup,
349 treatment, and disposal.

350 (j) An onsite sewage treatment and disposal system for a
351 single-family residence that is designed by a professional
352 engineer registered in the state and certified by such engineer
353 as complying with performance criteria adopted by the department
354 must be approved by the department subject to the following:

355 1. The performance criteria applicable to engineer-
356 designed systems must be limited to those necessary to ensure
357 that such systems do not adversely affect the public health or
358 significantly degrade the groundwater or surface water. Such
359 performance criteria shall include consideration of the quality
360 of system effluent, the proposed total sewage flow per acre,
361 wastewater treatment capabilities of the natural or replaced
362 soil, water quality classification of the potential surface-
363 water-receiving body, and the structural and maintenance

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viability of the system for the treatment of domestic wastewater. However, performance criteria shall address only the performance of a system and not a system's design.

2. The technical review and advisory panel shall assist the department in the development of performance criteria applicable to engineer-designed systems.

3. A person electing to utilize an engineer-designed system shall, upon completion of the system design, submit such design, certified by a registered professional engineer, to the county health department. The county health department may utilize an outside consultant to review the engineer-designed system, with the actual cost of such review to be borne by the applicant. Within 5 working days after receiving an engineer-designed system permit application, the county health department shall request additional information if the application is not complete. Within 15 working days after receiving a complete application for an engineer-designed system, the county health department either shall issue the permit or, if it determines that the system does not comply with the performance criteria, shall notify the applicant of that determination and refer the application to the department for a determination as to whether the system should be approved, disapproved, or approved with modification. The department engineer's determination shall prevail over the action of the county health department. The applicant shall be notified in writing of the department's determination and of the applicant's rights to pursue a variance or seek review under the provisions of chapter 120.

391 4. The owner of an engineer-designed performance-based
392 system must maintain a current maintenance service agreement
393 with a maintenance entity permitted by the department. The
394 maintenance entity shall obtain a biennial system operating
395 permit from the department for each system under service
396 contract. The department shall inspect the system at least
397 annually, or on such periodic basis as the fee collected
398 permits, and may collect system-effluent samples if appropriate
399 to determine compliance with the performance criteria. The fee
400 for the biennial operating permit shall be collected beginning
401 with the second year of system operation. The maintenance entity
402 shall inspect each system at least twice each year and shall
403 report quarterly to the department on the number of systems
404 inspected and serviced.

405 5. If an engineer-designed system fails to properly
406 function or fails to meet performance standards, the system
407 shall be re-engineered, if necessary, to bring the system into
408 compliance with the provisions of this section.

409 (k) An innovative system may be approved in conjunction
410 with an engineer-designed site-specific system which is
411 certified by the engineer to meet the performance-based criteria
412 adopted by the department.

413 (1) For the Florida Keys, the department shall adopt a
414 special rule for the construction, installation, modification,
415 operation, repair, maintenance, and performance of onsite sewage
416 treatment and disposal systems which considers the unique soil
417 conditions and which considers water table elevations,
418 densities, and setback requirements. On lots where a setback

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419 distance of 75 feet from surface waters, saltmarsh, and
420 buttonwood association habitat areas cannot be met, an injection
421 well, approved and permitted by the department, may be used for
422 disposal of effluent from onsite sewage treatment and disposal
423 systems.

424 (m) No product sold in the state for use in onsite sewage
425 treatment and disposal systems may contain any substance in
426 concentrations or amounts that would interfere with or prevent
427 the successful operation of such system, or that would cause
428 discharges from such systems to violate applicable water quality
429 standards. The department shall publish criteria for products
430 known or expected to meet the conditions of this paragraph. In
431 the event a product does not meet such criteria, such product
432 may be sold if the manufacturer satisfactorily demonstrates to
433 the department that the conditions of this paragraph are met.

434 (n) Evaluations for determining the seasonal high-water
435 table elevations or the suitability of soils for the use of a
436 new onsite sewage treatment and disposal system shall be
437 performed by department personnel, professional engineers
438 registered in the state, or such other persons with expertise,
439 as defined by rule, in making such evaluations. Evaluations for
440 determining mean annual flood lines shall be performed by those
441 persons identified in paragraph (2)(i). The department shall
442 accept evaluations submitted by professional engineers and such
443 other persons as meet the expertise established by this section
444 or by rule unless the department has a reasonable scientific
445 basis for questioning the accuracy or completeness of the
446 evaluation.

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(o) The department shall appoint a research review and advisory committee, which shall meet at least semiannually. The committee shall advise the department on directions for new research, review and rank proposals for research contracts, and review draft research reports and make comments. The committee is comprised of:

1. A representative of the Division of Environmental Health of the Department of Health.
2. A representative from the septic tank industry.
3. A representative from the home building industry.
4. A representative from an environmental interest group.
5. A representative from the State University System, from a department knowledgeable about onsite sewage treatment and disposal systems.
6. A professional engineer registered in this state who has work experience in onsite sewage treatment and disposal systems.
7. A representative from the real estate profession.
8. A representative from the restaurant industry.
9. A consumer.

Members shall be appointed for a term of 3 years, with the appointments being staggered so that the terms of no more than four members expire in any one year. Members shall serve without remuneration, but are entitled to reimbursement for per diem and travel expenses as provided in s. 112.061.

(p) An application for an onsite sewage treatment and disposal system permit shall be completed in full, signed by the

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owner or the owner's authorized representative, or by a contractor licensed under chapter 489, and shall be accompanied by all required exhibits and fees. No specific documentation of property ownership shall be required as a prerequisite to the review of an application or the issuance of a permit. The issuance of a permit does not constitute determination by the department of property ownership.

(q) The department may not require any form of subdivision analysis of property by an owner, developer, or subdivider prior to submission of an application for an onsite sewage treatment and disposal system.

(r) Nothing in this section limits the power of a municipality or county to enforce other laws for the protection of the public health and safety.

(s) In the siting of onsite sewage treatment and disposal systems, including drainfields, shoulders, and slopes, guttering shall not be required on single-family residential dwelling units for systems located greater than 5 feet from the roof drip line of the house. If guttering is used on residential dwelling units, the downspouts shall be directed away from the drainfield.

(t) Notwithstanding the provisions of subparagraph (g)1., onsite sewage treatment and disposal systems located in floodways of the Suwannee and Aucilla Rivers must adhere to the following requirements:

1. The absorption surface of the drainfield shall not be subject to flooding based on 10-year flood elevations. Provided, however, for lots or parcels created by the subdivision of land

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503 in accordance with applicable local government regulations prior
504 to January 17, 1990, if an applicant cannot construct a
505 drainfield system with the absorption surface of the drainfield
506 at an elevation equal to or above 10-year flood elevation, the
507 department shall issue a permit for an onsite sewage treatment
508 and disposal system within the 10-year floodplain of rivers,
509 streams, and other bodies of flowing water if all of the
510 following criteria are met:

511 a. The lot is at least one-half acre in size;
512 b. The bottom of the drainfield is at least 36 inches
513 above the 2-year flood elevation; and
514 c. The applicant installs either: a waterless,
515 incinerating, or organic waste composting toilet and a graywater
516 system and drainfield in accordance with department rules; an
517 aerobic treatment unit and drainfield in accordance with
518 department rules; a system approved by the State Health Office
519 that is capable of reducing effluent nitrate by at least 50
520 percent; or a system approved by the county health department
521 pursuant to department rule other than a system using
522 alternative drainfield materials. The United States Department
523 of Agriculture Soil Conservation Service soil maps, State of
524 Florida Water Management District data, and Federal Emergency
525 Management Agency Flood Insurance maps are resources that shall
526 be used to identify flood-prone areas.

527 2. The use of fill or mounding to elevate a drainfield
528 system out of the 10-year floodplain of rivers, streams, or
529 other bodies of flowing water shall not be permitted if such a
530 system lies within a regulatory floodway of the Suwannee and

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531 Aucilla Rivers. In cases where the 10-year flood elevation does
532 not coincide with the boundaries of the regulatory floodway, the
533 regulatory floodway will be considered for the purposes of this
534 subsection to extend at a minimum to the 10-year flood
535 elevation.

536 (u) The owner of an aerobic treatment unit system shall
537 maintain a current maintenance service agreement with an aerobic
538 treatment unit maintenance entity permitted by the department.
539 The maintenance entity shall obtain a system operating permit
540 from the department for each aerobic treatment unit under
541 service contract. The maintenance entity shall inspect each
542 aerobic treatment unit system at least twice each year and shall
543 report quarterly to the department on the number of aerobic
544 treatment unit systems inspected and serviced. The owner shall
545 allow the department to inspect during reasonable hours each
546 aerobic treatment unit system at least annually, and such
547 inspection may include collection and analysis of system-
548 effluent samples for performance criteria established by rule of
549 the department.

550 (v) The department may require the submission of detailed
551 system construction plans that are prepared by a professional
552 engineer registered in this state. The department shall
553 establish by rule criteria for determining when such a
554 submission is required.

555 Section 4. Section 689.264, Florida Statutes, is created
556 to read:

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689.264 Sale of real property; disclosure of property location in a hurricane evacuation zone to prospective purchaser.--

(1) A prospective purchaser of real property located in a hurricane evacuation zone must be presented a disclosure summary at or before execution of the contract for sale. Unless a substantially similar disclosure summary is included in the contract for sale, a separate disclosure summary must be attached to the contract for sale. The disclosure summary, whether separate or included in the contract, must be in a form substantially similar to the following:

PROPERTY IN HURRICANE EVACUATION ZONE
DISCLOSURE SUMMARY

ALL OR A PORTION OF THIS PROPERTY CURRENTLY LIES WITHIN THE CATEGORY (INSERT ZONE(S)) HURRICANE EVACUATION ZONE(S) DESIGNATED BY THE COUNTY EMERGENCY MANAGEMENT DEPARTMENT. THIS DESIGNATION MAY REQUIRE OCCUPANTS OF THE PROPERTY TO EVACUATE DURING AN IMPENDING TROPICAL STORM OR HURRICANE EVENT. AS THIS DESIGNATION IS SUBJECT TO CHANGE, YOU SHOULD VERIFY YOUR HURRICANE EVACUATION ZONE DESIGNATION PRIOR TO THE START OF EACH HURRICANE SEASON. IF YOU HAVE ANY QUESTIONS REGARDING THIS DISCLOSURE, CONTACT THE COUNTY EMERGENCY MANAGEMENT AGENCY FOR INFORMATION.

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584 (2) Unless included in the contract, the disclosure
585 summary must be provided by the seller. If the disclosure
586 summary is not included in the contract for sale, the contract
587 for sale must refer to and incorporate by reference the
588 disclosure summary and include in prominent language a statement
589 that the potential purchaser should not execute the contract
590 until the disclosure summary required by this section has been
591 read.

592 Section 5. This act shall take effect upon becoming a law.

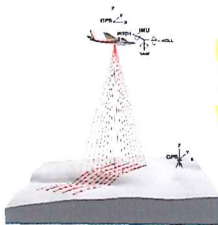


Background

In 2004 and 2005, Florida experienced an unprecedented level of tropical storm activity. In 2004, Hurricanes Charley, Frances, Ivan and Jeanne impacted our State. Hurricanes Dennis, Katrina, Rita and Wilma came ashore in Florida in 2005. In the short span of 24 months, millions of Florida residents were impacted, and property damages ran into the billions of dollars.

In response to these devastating hurricane seasons, state legislators passed House Bill 1721 and House Bill 1359, which identified enhanced statewide hurricane evacuation planning and a redefinition of the coastal high hazard area as state priorities. In accordance with this legislative direction, the State of Florida Division of Emergency Management obtained grant money through the Federal Emergency Management Agency's (FEMA) Hazard Mitigation Grant Program to conduct regional evacuation studies across the State.

The [Division of Emergency Management](#) contracted with Florida's Regional Planning Councils to carry out these studies in close collaboration with county emergency management agencies. The Regional Planning Councils will facilitate consistent and integrated mapping and analysis of all-hazards evacuation across Florida.



In South Florida, this multi-year project will result in a comprehensive regional evacuation study update that encompasses Miami-Dade, Broward and Monroe counties and is integrated with similar work being completed by the Treasure Coast and Southwest Florida regions. This study will include updated [Light Detection and Ranging \(LiDAR\) elevation data](#) and Sea, Lake and Overland Surge from Hurricanes (SLOSH) flood modeling under a separate contract.

Inter-agency cooperation and data sharing is a vital part of ensuring the success of this regional and state initiative. A regional Technical Advisory Team of county-level agencies has been created, with each county's Emergency Management Agency acting as the lead.

Although hurricanes are a prominent concern in the studies, the framework is being established for an "all hazards" analysis in order to support planning efforts to prepare for other types of evacuations as well, such as inland flooding or wildfires. These studies are not policy documents – instead, they are intended to provide support for future updates to local government emergency management plans. The completed study will consist of 44 volumes of material (4 from each of the 11 regions across the state), plus an index volume.

Project Elements

Phase I of the evacuation study consists of the following:

- A systematic enumeration and GIS mapping of the dwelling units, population, vehicles and socio-economic characteristics for the three counties and the region, as well as the projected population within those areas in the years 2006, 2010 and 2015. (Demographic Analysis)
- A comprehensive analysis of the potential hazards to the South Florida region, including investigations of storm surge, tornadoes, flooding, hazardous sites, terrorism and nuclear facilities, and critical facilities inventory. (Hazards Analysis)
- A systematic investigation of the probable tendencies of potential future evacuees based on a detailed residential survey. (Behavioral Analysis)
- A regionwide inventory of existing public shelters and shelter capacity analysis, and geocoding of the data to create a statewide layer of shelter locations. (Shelter Analysis)
- Establishment of a regional evacuation transportation network which links existing county-level evacuation routes and any additional arterials/collectors in the region.

Phase II of the study will include a vulnerability analysis, consisting of the delineation of the storm tide limits and the evacuation zones, identification of population-at-risk and evacuation populations, storm surge analysis of critical facilities and the evacuation transportation analysis.

Statewide Coordination Meetings

Statewide 2008:

January 31, 2008, Fort Myers, FL (Southwest Florida Regional Planning Council)

February 28, 2008, Stuart, FL (Treasure Coast Regional Planning Council)

March 31, 2008, Maitland, FL (East Central Florida Regional Planning Council)

Regional 2008:

March 7, 2008, Hollywood, FL (South Florida Regional Planning Council)

Project Status

The following summarizes completed deliverables through early 2008:

- The Demographic Analysis was completed in January of 2008, including finalized versions of county and regional profiles;
[Broward Demographics 2006](#)
[Miami-Dade Demographics 2006](#)
[Monroe Demographics 2006](#)
[South Florida Summary Demographics 2006](#)
- A regional Future Land Use Map (FLUM) has been developed based on statewide categories and standards which have been adopted and will be utilized by all the regions;
[FLUM Broward](#)
[FLUM Miami-Dade](#)
[FLUM Monroe](#)
[FLUM South Florida](#)

For Further Information

Contact Richard Ogburn, at rogburn@sfrpc.com.

This website will be updated with new materials as the Study Program moves forward. Please visit again for the most up-to-date information.





Changes to Coastal High Hazard Area/Evacuation Times

Proposed Change to Local Comprehensive Plans

What's Required...

- Defining/Redefining Coastal High Hazard Area
 - Category 1 Storm Surge Line
- Establishing Level of Service for Out of County Hurricane Evacuation
 - Category 5 Hurricane
 - Default Time: Sixteen hours
- Time to Shelter: Twelve Hours
- Identify Mitigation Measures to Satisfy Established Evacuation and Shelter standards

What We Currently Have...

- Coastal High Hazard Area
 - Category One Storm Surge Evacuation Zone
- Evacuation/Shelter Standard
 - Eighteen hours for Category 3 Hurricane
 - None for Shelter (Capacity Standard – 21%)
- Mitigation Measures
 - Chapter 2, Article XI, Hurricane Preparedness, Lee County Land Development Code
 - Coastal Rural LU Category, Pine Island

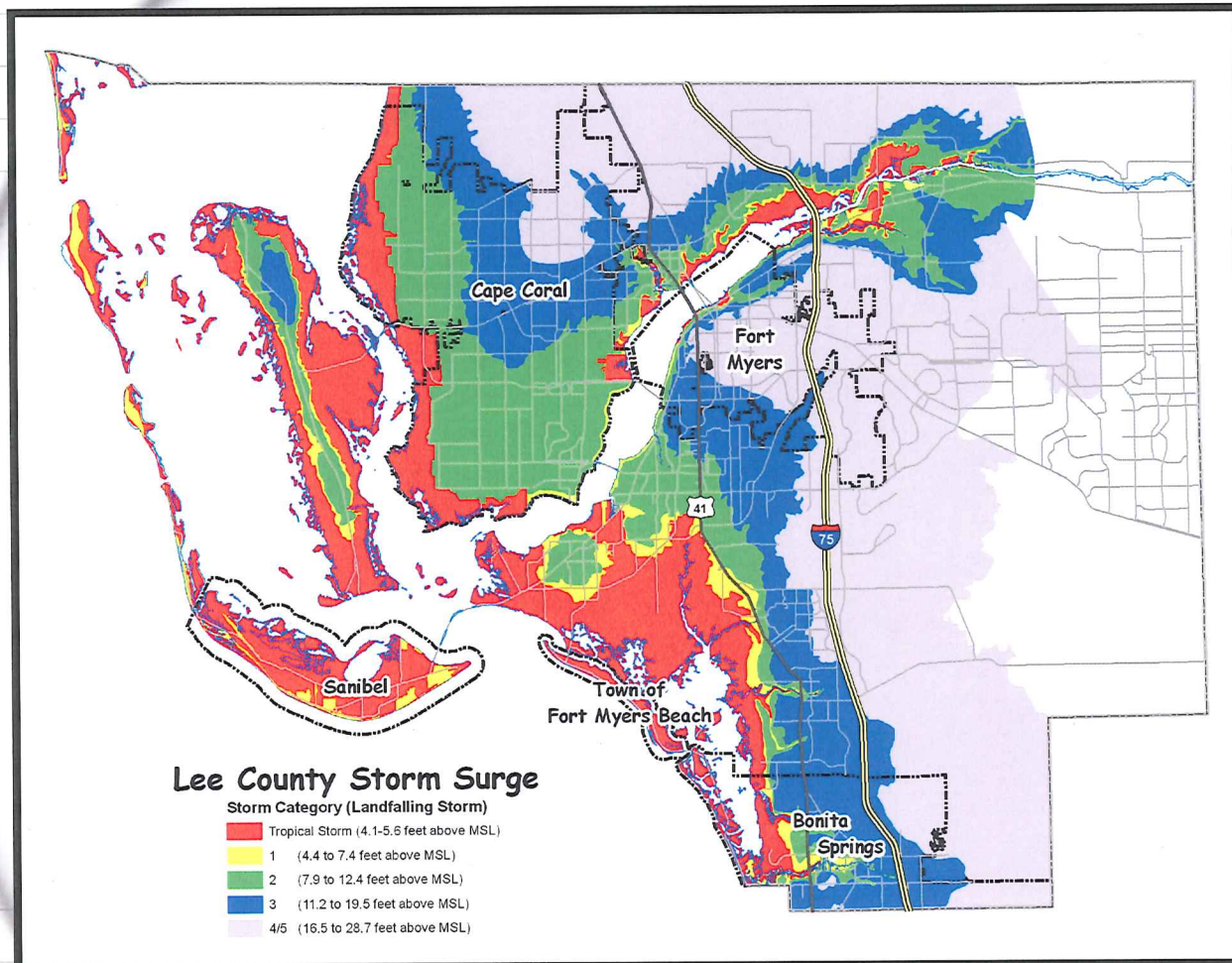
What We Need...

- Redefine Coastal High Hazard Area
- Establish Category 5 Hurricane Evacuation Standard
 - One Time 17.9 or 26.4 Hours?
 - Separate Time per Community?
- Establish Shelter Time Standard
 - 1.1 Hours ^{now} current time
- Adopt County Mitigation Measures
- Due Date by Statute: July 1, 2008

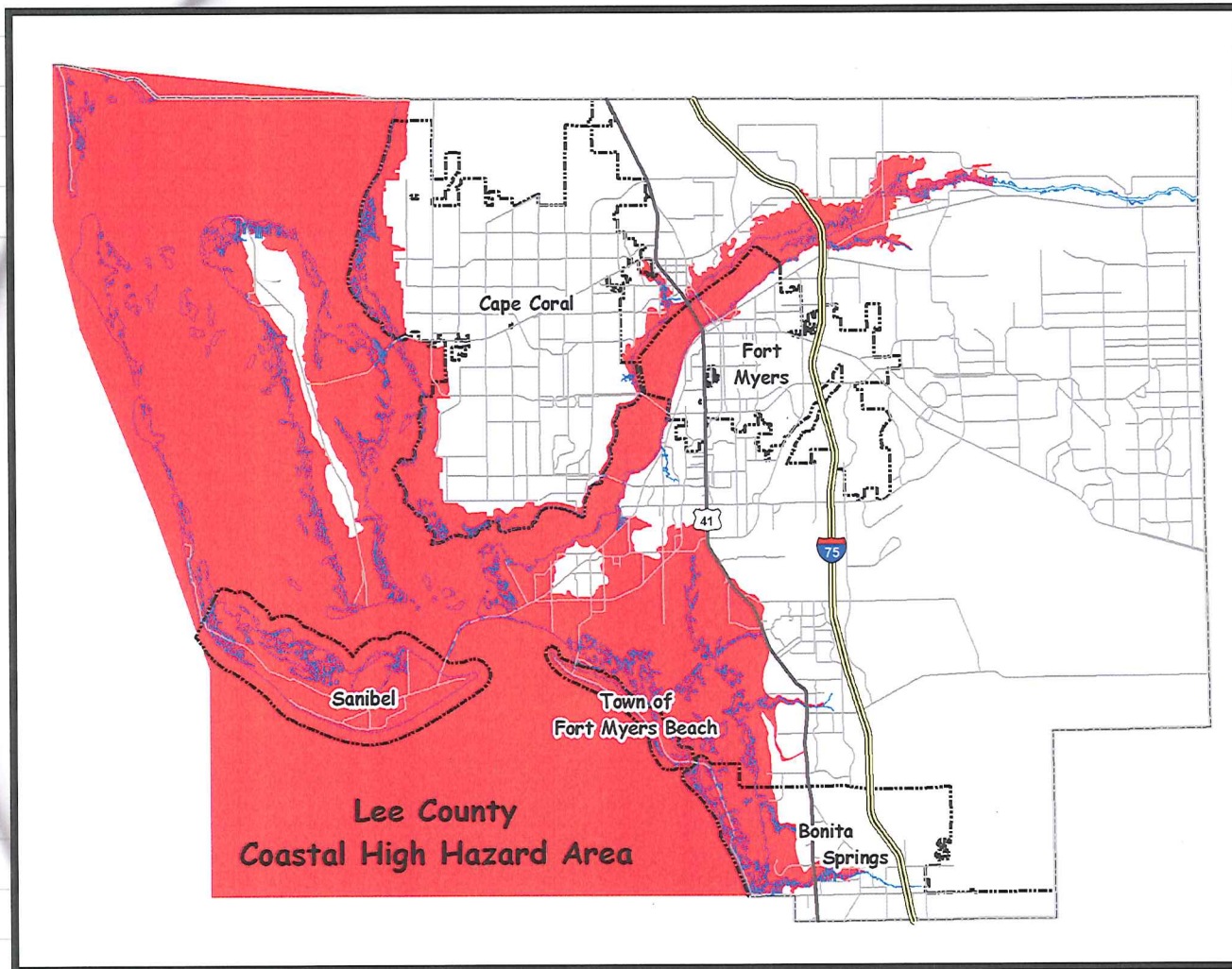
12 hrs. w/ change to Cat 5.

- Amend
By certain

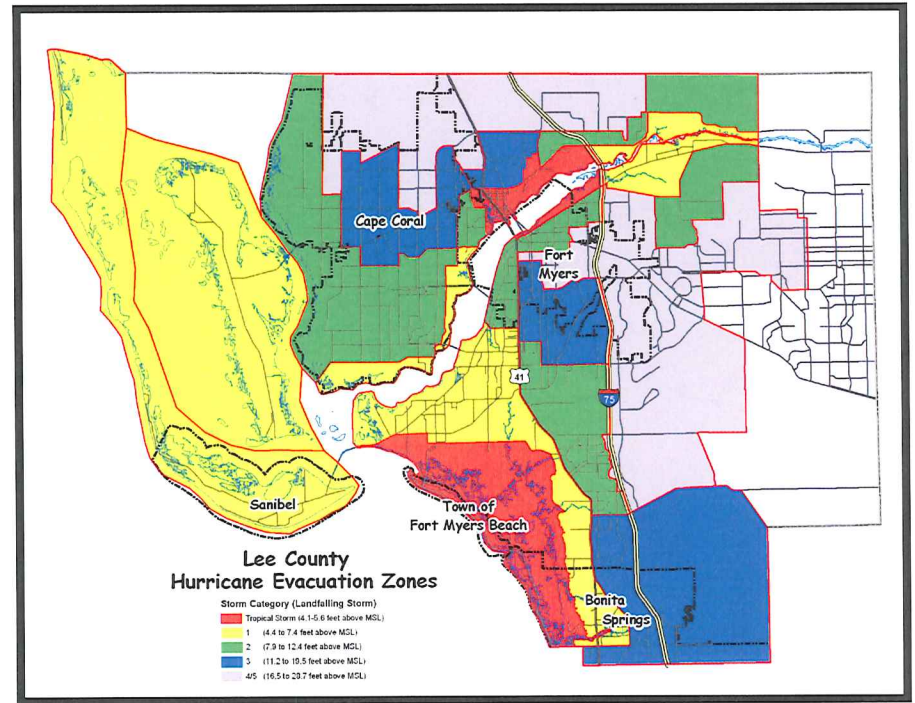
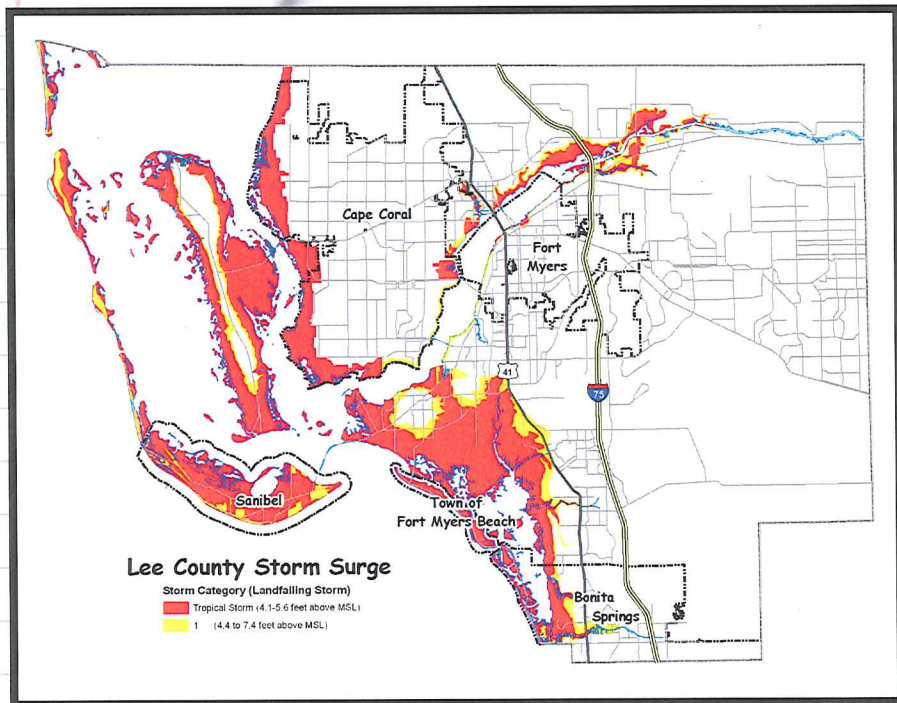
Lee County's Hurricane Risk



Coastal High Hazard Area



Hurricane Evacuation Zones



Coastal Management Element

*P. Mellor
County*

Goals, Objectives and Policies

NATURAL DISASTER PLANNING

GOAL ONE: PINELLAS COUNTY WILL PROTECT HUMAN LIFE, PRIVATE PROPERTY AND PUBLIC INVESTMENT FROM THE EFFECTS OF HURRICANES AND OTHER NATURAL DISASTERS

- 1.1. Objective: Pinellas County shall continue to implement, and update and revise, as necessary, its Post-Disaster Redevelopment Plan, as approved by the Pinellas County Board of County Commissioners, as part of the Pinellas County Comprehensive Emergency Management Plan, and shall continue to implement hazard mitigation measures to reduce the exposure of human life and public and private property to natural hazards.
- 1.1.1. Policy: The Redevelopment Plan shall provide guidelines for actions to be taken following natural disasters for immediate emergency recovery needed to protect the public health and safety, for short-range restoration, and for long-range reconstruction.
- 1.1.2. Policy: The Redevelopment Plan shall establish who will be responsible for making crucial decisions after a natural disaster regarding repair, reconstruction, relocation and hazard mitigation; this body could take the form of a recovery task force.
- 1.1.3. Policy: The Redevelopment Plan shall establish procedures for the restoration of essential public services and facilities following a disaster.
- 1.1.4. Policy: The Redevelopment Plan shall establish procedures for evaluating the effectiveness of current hazard mitigation measures at preventing damage.
- 1.1.5. Policy: The Redevelopment Plan shall establish procedures for utilizing information obtained from damage assessment teams in expediting post-disaster recovery.
- 1.1.6. Policy: The Redevelopment Plan shall contain provisions for enactment of a temporary restriction on issuing permits for reconstruction and repair not immediately needed to protect the public health, safety and welfare, and contain recommendations to enact expedited processes, such as permitting selected minor repairs and licensing and/or registering contractors.

- 1.1.7. Policy: The Redevelopment Plan shall establish criteria for evaluating the options for repairing, replacing, modifying or relocating public and private facilities and infrastructure within coastal high-hazard areas. Any actions chosen by Pinellas County to repair, replace, modify, or relocate public facilities and infrastructure within the coastal high hazard area shall be consistent with federal and state funding standards.
- 1.1.8. Policy: The Redevelopment Plan shall establish that structures damaged by fire or natural forces to the extent that the cost of reconstruction or repair exceeds 50 percent of the market value of the structure before the damage occurred shall be rebuilt to meet all applicable federal, state and local regulations. The Land Development Code shall determine the status of nonconforming uses when properties experience the level of damage addressed in this policy.
- 1.1.9. Policy: The Redevelopment Plan shall include guidelines and criteria for determining priorities for the acquisition of storm-damaged property in the coastal high-hazard area. These guidelines shall give priority to eliminating unsafe conditions and inappropriate uses. These guidelines/criteria will also be used to prioritize potential coastal acquisitions through the State's land acquisition program. By June 2008, additional criteria will be developed and included within the redevelopment plan to recognize pristine coastal properties or properties of significant or important environmental sensitivity.
- 1.1.10 Policy: Pinellas County shall continue to implement its existing hazard mitigation programs that include shoreline restoration and enhancement, building code and floodplain regulations, development management techniques such as land use, zoning, and subdivision regulations, and other applicable hazard mitigation measures. Recommendations from interagency hazard mitigation reports may be incorporated, at the discretion of the County. These mitigation programs shall be amended, as necessary, to remain consistent with federal and state requirements.
- 1.1.11. Policy: Pinellas County will use its Comprehensive Plan, its Land Development Code, its Local Mitigation Strategy, and other applicable hazard mitigation measures, including appropriate recommendations from interagency hazard mitigation reports, to reduce unsafe conditions and inappropriate uses as opportunities arise, and to limit redevelopment in areas of repeated damage.
- 1.1.12. Policy: Pinellas County shall periodically evaluate both its Post-Disaster Redevelopment Plan and its Comprehensive Plan with the Local Mitigation Strategy in order to determine if any amendments or

revisions are required in order to facilitate implementation of the final strategies.

1.1.13. Policy: The Post-Disaster Redevelopment Plan for Pinellas County shall also address steps to attain disaster assistance and funding to promote redevelopment of private property and businesses in order to foster economic recovery.

1.2. Objective: Pinellas County shall cooperate with state and regional agencies, and with other local governments to maintain or reduce hurricane clearance times as a component of the evacuation times for Pinellas County.

1.2.1. Policy: Pinellas County shall work towards reducing the out-of-county hurricane evacuation clearance time of 55 hours in 2006, as determined in the *Tampa Bay Region Hurricane Evacuation Study 2006*, for a category 5 storm event as measured on the Saffir-Simpson scale.

1.2.2. Policy: The adopted level of service standard for out-of-county hurricane evacuation clearance time for a category 5 storm event as measured on the Saffir-Simpson scale shall be 16 hours.

1.2.3. Policy: Pursuant to the Capital Improvements Element, Pinellas County shall annually evaluate projects proposed for inclusion within the Six-Year Schedule of Improvements and shall place a high priority on improvement needs for critical links and evacuation route points, and for bridges, causeways and highway facilities designated as regional evacuation routes when scheduling capital improvement projects.

1.2.4. Policy: The Board shall continue to enforce its regulations requiring the development of a hurricane evacuation plan by recreational vehicle parks and transient accommodations.

1.2.5. Policy: The County shall coordinate with the Florida Department of Transportation during preparation of the Transportation Improvement Plan for District 7 in order to encourage the State to give priority to road improvement projects on regional hurricane evacuation routes.

1.2.6. Policy: The County shall utilize the existing countywide computerized traffic signalization system and available law enforcement officers to expedite hurricane evacuation.

1.2.7. Policy: The County shall continue its public awareness campaign in cooperation with the Tampa Bay Regional Planning Agency to educate the general public on proper hurricane evacuation procedures. As part of the County's public awareness campaign,

the County shall also publish and make available a hurricane preparedness publication to the general public prior to June 1 of each year.

- 1.2.8. Policy: Pinellas County shall cooperate with the State Division of Emergency Management to coordinate multi-county evacuations in a manner consistent with the Pinellas County Hurricane Evacuation Implementation Guide.
- 1.2.9. Policy: County-maintained roadways used as evacuation routes shall continue to be clearly posted.
- 1.2.10. Policy: Hurricane evacuation shall be planned and conducted in a manner consistent with the Pinellas County Comprehensive Emergency Management Plan.
- 1.2.11. Policy: To improve upon the intergovernmental and agency coordination, the County shall consider establishing an optional Public Safety Element of the Pinellas County Comprehensive Plan.
- 1.2.12 Policy: In assessing transportation needs, Pinellas County shall review its Special Needs/Evacuation Registration Program and other sources in considering the evacuation needs of at-risk populations that have special needs, language barriers, and that are transportation disadvantaged.

- 1.3. Objective: Pinellas County shall restrict development within the coastal storm area, and shall direct population concentrations out of the coastal storm area.

- 1.3.1. Policy: The coastal high-hazard area (CHHA) shall be the area defined by the *Sea, Lake and Overland Surges from Hurricanes (SLOSH)* model to be inundated from a category one hurricane, as reflected in the most recent *Regional Evacuation Study, Storm Tide Atlas*.

- 1.3.2. Policy: The coastal storm area shall be the area delineated in Figure 2 of the Coastal Management Element, which encompasses all of the following:

- (1) the Coastal High Hazard Area (CHHA),
- (2) all land connected to the mainland of Pinellas County by bridges or causeways,
- (3) those isolated areas that are defined by the SLOSH model to be inundated by a category two hurricane or above and that are surrounded by the CHHA or by the CHHA and a body of water, and

(4) all land located within the Velocity Zone as designated by the Federal Emergency Management Agency.

- 1.3.3. Policy: If 20% or more of a parcel of land is located within the coastal storm area, then the entire parcel shall be considered within the coastal storm area. However, if either a parcel of land or a group of parcels that are part of a master development plan is equal to or greater than 5 acres and less than 50% of the parcel or group of parcels is within the coastal storm area, the property owner may elect to provide a survey of the parcel or parcels to determine the exact location of the coastal storm area.
- 1.3.4. Policy: Pinellas County shall prohibit the location of new, or expansion of existing hospitals, nursing homes, and assisted living facilities within the coastal storm area and the area inundated by a category 2 hurricane as depicted by the *SLOSH* model, as reflected in the most recent *Regional Evacuation Study, Storm Tide Atlas*.
- 1.3.5. Policy: Pinellas County shall not approve any request to amend the Future Land Use Map (FLUM) to designate parcels of land within the coastal storm area with a FLUM category that permits more than 5.0 dwelling units per gross acre.
- 1.3.6. Policy: The area known as "Collany Island," subject to a zoning and land use plan amendment approved in Ordinance 04-92, was a one-time exception to provide a zoning and land use designation for the site that is more consistent with the character of the neighborhood than the former commercial designation and no precedent is set through the adoption of Ordinance 04-92 for other amendments for lands located in the coastal storm area. Additionally, this finding will reaffirm Pinellas County's commitment to Policy 1.3.5 of the Coastal Management Element that states Pinellas County shall not approve any request for residential density above five units per gross acre on the Future Land Use Map for areas within the coastal storm area.
- 1.3.7. Policy: Pinellas County shall prohibit the siting of new or the expansion of existing mobile or manufactured home communities within the coastal storm area. This policy does not apply to the replacement of individual homes within the community with modern manufactured housing, as long as the replacement manufactured homes are properly anchored and elevated to the base flood elevation.
- 1.3.8. Policy: During the statutorily required evaluation and appraisal process, the County's existing hazard mitigation programs, including those within the Land Development Code, shall be reviewed and revised if

necessary to reduce the vulnerability of future development in the coastal storm area. This review shall evaluate the recommendations of existing interagency hazard mitigation reports and the mitigation functions chapter of the Pinellas County Comprehensive Emergency Management Plan.

- 1.3.9. Policy: Consistent with the goals, objectives and policies of this Element and the availability of budgeted funds, the County shall evaluate the acquisition of storm-damaged property in the coastal storm area.
- 1.3.10. Policy: By June 1, 2008, Pinellas County shall evaluate the feasibility of limiting the capacity of hospitals, nursing homes, and assisted living facilities proposed to be located within area inundated by a category 3 hurricane as depicted by the *SLOSH* model, as reflected within the most recent *Regional Evacuation Study, Storm Tide Atlas*.
- 1.3.11. Policy: If Pinellas County elects to utilize the provisions of §163.3178(9), F.S., to comply with the State's coastal high-hazard provisions when amending the Pinellas County Comprehensive Plan, any appropriate mitigation that may be required by this section shall be directed at increasing the number of hurricane shelter spaces, unless an alternative mitigation proposal has been approved by the Pinellas County Director of Emergency Management or her/his designee.
- 1.3.12. Policy: Mitigation required under Policy 1.3.11. above shall not exceed the amount required for a developer to accommodate impacts reasonably attributable to their development, and shall require Pinellas County and the developer to enter into a binding agreement to memorialize the mitigation plan.
- 1.4. Objective: Pinellas County shall restrict public expenditures that subsidize development or redevelopment in the coastal storm area.
- 1.4.1. Policy: County-funded infrastructure shall be prohibited within the coastal storm area except for the following:
- The expenditure for the maintenance, repair or replacement of existing facilities; or
 - The expenditure for restoration or enhancement of natural resources or public access; or
 - The expenditure needed to address an existing deficiency identified in this plan; or

The expenditure for the retrofitting of stormwater management facilities for water quality enhancement of stormwater runoff; or

The expenditure for the development or improvement of public roads and bridges identified in the Traffic Circulation Element of this plan; or

The expenditure for a public facility of overriding public interest to ensure public health, safety, and welfare.

- 1.4.2. Policy: When public infrastructure within the coastal storm area is destroyed or receives damage that equals or exceeds 50 percent of the cost of replacing the facility at its current location, the County shall analyze the feasibility of relocating this infrastructure landward of the coastal storm area. This requirement is included within the Pinellas County Post-Disaster Redevelopment Plan as adopted within the Pinellas County Comprehensive Emergency Management Plan.
- 1.4.3. Policy: Pinellas County shall not construct bridges or causeways to barrier islands not serviced by such infrastructure at the time of Plan adoption.
- 1.4.4. Policy: Capital improvements identified the Pinellas County Local Mitigation Strategy (LMS) under the jurisdiction of Pinellas County shall be considered to be incorporated into the Capital Improvements Element of the Pinellas County Comprehensive Plan.
- 1.5. Objective: Between June 2007 and June 2012, the existing deficit of public shelter spaces within the County shall be reduced by five percent.
- 1.5.1. Policy: The County shall coordinate with local jurisdictions and appropriate agencies (including the Tampa Chapter of the American Red Cross) in the development of a countywide plan for increasing the number of public shelter spaces in Pinellas County.
- 1.5.2. Policy: Pinellas County shall expand its coordination efforts within the limits provided by legislative authority to coordinate facility expansion plans and development review with the Pinellas County School Board so that new school facilities and facility expansion will be located and designed to provide hurricane shelters.
- 1.5.3. Policy: If the County determines, during its review of a proposed public school site for consistency with the Pinellas County Comprehensive Plan and after consideration of the criteria in Section 235.26(9) of the Florida Statutes, that the site is an appropriate location for a

shelter, the final determination of consistency will include a recommendation that the public school be constructed to function as a public emergency shelter.

- 1.5.4. Policy: Whenever possible, new or expanded county buildings shall be located, designed, and constructed so that they may be utilized for hurricane shelters.
- 1.5.5. Policy: Alternatives to traditional public sheltering shall be developed and promoted through public education by Pinellas County and other appropriate agencies. Alternatives to traditional public sheltering shall include, but not necessarily be limited to, host home programs, inland sheltering, retrofitting of existing structures whenever possible, utilizing refuges of last resort as appropriate, and evacuation of guests from transient accommodations to inland "sister" transient accommodations.
- 1.5.6. Policy: Pinellas County shall initiate discussion of new cooperative efforts between the County, municipalities, the Pinellas County School Board, and other appropriate agencies in an attempt to increase the number of public shelters and to reduce the shelter deficit.
- 1.5.7. Policy: In order to reduce demand on limited public shelter spaces, Pinellas County shall utilize its public education program to inform Pinellas County residents about safe alternatives to using public shelter during hurricane evacuations.
- 1.5.8. Policy: As a means of identifying solutions to the existing public shelter deficit, Pinellas County shall continue to host occasional emergency shelter workshops, or summits, with affected governments and agencies in updating the status of public shelter availability and capacity.
- 1.5.9. Policy: Pinellas County shall participate with the State Division of Emergency Management and regional planning council in updating a regional evacuation study and, within a year of its completion, shall have evaluated any relevant recommendations, including those regarding shelter capacity, for inclusion in the Comprehensive Plan and the Comprehensive Emergency Management Plan.
- 1.5.10. Policy: In assessing shelter space, Pinellas County shall consider the shelter needs of at-risk populations that have special needs, language barriers, and pets.

BEACHES AND DUNES

GOAL TWO: PINELLAS COUNTY SHALL CONSERVE, MAINTAIN AND RESTORE COASTAL BEACH AND DUNE SYSTEMS TO BALANCE THE BENEFITS TO STORM PROTECTION, RECREATION, AND THE ECONOMY WITH THEIR FUNCTION AS A NATURAL RESOURCE.

- 2.1. Objective: Pinellas County shall continue to manage its sandy shoreline with the intent of restoring and preserving the natural functions of the beach and dune system.
 - 2.1.1. Policy: Pinellas County shall continue to restore the developed sandy beaches and dunes primarily via its beach nourishment program; hard engineering structures shall be considered as a second option, to be implemented only if beach nourishment alone is insufficient in maintaining the beach and dune system.
 - 2.1.2. Policy: Pinellas County shall continue the role as the lead agency (local sponsor) for coordinating and managing Federal beach nourishment projects.
 - 2.1.3. Policy: Pinellas County shall monitor erosion of the County's nourished beaches and continue enhancement based on the results of the monitoring program.
 - 2.1.4. Policy: Pinellas County will continue to partner with the Florida Department of Environmental Protection on beach restoration projects by submitting annual funding requests to the Florida Beach Management Program.
 - 2.1.5. Policy: Pinellas County will not support shoreline hardening along the sandy beaches and dunes, except where necessary to protect upland property.
 - 2.1.6. Policy: Beach restoration projects will be designed and constructed to protect the ability of sea turtles and shorebirds to nest on Pinellas County beaches.
 - 2.1.7. Policy: Beach restoration projects will be designed and constructed with minimal impact to seagrasses and nearshore hardbottom.
- 2.2. Objective: Pinellas County shall continue to protect the stability of the beach and dune systems by utilizing construction standards, development regulations and other appropriate measures that minimize human impacts.

- 2.2.1. Policy: Pinellas County shall continue to implement County and State regulations pertaining to construction seaward of the State Coastal Construction Control Line. New development shall be prohibited in frontal dune and beach areas.
- 2.2.2. Policy: Vehicle traffic on the beach shall be prohibited with the exception of emergency law enforcement and maintenance vehicles, which shall be directed to marked driveways through the dunes.
- 2.2.3. Policy: Foot traffic will be directed to marked paths or dune walkovers in order to protect the dune system.
- 2.2.4. Policy: Pinellas County will support new dune walkover construction in locations where: 1) a dune exists, 2) public access is clearly marked, access to a public beach is provided, and public use is significant, 3) evidence of disturbance by pedestrian traffic, such as reduced dune elevation or disturbed vegetation, exists, and 4) construction of a dune walkover will not eliminate vehicle access to the beach.
- 2.2.5. Policy: Pinellas County shall designate undeveloped coastal barrier islands as Preservation, Recreation Open Space, or Preservation-Resource Management on the Future Land Use Map.

PUBLIC FACILITIES AND INFRASTRUCTURE

GOAL THREE: ADEQUATE PUBLIC FACILITIES SHALL BE AVAILABLE TO SERVE THE DEVELOPMENT AND REDEVELOPMENT PROPOSED IN THE FUTURE LAND USE AND QUALITY COMMUNITIES ELEMENT FOR THE UNINCORPORATED COASTAL PLANNING AREA.

- 3.1. Objective: Pinellas County shall continue to ensure that adequate levels of service are provided by public facilities within the unincorporated coastal planning area, and shall utilize the annual update of the Capital Improvements Element to schedule required infrastructure improvements in the unincorporated coastal planning area.
- 3.1.1. Policy: The level of service standards adopted elsewhere for public facilities in the Pinellas County Comprehensive Plan shall be the same standards used for public facilities and concurrency management within the coastal planning area.
- 3.1.2. Policy: The scheduling of public facility improvements within the coastal planning area shall be consistent with the Capital Improvements Element of this Plan.

- 3.1.3. Policy: The service areas for public facilities within the coastal planning area shall be those identified and/or established elsewhere in this Plan.
- 3.1.4. Policy: Pinellas County shall ensure that required infrastructure is available to serve development or redevelopment in the unincorporated coastal planning area, and shall require that development and redevelopment are consistent with the densities on the Future Land Use Map as well as with coastal resource protection and public safety policies.
- 3.1.5. Policy: Pinellas County will consider new strategies for the future of the County's bridges and causeways that emphasize sustainability and balance citizen needs, economic priorities and fiscal resources.

COASTAL LAND USE

GOAL FOUR: LAND USE DESIGNATIONS AND DECISIONS IN THE COASTAL PLANNING AREA SHALL BE CONSISTENT WITH THE FUTURE LAND USE AND QUALITY COMMUNITIES ELEMENT OF THIS COMPREHENSIVE PLAN AND COMPATIBLE WITH PROTECTION OF THE COUNTY'S NATURAL AND HISTORIC RESOURCES, REFLECTING THE NEED FOR LONG-TERM SUSTAINABILITY, CONTINUED ECONOMIC VITALITY AND CONSIDERATION FOR THE VULNERABILITY OF THE COUNTY'S COASTAL LOCATION.

- 4.1. Objective: The County shall give priority to water-dependent and water-related land uses in the coastal planning area, in a manner consistent with its goals of long-term sustainability, continued economic vitality, the preservation of recreational and commercial working waterfronts, and the protection of coastal and marine habitats and species.
- 4.1.1. Policy: The County shall continue to enforce the performance standards for water-dependent and water-related land uses included within its Land Development Code.
- 4.1.2. Policy: Pinellas County shall continue to conduct its comprehensive program of data collection, monitoring, education, interagency coordination and regulation to ensure that the location and impacts of water-related and water-dependent land uses do not conflict with the need to protect marine and coastal species and habitats, including the West Indian Manatee.
- 4.1.3. Policy: Pinellas County will continually evaluate the economic dynamics and trends affecting the viability of water dependent uses, including recreational and commercial working waterfronts, and adapt

decisions and strategies relating to the protection of such uses as appropriate.

- 4.1.4. Policy: By December 2010, Pinellas County will investigate and evaluate the following strategies, based on the recommendations from the Boating Access Task Force report approved by the Board of County Commissioners, toward the preservation of recreational and commercial working waterfronts:
- The feasibility of investing directly in property preservation through land acquisition;
 - Partnering and working with key municipal governments within the County that have jurisdiction over working waterfront areas;
 - Partnering and working with the private sector;
 - Protecting and maximizing the ability to use existing working waterfront facilities;
 - Making improvements to existing County facilities;
 - The feasibility of creating a working waterfront overlay zone.
- 4.1.5. Policy: To protect water dependent uses, including recreational and commercial working waterfronts, Pinellas County will discourage amendments to the Future Land Use Map and/or Zoning changes that would result in the discontinuation of such uses.
- 4.1.6. Policy: Pinellas County will continue to work with unincorporated waterfront communities to determine the need for additional regulatory incentives and criteria to support and/or enhance the preservation of viable recreational and commercial working waterfronts.
- 4.2. Objective: Boating access facilities will be sited or expanded in an environmentally-sensitive manner that strives to meet public access needs while minimizing negative impacts to coastal habitats, species and surrounding land uses.
- 4.2.1. Policy: The County shall as a minimum use the following criteria for siting marinas and boat ramp facilities:
- Adequate water depth to accommodate the proposed boat use. Sites that require no dredging or filling to provide access by canal, channel or road are preferred.

- Preference shall be given to the expansion of suitable existing facilities rather than construction of newly developed sites.
- Located in areas where there is adequate flushing of the basin to prevent stagnation and water quality deterioration.
- No adverse impact on archaeological or historic sites as defined by state and local comprehensive plans.
- Potential impact of the proposed facility on the West Indian Manatee.
- Reasonable access to a large navigable water body and/or prime boater destination points.
- Minimal impacts to environmentally-sensitive resources, including upland areas, consistent with Federal, State and local regulations.
- Sufficient upland area to accommodate all needed utilities and support facilities, such as parking spaces, rest rooms, dry storage, etc.
- Capacity of the surrounding roadways to handle boating traffic to and from the marina or boat ramp.
- Compatibility with surrounding and adjacent land uses.
- Adequate wastewater treatment capacity for upland and marine pump-out facilities, in accordance with State standards.
- Encourage facilities to have slips available for public use.
- Consideration of public safety and welfare.
- Marina and boat ramp development should be sensitive to the special requirements for developing in the following areas:
 - a. Aquatic Preserves
 - b. Outstanding Florida Waters
 - c. Class II waters
 - d. Areas approved or conditionally approved by the Florida Department of Environmental Protection (FDEP) for shellfish harvesting, and

- e. Other highly productive and/or unique habitats as determined by FDEP, by the Florida Fish and Wildlife Conservation Commission (FFWCC), as identified in the Comprehensive Conservation and Management Plan (CCMP), or by Pinellas County, based on vegetation and/or wildlife species.

- 4.2.2. Policy: No marina or boat ramp shall be constructed or expanded in areas determined by the Florida Department of Environmental Protection, or other governmental wildlife protection agency, to be critical to the survival of the West Indian Manatee.
- 4.2.3. Policy: No marina project shall be approved until a hurricane plan for this the project has been established.
- 4.2.4. Policy: The development of marinas shall be supported as a means of providing public water access to the extent that their development and use shall not adversely impact estuarine resources.
- 4.2.5. Policy: To address potential environmental and coastal resource impacts, the Building and Development Review Services Department will coordinate with the Department of Environmental Management in the siting of high-and-dry marina facilities.
- 4.2.6. Policy: On a case-by-case basis, Pinellas County will consider the feasibility of mooring fields as a means of boating access to area waters.
- 4.3. Objective: Pinellas County will continue, and improve upon as necessary, its long-standing efforts to manage and protect its coastal and marine resources, including manatees and their essential habitat.
- 4.3.1. Policy: Pinellas County shall continue to support the protection of manatees through such measures as enforcing land use, zoning restrictions and speed zones, implementing sea grass protection areas and land development regulations, regulating the location of docks, marinas and boat ramps, providing manatee signage, and educating the public.
- 4.3.2. Policy: By December 2009, Pinellas County shall review existing County regulations (e.g., Zoning Code, Water and Navigation Control Regulations, Boating Regulations, etc.) to determine if they continue to adequately support manatee protection goals.
- 4.3.3. Policy: Pinellas County shall continue to collect information (e.g., manatee watch line, mortality data, seagrass monitoring, etc.) required to identify critical use areas for manatees, and will use the information

to annually assess and revise, if necessary, its manatee protection measures and programs.

- 4.3.4. Policy: Pinellas County will continue its boater and public education efforts regarding manatee protection, particularly targeting areas and instances of high susceptibility to interactions between boaters and manatees.
- 4.3.5. Policy: To further boater and manatee safety, Pinellas County will continue to coordinate with the Sheriff's Marine Unit regarding marine enforcement, monitoring and speed restrictions.
- 4.3.6. Policy: By December 2009, Pinellas County will assess the boater to enforcement officer ratio to determine if current levels of boating regulation enforcement are adequate, and will identify and evaluate potential funding sources for increasing boater regulation enforcement, if such a need is determined.
- 4.3.7. Policy: Pinellas County will continue to coordinate with boating regulation enforcement agencies as the primary means of collecting data (speed citations, accident reports, etc.) to evaluate the potential need for additional manatee-related speed zones and/or changes to existing speed zones.
- 4.3.8. Policy: By December 2009, Pinellas County will have completed the inventory and mapping of signage related to speed restrictions, etc., and by December 2010, will evaluate the effectiveness of its signage and make appropriate adjustments as necessary.
- 4.3.9. Policy: Pinellas County will continue to identify, implement and enforce appropriate measures to protect important manatee sea grass feeding areas.
- 4.3.10. Policy: Pinellas County will continue active participation in state and regional technical forums regarding management and protection of manatees.
- 4.3.11. Policy: Pinellas County shall continue to use its land development code, and in particular, its countywide controls under the Water and Navigation Control Authority, to exercise locational restrictions and site-specific development controls to ensure development is undertaken in a manner that does not compromise the County's goals for protecting manatees.
- 4.4. Objective: By December 2008, Pinellas County will coordinate with Federal and State agencies to determine the need for a Manatee Protection Plan.

- 4.4.1. Policy: Pinellas County will utilize its existing Water and Navigation authority, land use planning and land development regulation strategies, and ongoing research and data collection to determine the need for additional manatee protection strategies and/or a Manatee Protection Plan.
- 4.4.2. Policy: Pinellas County will coordinate with State and Federal agencies and those municipal governments with water access, as well as boater groups and other affected stakeholders, in the development of manatee protection strategies and in determining the need for a Manatee Protection Plan.
- 4.4.3. Policy: Pinellas County will evaluate funding strategies and options for implementing manatee protection measures.
- 4.4.4. Policy: Pinellas County will coordinate with Federal, State and local law enforcement agencies to maximize law enforcement coverage on the water within budgetary constraints.
- 4.5. Objective: Pinellas County will expand, promote and enhance its Clean Marina Program.
- 4.5.1. Policy: Pinellas County will continue to promote and expand its Clean Marina Program through outreach and educational efforts regarding the benefits of certification.
- 4.5.2. Policy: All County-owned marinas will initiate the process to obtain certification as a Clean Marina within six months of purchase, with the goal of becoming certified within one year.
- 4.6. Objective: In an effort to ensure the long-term viability and sustainability of its coastal resources and land uses, Pinellas County will remain apprised of, and plan where appropriate for rising sea levels.
- 4.6.1. Policy: Pinellas County will evaluate the data and findings regarding sea level rise on at least a five-year basis.
- 4.6.2. Policy: Based on the evaluations directed by Policy 4.6.1, Pinellas County will continue to refine and incorporate long-term planning strategies, and amend land development regulations as necessary, to responsibly plan for the effects of rising sea levels.
- 4.6.3. Policy: Pinellas County recognizes the potential need for adequate coastal buffering in its response to future sea level rise, and will give preference to low environmental impact methods of shoreline protection, such as beach nourishment, where feasible and appropriate.

- 4.6.4. Policy: Pinellas County will encourage, and participate in, coordinated intergovernmental and interagency efforts to develop responsible strategies for addressing the potential negative effects of rising sea levels.
- 4.6.5. Policy: Pinellas County will share information with local municipalities regarding the implications of sea level rise and development decisions along the coast and other vulnerable areas.

LEE COUNTY ORDINANCE NO. 09-17
(Hurricane Evacuation/Coastal High Hazard Area)
(CPA2007-59)

AN ORDINANCE AMENDING THE LEE COUNTY COMPREHENSIVE PLAN, COMMONLY KNOWN AS THE "LEE PLAN," ADOPTED BY ORDINANCE NO. 89-02, AS AMENDED, SO AS TO ADOPT AMENDMENT CPA2007-59 (PERTAINING TO HURRICANE EVACUATION/COASTAL HIGH HAZARD AREA) APPROVED DURING THE COUNTY'S 2007/2008 REGULAR COMPREHENSIVE PLAN AMENDMENT CYCLE; PROVIDING FOR AMENDMENTS TO ADOPTED TEXT AND MAPS; PURPOSE AND SHORT TITLE; LEGAL EFFECT OF "THE LEE PLAN"; GEOGRAPHICAL APPLICABILITY; SEVERABILITY, CODIFICATION, SCRIVENER'S ERRORS, AND AN EFFECTIVE DATE.

WHEREAS, the Lee County Comprehensive Plan ("Lee Plan") Policy 2.4.1. and Chapter XIII, provides for adoption of amendments to the Plan in compliance with State statutes and in accordance with administrative procedures adopted by the Board of County Commissioners ("Board"); and,

WHEREAS, the Board, in accordance with Section 163.3181, Florida Statutes, and Lee County Administrative Code AC-13-6 provide an opportunity for the public to participate in the plan amendment public hearing process; and,

WHEREAS, the Lee County Local Planning Agency ("LPA") held a public hearing on the proposed amendment in accordance with Florida Statutes and the Lee County Administrative Code on September 22, 2008.

WHEREAS, the Board held a public hearing for the transmittal of the proposed amendment on October 22, 2008. At that hearing, the Board approved a motion to send, and did later send, proposed amendment CPA2007-59 pertaining to Hurricane Evacuation/Coastal High Hazard Area, to the Department of Community Affairs ("DCA") for review and comment; and,

WHEREAS, at the October 23, 2008 meeting, the Board announced its intention to hold a public hearing after the receipt of DCA's written comments commonly referred to as the "ORC Report." DCA issued their ORC report on January 16, 2009; and,

WHEREAS, the Board held public hearings on the adoption of the proposed amendment to the Lee Plan on February 25, 2009; and,

WHEREAS, on February 25, 2009, the Board adopted the proposed amendment to the Lee Plan set forth herein.

NOW, THEREFORE, BE IT ORDAINED BY THE BOARD OF COUNTY COMMISSIONERS OF LEE COUNTY, FLORIDA, THAT:

SECTION ONE: PURPOSE, INTENT AND SHORT TITLE

The Board of County Commissioners of Lee County, Florida, in compliance with Chapter 163, Part II, Florida Statutes, and with Lee County Administrative Code AC-13-6, conducted public hearings to review proposed amendments to the Lee Plan. The purpose of this ordinance is to adopt the amendments to the Lee Plan discussed at those meetings and approved by a majority of the Board of County Commissioners. The short title and proper reference for the Lee County Comprehensive Land Use Plan, as hereby amended, will continue to be the "Lee Plan." **This amending ordinance may be referred to as the "2007/2008 Regular Comprehensive Plan Amendment Cycle CPA2007-59 Hurricane Evacuation/Coastal High Hazard Area Ordinance."**

SECTION TWO: ADOPTION OF LEE COUNTY'S 2007/2008 REGULAR COMPREHENSIVE PLAN AMENDMENT CYCLE

The Lee County Board of County Commissioners amends the existing Lee Plan, adopted by Ordinance Number 89-02, as amended, by adopting an amendment, as

revised by the Board on February 25, 2009, known as CPA2007-59. CPA2007-59 amends the Conservation and Coastal Management Element of the Lee Plan to establish a Category 5 hurricane evacuation standard, a shelter time standard, and mitigation measures for future plan amendments increasing density in the Coastal High Hazard Area. It also amends the Future Land Use Map Series, Map 5, Coastal High Hazard Area, and the Glossary to redefine the Coastal High Hazard Area.

The corresponding Staff Reports and Analysis, along with all attachments for this amendment are adopted as "Support Documentation" for the Lee Plan.

OBJECTIVE 109.1: EVACUATION. ~~By 1995, e~~Evacuation times will be restored to 1987 levels using the 1987 Southwest Florida Regional Hurricane Plan Update as guidance; ~~and b~~ By 2010, 2030 Lee County will work towards attaining a level of service for out of county hurricane evacuation for a Category 5 storm event that the clearance time portion of evacuation time will does not exceed 18 hours.

POLICY 109.1.3: Critical roadway links causing congestion on evacuation routes for ~~Category 1 through 3 hurricanes, including S.R. 78,~~ will receive high priority for capital improvement expenditures.

POLICY 109.1.5: Comprehensive plan amendments that increase density within coastal high hazard areas must meet one of the following criteria in accordance with Section 163.3178(9), F.S.:

- 1) The proposed amendment will not exceed a 16 hour out of county hurricane evacuation time for a category 5 storm event; or
- 2) Maintain a 12 hour evacuation time to shelter for a Category 5 storm event and ensure shelter space is available to accommodate the additional

residents of the development allowed by the proposed comprehensive plan amendment; or

- 3) Provide appropriate mitigation to satisfy the provisions of either of the previous two paragraphs, which may include without limitation, the payment of money, contribution of land, or construction of hurricane shelters and transportation facilities. The developer must enter into a binding agreement to memorialize the mitigation plan prior to adoption of the plan amendment.

POLICY 109.2.1: The percentage rate of the evacuation population to be used as the basis for in-county and on-site shelter demand will be ~~twenty-one (21)~~ ten (10) percent of the population at risk in the Hurricane Vulnerability Zone under a Category ~~3~~ 5 storm hazard scenario ~~except for those developments with Lee County approved Hurricane Management Plans.~~ This rate will also be the target shelter capacity for a program to provide an emergency shelter supply within Lee County by the year ~~2040~~ 2030.

~~**POLICY 109.2.6:** Upon adoption of Rule 9J-2, F.A.C., the county will petition the Florida Department of Community Affairs to designate Lee County as a "special hurricane preparedness district" so that shelter alternatives not consistent with state-wide policies can be implemented.~~

COASTAL HIGH HAZARD AREA - The area below the elevation of the category 1 evacuation zone storm surge line as delineated by the ~~Southwest Florida Regional Planning Council~~ Map 5 of the Future Land Use Map Series.

In addition, the Map attached as Exhibit A to this Ordinance is incorporated into the Lee Plan as:

Future Land Use Map Series, Map 5, Coastal High Hazard Area.

SECTION THREE: LEGAL EFFECT OF THE "LEE PLAN"

No public or private development will be permitted except in conformity with the Lee Plan. All land development regulations and land development orders must be consistent with the Lee Plan as amended.

SECTION FOUR: GEOGRAPHIC APPLICABILITY

The Lee Plan is applicable throughout the unincorporated area of Lee County, Florida, except in those unincorporated areas included in joint or interlocal agreements with other local governments that specifically provide otherwise.

SECTION FIVE: SEVERABILITY

The provisions of this ordinance are severable and it is the intention of the Board of County Commissioners of Lee County, Florida, to confer the whole or any part of the powers herein provided. If any of the provisions of this ordinance are held unconstitutional by a court of competent jurisdiction, the decision of that court will not affect or impair the remaining provisions of this ordinance. It is hereby declared to be the legislative intent of the Board that this ordinance would have been adopted had the unconstitutional provisions not been included therein.

SECTION SIX: INCLUSION IN CODE, CODIFICATION, SCRIVENERS' ERROR

It is the intention of the Board of County Commissioners that the provisions of this ordinance will become and be made a part of the Lee County Code. Sections of this ordinance may be renumbered or re-lettered and the word "ordinance" may be changed to "section," "article," or other appropriate word or phrase in order to accomplish this intention; and regardless of whether inclusion in the code is accomplished, sections of

this ordinance may be renumbered or re-lettered. The correction of typographical errors that do not affect the intent, may be authorized by the County Manager, or his or her designee, without need of public hearing, by filing a corrected or recodified copy with the Clerk of the Circuit Court.

SECTION SEVEN: EFFECTIVE DATE

The plan amendments adopted herein are not effective until a final order is issued by the DCA or Administrative Commission finding the amendment in compliance with Section 163.3184, Florida Statutes, whichever occurs earlier. No development orders, development permits, or land uses dependent on this amendment may be issued or commence before the amendment has become effective. If a final order of noncompliance is issued by the Administration Commission, this amendment may nevertheless be made effective by adoption of a resolution affirming its effective status. A copy of such resolution will be sent to the DCA, Bureau of Local Planning, 2555 Shumard Oak Boulevard, Tallahassee, Florida 32399-2100.

THE FOREGOING ORDINANCE was offered by Commissioner Hall, who moved its adoption. The motion was seconded by Commissioner Mann. The vote was as follows:

Robert P. Janes	Aye
Brian Bigelow	Aye
Ray Judah	Aye
Tammara Hall	Aye
Frank Mann	Aye

DONE AND ADOPTED this 25th day of February 2009.

ATTEST:
CHARLIE GREEN, CLERK

LEE COUNTY
BOARD OF COUNTY COMMISSIONERS

BY: Marcia Wilson
Deputy Clerk

BY: Ray Judah
Ray Judah
Chair

DATE: 2/25/09



Approved as to form

By: Donna Marie Collins
Donna Marie Collins
County Attorney's Office

Exhibit A: Future Land Use Map Series, Map 5, Coastal High Hazard Area

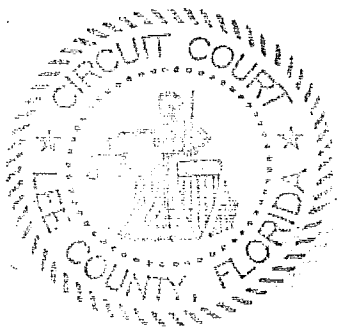
State of Florida
County of Lee

I Charlie Green, Clerk of the Circuit Court for Lee County, Florida, do hereby certify this document to be a true and correct copy of the original document filed in the Minutes Department.

Given under my hand and official seal at Fort Myers, Florida, this 25th day of March, A.D. 2009

CHARLIE GREEN, CLERK

By: Marcia Wilson
Deputy Clerk



CPA 2007-59
Hurricane Evacuation/Coastal High Hazard
Area

BoCC SPONSORED
AMENDMENT
TO THE

LEE COUNTY COMPREHENSIVE PLAN

THE LEE PLAN

LPA Public Hearing Document
for the
September 22nd Public Hearing

Lee County Planning Division
1500 Monroe Street
P.O. Box 398
Fort Myers, FL 33902-0398
(239) 533-8585

September 8, 2008

**LEE COUNTY
DIVISION OF PLANNING
STAFF REPORT FOR
COMPREHENSIVE PLAN AMENDMENT
CPA 2007-59**

✓	This Document Contains the Following Reviews:
✓	Staff Review
	Local Planning Agency Review and Recommendation
	Board of County Commissioners Hearing for Transmittal
	Staff Response to the DCA Objections, Recommendations, and Comments (ORC) Report
	Board of County Commissioners Hearing for Adoption

STAFF REPORT PREPARATION DATE: September 8, 2008

PART I - BACKGROUND AND STAFF RECOMMENDATION

A. SUMMARY OF APPLICATION

1. APPLICANT:

LEE COUNTY BOARD OF COUNTY COMMISSIONERS
REPRESENTED BY LEE COUNTY DIVISION OF PLANNING AND DIVISION OF
PUBLIC SAFETY

2. REQUEST:

Amend the Conservation and Coastal Management Element of the Lee Plan to establish a Category 5 hurricane evacuation standard, a shelter time standard, and mitigation measures. Amend Map 5, Coastal High Hazard Area, of the Future Land Use Map Series and the Lee Plan Glossary to redefine the Coastal High Hazard Area.

B. STAFF RECOMMENDATION AND FINDINGS OF FACT SUMMARY:

- 1. RECOMMENDATION:** Staff recommends that the Board of County Commissioners transmit this proposed amendment. The specific language modifications that staff recommends is provided below:

OBJECTIVE 109.1: EVACUATION. ~~By 1995,~~ Evacuation times will be restored to 1987 levels using the 1987 Southwest Florida Regional Hurricane Plan Update as guidance; and by 2010, the clearance time portion of evacuation time will not exceed 18 hours for a Category 5 storm event.

POLICY 109.1.1: The county will assess the impact of all new residential development upon the projected hurricane evacuation network and upon projected hurricane evacuation times, and will require mitigation either through structural (on-site, off-site shelter) provisions or through non-structural methods or techniques. All mitigation requirements will be based on a Category 5 storm event.

POLICY 109.1.3: Critical roadway links causing congestion on evacuation routes for ~~Category 1 through 3 hurricanes, including S.R. 78,~~ will receive high priority for capital improvement expenditures.

POLICY 109.2.1: The percentage rate of the evacuation population to be used as the basis for in-county and on-site shelter demand will be ~~twenty-one (21)~~ ten (10) percent of the population at risk in the Hurricane Vulnerability Zone under a Category 3 ~~5~~ storm hazard scenario except for those developments with Lee County approved Hurricane Management Plans. This rate will also be the target shelter capacity for a program to provide an emergency shelter supply within Lee County by the year 2010. The evacuation time to shelter will not exceed 12 hours for a Category 5 storm event.

~~**POLICY 109.2.6:** Upon adoption of Rule 9J-2, F.A.C., the county will petition the Florida Department of Community Affairs to designate Lee County as a "special hurricane preparedness district" so that shelter alternatives not consistent with state-wide policies can be implemented.~~

COASTAL HIGH HAZARD AREA - The category 1 ~~evacuation zone~~ storm surge line as delineated by the ~~Southwest Florida Regional Planning Council~~ Map 5 of the Future Land Use Map Series.

2. BASIS AND RECOMMENDED FINDINGS OF FACT:

- In 2006 legislation added requirements to Chapter 163.3178, F. S. requiring local governments to redefine the Coastal High Hazard Area (CHHA) from the Category 1 Storm Surge Evacuation Zone to the Category 1 Storm Surge Line.
- Chapter 163.3178, F.S. requires that the adopted level of service for out of county hurricane evacuation is maintained for a category 5 storm event.
- The percentage rate of the evacuation population should also be updated to reflect the empirical evidence of actual shelter usage during hurricane evacuations carried out in Lee County.
- Current Lee Plan policy should be updated to reflect the changes made to Chapter 163.3178, F.S. requiring mitigation measures that satisfy the requirements for a category 5 storm event.

C. BACKGROUND INFORMATION

This amendment was initiated by the Board of County Commissioners on September 25, 2007. The amendment addresses bills enacted by the Florida Legislature in response to the high level of hurricane activity. In 2006 legislation added requirements to Chapter 163.3178, F. S. requiring local governments to amend their future land use map and coastal management element of their comprehensive plans to depict the revised Coastal High Hazard Area (CHHA) and if necessary update evacuation times in the coastal management element. The changes made to Chapter 163.3178, F. S. are listed as follows:

1. Redefining the CHHA from the current Category 1 Storm Surge Evacuation Zone to the Category 1 Storm Surge Line.
2. Adopted level of service for out of county hurricane evacuation is maintained for a category 5 storm event.
3. Establish a 12 hour evacuation time to shelter maintained for a category 5 storm event.
4. Identify mitigation measures satisfying the provisions of the updated evacuation time to shelter and out of county hurricane evacuation standards based on a category 5 storm event.

Staff is proposing revisions to Objective 109.1 and several subsequent policies in the Conservation and Coastal Management Element of the Lee Plan, the definition of the CHHA in the Glossary of the Lee Plan, and Map 5, Coastal High Hazard Area, of the Future Land Use Map Series based on the changes made to 163.3178, F. S.

PART II - STAFF ANALYSIS

A. STAFF DISCUSSION

The proposed amendment to Objective 109.1 removes the 1995 target date for restoring evacuation times. The Conservation and Coastal Management Element currently maintains that the evacuation clearance time will not exceed 18 hours. The changes made to Chapter 163.3178, F.S. require the adopted level of service for out of county hurricane evacuation is maintained for a category 5 storm event as measured on the Saffir-Simpson scale. Staff proposes adding the following text to the Objective to specify that the evacuation time will be maintained for a category 5 storm event.

OBJECTIVE 109.1: EVACUATION. ~~By 1995, e~~Evacuation times will be restored to 1987 levels using the 1987 Southwest Florida Regional Hurricane Plan Update as guidance; and by 2010, the clearance time portion of evacuation time will not exceed 18 hours for a Category 5 storm event.

Currently there is a state funded program to conduct regional evacuation studies across the state of Florida. The State Division of Emergency Management has contracted with Florida's Regional Planning Councils to carry out the studies in collaboration with local emergency management agencies. Upon completion of the studies staff will revisit Objective 109.1 to determine if an update to evacuation clearance time will be necessary based on the study findings.

The proposed amendment to Policy 109.1.3 removes the reference to Category 1 through 3 hurricanes. The Category 5 level of service required by Chapter 163.3178, F.S. is now stated through Objective 109.1 and the reference to S.R. 78 has been removed to reflect that it will be necessary for all critical roadway links to receive high priority for capital improvement expenditures. The proposed text changes to Objective 109.1 are shown below:

POLICY 109.1.3: Critical roadway links causing congestion on evacuation routes for ~~Category 1 through 3 hurricanes, including S.R. 78,~~ will receive high priority for capital improvement expenditures.

The proposed amendment to 109.2.1 changes the percentage rate of the evacuation population from 21 percent to 10 percent. The text change also adds a 12 hour evacuation time to shelter and changes the population at risk under a category 5 storm per Chapter 163.3178, F.S. The percentage change is based on empirical evidence of actual shelter usage during hurricane evacuations carried out in Lee County (see Attachment 1). The ten percent was derived by averaging the shelter usage rates documented through post storm behavioral surveys for the following hurricanes: Andrew (1992), Georges (1998), Charley and Ivan (2004) and Wilma (2005). The proposed text changes to Objective 109.1 are shown below:

POLICY 109.2.1: The percentage rate of the evacuation population to be used as the basis for in-county and on-site shelter demand will be ~~twenty-one (21)~~ ten (10) percent of the population at risk in the Hurricane Vulnerability Zone under a Category ~~3~~ 5 storm hazard scenario except for those developments with Lee County approved Hurricane Management Plans. This rate will also be the target shelter capacity for a program to provide an emergency shelter supply within Lee County by the year 2010. The evacuation time to shelter will not exceed 12 hours for a Category 5 storm event.

The proposed deletion of 109.2.6 removes the statement that the county will petition the state to designate Lee County as a special hurricane preparedness district. Lee County has already achieved the special district status. In 1990, The Southwest Florida Regional Planning Council petitioned the Department of Community Affairs on behalf of Lee, Collier, Charlotte and Sarasota counties to be designated as a special hurricane preparedness district. The request identified why the four counties or region should be designated and established what types of hurricane preparedness mitigation measures will apply to developments within the district. The request for designation was based on the following types of generalized regional or county considerations:

- (a) The overall land elevation and the amount of area anticipated to flood during a hurricane event;
- (b) The transportation system and its ability to transport residents to safe areas within a reasonable time;
- (c) Less than twenty percent of a county's or region's hurricane shelters are available to the population during a 100-year or category three hurricane event; and
- (d) The percentage of the total population anticipated to evacuate

Based on a written request supported by data and information received from the Southwest Florida Regional Planning Council, the Department designated the area contained within the category three hurricane flood zone as identified in the Hurricane Evacuation Study Update, 1995 Southwest Florida Regional Planning Council within the counties of Sarasota, Charlotte, Lee, and Collier as a special hurricane preparedness district for developments of regional impact.

The policy proposed for deletion is shown below:

~~POLICY 109.2.6:~~ ~~Upon adoption of Rule 9J-2, F.A.C., the county will petition the Florida Department of Community Affairs to designate Lee County as a "special hurricane preparedness district" so that shelter alternatives not consistent with state-wide policies can be implemented.~~

The proposed amendment to the Glossary definition of the Coastal High Hazard Area changes the defined CHHA from the category 1 evacuation zone to the category 1 storm surge line. The changes made to Chapter 163.3178, F. S. define the coastal high hazard area as the area below the elevation of the category 1 storm surge line as established by a Sea, Lake and Overland Surges from Hurricanes (SLOSH) computerized storm surge model. This change will also require an amendment to Map 5, Coastal High Hazard Area, of the future land use map series reflecting the updated definition of the CHHA. The proposed Map 5 is attached as Attachment 2. The proposed changes to the Glossary definition are shown below:

COASTAL HIGH HAZARD AREA - ~~The category 1 evacuation zone~~ storm surge line as delineated by ~~the Southwest Florida Regional Planning Council~~ Map 5 of the Future Land Use Map Series.

The changes made to Chapter 163.3178, F.S. also require identifying mitigation measures that satisfy the requirements for a category 5 storm event evacuation time to shelter and out of county evacuation. Current Lee Plan policy 109.1.1 addresses mitigation requirements for impacts to the hurricane evacuation network and hurricane evacuation times. The policy states that impacts will require mitigation through structural provisions or non-structural methods or techniques. Staff is proposing additional language to policy 109.1.1 clarifying that the mitigation measures must be consistent with a category 5 storm event. The revised policy is shown below:

POLICY 109.1.1: The county will assess the impact of all new residential development upon the projected hurricane evacuation network and upon projected hurricane evacuation times, and will require mitigation either through structural (on-site, off-site shelter) provisions or through non-structural methods or techniques. All mitigation requirements will be based on a Category 5 storm event.

Mitigation measures are incorporated into the County development regulations through Lee County Land Development Code Chapter 2, Article XI, Hurricane Preparedness. Amendments to the Land Development Code will also be necessary to clarify that mitigation requirements will be based on a Category 5 storm event consistent with the changes made to Chapter 163.3178, F.S.

B. CONCLUSIONS

Changes have been made to Chapter 163.3178, F.S. requiring local governments to amend their future land use map and coastal management element of their comprehensive plans to depict the revised Coastal High Hazard Area (CHHA) and to update evacuation times in the coastal management element. Lee Plan policy should reflect the changes made to Chapter 163.3178, F.S.

C. STAFF RECOMMENDATION

Planning staff recommends that the Board of County Commissioners transmit this proposed amendment. This recommendation is based upon the previously discussed issues and conclusions of this report. Staff recommends that the Conservation and Coastal Management Element and the Glossary of the Lee Plan be modified as provided below. Staff also recommends that Map 5, Coastal High Hazard Area, of the Future Land Use Map Series be modified as provided in Attachment 2.

OBJECTIVE 109.1: EVACUATION. ~~By 1995, e~~Evacuation times will be restored to 1987 levels using the 1987 Southwest Florida Regional Hurricane Plan Update as guidance; and by 2010, the clearance time portion of evacuation time will not exceed 18 hours for a Category 5 storm event.

POLICY 109.1.1: The county will assess the impact of all new residential development upon the projected hurricane evacuation network and upon projected hurricane evacuation times, and will require mitigation either through structural (on-site, off-site shelter) provisions or through non-structural methods or techniques. All mitigation requirements will be based on a Category 5 storm event.

POLICY 109.1.3: Critical roadway links causing congestion on evacuation routes ~~for Category 1 through 3 hurricanes, including S.R. 78,~~ will receive high priority for capital improvement expenditures.

POLICY 109.2.1: The percentage rate of the evacuation population to be used as the basis for in-county and on-site shelter demand will be ~~twenty-one (21)~~ ten (10) percent of the population at risk in the Hurricane Vulnerability Zone under a Category ~~3~~ 5 storm hazard scenario except for those developments with Lee County approved Hurricane Management Plans. This rate will also be the target shelter capacity for a program to provide an emergency shelter supply within Lee County by

the year 2010. The evacuation time to shelter will not exceed 12 hours for a Category 5 storm event.

~~**POLICY 109.2.6:** Upon adoption of Rule 9J-2, F.A.C., the county will petition the Florida Department of Community Affairs to designate Lee County as a "special hurricane preparedness district" so that shelter alternatives not consistent with state-wide policies can be implemented.~~

COASTAL HIGH HAZARD AREA - The category 1 evacuation zone storm surge line as delineated by the Southwest Florida Regional Planning Council Map 5 of the Future Land Use Map Series.

**PART III - LOCAL PLANNING AGENCY
REVIEW AND RECOMMENDATION**

DATE OF PUBLIC HEARING: September 22, 2008

A. LOCAL PLANNING AGENCY REVIEW

**B. LOCAL PLANNING AGENCY RECOMMENDATION AND FINDINGS OF FACT
SUMMARY**

1. RECOMMENDATION:

2. BASIS AND RECOMMENDED FINDINGS OF FACT:

C. VOTE:

NOEL ANDRESS

LES COCHRAN

RONALD INGE

JACQUE RIPPE

CARLETON RYFFEL

LELAND TAYLOR

RAE ANN WESSEL

**PART IV - BOARD OF COUNTY COMMISSIONERS
HEARING FOR TRANSMITTAL OF PROPOSED AMENDMENT**

DATE TRANSMITTAL HEARING: October 22, 2008

A. BOARD REVIEW:

B. BOARD ACTION AND FINDINGS OF FACT SUMMARY:

1. BOARD ACTION:

2. BASIS AND RECOMMENDED FINDINGS OF FACT:

C. VOTE:

A. BRIAN BIGELOW

TAMMARA HALL

ROBERT P. JANES

RAY JUDAH

FRANKLIN B. MANN

**PART V - DEPARTMENT OF COMMUNITY AFFAIRS OBJECTIONS,
RECOMMENDATIONS, AND COMMENTS (ORC) REPORT**

DATE OF ORC REPORT: _____

A. DCA OBJECTIONS, RECOMMENDATIONS AND COMMENTS

B. STAFF RECOMMENDATION

**PART VI - BOARD OF COUNTY COMMISSIONERS
HEARING FOR ADOPTION OF PROPOSED AMENDMENT**

DATE OF ADOPTION HEARING: _____

A. BOARD REVIEW:

B. BOARD ACTION AND FINDINGS OF FACT SUMMARY:

1. BOARD ACTION:

2. BASIS AND RECOMMENDED FINDINGS OF FACT:

C. VOTE:

A. BRIAN BIGELOW

TAMMARA HALL

ROBERT P. JANES

RAY JUDAH

FRANKLIN B. MANN

CPA 2007-59
Hurricane Evacuation/Coastal High Hazard
Area

BoCC SPONSORED
AMENDMENT
TO THE

LEE COUNTY COMPREHENSIVE PLAN

THE LEE PLAN

BoCC Public Hearing Document
for the
October 22nd, 2008 Public Hearing

Lee County Planning Division
1500 Monroe Street
P.O. Box 398
Fort Myers, FL 33902-0398
(239) 533-8585

October 9, 2008

**LEE COUNTY
DIVISION OF PLANNING
STAFF REPORT FOR
COMPREHENSIVE PLAN AMENDMENT
CPA 2007-59**

✓	This Document Contains the Following Reviews:
✓	Staff Review
✓	Local Planning Agency Review and Recommendation
	Board of County Commissioners Hearing for Transmittal
	Staff Response to the DCA Objections, Recommendations, and Comments (ORC) Report
	Board of County Commissioners Hearing for Adoption

STAFF REPORT PREPARATION DATE: September 8, 2008

PART I - BACKGROUND AND STAFF RECOMMENDATION

A. SUMMARY OF APPLICATION

1. APPLICANT:

LEE COUNTY BOARD OF COUNTY COMMISSIONERS
REPRESENTED BY LEE COUNTY DIVISION OF PLANNING AND DIVISION OF
PUBLIC SAFETY

2. REQUEST:

Amend the Conservation and Coastal Management Element of the Lee Plan to establish a Category 5 hurricane evacuation standard, a shelter time standard, and mitigation measures for future plan amendments increasing density in the Coastal High Hazard Area. Amend the Future Land Use Map Series, Map 5, Coastal High Hazard Area, and the Glossary to redefine the Coastal High Hazard Area in accordance with Chapter 163.3178, F.S.

B. STAFF RECOMMENDATION AND FINDINGS OF FACT SUMMARY:

- 1. RECOMMENDATION:** Staff recommends that the Board of County Commissioners transmit this proposed amendment. The specific language modifications that staff recommends is provided below:

OBJECTIVE 109.1: EVACUATION. ~~By 1995, e~~Evacuation times will be restored to 1987 levels using the 1987 Southwest Florida Regional Hurricane Plan Update as guidance; ~~and b~~ By 2010, 2030 Lee County will work towards attaining a level of service for out of county hurricane evacuation for a Category 5 storm event that the clearance time portion of evacuation time will does not exceed 18 hours.

POLICY 109.1.3: Critical roadway links causing congestion on evacuation routes for Category 1 through 3 hurricanes, including S.R. 78; will receive high priority for capital improvement expenditures.

POLICY 109.1.5: Comprehensive plan amendments that increase density within coastal high hazard areas must meet one of the following criteria:

- 1) The proposed amendment will not impede the objective of attaining the adopted level of service for out of county hurricane evacuation for a category 5 storm event (see Objective 109.1); or
- 2) Maintain a 12 hour evacuation time to shelter for a Category 5 storm event and ensure shelter space is available to accommodate the additional residents of the development allowed by the proposed comprehensive plan amendment; or
- 3) Provide appropriate mitigation to satisfy the provisions of the previous two paragraphs, which may include without limitation, the payment of money, contribution of land, or construction of hurricane shelters and transportation facilities. The developer must enter into a binding agreement to memorialize the mitigation plan prior to local development order approval.

POLICY 109.2.1: The percentage rate of the evacuation population to be used as the basis for in-county and on-site shelter demand will be ~~twenty-one (21)~~ ten (10) percent of the population at risk in the Hurricane Vulnerability Zone under a Category 3 5 storm hazard scenario ~~except for those developments with Lee County approved Hurricane Management Plans.~~ This rate will also be the target shelter capacity for a program to provide an emergency shelter supply within Lee County by the year 2010 2030.

~~**POLICY 109.2.6:** Upon adoption of Rule 9J-2, F.A.C., the county will petition the Florida Department of Community Affairs to designate Lee County as a "special hurricane preparedness district" so that shelter alternatives not consistent with state-wide policies can be implemented.~~

COASTAL HIGH HAZARD AREA - The category 1 evacuation zone storm surge line as delineated by the Southwest Florida Regional Planning Council Map 5 of the Future Land Use Map Series.

2. BASIS AND RECOMMENDED FINDINGS OF FACT:

- In 2006 legislation added requirements to Chapter 163.3178, F. S. requiring local governments to redefine the Coastal High Hazard Area (CHHA) from the Category 1 Storm Surge Evacuation Zone to the Category 1 Storm Surge Line.

- Chapter 163.3178, F.S. also requires local governments to establish criteria for an evacuation standard, a shelter time standard, and mitigation measures for proposed comprehensive plan amendments.
- The percentage rate of the evacuation population should also be updated to reflect the empirical evidence of actual shelter usage during hurricane evacuations carried out in Lee County.

C. BACKGROUND INFORMATION

This amendment was initiated by the Board of County Commissioners on September 25, 2007. The amendment addresses bills enacted by the Florida Legislature in response to the high level of hurricane activity. In 2006 legislation added requirements to Chapter 163.3178, F. S. requiring local governments to amend their future land use map and coastal management element of their comprehensive plans to depict the revised Coastal High Hazard Area (CHHA) and if necessary update evacuation times in the coastal management element if a level of service for out of county evacuation has not been established. In addition, the legislation established an evacuation standard, a shelter time standard, and mitigation measures for proposed comprehensive plan amendments as options for compliance with state coastal high hazard provisions.

Staff is proposing revisions to Objective 109.1 and several subsequent policies in the Conservation and Coastal Management Element of the Lee Plan, the definition of the CHHA in the Glossary of the Lee Plan, and Map 5, Coastal High Hazard Area, of the Future Land Use Map Series based on the changes made to 163.3178, F. S. Staff is also proposing a new policy, Policy 109.1.5, to include new requirements for proposed comprehensive plan amendments.

PART II - STAFF ANALYSIS

A. STAFF DISCUSSION

The proposed amendment to Objective 109.1 removes the outdated references for restoring evacuation times. The Conservation and Coastal Management Element currently maintains that the evacuation clearance time will not exceed 18 hours. The changes made to Chapter 163.3178, F.S. require the adopted level of service for out of county hurricane evacuation is maintained for a category 5 storm event as measured on the Saffir-Simpson scale. Staff proposes adding the following text to the Objective to specify that the evacuation time will be maintained for a category 5 storm event.

OBJECTIVE 109.1: EVACUATION. ~~By 1995, eEvacuation times will be restored to 1987 levels using the 1987 Southwest Florida Regional Hurricane Plan Update as guidance; and b By 2010, 2030 Lee County will work towards attaining a level of service for out of county hurricane evacuation for a Category 5 storm event that the clearance time portion of evacuation time will~~ does not exceed 18 hours.

Currently there is a state funded program to conduct regional evacuation studies across the state of Florida. The State Division of Emergency Management has contracted with Florida's Regional Planning Councils to carry out the studies in collaboration with local emergency management agencies. Upon completion of the studies staff will revisit Objective 109.1 to determine if an update to evacuation clearance time will be necessary based on the study findings.

The proposed amendment to Policy 109.1.3 removes the reference to Category 1 through 3 hurricanes. The policy now reflects that it will be necessary for all critical roadway links to receive high priority for capital improvement expenditures. The proposed text changes to Objective 109.1 are shown below:

POLICY 109.1.3: Critical roadway links causing congestion on evacuation routes ~~for Category 1 through 3 hurricanes, including S.R. 78,~~ will receive high priority for capital improvement expenditures.

Staff is proposing a new policy, Policy 109.1.5, to include requirements for proposed comprehensive plan amendments that increase density in the coastal high hazard areas. Per Chapter 163.3178, F.S., a proposed comprehensive plan amendment will be found in compliance with state coastal high hazard provisions if one of the following provisions are met: the adopted level of service for a Category 5 storm event is maintained; or a 12 hour evacuation time to shelter is maintained for a Category 5 storm event and shelter space for those residents contemplated by the proposed amendment is available; or appropriate mitigation is provided. Staff recommends adding new Policy 109.1.5 to the Conservation and Coastal Management Element as shown below:

POLICY 109.1.5: Comprehensive plan amendments that increase density within coastal high hazard areas must meet one of the following criteria:

- 3) The proposed amendment will not impede the objective of attaining the adopted level of service for out of county hurricane evacuation for a category 5 storm event (see Objective 109.1); or
- 4) Maintain a 12 hour evacuation time to shelter for a Category 5 storm event and ensure shelter space is available to accommodate the additional residents of the development allowed by the proposed comprehensive plan amendment; or
- 3) Provide appropriate mitigation to satisfy the provisions of the previous two paragraphs, which may include without limitation, the payment of money, contribution of land, or construction of hurricane shelters and transportation facilities. The developer must enter into a binding agreement to memorialize the mitigation plan prior to local development order approval.

The proposed amendment to 109.2.1 changes the percentage rate of the evacuation population from 21 percent to 10 percent. The text change also changes the population at risk under a category 5 storm and removes the reference to Hurricane Management Plans. The percentage change is based on empirical evidence of actual shelter usage during hurricane evacuations carried out in Lee County (see Attachment 1). The ten percent was derived by averaging the

shelter usage rates documented through post storm behavioral surveys for the following hurricanes: Andrew (1992), Georges (1998), Charley and Ivan (2004) and Wilma (2005). Staff finds that the reference to Hurricane Management Plans is not necessary due to the fact that Florida Statute and the Florida Administrative Code govern hurricane preparedness plans for hospitals and assisted living facilities. The proposed text changes to Objective 109.1 are shown below:

POLICY 109.2.1: The percentage rate of the evacuation population to be used as the basis for in-county and on-site shelter demand will be ~~twenty-one (21)~~ ten (10) percent of the population at risk in the Hurricane Vulnerability Zone under a Category 3 5 storm hazard scenario ~~except for those developments with Lee County approved Hurricane Management Plans.~~ This rate will also be the target shelter capacity for a program to provide an emergency shelter supply within Lee County by the year ~~2010~~ 2030.

The proposed deletion of 109.2.6 removes the statement that the county will petition the state to designate Lee County as a special hurricane preparedness district. Lee County has already achieved the special district status. In 1990, The Southwest Florida Regional Planning Council petitioned the Department of Community Affairs on behalf of Lee, Collier, Charlotte and Sarasota counties to be designated as a special hurricane preparedness district. The request identified why the four counties or region should be designated and established what types of hurricane preparedness mitigation measures will apply to developments within the district. The request for designation was based on the following types of generalized regional or county considerations:

- (a) The overall land elevation and the amount of area anticipated to flood during a hurricane event;
- (b) The transportation system and its ability to transport residents to safe areas within a reasonable time;
- (c) Less than twenty percent of a county's or region's hurricane shelters are available to the population during a 100-year or category three hurricane event; and
- (d) The percentage of the total population anticipated to evacuate

Based on a written request supported by data and information received from the Southwest Florida Regional Planning Council, the Department designated the area contained within the category three hurricane flood zone as identified in the Hurricane Evacuation Study Update, 1995 Southwest Florida Regional Planning Council within the counties of Sarasota, Charlotte, Lee, and Collier as a special hurricane preparedness district for developments of regional impact.

The policy proposed for deletion is shown below:

~~**POLICY 109.2.6:** Upon adoption of Rule 9J-2, F.A.C., the county will petition the Florida Department of Community Affairs to designate Lee County as a "special hurricane preparedness district" so that shelter alternatives not consistent with state-wide policies can be implemented.~~

The proposed amendment to the Glossary definition of the Coastal High Hazard Area changes the defined CHHA from the category 1 evacuation zone to the category 1 storm surge line. The changes made to Chapter 163.3178, F. S. define the coastal high hazard area as the area below the elevation of the category 1 storm surge line as established by a Sea, Lake and Overland Surges from Hurricanes (SLOSH) computerized storm surge model. This change will also require an amendment to Map 5, Coastal High Hazard Area, of the future land use map series reflecting the updated definition of the CHHA. The proposed Map 5 is attached as Attachment 2. The proposed changes to the Glossary definition are shown below:

COASTAL HIGH HAZARD AREA - ~~The category 1 evacuation zone~~ storm surge line as delineated by the Southwest Florida Regional Planning Council Map 5 of the Future Land Use Map Series.

B. CONCLUSIONS

Changes have been made to Chapter 163.3178, F.S. requiring local governments to amend their future land use map and coastal management element of their comprehensive plans to depict the revised Coastal High Hazard Area (CHHA) and to update requirements for proposed comprehensive plan amendments that increase density in coastal high hazard areas. Lee Plan policy should reflect the changes made to Chapter 163.3178, F.S.

C. STAFF RECOMMENDATION

Planning staff recommends that the Board of County Commissioners transmit this proposed amendment. This recommendation is based upon the previously discussed issues and conclusions of this report. Staff recommends that the Conservation and Coastal Management Element and the Glossary of the Lee Plan be modified as provided below. Staff also recommends that Map 5, Coastal High Hazard Area, of the Future Land Use Map Series be modified as provided in Attachment 2.

OBJECTIVE 109.1: EVACUATION. ~~By 1995, evacuation times will be restored to 1987 levels using the 1987 Southwest Florida Regional Hurricane Plan Update as guidance; and b By 2010, 2030 Lee County will work towards attaining a level of service for out of county hurricane evacuation for a Category 5 storm event that the clearance time portion of evacuation time will~~ does not exceed 18 hours.

POLICY 109.1.3: Critical roadway links causing congestion on evacuation routes ~~for Category 1 through 3 hurricanes, including S.R. 78,~~ will receive high priority for capital improvement expenditures.

POLICY 109.1.5: Comprehensive plan amendments that increase density within coastal high hazard areas must meet one of the following criteria:

- 5) The proposed amendment will not impede the objective of attaining the adopted level of service for out of county hurricane evacuation for a category 5 storm event (see Objective 109.1); or

- 6) Maintain a 12 hour evacuation time to shelter for a Category 5 storm event and ensure shelter space is available to accommodate the additional residents of the development allowed by the proposed comprehensive plan amendment; or
- 3) Provide appropriate mitigation to satisfy the provisions of the previous two paragraphs, which may include without limitation, the payment of money, contribution of land, or construction of hurricane shelters and transportation facilities. The developer must enter into a binding agreement to memorialize the mitigation plan prior to local development order approval.

POLICY 109.2.1: The percentage rate of the evacuation population to be used as the basis for in-county and on-site shelter demand will be ~~twenty-one (21)~~ ten (10) percent of the population at risk in the Hurricane Vulnerability Zone under a Category ~~3~~ 5 storm hazard scenario ~~except for those developments with Lee County approved Hurricane Management Plans.~~ This rate will also be the target shelter capacity for a program to provide an emergency shelter supply within Lee County by the year ~~2010~~ 2030.

POLICY 109.2.6: ~~Upon adoption of Rule 9J-2, F.A.C., the county will petition the Florida Department of Community Affairs to designate Lee County as a "special hurricane preparedness district" so that shelter alternatives not consistent with state-wide policies can be implemented.~~

COASTAL HIGH HAZARD AREA - The category 1 evacuation zone storm surge line as delineated by the ~~Southwest Florida Regional Planning Council~~ Map 5 of the Future Land Use Map Series.

PART III - LOCAL PLANNING AGENCY REVIEW AND RECOMMENDATION

DATE OF PUBLIC HEARING: September 22, 2008

A. LOCAL PLANNING AGENCY REVIEW

At the September 22nd meeting the Local Planning Agency reviewed a previous draft of the proposed amendment. Upon closer examination, staff found that the previous staff report was not responsive to the changes dictated by the change in legislation. Therefore staff has issued a revised report as the recommended transmittal document. The revised report reflects the recommended amendments to the plan based on the dictates of the statute.

At the September 22nd meeting, planning staff gave a brief presentation concerning the proposed amendment. Staff also noted that a map depicting Lee County Storm Surge will be attached to the report for informational purposes. The map has been attached as Attachment 3. One of members of the LPA expressed concern with the proposed amendment as it would apply to a Category 5 storm event which encompasses a majority of the County and asked what our evacuation time frame is. Public Safety staff indicated that evacuation time currently exceeds the 18 hour time frame. Staff indicated that the ability to mitigate the impact of new development allows the ability to meet the intent of the legislation. Another member of the LPA asked how close the County is in achieving the onsite shelter demand. Public Safety staff indicated that the County is behind with the current level of service and that the proposed amendment changes the percentage from 21% to 10% based on empirical evidence. This member of the LPA asked what the County is doing to increase shelter capacity. Public Safety staff responded that there currently is an all hazards MSTU levied. A portion of the levied funds go to improving buildings that serve as shelters. Currently, with the reduction in school students in Lee County schools funding has dropped. Public Safety staff stated that the County is focusing on churches and community centers for shelter space. A motion was made and seconded to recommend transmittal of the proposed amendment. The LPA recommended transmittal of the amendment in support of the required statutory changes. One member of the LPA noted they could not support the amendment as drafted. The votes for the September 22nd meeting are reflected below.

At the October 9th, 2008 LPA meeting staff provided an update to LPA under the "other business" item on the LPA agenda. The proposed revision to the staff recommendation was presented verbally and in writing. One member of the LPA asked for clarification regarding the deletion of the reference to S.R. 78. The deletion was included in the proposal the LPA reviewed on September 22nd as well. Staff explained that this was an effort to clarify that all roadway links causing congestion on evacuation routes will receive high priority. Public Safety staff clarified that the reference was placed in the policy when there was concerns over funding S.R. 78 from Bayshore Road to I-75 and this is no longer a concern since the road has been improved. Public safety staff also clarified that Lee County has coordinated with the Sheriff's Office to ensure that in an emergency S.R. 78 in the western portion of Lee County will become one way in order to route outbound traffic east.

The LPA reviewed the revised amendment language and found no issues with the proposal.

B. LOCAL PLANNING AGENCY RECOMMENDATION AND FINDINGS OF FACT SUMMARY

1. **RECOMMENDATION:** The LPA recommends that the Board of County Commissioners transmit the proposed amendment.
2. **BASIS AND RECOMMENDED FINDINGS OF FACT:** The majority of the LPA accepted the findings of fact as advanced by the staff.

C. VOTE BASED ON THE PRESENTATION OF SEPTEMBER 22, 2008:

NOEL ANDRESS	AYE
LES COCHRAN	ABSENT
RONALD INGE	NAY
JACQUE RIPPE	AYE
CARLETON RYFFEL	AYE
LELAND TAYLOR	AYE
RAE ANN WESSEL	AYE

**PART IV - BOARD OF COUNTY COMMISSIONERS
HEARING FOR TRANSMITTAL OF PROPOSED AMENDMENT**

DATE TRANSMITTAL HEARING: October 22, 2008

A. BOARD REVIEW:

B. BOARD ACTION AND FINDINGS OF FACT SUMMARY:

1. BOARD ACTION:

2. BASIS AND RECOMMENDED FINDINGS OF FACT:

C. VOTE:

A. BRIAN BIGELOW

TAMMARA HALL

ROBERT P. JANES

RAY JUDAH

FRANKLIN B. MANN

**PART V - DEPARTMENT OF COMMUNITY AFFAIRS OBJECTIONS,
RECOMMENDATIONS, AND COMMENTS (ORC) REPORT**

DATE OF ORC REPORT: _____

A. DCA OBJECTIONS, RECOMMENDATIONS AND COMMENTS

B. STAFF RECOMMENDATION

**PART VI - BOARD OF COUNTY COMMISSIONERS
HEARING FOR ADOPTION OF PROPOSED AMENDMENT**

DATE OF ADOPTION HEARING: _____

A. BOARD REVIEW:

B. BOARD ACTION AND FINDINGS OF FACT SUMMARY:

1. BOARD ACTION:

2. BASIS AND RECOMMENDED FINDINGS OF FACT:

C. VOTE:

A. BRIAN BIGELOW

TAMMARA HALL

ROBERT P. JANES

RAY JUDAH

FRANKLIN B. MANN

**Behavioral Assumptions for
Hurricane Evacuation Planning in the
Southwest Florida Region**

Prepared by

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HAZARDS MANAGEMENT GROUP, INC.
TALLAHASSEE, FL

For

Florida Department of Community Affairs
Division of Emergency Management
Tallahassee, FL

September 2001

Introduction

Evacuation outcomes depend upon many factors, including how the public responds. The public responses having the greatest impact upon an evacuation are:

1. The number of households which evacuate.
2. How promptly evacuees leave.
3. The number of evacuees who seek refuge in public shelters.
4. The number of evacuees who leave or attempt to leave the local area and where they go.
5. The number of vehicles used.

Deriving Correct Assumptions

There are at least three basic ways to derive behavioral assumptions:

Type of Refuge

Response in Georges

Except in Glades and Hendry Counties public shelter use was low in Georges (Table 40). Among evacuees from category 1 surge areas (which accounted for 76% of the evacuees) only 2% said they went to public shelters. In other locations in the coastal counties just 10% of the evacuees said they used public shelters. As in most locations the majority of evacuees (except those in the non-coastal counties) went to the homes of friends and relatives. About a fourth went to hotels and motels.

Table 40. Type of refuge used by evacuees in Georges, by county (percent of evacuees)

	Sarasota (N=82)	Charlotte (N=54)	Lee (N=66)	Collier (N=79)	Hendry (N=20)	Glades (N=17)
Public Shelter	4	6	8	3	25	18
Friend/Relative	67	54	58	61	25	41
Hotel/Motel	23	28	23	30	20	18
Other	6	13	12	6	30	24

Table 41. Type of refuge used by evacuees in Georges, by risk area (percent of evacuees)

	Cat 1 (N=205)	Cat 2/3 (2/5) (N=47)	Inland of Cat 2/3 (2/5) (N=29)	Non-Coastal (N=37)
Public Shelter	2	11	10	22
Friend/Relative	61	60	62	32
Hotel/Motel	27	23	21	19
Other	10	6	7	27

Of those evacuees who went to public shelters the great majority (81%) went to a shelter in their own neighborhood, and the remainder went to one in their own county (Table 42). More than half the homes of friends and families to which evacuees went were in their own county, but most of the hotel and motels used were out of county.

Table 42. Location of refuges in Georges (percent of evacuees by refuge)

	Public Shelter (N=21)	Friend/Relative (N=181)	Hotel/Motel (N=80)	Other (N=35)
Neighborhood	81	25	14	51
Own County	19	39	19	12
Other Florida	0	33	64	26
Out of State	0	3	4	11

Response in Andrew

Responses in Andrew in 1992 were similar to those in Georges. Most of the evacuation came from category 1 risk areas in Andrew, and just 2% of the evacuees in Collier and 9% in Lee said they went to public shelters.

Table 43. Location of refuges in Andrew (percent of evacuees by refuge)

	Public Shelter	Friend/Relative	Hotel/Motel	Other
Collier	2	63	29	6
Lee	9	48	33	9

Hypothetical Responses

Interviewees were asked what sort of refuge they would use in each of the four hypothetical hurricane threat scenarios described above. The percentages of respondents saying they would go to public shelters are indicated in Table 44 by risk area and in Table 45 by county. There was only slight variation among storm intensity scenarios. That is, in a given location, the percentage of intended evacuees saying they would go to public shelters was very similar in each storm scenario. It is likely, however, that the availability of public shelters in southwest Florida will decrease in stronger storms.



2008



Florida Department of Community Affairs
& Regional Planning Councils of Florida
STATEWIDE REGIONAL
EVACUATION STUDY PROGRAM:
Southwest Behavioral Survey Report

Authors:

Phillip E. Downs, Ph.D., Principal Investigator
Sonia Prusaitis, Senior Project Director
Joey St. Germain, Project Director
Kerr & Downs Research

With contributions from
Earl J. Baker, Ph.D.
Hazards Management Group



STATEWIDE
REGIONAL
EVACUATION
STUDY PROGRAM

Where did you evacuate to during Hurricane Charley?

It should be noted that relatively few residents in some evacuation zones answered this question, so responses should be interpreted cautiously. Six in ten residents (60%) of the Southwest region who evacuated during Hurricane Charley report going to friends or relatives, while 17% report going to a public shelter.

Where did you evacuate to during Hurricane Charley?

	n	Public shelter	Friend/relative	Hotel/motel	Other	Don't know
Southwest	331	17%	60%	14%	9%	0%
Category 1	103	16%	50%	23%	11%	0%
Category 2	70	11%	68%	18%	2%	1%
Category 3	43	8%	78%	11%	3%	0%
Category 4	11	40%	46%	9%	4%	0%
Category 5	12	40%	46%	9%	4%	0%
Non-Surge	16	29%	35%	13%	22%	0%
Inland	76	18%	66%	7%	9%	0%
Charlotte	57	17%	69%	4%	10%	0%
Category 1	22	21%	46%	11%	21%	0%
Category 2	14	0%	91%	0%	9%	0%
Category 3	10	7%	89%	0%	4%	0%
Category 4	8	43%	57%	0%	0%	0%
Category 5	8	43%	57%	0%	0%	0%
Non-Surge	3	0%	100%	0%	0%	0%
Collier	67	17%	49%	26%	8%	0%
Category 1	35	8%	47%	33%	12%	0%
Category 2	23	10%	69%	21%	0%	0%
Category 3	23	10%	69%	21%	0%	0%
Category 4	2	0%	51%	0%	49%	0%
Category 5	2	0%	51%	0%	49%	0%
Non-Surge	7	47%	21%	21%	11%	0%
Lee	81	19%	56%	14%	10%	1%
Category 1	24	25%	48%	18%	9%	0%
Category 2	33	16%	59%	21%	2%	2%
Category 3	14	0%	93%	0%	7%	0%
Category 4	7	71%	11%	12%	6%	0%
Category 5	7	71%	11%	12%	6%	0%
Non-Surge	3	0%	46%	0%	54%	0%
Sarasota	50	11%	60%	26%	3%	0%
Category 1	22	5%	64%	31%	0%	0%
Category 2	11	15%	60%	25%	0%	0%
Category 3	8	21%	71%	8%	0%	0%
Category 4	6	0%	66%	34%	0%	0%
Category 5	6	0%	66%	34%	0%	0%
Non-Surge	3	36%	0%	15%	49%	0%
Glades	37	14%	63%	13%	9%	1%
Hendry	39	22%	69%	1%	8%	0%

County Level Results

Hendry County residents (22%) are more likely to report going to public shelters during Hurricane Charley, while Hendry and Charlotte residents are more likely to report going to friends and relatives (69%).

9. Historical Evacuation Behavior

Where did you evacuate to during Hurricane Jeanne?

Over six in ten households (64%) that report evacuating during Hurricane Jeanne say they went to friends and relatives. Only 19% report evacuating to a public shelter.

County-Level Results

Proportionately more residents in Hendry County (28%) report going to a public shelter.

Where did you evacuate to during Hurricane Jeanne?

	n	Public shelter	Friend/relative	Hotel/motel	Other	Don't know
Southwest	67	19%	64%	7%	10%	0%
Glades	38	14%	63%	11%	13%	0%
Hendry	29	28%	64%	1%	6%	0%

Where did you evacuate to during Hurricane Frances?

Over six in ten residents in the Southwest region (62%) went to friends or relatives when they evacuated during Hurricane Frances. Only 16% report evacuating to a public shelter during Hurricane Frances, and only 12% went to a hotel or motel to escape Hurricane Frances.

County-Level Results

One in four residents of Hendry County (25%) report going to a public shelter during Hurricane Frances.

Where did you evacuate to during Hurricane Frances?

	n	Public shelter	Friend/relative	Hotel/motel	Other	Don't know
Southwest	102	16%	62%	12%	10%	0%
Category 1	12	0%	57%	8%	35%	0%
Category 2	5	27%	73%	0%	0%	0%
Category 3	4	45%	16%	39%	0%	0%
Category 4	1	0%	100%	0%	0%	0%
Category 5	1	0%	100%	0%	0%	0%
Non-Surge	2	70%	0%	30%	0%	0%
Inland	77	15%	63%	13%	9%	0%
Sarasota	25	19%	56%	10%	15%	0%
Category 1	12	0%	57%	8%	35%	0%
Category 2	5	27%	73%	0%	0%	0%
Category 3	4	45%	16%	39%	0%	0%
Category 4	2	0%	100%	0%	0%	0%
Category 5	2	0%	100%	0%	0%	0%
Non-Surge	2	70%	0%	30%	0%	0%
Glades	38	7%	58%	20%	15%	0%
Hendry	39	25%	69%	4%	2%	0%

Where did you evacuate to during Hurricane Ivan?

Residents of the Southwest region who report evacuating for Hurricane Ivan are equally likely to say they went to friends and relatives (35%) or to a hotel or motel (32%), while 15% went to public shelters.

County Level Results

Evacuating to public shelters was more prevalent in Collier County (30%), while evacuating to friends and relatives was most frequent in Charlotte County (49%).

Where did you evacuate to during Hurricane Ivan?

	n	Public shelter	Friend/relative	Hotel/motel	Other	Don't know
Southwest	118	15%	35%	32%	16%	2%
Category 1	45	15%	27%	43%	12%	3%
Category 2	29	4%	41%	38%	15%	2%
Category 3	14	2%	41%	49%	7%	0%
Category 4	7	4%	63%	18%	15%	0%
Category 5	12	4%	63%	18%	15%	0%
Non-Surge	11	51%	21%	0%	28%	0%
Charlotte	44	3%	49%	38%	7%	3%
Category 1	16	0%	40%	48%	4%	8%
Category 2	7	12%	59%	22%	7%	0%
Category 3	7	0%	45%	55%	0%	0%
Category 4		6%	52%	24%	18%	0%
Category 5	12	6%	52%	24%	18%	0%
Non-Surge	2	0%	100%	0%	0%	0%
Collier	37	30%	29%	28%	12%	1%
Category 1	19	24%	25%	34%	16%	2%
Category 2		5%	48%	47%	0%	0%
Category 3	10	5%	48%	47%	0%	0%
Category 4		0%	100%	0%	0%	0%
Category 5	2	0%	100%	0%	0%	0%
Non-Surge	6	69%	10%	0%	21%	0%
Lee	37	11%	28%	30%	29%	2%
Category 1	10	16%	16%	52%	16%	0%
Category 2	15	0%	27%	35%	32%	5%
Category 3	4	0%	10%	41%	49%	0%
Category 4		0%	80%	7%	13%	0%
Category 5	5	0%	80%	7%	13%	0%
Non-Surge	3	33%	22%	0%	45%	0%

9. Historical Evacuation Behavior

Where did you evacuate to during Hurricane Wilma?

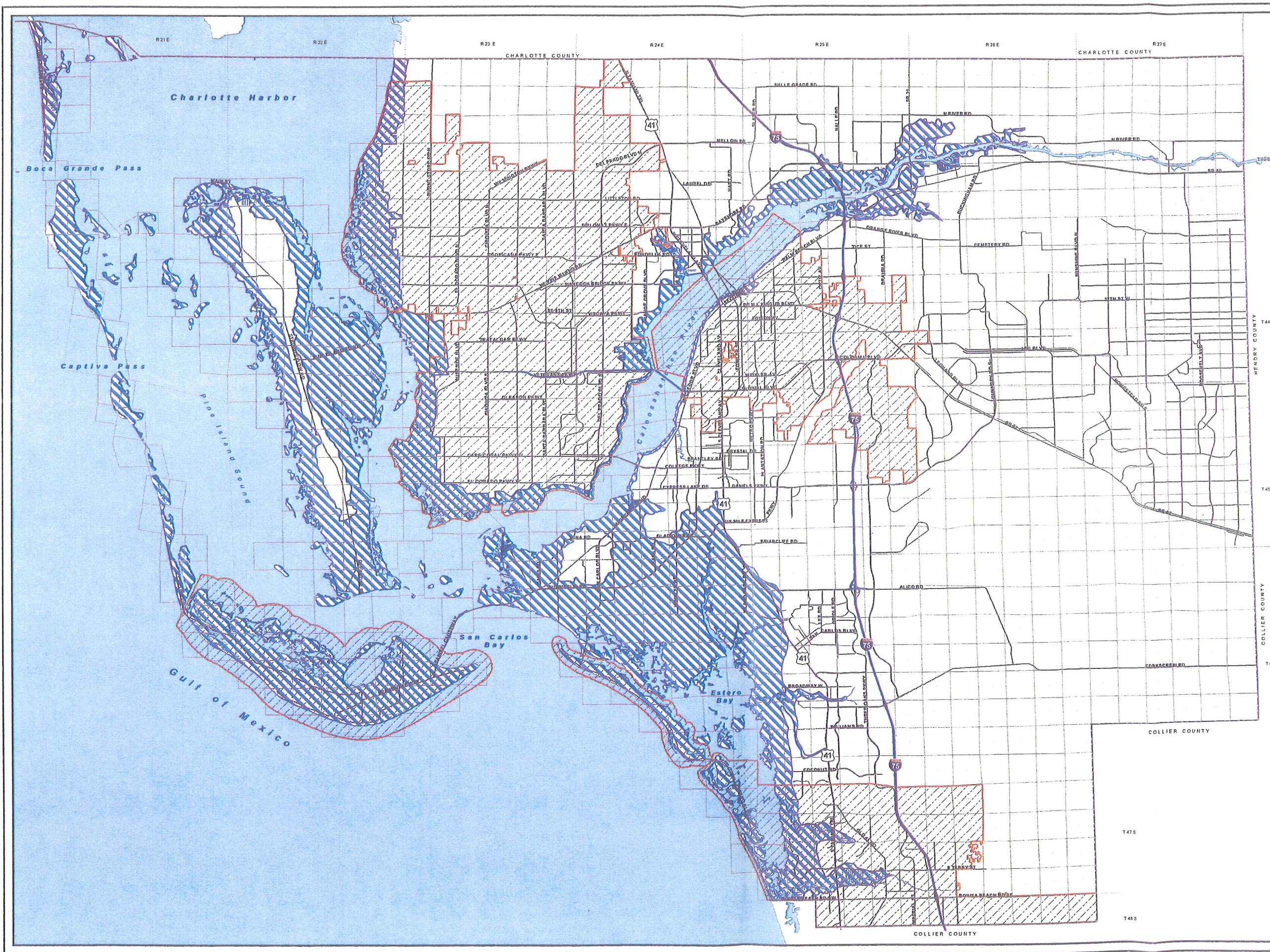
Over half of evacuees in Hurricane Wilma (52%) report going to friends and relatives, while 11% report evacuating to a public shelter.

County-Level Results

Incidence of evacuating to public shelters is highest in Sarasota (15%) and Collier (14%) counties. Reported evacuation to hotels/motels is greatest in Charlotte County (41%).

Where did you evacuate to during Hurricane Wilma?

	n	Public shelter	Friend/relative	Hotel/motel	Other	Don't know
Southwest	245	11%	52%	28%	8%	0%
Category 1	101	10%	54%	30%	5%	0%
Category 2	74	10%	55%	25%	10%	0%
Category 3	35	7%	60%	25%	8%	0%
Category 4	10	2%	57%	37%	4%	0%
Category 5	7	2%	57%	37%	4%	0%
Non-Surge	18	29%	18%	31%	18%	4%
Charlotte	25	2%	46%	41%	12%	0%
Category 1	8	0%	22%	62%	17%	0%
Category 2	10	0%	95%	0%	5%	0%
Category 3	3	0%	65%	0%	35%	0%
Category 4	4	6%	6%	88%	0%	0%
Category 5	4	6%	6%	88%	0%	0%
Non-Surge	0	-	-	-	-	-
Collier	130	14%	52%	28%	6%	1%
Category 1	70	11%	58%	28%	3%	0%
Category 2	39	8%	54%	29%	9%	0%
Category 3	3	8%	54%	29%	9%	0%
Category 4	6	0%	63%	31%	6%	0%
Category 5	6	0%	63%	31%	6%	0%
Non-Surge	15	37%	21%	29%	8%	5%
Lee	66	8%	53%	26%	14%	0%
Category 1	15	10%	46%	34%	10%	0%
Category 2	32	14%	47%	25%	14%	0%
Category 3	12	0%	86%	14%	0%	0%
Category 4	5	0%	84%	8%	8%	0%
Category 5	5	0%	84%	8%	8%	0%
Non-Surge	2	0%	0%	42%	58%	0%
Sarasota	24	15%	63%	22%	0%	0%
Category 1	8	10%	79%	10%	0%	0%
Category 2	7	21%	55%	25%	0%	0%
Category 3	6	19%	42%	39%	0%	0%
Category 4	2	0%	100%	0%	0%	0%
Category 5	2	0%	100%	0%	0%	0%
Non-Surge	1	0%	100%	0%	0%	0%

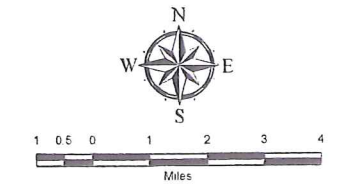


PROPOSED LEE COUNTY

COASTAL HIGH HAZARD AREA (CHHA)

Legend

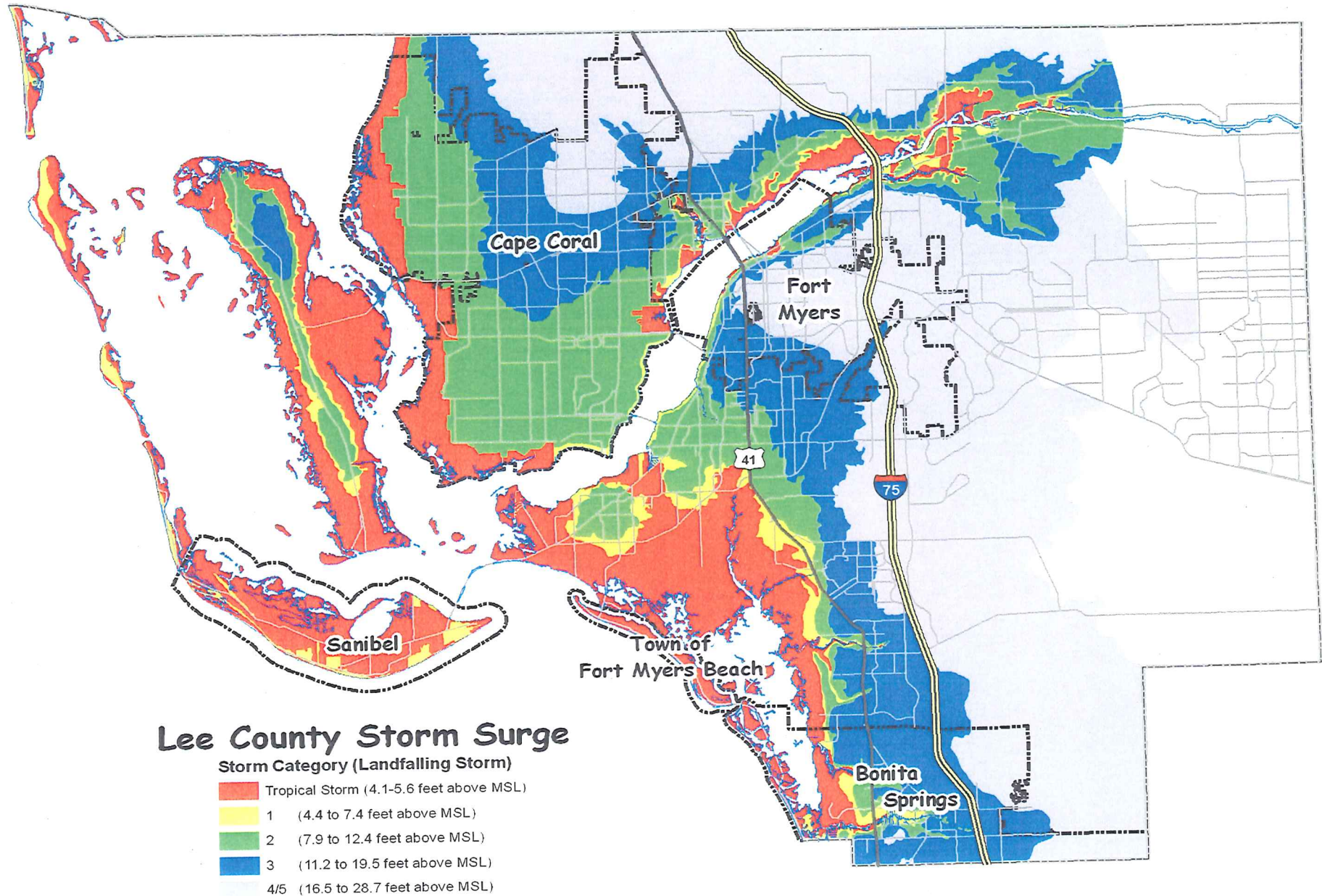
- Coastal High Hazard Area
- City Limits



Source: SLOSH Model
(Sea, Lake and Overland Surges from Hurricanes)
Run by Southwest Florida Regional Planning Council

Map Generated: September 2008
City Limits current to date of map generation

Lee Plan Map 5



CPA 2007-59
Hurricane Evacuation/Coastal High Hazard
Area

BoCC SPONSORED
AMENDMENT
TO THE

LEE COUNTY COMPREHENSIVE PLAN

THE LEE PLAN

DCA Transmittal Document

Lee County Planning Division
1500 Monroe Street
P.O. Box 398
Fort Myers, FL 33902-0398
(239) 533-8585

October 22, 2008

**LEE COUNTY
DIVISION OF PLANNING
STAFF REPORT FOR
COMPREHENSIVE PLAN AMENDMENT
CPA 2007-59**

✓	This Document Contains the Following Reviews:
✓	Staff Review
✓	Local Planning Agency Review and Recommendation
✓	Board of County Commissioners Hearing for Transmittal
	Staff Response to the DCA Objections, Recommendations, and Comments (ORC) Report
	Board of County Commissioners Hearing for Adoption

STAFF REPORT PREPARATION DATE: September 8, 2008

PART I - BACKGROUND AND STAFF RECOMMENDATION

A. SUMMARY OF APPLICATION

1. APPLICANT:

LEE COUNTY BOARD OF COUNTY COMMISSIONERS
REPRESENTED BY LEE COUNTY DIVISION OF PLANNING AND DIVISION OF
PUBLIC SAFETY

2. REQUEST:

Amend the Conservation and Coastal Management Element of the Lee Plan to establish a Category 5 hurricane evacuation standard, a shelter time standard, and mitigation measures for future plan amendments increasing density in the Coastal High Hazard Area. Amend the Future Land Use Map Series, Map 5, Coastal High Hazard Area, and the Glossary to redefine the Coastal High Hazard Area in accordance with Chapter 163.3178, F.S.

B. STAFF RECOMMENDATION AND FINDINGS OF FACT SUMMARY:

- 1. RECOMMENDATION:** Staff recommends that the Board of County Commissioners transmit this proposed amendment. The specific language modifications that staff recommends is provided below:

OBJECTIVE 109.1: EVACUATION. ~~By 1995, evacuation times will be restored to 1987 levels using the 1987 Southwest Florida Regional Hurricane Plan Update as guidance; and b By 2010, 2030 Lee County will work towards attaining a level of service for out of county hurricane evacuation for a Category 5 storm event that the clearance time portion of evacuation time will~~ does not exceed 18 hours.

POLICY 109.1.3: Critical roadway links causing congestion on evacuation routes for Category 1 through 3 hurricanes, ~~including S.R. 78,~~ will receive high priority for capital improvement expenditures.

POLICY 109.1.5: Comprehensive plan amendments that increase density within coastal high hazard areas must meet one of the following criteria:

- 1) The proposed amendment will not impede the objective of attaining the adopted level of service for out of county hurricane evacuation for a category 5 storm event (see Objective 109.1); or
- 2) Maintain a 12 hour evacuation time to shelter for a Category 5 storm event and ensure shelter space is available to accommodate the additional residents of the development allowed by the proposed comprehensive plan amendment; or
- 3) Provide appropriate mitigation to satisfy the provisions of the previous two paragraphs, which may include without limitation, the payment of money, contribution of land, or construction of hurricane shelters and transportation facilities. The developer must enter into a binding agreement to memorialize the mitigation plan prior to local development order approval.

POLICY 109.2.1: The percentage rate of the evacuation population to be used as the basis for in-county and on-site shelter demand will be ~~twenty-one (21)~~ ten (10) percent of the population at risk in the Hurricane Vulnerability Zone under a Category 3 5 storm hazard scenario ~~except for those developments with Lee County approved Hurricane Management Plans.~~ This rate will also be the target shelter capacity for a program to provide an emergency shelter supply within Lee County by the year ~~2010~~ 2030.

POLICY 109.2.6: ~~Upon adoption of Rule 9J-2, F.A.C., the county will petition the Florida Department of Community Affairs to designate Lee County as a "special hurricane preparedness district" so that shelter alternatives not consistent with state-wide policies can be implemented.~~

COASTAL HIGH HAZARD AREA - The category 1 evacuation zone storm surge line as delineated by the Southwest Florida Regional Planning Council Map 5 of the Future Land Use Map Series.

2. BASIS AND RECOMMENDED FINDINGS OF FACT:

- In 2006 legislation added requirements to Chapter 163.3178, F. S. requiring local governments to redefine the Coastal High Hazard Area (CHHA) from the Category 1 Storm Surge Evacuation Zone to the Category 1 Storm Surge Line.

- Chapter 163.3178, F.S. also requires local governments to establish criteria for an evacuation standard, a shelter time standard, and mitigation measures for proposed comprehensive plan amendments.
- The percentage rate of the evacuation population should also be updated to reflect the empirical evidence of actual shelter usage during hurricane evacuations carried out in Lee County.

C. BACKGROUND INFORMATION

This amendment was initiated by the Board of County Commissioners on September 25, 2007. The amendment addresses bills enacted by the Florida Legislature in response to the high level of hurricane activity. In 2006 legislation added requirements to Chapter 163.3178, F. S. requiring local governments to amend their future land use map and coastal management element of their comprehensive plans to depict the revised Coastal High Hazard Area (CHHA) and if necessary update evacuation times in the coastal management element if a level of service for out of county evacuation has not been established. In addition, the legislation established an evacuation standard, a shelter time standard, and mitigation measures for proposed comprehensive plan amendments as options for compliance with state coastal high hazard provisions.

Staff is proposing revisions to Objective 109.1 and several subsequent policies in the Conservation and Coastal Management Element of the Lee Plan, the definition of the CHHA in the Glossary of the Lee Plan, and Map 5, Coastal High Hazard Area, of the Future Land Use Map Series based on the changes made to 163.3178, F. S. Staff is also proposing a new policy, Policy 109.1.5, to include new requirements for proposed comprehensive plan amendments.

PART II - STAFF ANALYSIS

A. STAFF DISCUSSION

The proposed amendment to Objective 109.1 removes the outdated references for restoring evacuation times. The Conservation and Coastal Management Element currently maintains that the evacuation clearance time will not exceed 18 hours. The changes made to Chapter 163.3178, F.S. require the adopted level of service for out of county hurricane evacuation is maintained for a category 5 storm event as measured on the Saffir-Simpson scale. Staff proposes adding the following text to the Objective to specify that the evacuation time will be maintained for a category 5 storm event.

OBJECTIVE 109.1: EVACUATION. ~~By 1995, evacuation times will be restored to 1987 levels using the 1987 Southwest Florida Regional Hurricane Plan Update as guidance; and b By 2010, 2030 Lee County will work towards attaining a level of service for out of county hurricane evacuation for a Category 5 storm event that the clearance time portion of evacuation time will~~ does not exceed 18 hours.

Currently there is a state funded program to conduct regional evacuation studies across the state of Florida. The State Division of Emergency Management has contracted with Florida's Regional Planning Councils to carry out the studies in collaboration with local emergency management agencies. Upon completion of the studies staff will revisit Objective 109.1 to determine if an update to evacuation clearance time will be necessary based on the study findings.

The proposed amendment to Policy 109.1.3 removes the reference to Category 1 through 3 hurricanes. The policy now reflects that it will be necessary for all critical roadway links to receive high priority for capital improvement expenditures. The proposed text changes to Objective 109.1 are shown below:

POLICY 109.1.3: Critical roadway links causing congestion on evacuation routes ~~for Category 1 through 3 hurricanes, including S.R. 78,~~ will receive high priority for capital improvement expenditures.

Staff is proposing a new policy, Policy 109.1.5, to include requirements for proposed comprehensive plan amendments that increase density in the coastal high hazard areas. Per Chapter 163.3178, F.S., a proposed comprehensive plan amendment will be found in compliance with state coastal high hazard provisions if one of the following provisions are met: the adopted level of service for a Category 5 storm event is maintained; or a 12 hour evacuation time to shelter is maintained for a Category 5 storm event and shelter space for those residents contemplated by the proposed amendment is available; or appropriate mitigation is provided. Staff recommends adding new Policy 109.1.5 to the Conservation and Coastal Management Element as shown below:

POLICY 109.1.5: Comprehensive plan amendments that increase density within coastal high hazard areas must meet one of the following criteria:

- 3) The proposed amendment will not impede the objective of attaining the adopted level of service for out of county hurricane evacuation for a category 5 storm event (see Objective 109.1); or
- 4) Maintain a 12 hour evacuation time to shelter for a Category 5 storm event and ensure shelter space is available to accommodate the additional residents of the development allowed by the proposed comprehensive plan amendment; or
- 3) Provide appropriate mitigation to satisfy the provisions of the previous two paragraphs, which may include without limitation, the payment of money, contribution of land, or construction of hurricane shelters and transportation facilities. The developer must enter into a binding agreement to memorialize the mitigation plan prior to local development order approval.

The proposed amendment to 109.2.1 changes the percentage rate of the evacuation population from 21 percent to 10 percent. The text change also changes the population at risk under a category 5 storm and removes the reference to Hurricane Management Plans. The percentage change is based on empirical evidence of actual shelter usage during hurricane evacuations carried out in Lee County (see Attachment 1). The ten percent was derived by averaging the

shelter usage rates documented through post storm behavioral surveys for the following hurricanes: Andrew (1992), Georges (1998), Charley and Ivan (2004) and Wilma (2005). Staff finds that the reference to Hurricane Management Plans is not necessary due to the fact that Florida Statute and the Florida Administrative Code govern hurricane preparedness plans for hospitals and assisted living facilities. The proposed text changes to Objective 109.1 are shown below:

POLICY 109.2.1: The percentage rate of the evacuation population to be used as the basis for in-county and on-site shelter demand will be ~~twenty-one (21)~~ ten (10) percent of the population at risk in the Hurricane Vulnerability Zone under a Category 3 5 storm hazard scenario ~~except for those developments with Lee County approved Hurricane Management Plans.~~ This rate will also be the target shelter capacity for a program to provide an emergency shelter supply within Lee County by the year ~~2010~~ 2030.

The proposed deletion of 109.2.6 removes the statement that the county will petition the state to designate Lee County as a special hurricane preparedness district. Lee County has already achieved the special district status. In 1990, The Southwest Florida Regional Planning Council petitioned the Department of Community Affairs on behalf of Lee, Collier, Charlotte and Sarasota counties to be designated as a special hurricane preparedness district. The request identified why the four counties or region should be designated and established what types of hurricane preparedness mitigation measures will apply to developments within the district. The request for designation was based on the following types of generalized regional or county considerations:

- (a) The overall land elevation and the amount of area anticipated to flood during a hurricane event;
- (b) The transportation system and its ability to transport residents to safe areas within a reasonable time;
- (c) Less than twenty percent of a county's or region's hurricane shelters are available to the population during a 100-year or category three hurricane event; and
- (d) The percentage of the total population anticipated to evacuate

Based on a written request supported by data and information received from the Southwest Florida Regional Planning Council, the Department designated the area contained within the category three hurricane flood zone as identified in the Hurricane Evacuation Study Update, 1995 Southwest Florida Regional Planning Council within the counties of Sarasota, Charlotte, Lee, and Collier as a special hurricane preparedness district for developments of regional impact.

The policy proposed for deletion is shown below:

~~**POLICY 109.2.6:** Upon adoption of Rule 9J-2, F.A.C., the county will petition the Florida Department of Community Affairs to designate Lee County as a "special hurricane preparedness district" so that shelter alternatives not consistent with state-wide policies can be implemented.~~

The proposed amendment to the Glossary definition of the Coastal High Hazard Area changes the defined CHHA from the category 1 evacuation zone to the category 1 storm surge line. The changes made to Chapter 163.3178, F. S. define the coastal high hazard area as the area below the elevation of the category 1 storm surge line as established by a Sea, Lake and Overland Surges from Hurricanes (SLOSH) computerized storm surge model. This change will also require an amendment to Map 5, Coastal High Hazard Area, of the future land use map series reflecting the updated definition of the CHHA. The proposed Map 5 is attached as Attachment 2. The proposed changes to the Glossary definition are shown below:

COASTAL HIGH HAZARD AREA - The category 1 ~~evacuation zone~~ storm surge line as delineated by the ~~Southwest Florida Regional Planning Council~~ Map 5 of the Future Land Use Map Series.

B. CONCLUSIONS

Changes have been made to Chapter 163.3178, F.S. requiring local governments to amend their future land use map and coastal management element of their comprehensive plans to depict the revised Coastal High Hazard Area (CHHA) and to update requirements for proposed comprehensive plan amendments that increase density in coastal high hazard areas. Lee Plan policy should reflect the changes made to Chapter 163.3178, F.S.

C. STAFF RECOMMENDATION

Planning staff recommends that the Board of County Commissioners transmit this proposed amendment. This recommendation is based upon the previously discussed issues and conclusions of this report. Staff recommends that the Conservation and Coastal Management Element and the Glossary of the Lee Plan be modified as provided below. Staff also recommends that Map 5, Coastal High Hazard Area, of the Future Land Use Map Series be modified as provided in Attachment 2.

OBJECTIVE 109.1: EVACUATION. ~~By 1995, eEvacuation times will be restored to 1987 levels using the 1987 Southwest Florida Regional Hurricane Plan Update as guidance; and b By 2010, 2030 Lee County will work towards attaining a level of service for out of county hurricane evacuation for a Category 5 storm event that the clearance time portion of evacuation time will~~ does not exceed 18 hours.

POLICY 109.1.3: Critical roadway links causing congestion on evacuation routes for ~~Category 1 through 3 hurricanes, including S.R. 78,~~ will receive high priority for capital improvement expenditures.

POLICY 109.1.5: Comprehensive plan amendments that increase density within coastal high hazard areas must meet one of the following criteria:

- 5) The proposed amendment will not impede the objective of attaining the adopted level of service for out of county hurricane evacuation for a category 5 storm event (see Objective 109.1); or

- 6) Maintain a 12 hour evacuation time to shelter for a Category 5 storm event and ensure shelter space is available to accommodate the additional residents of the development allowed by the proposed comprehensive plan amendment; or
- 3) Provide appropriate mitigation to satisfy the provisions of the previous two paragraphs, which may include without limitation, the payment of money, contribution of land, or construction of hurricane shelters and transportation facilities. The developer must enter into a binding agreement to memorialize the mitigation plan prior to local development order approval.

POLICY 109.2.1: The percentage rate of the evacuation population to be used as the basis for in-county and on-site shelter demand will be ~~twenty-one (21)~~ ten (10) percent of the population at risk in the Hurricane Vulnerability Zone under a Category 3 5 storm hazard scenario ~~except for those developments with Lee County approved Hurricane Management Plans.~~ This rate will also be the target shelter capacity for a program to provide an emergency shelter supply within Lee County by the year ~~2010~~ 2030.

POLICY 109.2.6: ~~Upon adoption of Rule 9J-2, F.A.C., the county will petition the Florida Department of Community Affairs to designate Lee County as a "special hurricane preparedness district" so that shelter alternatives not consistent with state-wide policies can be implemented.~~

COASTAL HIGH HAZARD AREA - The category 1 ~~evacuation zone~~ storm surge line as delineated by the ~~Southwest Florida Regional Planning Council~~ Map 5 of the Future Land Use Map Series.

PART III - LOCAL PLANNING AGENCY REVIEW AND RECOMMENDATION

DATE OF PUBLIC HEARING: September 22, 2008

A. LOCAL PLANNING AGENCY REVIEW

At the September 22nd meeting the Local Planning Agency reviewed a previous draft of the proposed amendment. Upon closer examination, staff found that the previous staff report was not responsive to the changes dictated by the change in legislation. Therefore staff has issued a revised report as the recommended transmittal document. The revised report reflects the recommended amendments to the plan based on the dictates of the statute.

At the September 22nd meeting, planning staff gave a brief presentation concerning the proposed amendment. Staff also noted that a map depicting Lee County Storm Surge will be attached to the report for informational purposes. The map has been attached as Attachment 3. One of members of the LPA expressed concern with the proposed amendment as it would apply to a Category 5 storm event which encompasses a majority of the County and asked what our evacuation time frame is. Public Safety staff indicated that evacuation time currently exceeds the 18 hour time frame. Staff indicated that the ability to mitigate the impact of new development allows the ability to meet the intent of the legislation. Another member of the LPA asked how close the County is in achieving the onsite shelter demand. Public Safety staff indicated that the County is behind with the current level of service and that the proposed amendment changes the percentage from 21% to 10% based on empirical evidence. This member of the LPA asked what the County is doing to increase shelter capacity. Public Safety staff responded that there currently is an all hazards MSTU levied. A portion of the levied funds go to improving buildings that serve as shelters. Currently, with the reduction in school students in Lee County schools funding has dropped. Public Safety staff stated that the County is focusing on churches and community centers for shelter space. A motion was made and seconded to recommend transmittal of the proposed amendment. The LPA recommended transmittal of the amendment in support of the required statutory changes. One member of the LPA noted they could not support the amendment as drafted. The votes for the September 22nd meeting are reflected below.

At the October 9th, 2008 LPA meeting staff provided an update to LPA under the "other business" item on the LPA agenda. The proposed revision to the staff recommendation was presented verbally and in writing. One member of the LPA asked for clarification regarding the deletion of the reference to S.R. 78. The deletion was included in the proposal the LPA reviewed on September 22nd as well. Staff explained that this was an effort to clarify that all roadway links causing congestion on evacuation routes will receive high priority. Public Safety staff clarified that the reference was placed in the policy when there was concerns over funding S.R. 78 from Bayshore Road to I-75 and this is no longer a concern since the road has been improved. Public safety staff also clarified that Lee County has coordinated with the Sheriff's Office to ensure that in an emergency S.R. 78 in the western portion of Lee County will become one way in order to route outbound traffic east.

The LPA reviewed the revised amendment language and found no issues with the proposal.

B. LOCAL PLANNING AGENCY RECOMMENDATION AND FINDINGS OF FACT SUMMARY

1. **RECOMMENDATION:** The LPA recommends that the Board of County Commissioners transmit the proposed amendment.
2. **BASIS AND RECOMMENDED FINDINGS OF FACT:** The majority of the LPA accepted the findings of fact as advanced by the staff.

C. VOTE BASED ON THE PRESENTATION OF SEPTEMBER 22, 2008:

NOEL ANDRESS	<u>AYE</u>
LES COCHRAN	<u>ABSENT</u>
RONALD INGE	<u>NAY</u>
JACQUE RIPPE	<u>AYE</u>
CARLETON RYFFEL	<u>AYE</u>
LELAND TAYLOR	<u>AYE</u>
RAE ANN WESSEL	<u>AYE</u>

**PART IV - BOARD OF COUNTY COMMISSIONERS
HEARING FOR TRANSMITTAL OF PROPOSED AMENDMENT**

DATE TRANSMITTAL HEARING: October 22, 2008

A. BOARD REVIEW: The Board of County Commissioners provided no discussion concerning the proposed plan amendment. No public input was provided concerning the proposed plan amendment. This item was approved on the consent agenda.

B. BOARD ACTION AND FINDINGS OF FACT SUMMARY:

1. **BOARD ACTION:** The Board of County Commissioners voted to transmit the proposed plan amendment.
2. **BASIS AND RECOMMENDED FINDINGS OF FACT:** The Board accepted the findings of fact as advanced by staff and the LPA.

C. VOTE:

A. BRIAN BIGELOW	AYE
TAMMARA HALL	AYE
ROBERT P. JANES	AYE
RAY JUDAH	AYE
FRANKLIN B. MANN	AYE

**PART V - DEPARTMENT OF COMMUNITY AFFAIRS OBJECTIONS,
RECOMMENDATIONS, AND COMMENTS (ORC) REPORT**

DATE OF ORC REPORT: _____

A. DCA OBJECTIONS, RECOMMENDATIONS AND COMMENTS

B. STAFF RECOMMENDATION

**PART VI - BOARD OF COUNTY COMMISSIONERS
HEARING FOR ADOPTION OF PROPOSED AMENDMENT**

DATE OF ADOPTION HEARING: _____

A. BOARD REVIEW:

B. BOARD ACTION AND FINDINGS OF FACT SUMMARY:

1. BOARD ACTION:

2. BASIS AND RECOMMENDED FINDINGS OF FACT:

C. VOTE:

A. BRIAN BIGELOW

TAMMARA HALL

ROBERT P. JANES

RAY JUDAH

FRANKLIN B. MANN

**Behavioral Assumptions for
Hurricane Evacuation Planning in the
Southwest Florida Region**

Prepared by

EARL J. BAKER, PH. D.
HAZARDS MANAGEMENT GROUP, INC.
TALLAHASSEE, FL

For

Florida Department of Community Affairs
Division of Emergency Management
Tallahassee, FL

September 2001

Introduction

Evacuation outcomes depend upon many factors, including how the public responds. The public responses having the greatest impact upon an evacuation are:

1. The number of households which evacuate.
2. How promptly evacuees leave.
3. The number of evacuees who seek refuge in public shelters.
4. The number of evacuees who leave or attempt to leave the local area and where they go.
5. The number of vehicles used.

Deriving Correct Assumptions

There are at least three basic ways to derive behavioral assumptions:

Type of Refuge

Response in Georges

Except in Glades and Hendry Counties public shelter use was low in Georges (Table 40). Among evacuees from category 1 surge areas (which accounted for 76% of the evacuees) only 2% said they went to public shelters. In other locations in the coastal counties just 10% of the evacuees said they used public shelters. As in most locations the majority of evacuees (except those in the non-coastal counties) went to the homes of friends and relatives. About a fourth went to hotels and motels.

Table 40. Type of refuge used by evacuees in Georges, by county (percent of evacuees)

	Sarasota (N=82)	Charlotte (N=54)	Lee (N=66)	Collier (N=79)	Hendry (N=20)	Glades (N=17)
Public Shelter	4	6	8	3	25	18
Friend/Relative	67	54	58	61	25	41
Hotel/Motel	23	28	23	30	20	18
Other	6	13	12	6	30	24

Table 41. Type of refuge used by evacuees in Georges, by risk area (percent of evacuees)

	Cat 1 (N=205)	Cat 2/3 (2/5) (N=47)	Inland of Cat 2/3 (2/5) (N=29)	Non-Coastal (N=37)
Public Shelter	2	11	10	22
Friend/Relative	61	60	62	32
Hotel/Motel	27	23	21	19
Other	10	6	7	27

Of those evacuees who went to public shelters the great majority (81%) went to a shelter in their own neighborhood, and the remainder went to one in their own county (Table 42). More than half the homes of friends and families to which evacuees went were in their own county, but most of the hotel and motels used were out of county.

Table 42. Location of refuges in Georges (percent of evacuees by refuge)

	Public Shelter (N=21)	Friend/Relative (N=181)	Hotel/Motel (N=80)	Other (N=35)
Neighborhood	81	25	14	51
Own County	19	39	19	12
Other Florida	0	33	64	26
Out of State	0	3	4	11

Response in Andrew

Responses in Andrew in 1992 were similar to those in Georges. Most of the evacuation came from category 1 risk areas in Andrew, and just 2% of the evacuees in Collier and 9% in Lee said they went to public shelters.

Table 43. Location of refuges in Andrew (percent of evacuees by refuge)

	Public Shelter	Friend/Relative	Hotel/Motel	Other
Collier	2	63	29	6
Lee	9	48	33	9

Hypothetical Responses

Interviewees were asked what sort of refuge they would use in each of the four hypothetical hurricane threat scenarios described above. The percentages of respondents saying they would go to public shelters are indicated in Table 44 by risk area and in Table 45 by county. There was only slight variation among storm intensity scenarios. That is, in a given location, the percentage of intended evacuees saying they would go to public shelters was very similar in each storm scenario. It is likely, however, that the availability of public shelters in southwest Florida will decrease in stronger storms.



2008

Florida Department of Community Affairs
& Regional Planning Councils of Florida
STATEWIDE REGIONAL
EVACUATION STUDY PROGRAM:
Southwest Behavioral Survey Report

Authors:

Phillip E. Downs, Ph.D., Principal Investigator
Sonia Prusaitis, Senior Project Director
Joey St. Germain, Project Director
Kerr & Downs Research

With contributions from
Earl J. Baker, Ph.D.
Hazards Management Group



STATEWIDE
REGIONAL
EVACUATION
STUDY PROGRAM



Where did you evacuate to during Hurricane Charley?

It should be noted that relatively few residents in some evacuation zones answered this question, so responses should be interpreted cautiously. Six in ten residents (60%) of the Southwest region who evacuated during Hurricane Charley report going to friends or relatives, while 17% report going to a public shelter.

Where did you evacuate to during Hurricane Charley?

	n	Public shelter	Friend/relative	Hotel/motel	Other	Don't know
Southwest	331	17%	60%	14%	9%	0%
Category 1	103	16%	50%	23%	11%	0%
Category 2	70	11%	68%	18%	2%	1%
Category 3	43	8%	78%	13%	3%	0%
Category 4	11	40%	46%	9%	4%	0%
Category 5	12	40%	46%	9%	4%	0%
Non-Surge	16	29%	35%	13%	22%	0%
Inland	76	18%	66%	7%	9%	0%
Charlotte	57	17%	69%	4%	10%	0%
Category 1	22	21%	46%	11%	21%	0%
Category 2	14	0%	91%	0%	9%	0%
Category 3	10	7%	89%	0%	4%	0%
Category 4	8	43%	57%	0%	0%	0%
Category 5	8	43%	57%	0%	0%	0%
Non-Surge	3	0%	100%	0%	0%	0%
Collier	67	17%	49%	26%	8%	0%
Category 1	35	8%	47%	33%	12%	0%
Category 2	23	10%	69%	21%	0%	0%
Category 3	23	10%	69%	21%	0%	0%
Category 4	2	0%	51%	0%	49%	0%
Category 5	2	0%	51%	0%	49%	0%
Non-Surge	7	47%	21%	21%	11%	0%
Lee	81	19%	56%	14%	10%	1%
Category 1	24	25%	48%	18%	9%	0%
Category 2	33	16%	59%	21%	2%	2%
Category 3	14	0%	93%	0%	7%	0%
Category 4	7	71%	11%	12%	6%	0%
Category 5	7	71%	11%	12%	6%	0%
Non-Surge	3	0%	46%	0%	54%	0%
Sarasota	50	11%	60%	26%	3%	0%
Category 1	22	5%	64%	31%	0%	0%
Category 2	11	15%	60%	25%	0%	0%
Category 3	8	21%	71%	8%	0%	0%
Category 4	6	0%	66%	34%	0%	0%
Category 5	6	0%	66%	34%	0%	0%
Non-Surge	3	36%	0%	15%	49%	0%
Glades	37	14%	63%	13%	9%	1%
Hendry	39	22%	69%	1%	8%	0%

County Level Results

Hendry County residents (22%) are more likely to report going to public shelters during Hurricane Charley, while Hendry and Charlotte residents are more likely to report going to friends and relatives (69%).

9. Historical Evacuation Behavior

Where did you evacuate to during Hurricane Jeanne?

Over six in ten households (64%) that report evacuating during Hurricane Jeanne say they went to friends and relatives. Only 19% report evacuating to a public shelter.

County-Level Results

Proportionately more residents in Hendry County (28%) report going to a public shelter.

Where did you evacuate to during Hurricane Jeanne?

	n	Public shelter	Friend/relative	Hotel/motel	Other	Don't know
Southwest	67	19%	64%	7%	10%	0%
Glades	38	14%	63%	11%	13%	0%
Hendry	29	28%	64%	1%	6%	0%

Where did you evacuate to during Hurricane Frances?

Over six in ten residents in the Southwest region (62%) went to friends or relatives when they evacuated during Hurricane Frances. Only 16% report evacuating to a public shelter during Hurricane Frances, and only 12% went to a hotel or motel to escape Hurricane Frances.

County-Level Results

One in four residents of Hendry County (25%) report going to a public shelter during Hurricane Frances.

Where did you evacuate to during Hurricane Frances?

	n	Public shelter	Friend/relative	Hotel/motel	Other	Don't know
Southwest	102	16%	62%	12%	10%	0%
Category 1	12	0%	57%	8%	35%	0%
Category 2	5	27%	73%	0%	0%	0%
Category 3	4	45%	16%	39%	0%	0%
Category 4	1	0%	100%	0%	0%	0%
Category 5	1	0%	100%	0%	0%	0%
Non-Surge	2	70%	0%	30%	0%	0%
Inland	77	15%	63%	13%	9%	0%
Sarasota	25	19%	56%	10%	15%	0%
Category 1	12	0%	57%	8%	35%	0%
Category 2	5	27%	73%	0%	0%	0%
Category 3	4	45%	16%	39%	0%	0%
Category 4	2	0%	100%	0%	0%	0%
Category 5	2	0%	100%	0%	0%	0%
Non-Surge	2	70%	0%	30%	0%	0%
Glades	38	7%	58%	20%	15%	0%
Hendry	39	25%	69%	4%	2%	0%

Where did you evacuate to during Hurricane Ivan?

Residents of the Southwest region who report evacuating for Hurricane Ivan are equally likely to say they went to friends and relatives (35%) or to a hotel or motel (32%), while 15% went to public shelters.

County Level Results

Evacuating to public shelters was more prevalent in Collier County (30%), while evacuating to friends and relatives was most frequent in Charlotte County (49%).

Where did you evacuate to during Hurricane Ivan?

	n	Public shelter	Friend/relative	Hotel/motel	Other	Don't know
Southwest	118	15%	35%	32%	16%	2%
Category 1	45	15%	27%	43%	12%	3%
Category 2	29	4%	43%	38%	15%	2%
Category 3	14	2%	43%	49%	7%	0%
Category 4	7	4%	63%	18%	15%	0%
Category 5	12	4%	63%	18%	15%	0%
Non-Surge	11	51%	23%	0%	28%	0%
Charlotte	44	3%	49%	38%	7%	3%
Category 1	16	0%	40%	48%	4%	8%
Category 2	7	12%	59%	22%	7%	0%
Category 3	7	0%	45%	55%	0%	0%
Category 4	12	6%	52%	24%	18%	0%
Category 5	12	6%	52%	24%	18%	0%
Non-Surge	2	0%	100%	0%	0%	0%
Collier	37	30%	29%	28%	12%	1%
Category 1	19	24%	25%	34%	16%	2%
Category 2	10	5%	48%	47%	0%	0%
Category 3	10	5%	48%	47%	0%	0%
Category 4	2	0%	100%	0%	0%	0%
Category 5	2	0%	100%	0%	0%	0%
Non-Surge	6	69%	10%	0%	21%	0%
Lee	37	11%	28%	30%	29%	2%
Category 1	10	16%	16%	52%	16%	0%
Category 2	15	0%	27%	35%	32%	5%
Category 3	4	0%	10%	41%	49%	0%
Category 4	5	0%	80%	7%	13%	0%
Category 5	5	0%	80%	7%	13%	0%
Non-Surge	3	33%	22%	0%	45%	0%

9. Historical Evacuation Behavior

Where did you evacuate to during Hurricane Wilma?

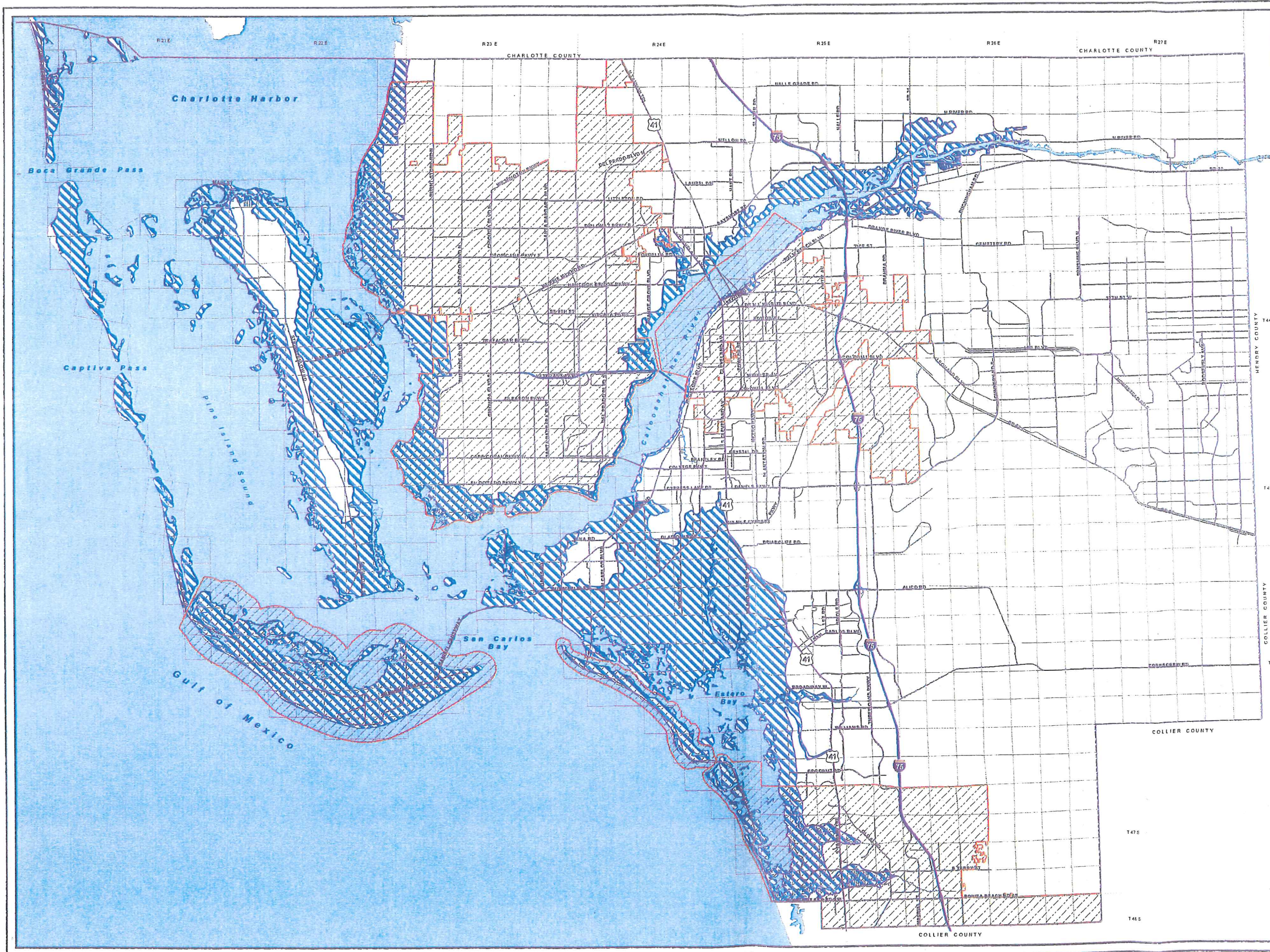
Over half of evacuees in Hurricane Wilma (52%) report going to friends and relatives, while 11% report evacuating to a public shelter.

County-Level Results

Incidence of evacuating to public shelters is highest in Sarasota (15%) and Collier (14%) counties. Reported evacuation to hotels/motels is greatest in Charlotte County (41%).

Where did you evacuate to during Hurricane Wilma?

	n	Public shelter	Friend/relative	Hotel/motel	Other	Don't know
Southwest	245	11%	52%	28%	8%	0%
Category 1	101	10%	54%	30%	5%	0%
Category 2	74	10%	55%	25%	10%	0%
Category 3	35	7%	60%	25%	8%	0%
Category 4	10	2%	57%	37%	4%	0%
Category 5	7	2%	57%	37%	4%	0%
Non-Surge	18	29%	18%	31%	18%	4%
Charlotte	25	2%	46%	41%	12%	0%
Category 1	8	0%	22%	62%	17%	0%
Category 2	10	0%	95%	0%	5%	0%
Category 3	3	0%	65%	0%	35%	0%
Category 4	4	6%	6%	88%	0%	0%
Category 5	4	6%	6%	88%	0%	0%
Non-Surge	0					
Collier	130	14%	52%	28%	6%	1%
Category 1	70	11%	58%	28%	3%	0%
Category 2	39	8%	54%	29%	9%	0%
Category 3	39	8%	54%	29%	9%	0%
Category 4	6	0%	63%	31%	6%	0%
Category 5	6	0%	63%	31%	6%	0%
Non-Surge	15	37%	21%	29%	8%	5%
Lee	66	8%	53%	26%	14%	0%
Category 1	15	10%	46%	34%	10%	0%
Category 2	32	14%	47%	25%	14%	0%
Category 3	12	0%	86%	14%	0%	0%
Category 4	5	0%	84%	8%	8%	0%
Category 5	5	0%	84%	8%	8%	0%
Non-Surge	2	0%	0%	42%	58%	0%
Sarasota	24	15%	63%	22%	0%	0%
Category 1	8	10%	79%	10%	0%	0%
Category 2	7	21%	55%	25%	0%	0%
Category 3	6	19%	42%	39%	0%	0%
Category 4	2	0%	100%	0%	0%	0%
Category 5	2	0%	100%	0%	0%	0%
Non-Surge	1	0%	100%	0%	0%	0%

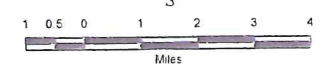


PROPOSED LEE COUNTY

COASTAL HIGH HAZARD AREA (CHHA)

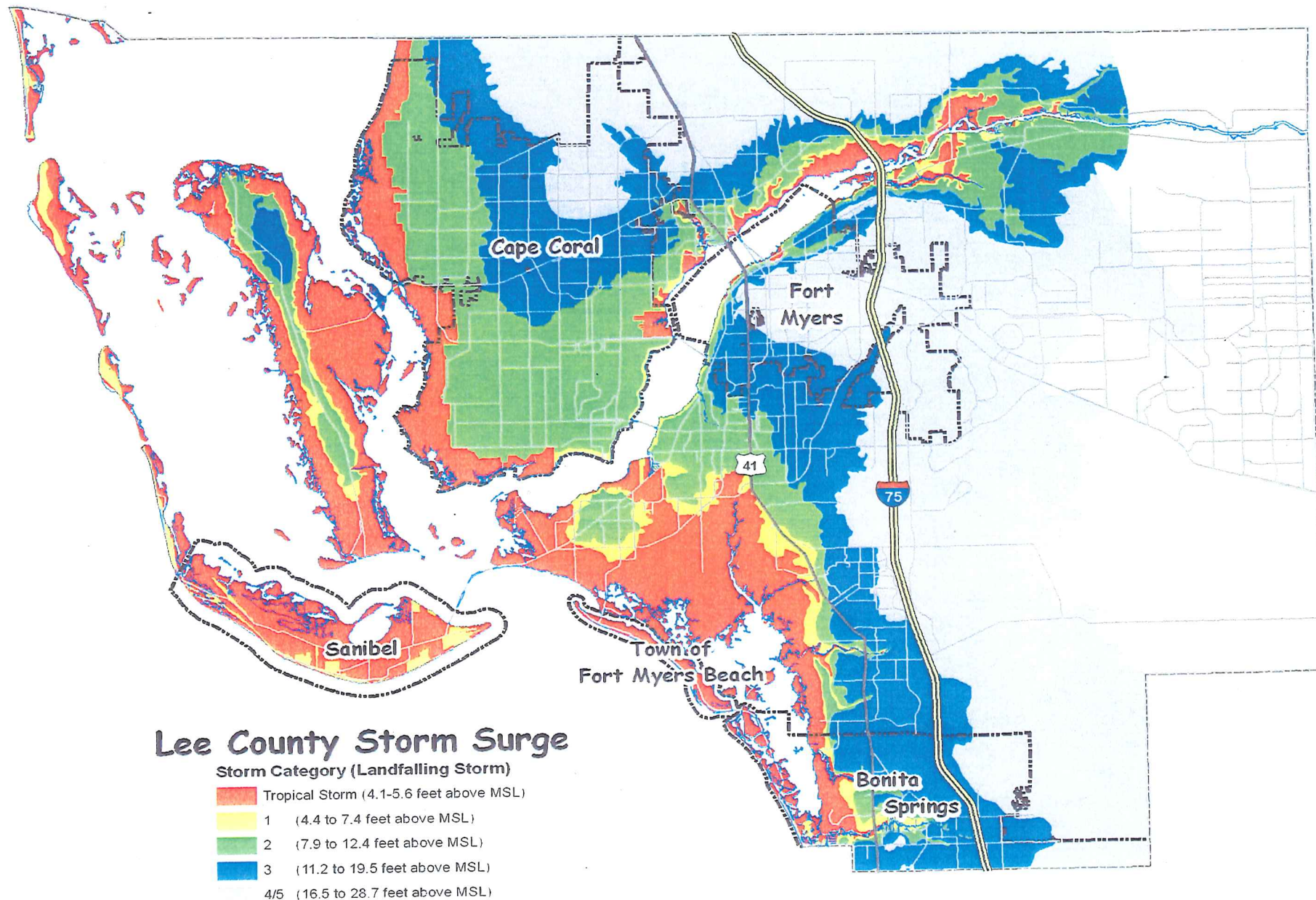
Legend

-  Coastal High Hazard Area
-  City Limits



Source: SLOSH Model
(Sea, Lake and Overland Surges from Hurricanes)
Run by Southwest Florida Regional Planning Council
Map Generated: September 2008
City Limits current to date of map generation

Lee Plan Map 5



CPA 2007-59
Hurricane Evacuation/Coastal High Hazard
Area

BoCC SPONSORED
AMENDMENT
TO THE

LEE COUNTY COMPREHENSIVE PLAN

THE LEE PLAN

BoCC Public Hearing Document
for the
February 25th Adoption Hearing

Lee County Planning Division
1500 Monroe Street
P.O. Box 398
Fort Myers, FL 33902-0398
(239) 533-8585

January 16, 2009

**LEE COUNTY
DIVISION OF PLANNING
STAFF REPORT FOR
COMPREHENSIVE PLAN AMENDMENT
CPA 2007-59**

✓	This Document Contains the Following Reviews:
✓	Staff Review
✓	Local Planning Agency Review and Recommendation
✓	Board of County Commissioners Hearing for Transmittal
✓	Staff Response to the DCA Objections, Recommendations, and Comments (ORC) Report
	Board of County Commissioners Hearing for Adoption

STAFF REPORT PREPARATION DATE: September 8, 2008

PART I - BACKGROUND AND STAFF RECOMMENDATION

A. SUMMARY OF APPLICATION

1. APPLICANT:

LEE COUNTY BOARD OF COUNTY COMMISSIONERS
REPRESENTED BY LEE COUNTY DIVISION OF PLANNING AND DIVISION OF
PUBLIC SAFETY

2. REQUEST:

Amend the Conservation and Coastal Management Element of the Lee Plan to establish a Category 5 hurricane evacuation standard, a shelter time standard, and mitigation measures for future plan amendments increasing density in the Coastal High Hazard Area. Amend the Future Land Use Map Series, Map 5, Coastal High Hazard Area, and the Glossary to redefine the Coastal High Hazard Area in accordance with Chapter 163.3178, F.S.

B. REVISED STAFF RECOMMENDATION AND FINDINGS OF FACT SUMMARY:

- 1. RECOMMENDATION:** Staff recommends that the Board of County Commissioners adopt this proposed amendment. The specific language modifications that staff recommends is provided below:

OBJECTIVE 109.1: EVACUATION. ~~By 1995, evacuation times will be restored to 1987 levels using the 1987 Southwest Florida Regional Hurricane Plan Update as guidance; and b By 2010, 2030 Lee County will work towards attaining a level of service for out of county hurricane evacuation for a Category 5 storm event that the clearance time portion of evacuation time will~~ does not exceed 18 hours.

POLICY 109.1.3: Critical roadway links causing congestion on evacuation routes for Category 1 through 3 hurricanes, including S.R. 78, will receive high priority for capital improvement expenditures.

POLICY 109.1.5: Comprehensive plan amendments that increase density within coastal high hazard areas must meet one of the following criteria in accordance with Section 163.3178(9), F.S.:

- 1) The proposed amendment will not exceed a 16 hour ~~impede the objective of attaining the adopted level of service for out of county hurricane evacuation time for a category 5 storm event (see Objective 109.1); or~~
- 2) Maintain a 12 hour evacuation time to shelter for a Category 5 storm event and ensure shelter space is available to accommodate the additional residents of the development allowed by the proposed comprehensive plan amendment; or
- 3) Provide appropriate mitigation to satisfy the provisions of either of the previous two paragraphs, which may include without limitation, the payment of money, contribution of land, or construction of hurricane shelters and transportation facilities. The developer must enter into a binding agreement to memorialize the mitigation plan prior to local development order approval adoption of the plan amendment.

POLICY 109.2.1: The percentage rate of the evacuation population to be used as the basis for in-county and on-site shelter demand will be ~~twenty-one (21)~~ ten (10) percent of the population at risk in the Hurricane Vulnerability Zone under a Category 3 ~~5~~ storm hazard scenario ~~except for those developments with Lee County approved Hurricane Management Plans.~~ This rate will also be the target shelter capacity for a program to provide an emergency shelter supply within Lee County by the year ~~2010~~ 2030.

POLICY 109.2.6: ~~Upon adoption of Rule 9J-2, F.A.C., the county will petition the Florida Department of Community Affairs to designate Lee County as a "special hurricane preparedness district" so that shelter alternatives not consistent with state-wide policies can be implemented.~~

COASTAL HIGH HAZARD AREA - The area below the elevation of the category 1 evacuation zone storm surge line as delineated by the Southwest Florida Regional Planning Council Map 5 of the Future Land Use Map Series.

C. ORIGINAL STAFF RECOMMENDATION AND FINDINGS OF FACT SUMMARY:

1. **RECOMMENDATION:** Staff recommends that the Board of County Commissioners transmit this proposed amendment. The specific language modifications that staff recommends is provided below:

OBJECTIVE 109.1: EVACUATION. ~~By 1995, eEvacuation times will be restored to 1987 levels using the 1987 Southwest Florida Regional Hurricane Plan Update as guidance; and b By 2010; 2030 Lee County will work towards attaining a level of service for out of county hurricane evacuation for a Category 5 storm event that the clearanee time portion of evacuation time will does not exceed 18 hours.~~

POLICY 109.1.3: Critical roadway links causing congestion on evacuation routes for ~~Category 1 through 3 hurricanes, including S.R. 78,~~ will receive high priority for capital improvement expenditures.

POLICY 109.1.5: Comprehensive plan amendments that increase density within coastal high hazard areas must meet one of the following criteria:

- 1) The proposed amendment will not impede the objective of attaining the adopted level of service for out of county hurricane evacuation for a category 5 storm event (see Objective 109.1); or
- 2) Maintain a 12 hour evacuation time to shelter for a Category 5 storm event and ensure shelter space is available to accommodate the additional residents of the development allowed by the proposed comprehensive plan amendment; or
- 3) Provide appropriate mitigation to satisfy the provisions of the previous two paragraphs, which may include without limitation, the payment of money, contribution of land, or construction of hurricane shelters and transportation facilities. The developer must enter into a binding agreement to memorialize the mitigation plan prior to local development order approval.

POLICY 109.2.1: The percentage rate of the evacuation population to be used as the basis for in-county and on-site shelter demand will be ~~twenty-one (21)~~ ten (10) percent of the population at risk in the Hurricane Vulnerability Zone under a Category 3 5 storm hazard scenario ~~except for those developments with Lee County approved Hurricane Management Plans.~~ This rate will also be the target shelter capacity for a program to provide an emergency shelter supply within Lee County by the year ~~2010~~ 2030.

POLICY 109.2.6: ~~Upon adoption of Rule 9J-2, F.A.C., the county will petition the Florida Department of Community Affairs to designate Lee County as a "special hurricane preparedness district" so that shelter alternatives not consistent with state-wide policies can be implemented.~~

COASTAL HIGH HAZARD AREA - The category 1 ~~evacuation zone~~ storm surge line as delineated by the Southwest Florida Regional Planning Council Map 5 of the Future Land Use Map Series.

2. BASIS AND RECOMMENDED FINDINGS OF FACT:

- In 2006 legislation added requirements to Chapter 163.3178, F. S. requiring local governments to redefine the Coastal High Hazard Area (CHHA) from the Category 1 Storm Surge Evacuation Zone to the Category 1 Storm Surge Line.
- Chapter 163.3178, F.S. also requires local governments to establish criteria for an evacuation standard, a shelter time standard, and mitigation measures for proposed comprehensive plan amendments.
- The percentage rate of the evacuation population should also be updated to reflect the empirical evidence of actual shelter usage during hurricane evacuations carried out in Lee County.

C. BACKGROUND INFORMATION

This amendment was initiated by the Board of County Commissioners on September 25, 2007. The amendment addresses bills enacted by the Florida Legislature in response to the high level of hurricane activity. In 2006 legislation added requirements to Chapter 163.3178, F. S. requiring local governments to amend their future land use map and coastal management element of their comprehensive plans to depict the revised Coastal High Hazard Area (CHHA) and if necessary update evacuation times in the coastal management element if a level of service for out of county evacuation has not been established. In addition, the legislation established an evacuation standard, a shelter time standard, and mitigation measures for proposed comprehensive plan amendments as options for compliance with state coastal high hazard provisions.

Staff is proposing revisions to Objective 109.1 and several subsequent policies in the Conservation and Coastal Management Element of the Lee Plan, the definition of the CHHA in the Glossary of the Lee Plan, and Map 5, Coastal High Hazard Area, of the Future Land Use Map Series based on the changes made to 163.3178, F. S. Staff is also proposing a new policy, Policy 109.1.5, to include new requirements for proposed comprehensive plan amendments.

PART II - STAFF ANALYSIS

A. STAFF DISCUSSION

The proposed amendment to Objective 109.1 removes the outdated references for restoring evacuation times. The Conservation and Coastal Management Element currently maintains that the evacuation clearance time will not exceed 18 hours. The changes made to Chapter 163.3178, F.S. require the adopted level of service for out of county hurricane evacuation is maintained for a category 5 storm event as measured on the Saffir-Simpson scale. Staff proposes adding the following text to the Objective to specify that the evacuation time will be maintained for a category 5 storm event.

OBJECTIVE 109.1: EVACUATION. ~~By 1995, evacuation times will be restored to 1987 levels using the 1987 Southwest Florida Regional Hurricane Plan Update as guidance; and b By 2010, 2030 Lee County will work towards attaining a level of service for out of county hurricane evacuation for a Category 5 storm event that the clearance time portion of evacuation time will~~ does not exceed 18 hours.

Currently there is a state funded program to conduct regional evacuation studies across the state of Florida. The State Division of Emergency Management has contracted with Florida's Regional Planning Councils to carry out the studies in collaboration with local emergency management agencies. Upon completion of the studies staff will revisit Objective 109.1 to determine if an update to evacuation clearance time will be necessary based on the study findings.

The proposed amendment to Policy 109.1.3 removes the reference to Category 1 through 3 hurricanes. The policy now reflects that it will be necessary for all critical roadway links to receive high priority for capital improvement expenditures. The proposed text changes to Objective 109.1 are shown below:

POLICY 109.1.3: Critical roadway links causing congestion on evacuation routes ~~for Category 1 through 3 hurricanes, including S.R. 78,~~ will receive high priority for capital improvement expenditures.

Staff is proposing a new policy, Policy 109.1.5, to include requirements for proposed comprehensive plan amendments that increase density in the coastal high hazard areas. Per Chapter 163.3178, F.S., a proposed comprehensive plan amendment will be found in compliance with state coastal high hazard provisions if one of the following provisions are met: the adopted level of service for a Category 5 storm event is maintained; or a 12 hour evacuation time to shelter is maintained for a Category 5 storm event and shelter space for those residents contemplated by the proposed amendment is available; or appropriate mitigation is provided. Staff recommends adding new Policy 109.1.5 to the Conservation and Coastal Management Element as shown below:

POLICY 109.1.5: Comprehensive plan amendments that increase density within coastal high hazard areas must meet one of the following criteria:

- 1) The proposed amendment will not impede the objective of attaining the adopted level of service for out of county hurricane evacuation for a category 5 storm event (see Objective 109.1); or
- 2) Maintain a 12 hour evacuation time to shelter for a Category 5 storm event and ensure shelter space is available to accommodate the additional residents of the development allowed by the proposed comprehensive plan amendment; or
- 3) Provide appropriate mitigation to satisfy the provisions of the previous two paragraphs, which may include without limitation, the payment of money, contribution of land, or construction of hurricane shelters and transportation facilities. The developer must enter into a binding agreement to memorialize the mitigation plan prior to local development order approval.

The proposed amendment to 109.2.1 changes the percentage rate of the evacuation population from 21 percent to 10 percent. The text change also changes the population at risk under a category 5 storm and removes the reference to Hurricane Management Plans. The percentage change is based on empirical evidence of actual shelter usage during hurricane evacuations carried out in Lee County (see Attachment 1). The ten percent was derived by averaging the shelter usage rates documented through post storm behavioral surveys for the following hurricanes: Andrew (1992), Georges (1998), Charley and Ivan (2004) and Wilma (2005). Staff finds that the reference to Hurricane Management Plans is not necessary due to the fact that Florida Statute and the Florida Administrative Code govern hurricane preparedness plans for hospitals and assisted living facilities. The proposed text changes to Objective 109.1 are shown below:

POLICY 109.2.1: The percentage rate of the evacuation population to be used as the basis for in-county and on-site shelter demand will be ~~twenty-one (21)~~ ten (10) percent of the population at risk in the Hurricane Vulnerability Zone under a Category ~~3~~ 5 storm hazard scenario ~~except for those developments with Lee County approved Hurricane Management Plans.~~ This rate will also be the target shelter capacity for a program to provide an emergency shelter supply within Lee County by the year ~~2010~~ 2030.

The proposed deletion of 109.2.6 removes the statement that the county will petition the state to designate Lee County as a special hurricane preparedness district. Lee County has already achieved the special district status. In 1990, The Southwest Florida Regional Planning Council petitioned the Department of Community Affairs on behalf of Lee, Collier, Charlotte and Sarasota counties to be designated as a special hurricane preparedness district. The request identified why the four counties or region should be designated and established what types of hurricane preparedness mitigation measures will apply to developments within the district. The request for designation was based on the following types of generalized regional or county considerations:

- (a) The overall land elevation and the amount of area anticipated to flood during a hurricane event;
- (b) The transportation system and its ability to transport residents to safe areas within a reasonable time;
- (c) Less than twenty percent of a county's or region's hurricane shelters are available to the population during a 100-year or category three hurricane event; and
- (d) The percentage of the total population anticipated to evacuate

Based on a written request supported by data and information received from the Southwest Florida Regional Planning Council, the Department designated the area contained within the category three hurricane flood zone as identified in the Hurricane Evacuation Study Update, 1995 Southwest Florida Regional Planning Council within the counties of Sarasota, Charlotte, Lee, and Collier as a special hurricane preparedness district for developments of regional impact.

The policy proposed for deletion is shown below:

~~**POLICY 109.2.6:** Upon adoption of Rule 9J-2, F.A.C., the county will petition the Florida Department of Community Affairs to designate Lee County as a "special hurricane preparedness district" so that shelter alternatives not consistent with state-wide policies can be implemented.~~

The proposed amendment to the Glossary definition of the Coastal High Hazard Area changes the defined CHHA from the category 1 evacuation zone to the category 1 storm surge line. The changes made to Chapter 163.3178, F. S. define the coastal high hazard area as the area below the elevation of the category 1 storm surge line as established by a Sea, Lake and Overland Surges from Hurricanes (SLOSH) computerized storm surge model. This change will also require an amendment to Map 5, Coastal High Hazard Area, of the future land use map series reflecting the updated definition of the CHHA. The proposed Map 5 is attached as Attachment 2. The proposed changes to the Glossary definition are shown below:

COASTAL HIGH HAZARD AREA - The category 1 evacuation zone storm surge line as delineated by the Southwest Florida Regional Planning Council Map 5 of the Future Land Use Map Series.

B. CONCLUSIONS

Changes have been made to Chapter 163.3178, F.S. requiring local governments to amend their future land use map and coastal management element of their comprehensive plans to depict the revised Coastal High Hazard Area (CHHA) and to update requirements for proposed comprehensive plan amendments that increase density in coastal high hazard areas. Lee Plan policy should reflect the changes made to Chapter 163.3178, F.S.

C. STAFF RECOMMENDATION

Planning staff recommends that the Board of County Commissioners transmit this proposed amendment. This recommendation is based upon the previously discussed issues and conclusions of this report. Staff recommends that the Conservation and Coastal Management Element and the Glossary of the Lee Plan be modified as provided below. Staff also recommends that Map 5, Coastal High Hazard Area, of the Future Land Use Map Series be modified as provided in Attachment 2.

OBJECTIVE 109.1: EVACUATION. ~~By 1995, e~~Evacuation times will be restored to 1987 levels using the 1987 Southwest Florida Regional Hurricane Plan Update as guidance; and b By 2010, 2030 Lee County will work towards attaining a level of service for out of county hurricane evacuation for a Category 5 storm event that the clearance time portion of evacuation time will does not exceed 18 hours.

POLICY 109.1.3: Critical roadway links causing congestion on evacuation routes for Category 1 through 3 hurricanes, including S.R. 78, will receive high priority for capital improvement expenditures.

POLICY 109.1.5: Comprehensive plan amendments that increase density within coastal high hazard areas must meet one of the following criteria:

- 1) The proposed amendment will not impede the objective of attaining the adopted level of service for out of county hurricane evacuation for a category 5 storm event (see Objective 109.1); or
- 2) Maintain a 12 hour evacuation time to shelter for a Category 5 storm event and ensure shelter space is available to accommodate the additional residents of the development allowed by the proposed comprehensive plan amendment; or
- 3) Provide appropriate mitigation to satisfy the provisions of the previous two paragraphs, which may include without limitation, the payment of money, contribution of land, or construction of hurricane shelters and transportation facilities. The developer must enter into a binding agreement to memorialize the mitigation plan prior to local development order approval.

POLICY 109.2.1: The percentage rate of the evacuation population to be used as the basis for in-county and on-site shelter demand will be ~~twenty-one (21)~~ ten (10) percent of the population at risk in the Hurricane Vulnerability Zone under a Category 3 5 storm hazard scenario ~~except for those developments with Lee County approved Hurricane Management Plans.~~ This rate will also be the target shelter capacity for a program to provide an emergency shelter supply within Lee County by the year ~~2010~~ 2030.

POLICY 109.2.6: ~~Upon adoption of Rule 9J-2, F.A.C., the county will petition the Florida Department of Community Affairs to designate Lee County as a "special hurricane preparedness district" so that shelter alternatives not consistent with state-wide policies can be implemented.~~

COASTAL HIGH HAZARD AREA - The category 1 ~~evacuation zone~~ storm surge line as delineated by the Southwest Florida Regional Planning Council Map 5 of the Future Land Use Map Series.

PART III - LOCAL PLANNING AGENCY REVIEW AND RECOMMENDATION

DATE OF PUBLIC HEARING: September 22, 2008

A. LOCAL PLANNING AGENCY REVIEW

At the September 22nd meeting the Local Planning Agency reviewed a previous draft of the proposed amendment. Upon closer examination, staff found that the previous staff report was not responsive to the changes dictated by the change in legislation. Therefore staff has issued a revised report as the recommended transmittal document. The revised report reflects the recommended amendments to the plan based on the dictates of the statute.

At the September 22nd meeting, planning staff gave a brief presentation concerning the proposed amendment. Staff also noted that a map depicting Lee County Storm Surge will be attached to the report for informational purposes. The map has been attached as Attachment 3. One of members of the LPA expressed concern with the proposed amendment as it would apply to a Category 5 storm event which encompasses a majority of the County and asked what our evacuation time frame is. Public Safety staff indicated that evacuation time currently exceeds the 18 hour time frame. Staff indicated that the ability to mitigate the impact of new development allows the ability to meet the intent of the legislation. Another member of the LPA asked how close the County is in achieving the onsite shelter demand. Public Safety staff indicated that the County is behind with the current level of service and that the proposed amendment changes the percentage from 21% to 10% based on empirical evidence. This member of the LPA asked what the County is doing to increase shelter capacity. Public Safety staff responded that there currently is an all hazards MSTU levied. A portion of the levied funds go to improving buildings that serve as shelters. Currently, with the reduction in school students in Lee County schools funding has dropped. Public Safety staff stated that the County is focusing on churches and community centers for shelter space. A motion was made and seconded to recommend transmittal of the proposed amendment. The LPA recommended transmittal of the amendment in support of the required statutory changes. One member of the LPA noted they could not support the amendment as drafted. The votes for the September 22nd meeting are reflected below.

At the October 9th, 2008 LPA meeting staff provided an update to LPA under the "other business" item on the LPA agenda. The proposed revision to the staff recommendation was presented verbally and in writing. One member of the LPA asked for clarification regarding the deletion of the reference to S.R. 78. The deletion was included in the proposal the LPA reviewed on September 22nd as well. Staff explained that this was an effort to clarify that all roadway links causing congestion on evacuation routes will receive high priority. Public Safety staff clarified that the reference was placed in the policy when there was concerns over funding S.R. 78 from Bayshore Road to I-75 and this is no longer a concern since the road has been improved. Public safety staff also clarified that Lee County has coordinated with the Sheriff's Office to ensure that in an emergency S.R. 78 in the western portion of Lee County will become one way in order to route outbound traffic east.

The LPA reviewed the revised amendment language and found no issues with the proposal.

B. LOCAL PLANNING AGENCY RECOMMENDATION AND FINDINGS OF FACT SUMMARY

1. **RECOMMENDATION:** The LPA recommends that the Board of County Commissioners transmit the proposed amendment.
2. **BASIS AND RECOMMENDED FINDINGS OF FACT:** The majority of the LPA accepted the findings of fact as advanced by the staff.

C. VOTE BASED ON THE PRESENTATION OF SEPTEMBER 22, 2008:

NOEL ANDRESS	<u>AYE</u>
LES COCHRAN	<u>ABSENT</u>
RONALD INGE	<u>NAY</u>
JACQUE RIPPE	<u>AYE</u>
CARLETON RYFFEL	<u>AYE</u>
LELAND TAYLOR	<u>AYE</u>
RAE ANN WESSEL	<u>AYE</u>

**PART IV - BOARD OF COUNTY COMMISSIONERS
HEARING FOR TRANSMITTAL OF PROPOSED AMENDMENT**

DATE TRANSMITTAL HEARING: October 22, 2008

A. BOARD REVIEW: The Board of County Commissioners provided no discussion concerning the proposed plan amendment. No public input was provided concerning the proposed plan amendment. This item was approved on the consent agenda.

B. BOARD ACTION AND FINDINGS OF FACT SUMMARY:

- 1. BOARD ACTION:** The Board of County Commissioners voted to transmit the proposed plan amendment.
- 2. BASIS AND RECOMMENDED FINDINGS OF FACT:** The Board accepted the findings of fact as advanced by staff and the LPA.

C. VOTE:

A. BRIAN BIGELOW	AYE
TAMMARA HALL	AYE
ROBERT P. JANES	AYE
RAY JUDAH	AYE
FRANKLIN B. MANN	AYE

**PART V - DEPARTMENT OF COMMUNITY AFFAIRS OBJECTIONS,
RECOMMENDATIONS, AND COMMENTS (ORC) REPORT**

DATE OF ORC REPORT: January 16, 2009

A. DCA OBJECTIONS, RECOMMENDATIONS AND COMMENTS

The Department of Community Affairs has raised objections to proposed amendment CPA2007-59. The DCA objections are reproduced below:

Objection: *The proposed Future Land Use Map series Map 5 shows the revised CHHA as based on the SLOSH Model, and the proposed Glossary definition of the CHHA states: "The category 1 storm surge line as delineated by Map 5 of the Future Land Use Map Series." The proposed Glossary definition does not establish a meaningful and predictable guideline to define the CHHA consistent with Section 163.3178, F.S., because the Glossary defines the CHHA (which is an area) as a line rather than as the area below the elevation of the category 1 storm surge line as established by a Sea, Lake and Overland Surges from Hurricanes (SLOSH) computerized storm surge model consistent with Section 163.3178, F.S.*

Section 163.3178(9), F.S., establishes a 16 hour level of service standard for out of county hurricane for a Category 5 storm event. The proposed amendment revises Objective 109.1 to establish an 18 hour level of service standard for out of county hurricane evacuation for a Category 5 storm event and this is not consistent with the 16 hour standard of Section 163.3178(9). The proposed amendment adds new Policy 109.1.5, which establishes requirements for proposed comprehensive plan amendments that increase density in the Coastal High Hazard Area. Policy 109.1.5 is not consistent with Section 163.3178(9) F.S., because Policy 10.5.1.5(1 and 3) reference Objective 109.1, which has the 18 hour standard which is not consistent with Section 163.3178(9), F.S. In addition, Policy 109.1.5(1) includes language ("The proposed amendment will not impede...") that does not establish meaningful and predictable guidelines and standards to ensure that the adopted level of service for out-of-county hurricane evacuation is maintained for a category 5 storm event as measured on the Saffir-Simpson scale consistent with Section 163.3178(9), F.S. The proposed Policy 109.1.5(2) tracks Section 163.3178(9), F.S. The proposed Policy 109.1.5(3) is not consistent with Section 163.3178(9), F.S., because the policy does not ensure that the mitigation agreement is executed by the time of the plan amendment that increases density in the CHHA..

Rules 9J-5.005(2, 5 and 6); 9J-5.006(4); 9J-5.012(3), F.A.C.; and Sections 163.3177(2); 163.3177(6)(a); and 163.3178, F.S.

Recommendation: *Revise the Glossary to define the CHHA consistent with the requirements of Section 163.3178, F.S. Revise Objective 109.1 to utilize a 16 hour standard for out of county evacuation. Revise Policy 109.1.5(1) to establish meaningful and predictable guidelines and standards to ensure that the adopted level of service for out-of-county hurricane evacuation is maintained for a category 5 storm event as measured on the Saffir-Simpson scale consistent with Section 163.3178(9), F.S. Revise Policy 109.1.5(3) to ensure that the mitigation agreement is executed by the time of the plan amendment that increases density in the CHHA.*

B. STAFF DISCUSSION

The DCA has objected to the revised Glossary definition for the Coastal High Hazard Area stating the definition as it is written defines a line rather than an area. Staff has updated the definition to clarify the coastal high hazard area includes the area below the elevation of the category 1 storm surge line as shown below:

COASTAL HIGH HAZARD AREA - The area below the elevation of the category 1 ~~evacuation zone~~ storm surge line as delineated by the ~~Southwest Florida Regional Planning Council~~ Map 5 of the Future Land Use Map Series.

New Policy 109.1.5 establishes requirements for proposed plan amendments that would increase density in the coastal high hazard area. Section 163.3178(9), F.S. requires a 16 hour standard for such plan amendments. DCA has found this policy inconsistent because it refers to Objective 109.1 which includes the 18 hour level of service for hurricane evacuation. Staff has clarified through discussions with DCA that the 18 hour level of service for hurricane evacuation is allowed because it has been in the comprehensive plan since 1990. However, DCA staff clarified that per Section 163.3178(9), F.S. a 16 hour level of service for hurricane evacuation must be applied to plan amendments that would increase density in the coastal high hazard area. According to the DCA, this 16 hour requirement overrides even when a previous timeframe has been established in the comprehensive plan of local governments. In order to reflect this requirement for proposed comprehensive plan amendments staff has updated proposed Policy 109.1.5 to specify the 16 hour out of county evacuation time specifically for proposed comprehensive plan amendments, in the coastal high hazard area.

In addition, DCA has provided that the language proposed through Policy 109.1.5(1) does not establish meaningful and predictable guidelines and standards ensuring the level of service for hurricane evacuation is maintained for a category 5 storm event as it would apply to proposed comprehensive plan amendments. Staff has updated Policy 109.1.5(1) to clarify that a proposed amendment will not exceed the established out of county evacuation time.

DCA has also provided that Policy 109.1.5(3) does not ensure that a mitigation agreement is executed at the time of the plan amendment. Staff has removed the reference to local development order approval and replaced the language clarifying that mitigation will be agreed upon by the time of plan amendment adoption. Staff has also clarified that mitigation will satisfy either paragraph 1 or paragraph 2 of Policy 109.1.5.

Policy 109.1.5 has been updated as follows to address the DCA objections:

POLICY 109.1.5: Comprehensive plan amendments that increase density within coastal high hazard areas must meet one of the following criteria in accordance with Section 163.3178(9), F.S.:

- 1) The proposed amendment will not exceed a 16 hour ~~impede the objective of attaining the adopted level of service for~~ out of county hurricane evacuation time for a category 5 storm event (see Objective 109.1); or

- 2) Maintain a 12 hour evacuation time to shelter for a Category 5 storm event and ensure shelter space is available to accommodate the additional residents of the development allowed by the proposed comprehensive plan amendment; or
- 3) Provide appropriate mitigation to satisfy the provisions of either of the previous two paragraphs, which may include without limitation, the payment of money, contribution of land, or construction of hurricane shelters and transportation facilities. The developer must enter into a binding agreement to memorialize the mitigation plan prior to local development order approval adoption of the plan amendment.

C. STAFF RECOMMENDATION

Planning staff recommends that the Board of County Commissioners adopt the proposed Lee Plan amendment as follows:

OBJECTIVE 109.1: EVACUATION. ~~By 1995, evacuation times will be restored to 1987 levels using the 1987 Southwest Florida Regional Hurricane Plan Update as guidance; and b By 2010, 2030 Lee County will work towards attaining a level of service for out of county hurricane evacuation for a Category 5 storm event that the clearance time portion of evacuation time will does not exceed 18 hours.~~

POLICY 109.1.3: Critical roadway links causing congestion on evacuation routes for Category 1 through 3 hurricanes, including S.R. 78, will receive high priority for capital improvement expenditures.

POLICY 109.1.5: Comprehensive plan amendments that increase density within coastal high hazard areas must meet one of the following criteria in accordance with Section 163.3178(9), F.S.:

- 1) The proposed amendment will not exceed a 16 hour ~~impede the objective of attaining the adopted level of service for out of county hurricane evacuation time for a category 5 storm event (see Objective 109.1); or~~
- 2) Maintain a 12 hour evacuation time to shelter for a Category 5 storm event and ensure shelter space is available to accommodate the additional residents of the development allowed by the proposed comprehensive plan amendment; or
- 3) Provide appropriate mitigation to satisfy the provisions of either of the previous two paragraphs, which may include without limitation, the payment of money, contribution of land, or construction of hurricane shelters and transportation facilities. The developer must enter into a binding agreement to memorialize the mitigation plan prior to local development order approval adoption of the plan amendment.

POLICY 109.2.1: The percentage rate of the evacuation population to be used as the basis for in-county and on-site shelter demand will be ~~twenty-one (21)~~ ten (10) percent of the population at risk in the Hurricane Vulnerability Zone under a Category 3 5 storm hazard scenario ~~except for those developments with Lee County approved Hurricane Management Plans.~~ This rate will also be the target shelter

capacity for a program to provide an emergency shelter supply within Lee County by the year 2010 2030.

~~**POLICY 109.2.6:** Upon adoption of Rule 9J-2, F.A.C., the county will petition the Florida Department of Community Affairs to designate Lee County as a "special hurricane preparedness district" so that shelter alternatives not consistent with state-wide policies can be implemented.~~

COASTAL HIGH HAZARD AREA - The area below the elevation of the category 1 evacuation zone storm surge line as delineated by the Southwest Florida Regional Planning Council Map 5 of the Future Land Use Map Series.

**PART VI - BOARD OF COUNTY COMMISSIONERS
HEARING FOR ADOPTION OF PROPOSED AMENDMENT**

DATE OF ADOPTION HEARING: February 25, 2009

A. BOARD REVIEW:

B. BOARD ACTION AND FINDINGS OF FACT SUMMARY:

1. BOARD ACTION:

2. BASIS AND RECOMMENDED FINDINGS OF FACT:

C. VOTE:

A. BRIAN BIGELOW

TAMMARA HALL

ROBERT P. JANES

RAY JUDAH

FRANKLIN B. MANN

**Behavioral Assumptions for
Hurricane Evacuation Planning in the
Southwest Florida Region**

Prepared by

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For

Florida Department of Community Affairs
Division of Emergency Management
Tallahassee, FL

September 2001

Introduction

Evacuation outcomes depend upon many factors, including how the public responds. The public responses having the greatest impact upon an evacuation are:

1. The number of households which evacuate.
2. How promptly evacuees leave.
3. The number of evacuees who seek refuge in public shelters.
4. The number of evacuees who leave or attempt to leave the local area and where they go.
5. The number of vehicles used.

Deriving Correct Assumptions

There are at least three basic ways to derive behavioral assumptions:

Type of Refuge

Response in Georges

Except in Glades and Hendry Counties public shelter use was low in Georges (Table 40). Among evacuees from category 1 surge areas (which accounted for 76% of the evacuees) only 2% said they went to public shelters. In other locations in the coastal counties just 10% of the evacuees said they used public shelters. As in most locations the majority of evacuees (except those in the non-coastal counties) went to the homes of friends and relatives. About a fourth went to hotels and motels.

Table 40. Type of refuge used by evacuees in Georges, by county (percent of evacuees)

	Sarasota (N=82)	Charlotte (N=54)	Lee (N=66)	Collier (N=79)	Hendry (N=20)	Glades (N=17)
Public Shelter	4	6	8	3	25	18
Friend/Relative	67	54	58	61	25	41
Hotel/Motel	23	28	23	30	20	18
Other	6	13	12	6	30	24

Table 41. Type of refuge used by evacuees in Georges, by risk area (percent of evacuees)

	Cat 1 (N=205)	Cat 2/3 (2/5) (N=47)	Inland of Cat 2/3 (2/5) (N=29)	Non-Coastal (N=37)
Public Shelter	2	11	10	22
Friend/Relative	61	60	62	32
Hotel/Motel	27	23	21	19
Other	10	6	7	27

Of those evacuees who went to public shelters the great majority (81%) went to a shelter in their own neighborhood, and the remainder went to one in their own county (Table 42). More than half the homes of friends and families to which evacuees went were in their own county, but most of the hotel and motels used were out of county.

Table 42. Location of refuges in Georges (percent of evacuees by refuge)

	Public Shelter (N=21)	Friend/Relative (N=181)	Hotel/Motel (N=80)	Other (N=35)
Neighborhood	81	25	14	51
Own County	19	39	19	12
Other Florida	0	33	64	26
Out of State	0	3	4	11

Response in Andrew

Responses in Andrew in 1992 were similar to those in Georges. Most of the evacuation came from category 1 risk areas in Andrew, and just 2% of the evacuees in Collier and 9% in Lee said they went to public shelters.

Table 43. Location of refuges in Andrew (percent of evacuees by refuge)

	Public Shelter	Friend/Relative	Hotel/Motel	Other
Collier	2	63	29	6
Lee	9	48	33	9

Hypothetical Responses

Interviewees were asked what sort of refuge they would use in each of the four hypothetical hurricane threat scenarios described above. The percentages of respondents saying they would go to public shelters are indicated in Table 44 by risk area and in Table 45 by county. There was only slight variation among storm intensity scenarios. That is, in a given location, the percentage of intended evacuees saying they would go to public shelters was very similar in each storm scenario. It is likely, however, that the availability of public shelters in southwest Florida will decrease in stronger storms.



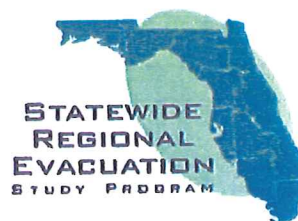
2008

Florida Department of Community Affairs
& Regional Planning Councils of Florida
STATEWIDE REGIONAL
EVACUATION STUDY PROGRAM:
Southwest Behavioral Survey Report

Authors:

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Where did you evacuate to during Hurricane Charley?

It should be noted that relatively few residents in some evacuation zones answered this question, so responses should be interpreted cautiously. Six in ten residents (60%) of the Southwest region who evacuated during Hurricane Charley report going to friends or relatives, while 17% report going to a public shelter.

Where did you evacuate to during Hurricane Charley?

	n	Public shelter	Friend/relative	Hotel/motel	Other	Don't know
Southwest	331	17%	60%	14%	9%	0%
Category 1	103	16%	50%	23%	11%	0%
Category 2	70	11%	68%	18%	2%	1%
Category 3	43	8%	78%	11%	3%	0%
Category 4	11	40%	46%	9%	4%	0%
Category 5	12	40%	46%	9%	4%	0%
Non-Surge	16	29%	35%	13%	22%	0%
Inland	76	18%	66%	7%	9%	0%
Charlotte	57	17%	69%	4%	10%	0%
Category 1	22	21%	46%	11%	21%	0%
Category 2	14	0%	91%	0%	9%	0%
Category 3	10	7%	89%	0%	4%	0%
Category 4	8	43%	57%	0%	0%	0%
Category 5	8	43%	57%	0%	0%	0%
Non-Surge	3	0%	100%	0%	0%	0%
Collier	67	17%	49%	26%	8%	0%
Category 1	35	8%	47%	33%	12%	0%
Category 2	23	10%	69%	21%	0%	0%
Category 3	23	10%	69%	21%	0%	0%
Category 4	2	0%	51%	0%	49%	0%
Category 5	2	0%	51%	0%	49%	0%
Non-Surge	7	47%	21%	21%	11%	0%
Lee	81	19%	56%	14%	10%	1%
Category 1	24	25%	48%	18%	9%	0%
Category 2	33	16%	59%	21%	2%	2%
Category 3	14	0%	93%	0%	7%	0%
Category 4	7	71%	11%	12%	6%	0%
Category 5	7	71%	11%	12%	6%	0%
Non-Surge	3	0%	46%	0%	54%	0%
Sarasota	50	11%	60%	26%	3%	0%
Category 1	22	5%	64%	31%	0%	0%
Category 2	11	15%	60%	25%	0%	0%
Category 3	8	21%	71%	8%	0%	0%
Category 4	6	0%	66%	34%	0%	0%
Category 5	6	0%	66%	34%	0%	0%
Non-Surge	3	36%	0%	15%	49%	0%
Glades	37	14%	63%	13%	9%	1%
Hendry	39	22%	69%	1%	8%	0%

County Level Results

Hendry County residents (22%) are more likely to report going to public shelters during Hurricane Charley, while Hendry and Charlotte residents are more likely to report going to friends and relatives (69%).

9. Historical Evacuation Behavior

Where did you evacuate to during Hurricane Jeanne?

Over six in ten households (64%) that report evacuating during Hurricane Jeanne say they went to friends and relatives. Only 19% report evacuating to a public shelter.

County-Level Results

Proportionately more residents in Hendry County (28%) report going to a public shelter.

Where did you evacuate to during Hurricane Jeanne?

	n	Public shelter	Friend/relative	Hotel/motel	Other	Don't know
Southwest	67	19%	64%	7%	10%	0%
Glades	38	14%	63%	11%	13%	0%
Hendry	29	28%	64%	1%	6%	0%

Where did you evacuate to during Hurricane Frances?

Over six in ten residents in the Southwest region (62%) went to friends or relatives when they evacuated during Hurricane Frances. Only 16% report evacuating to a public shelter during Hurricane Frances, and only 12% went to a hotel or motel to escape Hurricane Frances.

County-Level Results

One in four residents of Hendry County (25%) report going to a public shelter during Hurricane Frances.

Where did you evacuate to during Hurricane Frances?

	n	Public shelter	Friend/relative	Hotel/motel	Other	Don't know
Southwest	102	16%	62%	12%	10%	0%
Category 1	12	0%	57%	8%	35%	0%
Category 2	5	27%	73%	0%	0%	0%
Category 3	4	45%	16%	39%	0%	0%
Category 4	1	0%	100%	0%	0%	0%
Category 5	1	0%	100%	0%	0%	0%
Non-Surge	2	70%	0%	30%	0%	0%
Inland	77	15%	63%	13%	9%	0%
Sarasota	25	19%	56%	10%	15%	0%
Category 1	12	0%	57%	8%	35%	0%
Category 2	5	27%	73%	0%	0%	0%
Category 3	4	45%	16%	39%	0%	0%
Category 4	2	0%	100%	0%	0%	0%
Category 5	2	0%	100%	0%	0%	0%
Non-Surge	2	70%	0%	30%	0%	0%
Glades	38	7%	58%	20%	15%	0%
Hendry	39	25%	69%	4%	2%	0%

Where did you evacuate to during Hurricane Ivan?

Residents of the Southwest region who report evacuating for Hurricane Ivan are equally likely to say they went to friends and relatives (35%) or to a hotel or motel (32%), while 15% went to public shelters.

County Level Results

Evacuating to public shelters was more prevalent in Collier County (30%), while evacuating to friends and relatives was most frequent in Charlotte County (49%).

Where did you evacuate to during Hurricane Ivan?

	n	Public shelter	Friend/relative	Hotel/motel	Other	Don't know
Southwest	118	15%	35%	32%	16%	2%
Category 1	45	15%	27%	43%	12%	3%
Category 2	29	4%	41%	38%	15%	2%
Category 3	14	2%	41%	49%	7%	0%
Category 4	7	4%	63%	18%	15%	0%
Category 5	12	4%	63%	18%	15%	0%
Non-Surge	11	51%	21%	0%	28%	0%
Charlotte	44	3%	49%	38%	7%	3%
Category 1	16	0%	40%	48%	4%	8%
Category 2	7	12%	59%	22%	7%	0%
Category 3	7	0%	45%	55%	0%	0%
Category 4	12	6%	52%	24%	18%	0%
Category 5	12	6%	52%	24%	18%	0%
Non-Surge	2	0%	100%	0%	0%	0%
Collier	37	30%	29%	28%	12%	1%
Category 1	19	24%	25%	34%	16%	2%
Category 2	10	5%	48%	47%	0%	0%
Category 3	10	5%	48%	47%	0%	0%
Category 4	2	0%	100%	0%	0%	0%
Category 5	2	0%	100%	0%	0%	0%
Non-Surge	6	69%	10%	0%	21%	0%
Lee	37	11%	28%	30%	29%	2%
Category 1	10	16%	16%	52%	16%	0%
Category 2	15	0%	27%	35%	32%	5%
Category 3	4	0%	10%	41%	49%	0%
Category 4	5	0%	80%	7%	13%	0%
Category 5	5	0%	80%	7%	13%	0%
Non-Surge	3	33%	22%	0%	45%	0%

9. Historical Evacuation Behavior

Where did you evacuate to during Hurricane Wilma?

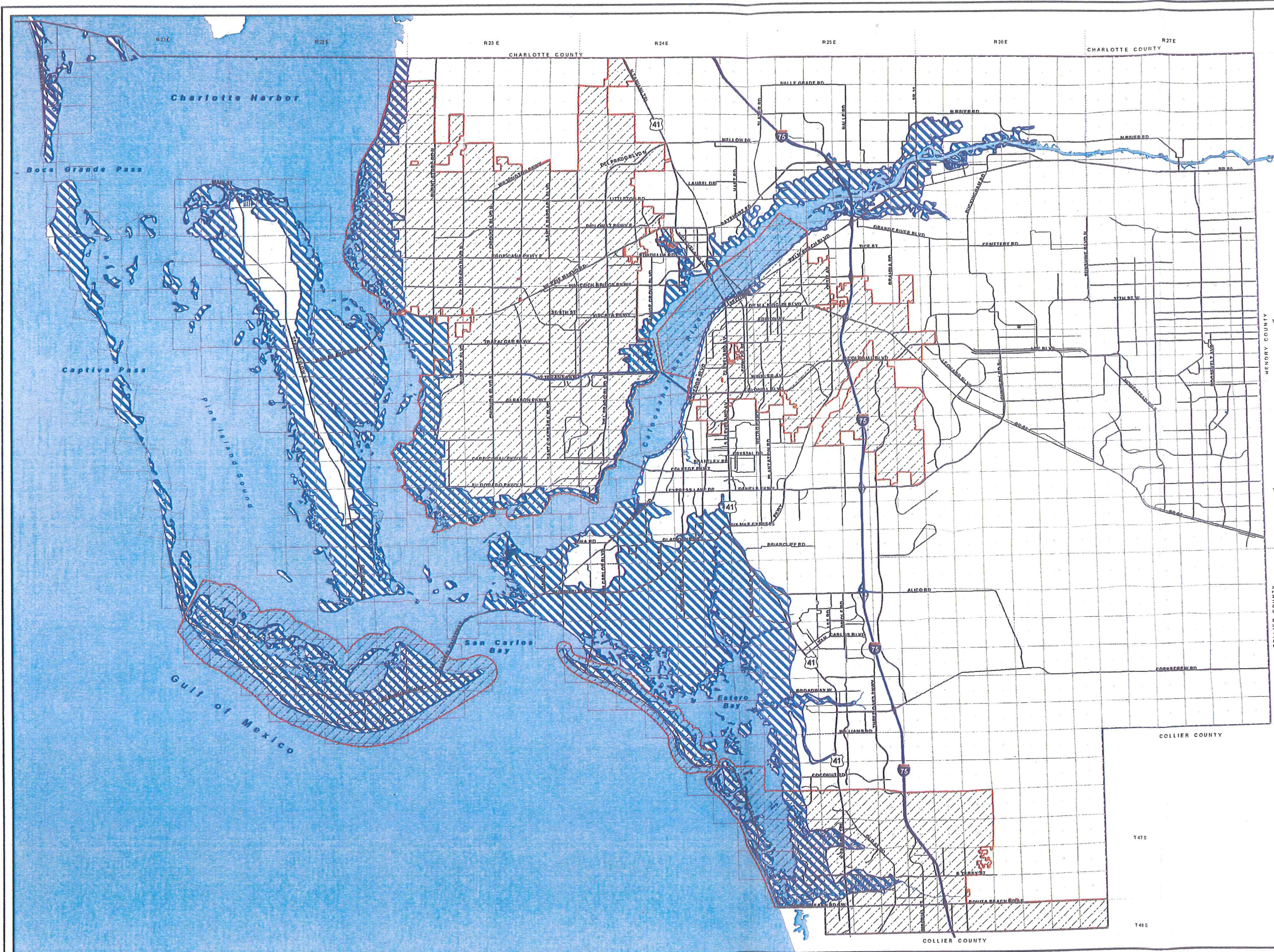
Over half of evacuees in Hurricane Wilma (52%) report going to friends and relatives, while 11% report evacuating to a public shelter.

County-Level Results

Incidence of evacuating to public shelters is highest in Sarasota (15%) and Collier (14%) counties. Reported evacuation to hotels/motels is greatest in Charlotte County (41%).

Where did you evacuate to during Hurricane Wilma?

	n	Public shelter	Friend/relative	Hotel/motel	Other	Don't know
Southwest	245	11%	52%	28%	8%	0%
Category 1	101	10%	54%	30%	5%	0%
Category 2	74	10%	55%	25%	10%	0%
Category 3	35	7%	60%	25%	8%	0%
Category 4	10	2%	57%	37%	4%	0%
Category 5	7	2%	57%	37%	4%	0%
Non-Surge	18	29%	18%	31%	18%	4%
Charlotte	25	2%	46%	41%	12%	0%
Category 1	8	0%	22%	62%	17%	0%
Category 2	10	0%	95%	0%	5%	0%
Category 3	3	0%	65%	0%	35%	0%
Category 4	4	6%	6%	88%	0%	0%
Category 5	4	6%	6%	88%	0%	0%
Non-Surge	0	-	-	-	-	-
Collier	130	14%	52%	28%	6%	1%
Category 1	70	11%	58%	28%	3%	0%
Category 2	39	8%	54%	29%	9%	0%
Category 3	3	8%	54%	29%	9%	0%
Category 4	6	0%	63%	31%	6%	0%
Category 5	6	0%	63%	31%	6%	0%
Non-Surge	15	37%	21%	29%	8%	5%
Lee	66	8%	53%	26%	14%	0%
Category 1	15	10%	46%	34%	10%	0%
Category 2	32	14%	47%	25%	14%	0%
Category 3	12	0%	86%	14%	0%	0%
Category 4	5	0%	84%	8%	8%	0%
Category 5	5	0%	84%	8%	8%	0%
Non-Surge	2	0%	0%	42%	58%	0%
Sarasota	24	15%	63%	22%	0%	0%
Category 1	8	10%	79%	10%	0%	0%
Category 2	7	21%	55%	25%	0%	0%
Category 3	6	19%	42%	39%	0%	0%
Category 4	2	0%	100%	0%	0%	0%
Category 5	2	0%	100%	0%	0%	0%
Non-Surge	1	0%	100%	0%	0%	0%

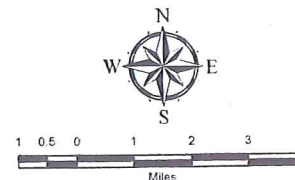


PROPOSED LEE COUNTY

COASTAL HIGH HAZARD AREA (CHHA)

Legend

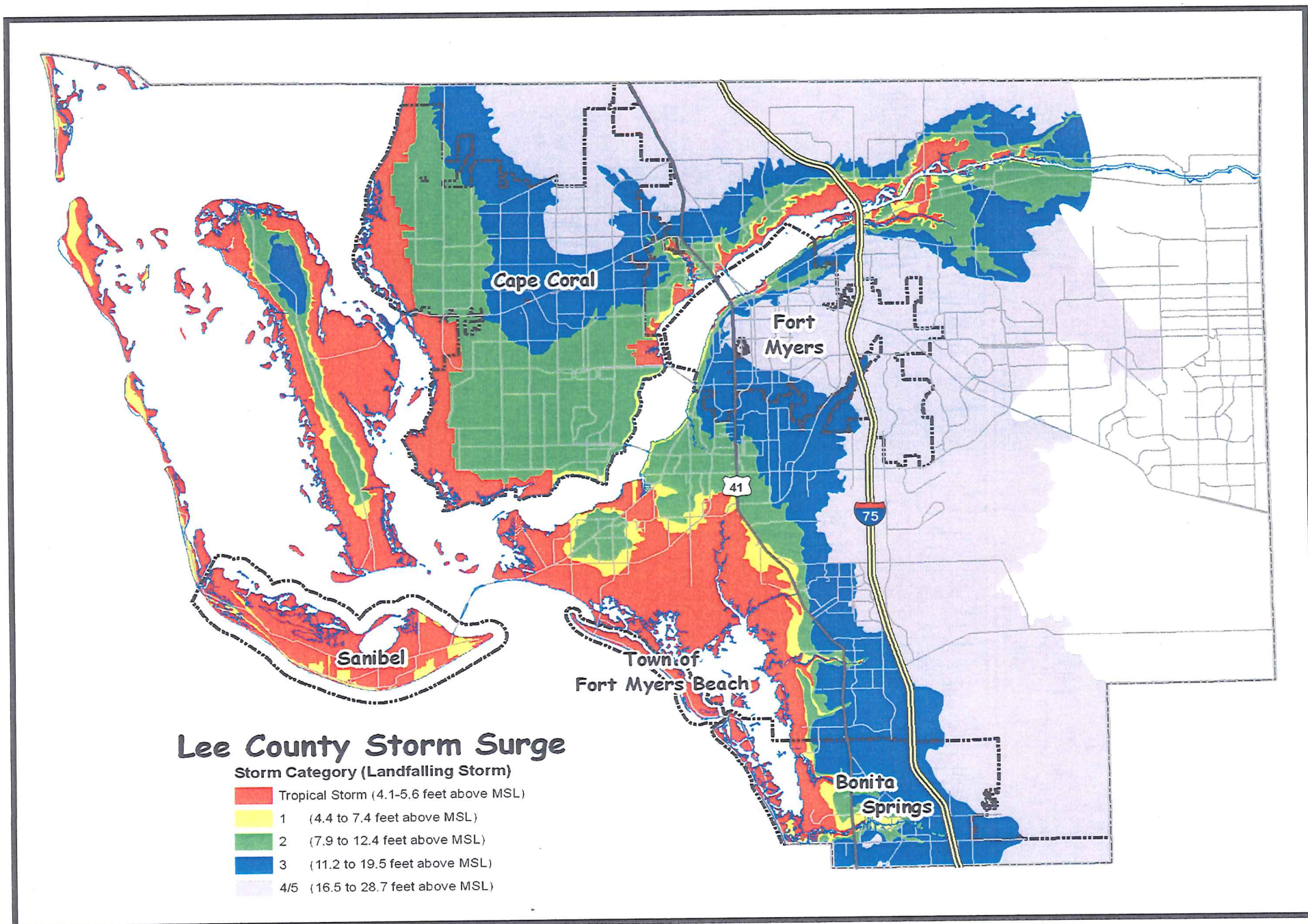
-  Coastal High Hazard Area
-  City Limits



Source: SLOSH Model
(Sea, Lake and Overland Surges from Hurricanes)
Run by Southwest Florida Regional Planning Council

Map Generated: September 2008
City Limits current to date of map generation

Lee Plan Map 5



CPA 2007-59
Hurricane Evacuation/Coastal High Hazard
Area

BoCC SPONSORED
AMENDMENT
TO THE

LEE COUNTY COMPREHENSIVE PLAN

THE LEE PLAN

BoCC Adoption Document

Lee County Planning Division
1500 Monroe Street
P.O. Box 398
Fort Myers, FL 33902-0398
(239) 533-8585

February 25, 2009

**LEE COUNTY
DIVISION OF PLANNING
STAFF REPORT FOR
COMPREHENSIVE PLAN AMENDMENT
CPA 2007-59**

✓	This Document Contains the Following Reviews:
✓	Staff Review
✓	Local Planning Agency Review and Recommendation
✓	Board of County Commissioners Hearing for Transmittal
✓	Staff Response to the DCA Objections, Recommendations, and Comments (ORC) Report
✓	Board of County Commissioners Hearing for Adoption

STAFF REPORT PREPARATION DATE: September 8, 2008

PART I - BACKGROUND AND STAFF RECOMMENDATION

A. SUMMARY OF APPLICATION

1. APPLICANT:

LEE COUNTY BOARD OF COUNTY COMMISSIONERS
REPRESENTED BY LEE COUNTY DIVISION OF PLANNING AND DIVISION OF
PUBLIC SAFETY

2. REQUEST:

Amend the Conservation and Coastal Management Element of the Lee Plan to establish a Category 5 hurricane evacuation standard, a shelter time standard, and mitigation measures for future plan amendments increasing density in the Coastal High Hazard Area. Amend the Future Land Use Map Series, Map 5, Coastal High Hazard Area, and the Glossary to redefine the Coastal High Hazard Area in accordance with Chapter 163.3178, F.S.

B. REVISED STAFF RECOMMENDATION AND FINDINGS OF FACT SUMMARY:

- 1. RECOMMENDATION:** Staff recommends that the Board of County Commissioners adopt this proposed amendment. The specific language modifications that staff recommends is provided below:

OBJECTIVE 109.1: EVACUATION. ~~By 1995, evacuation times will be restored to 1987 levels using the 1987 Southwest Florida Regional Hurricane Plan Update as guidance; and b By 2010, 2030 Lee County will work towards attaining a level of service for out of county hurricane evacuation for a Category 5 storm event that the clearance time portion of evacuation time will does not exceed 18 hours.~~

POLICY 109.1.3: Critical roadway links causing congestion on evacuation routes for Category 1 through 3 hurricanes, including S.R. 78, will receive high priority for capital improvement expenditures.

POLICY 109.1.5: Comprehensive plan amendments that increase density within coastal high hazard areas must meet one of the following criteria in accordance with Section 163.3178(9), F.S.:

- 1) The proposed amendment will not exceed a 16 hour ~~impede the objective of attaining the adopted level of service for out of county hurricane evacuation time for a category 5 storm event (see Objective 109.1); or~~
- 2) Maintain a 12 hour evacuation time to shelter for a Category 5 storm event and ensure shelter space is available to accommodate the additional residents of the development allowed by the proposed comprehensive plan amendment; or
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POLICY 109.2.1: The percentage rate of the evacuation population to be used as the basis for in-county and on-site shelter demand will be ~~twenty-one (21)~~ ten (10) percent of the population at risk in the Hurricane Vulnerability Zone under a Category 3 5 storm hazard scenario ~~except for those developments with Lee County approved Hurricane Management Plans.~~ This rate will also be the target shelter capacity for a program to provide an emergency shelter supply within Lee County by the year ~~2010~~ 2030.

POLICY 109.2.6: ~~Upon adoption of Rule 9J-2, F.A.C., the county will petition the Florida Department of Community Affairs to designate Lee County as a "special hurricane preparedness district" so that shelter alternatives not consistent with state-wide policies can be implemented.~~

COASTAL HIGH HAZARD AREA - The area below the elevation of the category 1 evacuation zone storm surge line as delineated by the Southwest Florida Regional Planning Council Map 5 of the Future Land Use Map Series.

C. ORIGINAL STAFF RECOMMENDATION AND FINDINGS OF FACT SUMMARY:

1. **RECOMMENDATION:** Staff recommends that the Board of County Commissioners transmit this proposed amendment. The specific language modifications that staff recommends is provided below:

OBJECTIVE 109.1: EVACUATION. ~~By 1995, eEvacuation times will be restored to 1987 levels using the 1987 Southwest Florida Regional Hurricane Plan Update as guidance; and b By 2010, 2030 Lee County will work towards attaining a level of service for out of county hurricane evacuation for a Category 5 storm event that the clearance time portion of evacuation time will~~ does not exceed 18 hours.

POLICY 109.1.3: Critical roadway links causing congestion on evacuation routes for Category 1 through 3 hurricanes, including S.R. 78, will receive high priority for capital improvement expenditures.

POLICY 109.1.5: Comprehensive plan amendments that increase density within coastal high hazard areas must meet one of the following criteria:

- 1) The proposed amendment will not impede the objective of attaining the adopted level of service for out of county hurricane evacuation for a category 5 storm event (see Objective 109.1); or
- 2) Maintain a 12 hour evacuation time to shelter for a Category 5 storm event and ensure shelter space is available to accommodate the additional residents of the development allowed by the proposed comprehensive plan amendment; or
- 3) Provide appropriate mitigation to satisfy the provisions of the previous two paragraphs, which may include without limitation, the payment of money, contribution of land, or construction of hurricane shelters and transportation facilities. The developer must enter into a binding agreement to memorialize the mitigation plan prior to local development order approval.

POLICY 109.2.1: The percentage rate of the evacuation population to be used as the basis for in-county and on-site shelter demand will be ~~twenty-one (21)~~ ten (10) percent of the population at risk in the Hurricane Vulnerability Zone under a Category 3 5 storm hazard scenario ~~except for those developments with Lee County approved Hurricane Management Plans.~~ This rate will also be the target shelter capacity for a program to provide an emergency shelter supply within Lee County by the year ~~2010~~ 2030.

~~POLICY 109.2.6:~~ ~~Upon adoption of Rule 9J-2, F.A.C., the county will petition the Florida Department of Community Affairs to designate Lee County as a "special hurricane preparedness district" so that shelter alternatives not consistent with state-wide policies can be implemented.~~

COASTAL HIGH HAZARD AREA - ~~The category 1 evacuation zone storm surge line as delineated by the Southwest Florida Regional Planning Council~~ Map 5 of the Future Land Use Map Series.

2. BASIS AND RECOMMENDED FINDINGS OF FACT:

- In 2006 legislation added requirements to Chapter 163.3178, F. S. requiring local governments to redefine the Coastal High Hazard Area (CHHA) from the Category 1 Storm Surge Evacuation Zone to the Category 1 Storm Surge Line.
- Chapter 163.3178, F.S. also requires local governments to establish criteria for an evacuation standard, a shelter time standard, and mitigation measures for proposed comprehensive plan amendments.
- The percentage rate of the evacuation population should also be updated to reflect the empirical evidence of actual shelter usage during hurricane evacuations carried out in Lee County.

C. BACKGROUND INFORMATION

This amendment was initiated by the Board of County Commissioners on September 25, 2007. The amendment addresses bills enacted by the Florida Legislature in response to the high level of hurricane activity. In 2006 legislation added requirements to Chapter 163.3178, F. S. requiring local governments to amend their future land use map and coastal management element of their comprehensive plans to depict the revised Coastal High Hazard Area (CHHA) and if necessary update evacuation times in the coastal management element if a level of service for out of county evacuation has not been established. In addition, the legislation established an evacuation standard, a shelter time standard, and mitigation measures for proposed comprehensive plan amendments as options for compliance with state coastal high hazard provisions.

Staff is proposing revisions to Objective 109.1 and several subsequent policies in the Conservation and Coastal Management Element of the Lee Plan, the definition of the CHHA in the Glossary of the Lee Plan, and Map 5, Coastal High Hazard Area, of the Future Land Use Map Series based on the changes made to 163.3178, F. S. Staff is also proposing a new policy, Policy 109.1.5, to include new requirements for proposed comprehensive plan amendments.

PART II - STAFF ANALYSIS

A. STAFF DISCUSSION

The proposed amendment to Objective 109.1 removes the outdated references for restoring evacuation times. The Conservation and Coastal Management Element currently maintains that the evacuation clearance time will not exceed 18 hours. The changes made to Chapter 163.3178, F.S. require the adopted level of service for out of county hurricane evacuation is maintained for a category 5 storm event as measured on the Saffir-Simpson scale. Staff proposes adding the following text to the Objective to specify that the evacuation time will be maintained for a category 5 storm event.

OBJECTIVE 109.1: EVACUATION. ~~By 1995, eEvacuation times will be restored to 1987 levels using the 1987 Southwest Florida Regional Hurricane Plan Update as guidance; and b By 2010, 2030 Lee County will work towards attaining a level of service for out of county hurricane evacuation for a Category 5 storm event that the clearance time portion of evacuation time will~~ does not exceed 18 hours.

Currently there is a state funded program to conduct regional evacuation studies across the state of Florida. The State Division of Emergency Management has contracted with Florida's Regional Planning Councils to carry out the studies in collaboration with local emergency management agencies. Upon completion of the studies staff will revisit Objective 109.1 to determine if an update to evacuation clearance time will be necessary based on the study findings.

The proposed amendment to Policy 109.1.3 removes the reference to Category 1 through 3 hurricanes. The policy now reflects that it will be necessary for all critical roadway links to receive high priority for capital improvement expenditures. The proposed text changes to Objective 109.1 are shown below:

POLICY 109.1.3: Critical roadway links causing congestion on evacuation routes ~~for Category 1 through 3 hurricanes, including S.R. 78,~~ will receive high priority for capital improvement expenditures.

Staff is proposing a new policy, Policy 109.1.5, to include requirements for proposed comprehensive plan amendments that increase density in the coastal high hazard areas. Per Chapter 163.3178, F.S., a proposed comprehensive plan amendment will be found in compliance with state coastal high hazard provisions if one of the following provisions are met: the adopted level of service for a Category 5 storm event is maintained; or a 12 hour evacuation time to shelter is maintained for a Category 5 storm event and shelter space for those residents contemplated by the proposed amendment is available; or appropriate mitigation is provided. Staff recommends adding new Policy 109.1.5 to the Conservation and Coastal Management Element as shown below:

POLICY 109.1.5: Comprehensive plan amendments that increase density within coastal high hazard areas must meet one of the following criteria:

- 1) The proposed amendment will not impede the objective of attaining the adopted level of service for out of county hurricane evacuation for a category 5 storm event (see Objective 109.1); or
- 2) Maintain a 12 hour evacuation time to shelter for a Category 5 storm event and ensure shelter space is available to accommodate the additional residents of the development allowed by the proposed comprehensive plan amendment; or
- 3) Provide appropriate mitigation to satisfy the provisions of the previous two paragraphs, which may include without limitation, the payment of money, contribution of land, or construction of hurricane shelters and transportation facilities. The developer must enter into a binding agreement to memorialize the mitigation plan prior to local development order approval.

The proposed amendment to 109.2.1 changes the percentage rate of the evacuation population from 21 percent to 10 percent. The text change also changes the population at risk under a category 5 storm and removes the reference to Hurricane Management Plans. The percentage change is based on empirical evidence of actual shelter usage during hurricane evacuations carried out in Lee County (see Attachment 1). The ten percent was derived by averaging the shelter usage rates documented through post storm behavioral surveys for the following hurricanes: Andrew (1992), Georges (1998), Charley and Ivan (2004) and Wilma (2005). Staff finds that the reference to Hurricane Management Plans is not necessary due to the fact that Florida Statute and the Florida Administrative Code govern hurricane preparedness plans for hospitals and assisted living facilities. The proposed text changes to Objective 109.1 are shown below:

POLICY 109.2.1: The percentage rate of the evacuation population to be used as the basis for in-county and on-site shelter demand will be ~~twenty-one (21)~~ ten (10) percent of the population at risk in the Hurricane Vulnerability Zone under a Category 3 5 storm hazard scenario ~~except for those developments with Lee County approved Hurricane Management Plans~~. This rate will also be the target shelter capacity for a program to provide an emergency shelter supply within Lee County by the year ~~2010~~ 2030.

The proposed deletion of 109.2.6 removes the statement that the county will petition the state to designate Lee County as a special hurricane preparedness district. Lee County has already achieved the special district status. In 1990, The Southwest Florida Regional Planning Council petitioned the Department of Community Affairs on behalf of Lee, Collier, Charlotte and Sarasota counties to be designated as a special hurricane preparedness district. The request identified why the four counties or region should be designated and established what types of hurricane preparedness mitigation measures will apply to developments within the district. The request for designation was based on the following types of generalized regional or county considerations:

- (a) The overall land elevation and the amount of area anticipated to flood during a hurricane event;
- (b) The transportation system and its ability to transport residents to safe areas within a reasonable time;
- (c) Less than twenty percent of a county's or region's hurricane shelters are available to the population during a 100-year or category three hurricane event; and
- (d) The percentage of the total population anticipated to evacuate

Based on a written request supported by data and information received from the Southwest Florida Regional Planning Council, the Department designated the area contained within the category three hurricane flood zone as identified in the Hurricane Evacuation Study Update, 1995 Southwest Florida Regional Planning Council within the counties of Sarasota, Charlotte, Lee, and Collier as a special hurricane preparedness district for developments of regional impact.

The policy proposed for deletion is shown below:

~~**POLICY 109.2.6:** Upon adoption of Rule 9J-2, F.A.C., the county will petition the Florida Department of Community Affairs to designate Lee County as a "special hurricane preparedness district" so that shelter alternatives not consistent with state-wide policies can be implemented.~~

The proposed amendment to the Glossary definition of the Coastal High Hazard Area changes the defined CHHA from the category 1 evacuation zone to the category 1 storm surge line. The changes made to Chapter 163.3178, F. S. define the coastal high hazard area as the area below the elevation of the category 1 storm surge line as established by a Sea, Lake and Overland Surges from Hurricanes (SLOSH) computerized storm surge model. This change will also require an amendment to Map 5, Coastal High Hazard Area, of the future land use map series reflecting the updated definition of the CHHA. The proposed Map 5 is attached as Attachment 2. The proposed changes to the Glossary definition are shown below:

COASTAL HIGH HAZARD AREA - The category 1 ~~evacuation zone~~ storm surge line as delineated by the Southwest Florida Regional Planning Council Map 5 of the Future Land Use Map Series.

B. CONCLUSIONS

Changes have been made to Chapter 163.3178, F.S. requiring local governments to amend their future land use map and coastal management element of their comprehensive plans to depict the revised Coastal High Hazard Area (CHHA) and to update requirements for proposed comprehensive plan amendments that increase density in coastal high hazard areas. Lee Plan policy should reflect the changes made to Chapter 163.3178, F.S.

C. STAFF RECOMMENDATION

Planning staff recommends that the Board of County Commissioners transmit this proposed amendment. This recommendation is based upon the previously discussed issues and conclusions of this report. Staff recommends that the Conservation and Coastal Management Element and the Glossary of the Lee Plan be modified as provided below. Staff also recommends that Map 5, Coastal High Hazard Area, of the Future Land Use Map Series be modified as provided in Attachment 2.

OBJECTIVE 109.1: EVACUATION. ~~By 1995, eEvacuation times will be restored to 1987 levels using the 1987 Southwest Florida Regional Hurricane Plan Update as guidance; and b By 2010, 2030 Lee County will work towards attaining a level of service for out of county hurricane evacuation for a Category 5 storm event that the clearance time portion of evacuation time will~~ does not exceed 18 hours.

POLICY 109.1.3: Critical roadway links causing congestion on evacuation routes for Category 1 through 3 hurricanes, including S.R. 78, will receive high priority for capital improvement expenditures.

POLICY 109.1.5: Comprehensive plan amendments that increase density within coastal high hazard areas must meet one of the following criteria:

- 1) The proposed amendment will not impede the objective of attaining the adopted level of service for out of county hurricane evacuation for a category 5 storm event (see Objective 109.1); or
- 2) Maintain a 12 hour evacuation time to shelter for a Category 5 storm event and ensure shelter space is available to accommodate the additional residents of the development allowed by the proposed comprehensive plan amendment; or
- 3) Provide appropriate mitigation to satisfy the provisions of the previous two paragraphs, which may include without limitation, the payment of money, contribution of land, or construction of hurricane shelters and transportation facilities. The developer must enter into a binding agreement to memorialize the mitigation plan prior to local development order approval.

POLICY 109.2.1: The percentage rate of the evacuation population to be used as the basis for in-county and on-site shelter demand will be ~~twenty-one (21)~~ ten (10) percent of the population at risk in the Hurricane Vulnerability Zone under a Category 3 5 storm hazard scenario ~~except for those developments with Lee County approved Hurricane Management Plans.~~ This rate will also be the target shelter capacity for a program to provide an emergency shelter supply within Lee County by the year ~~2010~~ 2030.

~~**POLICY 109.2.6:** Upon adoption of Rule 9J-2, F.A.C., the county will petition the Florida Department of Community Affairs to designate Lee County as a "special hurricane preparedness district" so that shelter alternatives not consistent with state-wide policies can be implemented.~~

COASTAL HIGH HAZARD AREA - The category 1 evacuation zone storm surge line as delineated by the Southwest Florida Regional Planning Council Map 5 of the Future Land Use Map Series.

PART III - LOCAL PLANNING AGENCY REVIEW AND RECOMMENDATION

DATE OF PUBLIC HEARING: September 22, 2008

A. LOCAL PLANNING AGENCY REVIEW

At the September 22nd meeting the Local Planning Agency reviewed a previous draft of the proposed amendment. Upon closer examination, staff found that the previous staff report was not responsive to the changes dictated by the change in legislation. Therefore staff has issued a revised report as the recommended transmittal document. The revised report reflects the recommended amendments to the plan based on the dictates of the statute.

At the September 22nd meeting, planning staff gave a brief presentation concerning the proposed amendment. Staff also noted that a map depicting Lee County Storm Surge will be attached to the report for informational purposes. The map has been attached as Attachment 3. One of members of the LPA expressed concern with the proposed amendment as it would apply to a Category 5 storm event which encompasses a majority of the County and asked what our evacuation time frame is. Public Safety staff indicated that evacuation time currently exceeds the 18 hour time frame. Staff indicated that the ability to mitigate the impact of new development allows the ability to meet the intent of the legislation. Another member of the LPA asked how close the County is in achieving the onsite shelter demand. Public Safety staff indicated that the County is behind with the current level of service and that the proposed amendment changes the percentage from 21% to 10% based on empirical evidence. This member of the LPA asked what the County is doing to increase shelter capacity. Public Safety staff responded that there currently is an all hazards MSTU levied. A portion of the levied funds go to improving buildings that serve as shelters. Currently, with the reduction in school students in Lee County schools funding has dropped. Public Safety staff stated that the County is focusing on churches and community centers for shelter space. A motion was made and seconded to recommend transmittal of the proposed amendment. The LPA recommended transmittal of the amendment in support of the required statutory changes. One member of the LPA noted they could not support the amendment as drafted. The votes for the September 22nd meeting are reflected below.

At the October 9th, 2008 LPA meeting staff provided an update to LPA under the "other business" item on the LPA agenda. The proposed revision to the staff recommendation was presented verbally and in writing. One member of the LPA asked for clarification regarding the deletion of the reference to S.R. 78. The deletion was included in the proposal the LPA reviewed on September 22nd as well. Staff explained that this was an effort to clarify that all roadway links causing congestion on evacuation routes will receive high priority. Public Safety staff clarified that the reference was placed in the policy when there was concerns over funding S.R. 78 from Bayshore Road to I-75 and this is no longer a concern since the road has been improved. Public safety staff also clarified that Lee County has coordinated with the Sheriff's Office to ensure that in an emergency S.R. 78 in the western portion of Lee County will become one way in order to route outbound traffic east.

The LPA reviewed the revised amendment language and found no issues with the proposal.

B. LOCAL PLANNING AGENCY RECOMMENDATION AND FINDINGS OF FACT SUMMARY

1. **RECOMMENDATION:** The LPA recommends that the Board of County Commissioners transmit the proposed amendment.
2. **BASIS AND RECOMMENDED FINDINGS OF FACT:** The majority of the LPA accepted the findings of fact as advanced by the staff.

C. VOTE BASED ON THE PRESENTATION OF SEPTEMBER 22, 2008:

NOEL ANDRESS	AYE
LES COCHRAN	ABSENT
RONALD INGE	NAY
JACQUE RIPPE	AYE
CARLETON RYFFEL	AYE
LELAND TAYLOR	AYE
RAE ANN WESSEL	AYE

**PART IV - BOARD OF COUNTY COMMISSIONERS
HEARING FOR TRANSMITTAL OF PROPOSED AMENDMENT**

DATE TRANSMITTAL HEARING: October 22, 2008

A. BOARD REVIEW: The Board of County Commissioners provided no discussion concerning the proposed plan amendment. No public input was provided concerning the proposed plan amendment. This item was approved on the consent agenda.

B. BOARD ACTION AND FINDINGS OF FACT SUMMARY:

- 1. BOARD ACTION:** The Board of County Commissioners voted to transmit the proposed plan amendment.
- 2. BASIS AND RECOMMENDED FINDINGS OF FACT:** The Board accepted the findings of fact as advanced by staff and the LPA.

C. VOTE:

A. BRIAN BIGELOW	AYE
TAMMARA HALL	AYE
ROBERT P. JANES	AYE
RAY JUDAH	AYE
FRANKLIN B. MANN	AYE

**PART V - DEPARTMENT OF COMMUNITY AFFAIRS OBJECTIONS,
RECOMMENDATIONS, AND COMMENTS (ORC) REPORT**

DATE OF ORC REPORT: January 16, 2009

A. DCA OBJECTIONS, RECOMMENDATIONS AND COMMENTS

The Department of Community Affairs has raised objections to proposed amendment CPA2007-59. The DCA objections are reproduced below:

Objection: *The proposed Future Land Use Map series Map 5 shows the revised CHHA as based on the SLOSH Model, and the proposed Glossary definition of the CHHA states: "The category 1 storm surge line as delineated by Map 5 of the Future Land Use Map Series." The proposed Glossary definition does not establish a meaningful and predictable guideline to define the CHHA consistent with Section 163.3178, F.S., because the Glossary defines the CHHA (which is an area) as a line rather than as the area below the elevation of the category 1 storm surge line as established by a Sea, Lake and Overland Surges from Hurricanes (SLOSH) computerized storm surge model consistent with Section 163.3178, F.S.*

Section 163.3178(9), F.S., establishes a 16 hour level of service standard for out of county hurricane for a Category 5 storm event. The proposed amendment revises Objective 109.1 to establish an 18 hour level of service standard for out of county hurricane evacuation for a Category 5 storm event and this is not consistent with the 16 hour standard of Section 163.3178(9). The proposed amendment adds new Policy 109.1.5, which establishes requirements for proposed comprehensive plan amendments that increase density in the Coastal High Hazard Area. Policy 109.1.5 is not consistent with Section 163.3178(9) F.S., because Policy 109.1.5(1 and 3) reference Objective 109.1, which has the 18 hour standard which is not consistent with Section 163.3178(9), F.S. In addition, Policy 109.1.5(1) includes language ("The proposed amendment will not impede...") that does not establish meaningful and predictable guidelines and standards to ensure that the adopted level of service for out-of-county hurricane evacuation is maintained for a category 5 storm event as measured on the Saffir-Simpson scale consistent with Section 163.3178(9), F.S. The proposed Policy 109.1.5(2) tracks Section 163.3178(9), F.S. The proposed Policy 109.1.5(3) is not consistent with Section 163.3178(9), F.S., because the policy does not ensure that the mitigation agreement is executed by the time of the plan amendment that increases density in the CHHA..

Rules 9J-5.005(2, 5 and 6); 9J-5.006(4); 9J-5.012(3), F.A.C.; and Sections 163.3177(2); 163.3177(6)(a); and 163.3178, F.S.

Recommendation: *Revise the Glossary to define the CHHA consistent with the requirements of Section 163.3178, F.S. Revise Objective 109.1 to utilize a 16 hour standard for out of county evacuation. Revise Policy 109.1.5(1) to establish meaningful and predictable guidelines and standards to ensure that the adopted level of service for out-of-county hurricane evacuation is maintained for a category 5 storm event as measured on the Saffir-Simpson scale consistent with Section 163.3178(9), F.S. Revise Policy 109.1.5(3) to ensure that the mitigation agreement is executed by the time of the plan amendment that increases density in the CHHA.*

B. STAFF DISCUSSION

The DCA has objected to the revised Glossary definition for the Coastal High Hazard Area stating the definition as it is written defines a line rather than an area. Staff has updated the definition to clarify the coastal high hazard area includes the area below the elevation of the category 1 storm surge line as shown below:

COASTAL HIGH HAZARD AREA - The area below the elevation of the category 1 evacuation zone storm surge line as delineated by the Southwest Florida Regional Planning Council Map 5 of the Future Land Use Map Series.

New Policy 109.1.5 establishes requirements for proposed plan amendments that would increase density in the coastal high hazard area. Section 163.3178(9), F.S. requires a 16 hour standard for such plan amendments. DCA has found this policy inconsistent because it refers to Objective 109.1 which includes the 18 hour level of service for hurricane evacuation. Staff has clarified through discussions with DCA that the 18 hour level of service for hurricane evacuation is allowed because it has been in the comprehensive plan since 1990. However, DCA staff clarified that per Section 163.3178(9), F.S. a 16 hour level of service for hurricane evacuation must be applied to plan amendments that would increase density in the coastal high hazard area. According to the DCA, this 16 hour requirement overrides even when a previous timeframe has been established in the comprehensive plan of local governments. In order to reflect this requirement for proposed comprehensive plan amendments staff has updated proposed Policy 109.1.5 to specify the 16 hour out of county evacuation time specifically for proposed comprehensive plan amendments, in the coastal high hazard area.

In addition, DCA has provided that the language proposed through Policy 109.1.5(1) does not establish meaningful and predictable guidelines and standards ensuring the level of service for hurricane evacuation is maintained for a category 5 storm event as it would apply to proposed comprehensive plan amendments. Staff has updated Policy 109.1.5(1) to clarify that a proposed amendment will not exceed the established out of county evacuation time.

DCA has also provided that Policy 109.1.5(3) does not ensure that a mitigation agreement is executed at the time of the plan amendment. Staff has removed the reference to local development order approval and replaced the language clarifying that mitigation will be agreed upon by the time of plan amendment adoption. Staff has also clarified that mitigation will satisfy either paragraph 1 or paragraph 2 of Policy 109.1.5.

Policy 109.1.5 has been updated as follows to address the DCA objections:

POLICY 109.1.5: Comprehensive plan amendments that increase density within coastal high hazard areas must meet one of the following criteria in accordance with Section 163.3178(9), F.S.:

- 1) The proposed amendment will not exceed a 16 hour ~~impede the objective of attaining the adopted level of service for out of county hurricane evacuation time for a category 5 storm event (see Objective 109.1); or~~

- 2) Maintain a 12 hour evacuation time to shelter for a Category 5 storm event and ensure shelter space is available to accommodate the additional residents of the development allowed by the proposed comprehensive plan amendment; or
- 3) Provide appropriate mitigation to satisfy the provisions of either of the previous two paragraphs, which may include without limitation, the payment of money, contribution of land, or construction of hurricane shelters and transportation facilities. The developer must enter into a binding agreement to memorialize the mitigation plan prior to local development order approval adoption of the plan amendment.

C. STAFF RECOMMENDATION

Planning staff recommends that the Board of County Commissioners adopt the proposed Lee Plan amendment as follows:

OBJECTIVE 109.1: EVACUATION. ~~By 1995, evacuation times will be restored to 1987 levels using the 1987 Southwest Florida Regional Hurricane Plan Update as guidance; and b By 2010, 2030 Lee County will work towards attaining a level of service for out of county hurricane evacuation for a Category 5 storm event that the clearance time portion of evacuation time will~~ does not exceed 18 hours.

POLICY 109.1.3: Critical roadway links causing congestion on evacuation routes for Category 1 through 3 hurricanes, including S.R. 78, will receive high priority for capital improvement expenditures.

POLICY 109.1.5: Comprehensive plan amendments that increase density within coastal high hazard areas must meet one of the following criteria in accordance with Section 163.3178(9), F.S.:

- 1) The proposed amendment will not exceed a 16 hour ~~impede the objective of attaining the adopted level of service for out of county hurricane evacuation time for a category 5 storm event (see Objective 109.1); or~~
- 2) Maintain a 12 hour evacuation time to shelter for a Category 5 storm event and ensure shelter space is available to accommodate the additional residents of the development allowed by the proposed comprehensive plan amendment; or
- 3) Provide appropriate mitigation to satisfy the provisions of either of the previous two paragraphs, which may include without limitation, the payment of money, contribution of land, or construction of hurricane shelters and transportation facilities. The developer must enter into a binding agreement to memorialize the mitigation plan prior to local development order approval adoption of the plan amendment.

POLICY 109.2.1: The percentage rate of the evacuation population to be used as the basis for in-county and on-site shelter demand will be ~~twenty-one (21)~~ ten (10) percent of the population at risk in the Hurricane Vulnerability Zone under a Category 3 5 storm hazard scenario ~~except for those developments with Lee County approved Hurricane Management Plans.~~ This rate will also be the target shelter

capacity for a program to provide an emergency shelter supply within Lee County by the year ~~2010~~ 2030.

~~POLICY 109.2.6:~~ ~~Upon adoption of Rule 9J-2, F.A.C., the county will petition the Florida Department of Community Affairs to designate Lee County as a "special hurricane preparedness district" so that shelter alternatives not consistent with state-wide policies can be implemented.~~

COASTAL HIGH HAZARD AREA - The area below the elevation of the category 1 evacuation zone storm surge line as delineated by the ~~Southwest Florida Regional Planning Council~~ Map 5 of the Future Land Use Map Series.

**PART VI - BOARD OF COUNTY COMMISSIONERS
HEARING FOR ADOPTION OF PROPOSED AMENDMENT**

DATE OF ADOPTION HEARING: February 25, 2009

A. BOARD REVIEW:

The Board of County Commissioners provided no discussion concerning the proposed plan amendment. No public input was provided concerning the proposed plan amendment. This item was approved on the administrative agenda.

B. BOARD ACTION AND FINDINGS OF FACT SUMMARY:

1. BOARD ACTION:

The Board of County Commissioners adopted the proposed amendment.

2. BASIS AND RECOMMENDED FINDINGS OF FACT:

The Board of County Commissioners accepted the facts advanced by staff and the LPA.

C. VOTE:

A. BRIAN BIGELOW

AYE

TAMMARA HALL

AYE

ROBERT P. JANES

AYE

RAY JUDAH

AYE

FRANKLIN B. MANN

AYE

**Behavioral Assumptions for
Hurricane Evacuation Planning in the
Southwest Florida Region**

Prepared by

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TALLAHASSEE, FL

For

Florida Department of Community Affairs
Division of Emergency Management
Tallahassee, FL

September 2001

Introduction

Evacuation outcomes depend upon many factors, including how the public responds. The public responses having the greatest impact upon an evacuation are:

1. The number of households which evacuate.
2. How promptly evacuees leave.
3. The number of evacuees who seek refuge in public shelters.
4. The number of evacuees who leave or attempt to leave the local area and where they go.
5. The number of vehicles used.

Deriving Correct Assumptions

There are at least three basic ways to derive behavioral assumptions:

Type of Refuge

Response in Georges

Except in Glades and Hendry Counties public shelter use was low in Georges (Table 40). Among evacuees from category 1 surge areas (which accounted for 76% of the evacuees) only 2% said they went to public shelters. In other locations in the coastal counties just 10% of the evacuees said they used public shelters. As in most locations the majority of evacuees (except those in the non-coastal counties) went to the homes of friends and relatives. About a fourth went to hotels and motels.

Table 40. Type of refuge used by evacuees in Georges, by county (percent of evacuees)

	Sarasota (N=82)	Charlotte (N=54)	Lee (N=66)	Collier (N=79)	Hendry (N=20)	Glades (N=17)
Public Shelter	4	6	8	3	25	18
Friend/Relative	67	54	58	61	25	41
Hotel/Motel	23	28	23	30	20	18
Other	6	13	12	6	30	24

Table 41. Type of refuge used by evacuees in Georges, by risk area (percent of evacuees)

	Cat 1 (N=205)	Cat 2/3 (2/5) (N=47)	Inland of Cat 2/3 (2/5) (N=29)	Non-Coastal (N=37)
Public Shelter	2	11	10	22
Friend/Relative	61	60	62	32
Hotel/Motel	27	23	21	19
Other	10	6	7	27

Of those evacuees who went to public shelters the great majority (81%) went to a shelter in their own neighborhood, and the remainder went to one in their own county (Table 42). More than half the homes of friends and families to which evacuees went were in their own county, but most of the hotel and motels used were out of county.

Table 42. Location of refuges in Georges (percent of evacuees by refuge)

	Public Shelter (N=21)	Friend/Relative (N=181)	Hotel/Motel (N=80)	Other (N=35)
Neighborhood	81	25	14	51
Own County	19	39	19	12
Other Florida	0	33	64	26
Out of State	0	3	4	11

Response in Andrew

Responses in Andrew in 1992 were similar to those in Georges. Most of the evacuation came from category 1 risk areas in Andrew, and just 2% of the evacuees in Collier and 9% in Lee said they went to public shelters.

Table 43. Location of refuges in Andrew (percent of evacuees by refuge)

	Public Shelter	Friend/Relative	Hotel/Motel	Other
Collier	2	63	29	6
Lee	9	48	33	9

Hypothetical Responses

Interviewees were asked what sort of refuge they would use in each of the four hypothetical hurricane threat scenarios described above. The percentages of respondents saying they would go to public shelters are indicated in Table 44 by risk area and in Table 45 by county. There was only slight variation among storm intensity scenarios. That is, in a given location, the percentage of intended evacuees saying they would go to public shelters was very similar in each storm scenario. It is likely, however, that the availability of public shelters in southwest Florida will decrease in stronger storms.



2008

Florida Department of Community Affairs
& Regional Planning Councils of Florida
STATEWIDE REGIONAL
EVACUATION STUDY PROGRAM:
Southwest Behavioral Survey Report

Authors:

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Where did you evacuate to during Hurricane Charley?

It should be noted that relatively few residents in some evacuation zones answered this question, so responses should be interpreted cautiously. Six in ten residents (60%) of the Southwest region who evacuated during Hurricane Charley report going to friends or relatives, while 17% report going to a public shelter.

Where did you evacuate to during Hurricane Charley?

	n	Public shelter	Friend/relative	Hotel/motel	Other	Don't know
Southwest	331	17%	60%	14%	9%	0%
Category 1	103	16%	50%	23%	11%	0%
Category 2	70	11%	68%	18%	2%	1%
Category 3	43	8%	78%	11%	3%	0%
Category 4	11	40%	46%	9%	4%	0%
Category 5	12	40%	46%	9%	4%	0%
Non-Surge	16	29%	35%	13%	22%	0%
Inland	76	18%	66%	7%	9%	0%
Charlotte	57	17%	69%	4%	10%	0%
Category 1	22	21%	46%	11%	21%	0%
Category 2	14	0%	91%	0%	9%	0%
Category 3	10	7%	89%	0%	4%	0%
Category 4	8	43%	57%	0%	0%	0%
Category 5	8	43%	57%	0%	0%	0%
Non-Surge	3	0%	100%	0%	0%	0%
Collier	67	17%	49%	26%	8%	0%
Category 1	35	8%	47%	33%	12%	0%
Category 2	23	10%	69%	21%	0%	0%
Category 3	23	10%	69%	21%	0%	0%
Category 4	2	0%	51%	0%	49%	0%
Category 5	2	0%	51%	0%	49%	0%
Non-Surge	7	47%	21%	21%	11%	0%
Lee	81	19%	56%	14%	10%	1%
Category 1	24	25%	48%	18%	9%	0%
Category 2	33	16%	59%	21%	2%	2%
Category 3	14	0%	93%	0%	7%	0%
Category 4	7	71%	11%	12%	6%	0%
Category 5	7	71%	11%	12%	6%	0%
Non-Surge	3	0%	46%	0%	54%	0%
Sarasota	50	11%	60%	26%	3%	0%
Category 1	22	5%	64%	31%	0%	0%
Category 2	11	15%	60%	25%	0%	0%
Category 3	8	21%	71%	8%	0%	0%
Category 4	6	0%	66%	34%	0%	0%
Category 5	6	0%	66%	34%	0%	0%
Non-Surge	3	36%	0%	15%	49%	0%
Glades	37	14%	63%	13%	9%	1%
Hendry	39	22%	69%	1%	8%	0%

County Level Results

Hendry County residents (22%) are more likely to report going to public shelters during Hurricane Charley, while Hendry and Charlotte residents are more likely to report going to friends and relatives (69%).

9. Historical Evacuation Behavior

Where did you evacuate to during Hurricane Jeanne?

Over six in ten households (64%) that report evacuating during Hurricane Jeanne say they went to friends and relatives. Only 19% report evacuating to a public shelter.

County-Level Results

Proportionately more residents in Hendry County (28%) report going to a public shelter.

Where did you evacuate to during Hurricane Jeanne?

	n	Public shelter	Friend/relative	Hotel/motel	Other	Don't know
Southwest	67	19%	64%	7%	10%	0%
Glades	38	14%	63%	11%	13%	0%
Hendry	29	28%	64%	1%	6%	0%

Where did you evacuate to during Hurricane Frances?

Over six in ten residents in the Southwest region (62%) went to friends or relatives when they evacuated during Hurricane Frances. Only 16% report evacuating to a public shelter during Hurricane Frances, and only 12% went to a hotel or motel to escape Hurricane Frances.

County-Level Results

One in four residents of Hendry County (25%) report going to a public shelter during Hurricane Frances.

Where did you evacuate to during Hurricane Frances?

	n	Public shelter	Friend/relative	Hotel/motel	Other	Don't know
Southwest	102	16%	62%	12%	10%	0%
Category 1	12	0%	57%	8%	35%	0%
Category 2	5	27%	73%	0%	0%	0%
Category 3	4	45%	16%	39%	0%	0%
Category 4	1	0%	100%	0%	0%	0%
Category 5	1	0%	100%	0%	0%	0%
Non-Surge	2	70%	0%	30%	0%	0%
Inland	77	15%	63%	13%	9%	0%
Sarasota	25	19%	56%	10%	15%	0%
Category 1	12	0%	57%	8%	35%	0%
Category 2	5	27%	73%	0%	0%	0%
Category 3	4	45%	16%	39%	0%	0%
Category 4	2	0%	100%	0%	0%	0%
Category 5	2	0%	100%	0%	0%	0%
Non-Surge	2	70%	0%	30%	0%	0%
Glades	38	7%	58%	20%	15%	0%
Hendry	39	25%	69%	4%	2%	0%

Where did you evacuate to during Hurricane Ivan?

Residents of the Southwest region who report evacuating for Hurricane Ivan are equally likely to say they went to friends and relatives (35%) or to a hotel or motel (32%), while 15% went to public shelters.

County Level Results

Evacuating to public shelters was more prevalent in Collier County (30%), while evacuating to friends and relatives was most frequent in Charlotte County (49%).

Where did you evacuate to during Hurricane Ivan?

	n	Public shelter	Friend/relative	Hotel/motel	Other	Don't know
Southwest	118	15%	35%	32%	16%	2%
Category 1	45	15%	27%	43%	12%	3%
Category 2	29	4%	41%	38%	15%	2%
Category 3	14	2%	41%	49%	7%	0%
Category 4	7	4%	63%	18%	15%	0%
Category 5	12	4%	63%	18%	15%	0%
Non-Surge	11	51%	21%	0%	28%	0%
Charlotte	44	3%	49%	38%	7%	3%
Category 1	16	0%	40%	48%	4%	8%
Category 2	7	12%	59%	22%	7%	0%
Category 3	7	0%	45%	55%	0%	0%
Category 4		6%	52%	24%	18%	0%
Category 5	12	6%	52%	24%	18%	0%
Non-Surge	2	0%	100%	0%	0%	0%
Collier	37	30%	29%	28%	12%	1%
Category 1	19	24%	25%	34%	16%	2%
Category 2		5%	48%	47%	0%	0%
Category 3	10	5%	48%	47%	0%	0%
Category 4		0%	100%	0%	0%	0%
Category 5	2	0%	100%	0%	0%	0%
Non-Surge	6	69%	10%	0%	21%	0%
Lee	37	11%	28%	30%	29%	2%
Category 1	10	16%	16%	52%	16%	0%
Category 2	15	0%	27%	35%	32%	5%
Category 3	4	0%	10%	41%	49%	0%
Category 4		0%	80%	7%	13%	0%
Category 5	5	0%	80%	7%	13%	0%
Non-Surge	3	33%	22%	0%	45%	0%

9. Historical Evacuation Behavior

Where did you evacuate to during Hurricane Wilma?

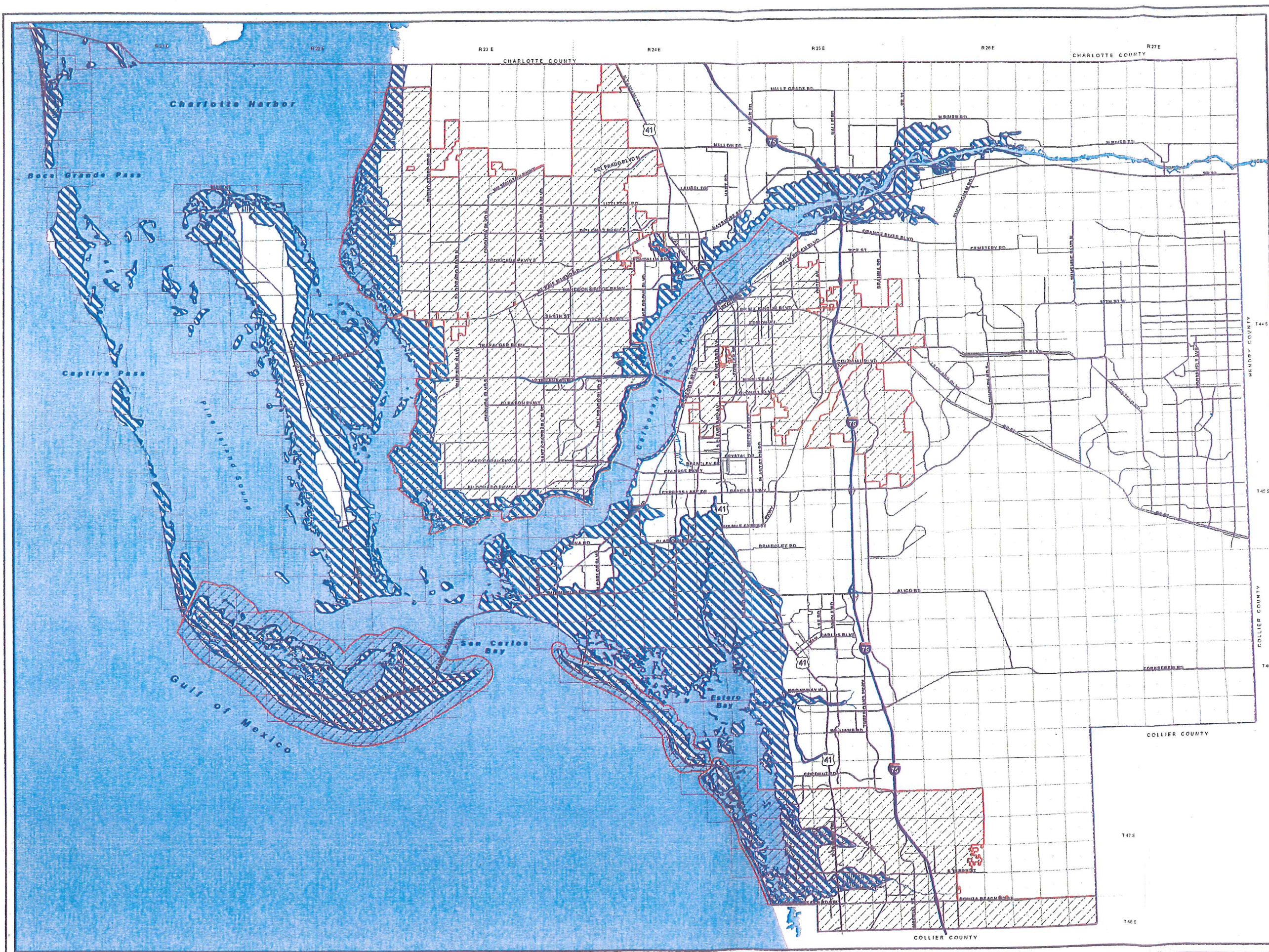
Over half of evacuees in Hurricane Wilma (52%) report going to friends and relatives, while 11% report evacuating to a public shelter.

County-Level Results

Incidence of evacuating to public shelters is highest in Sarasota (15%) and Collier (14%) counties. Reported evacuation to hotels/motels is greatest in Charlotte County (41%).

Where did you evacuate to during Hurricane Wilma?

	n	Public shelter	Friend/relative	Hotel/motel	Other	Don't know
Southwest	245	11%	52%	28%	8%	0%
Category 1	101	10%	54%	30%	5%	0%
Category 2	74	10%	55%	25%	10%	0%
Category 3	35	7%	60%	25%	8%	0%
Category 4	10	2%	57%	37%	4%	0%
Category 5	7	2%	57%	37%	4%	0%
Non-Surge	18	29%	18%	31%	18%	4%
Charlotte	25	2%	46%	41%	12%	0%
Category 1	8	0%	22%	62%	17%	0%
Category 2	10	0%	95%	0%	5%	0%
Category 3	3	0%	65%	0%	35%	0%
Category 4	4	6%	6%	88%	0%	0%
Category 5		6%	6%	88%	0%	0%
Non-Surge	0					
Collier	130	14%	52%	28%	6%	1%
Category 1	70	11%	58%	28%	3%	0%
Category 2		8%	54%	29%	9%	0%
Category 3	39	8%	54%	29%	9%	0%
Category 4		0%	63%	31%	6%	0%
Category 5	6	0%	63%	31%	6%	0%
Non-Surge	15	37%	21%	29%	8%	5%
Lee	66	8%	53%	26%	14%	0%
Category 1	15	10%	46%	34%	10%	0%
Category 2	32	14%	47%	25%	14%	0%
Category 3	12	0%	86%	14%	0%	0%
Category 4		0%	84%	8%	8%	0%
Category 5	5	0%	84%	8%	8%	0%
Non-Surge	2	0%	0%	42%	58%	0%
Sarasota	24	15%	63%	22%	0%	0%
Category 1	8	10%	79%	10%	0%	0%
Category 2	7	21%	55%	25%	0%	0%
Category 3	6	19%	42%	39%	0%	0%
Category 4		0%	100%	0%	0%	0%
Category 5	2	0%	100%	0%	0%	0%
Non-Surge	1	0%	100%	0%	0%	0%

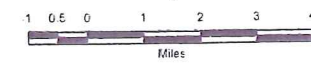


PROPOSED LEE COUNTY

COASTAL HIGH HAZARD AREA (CHHA)

Legend

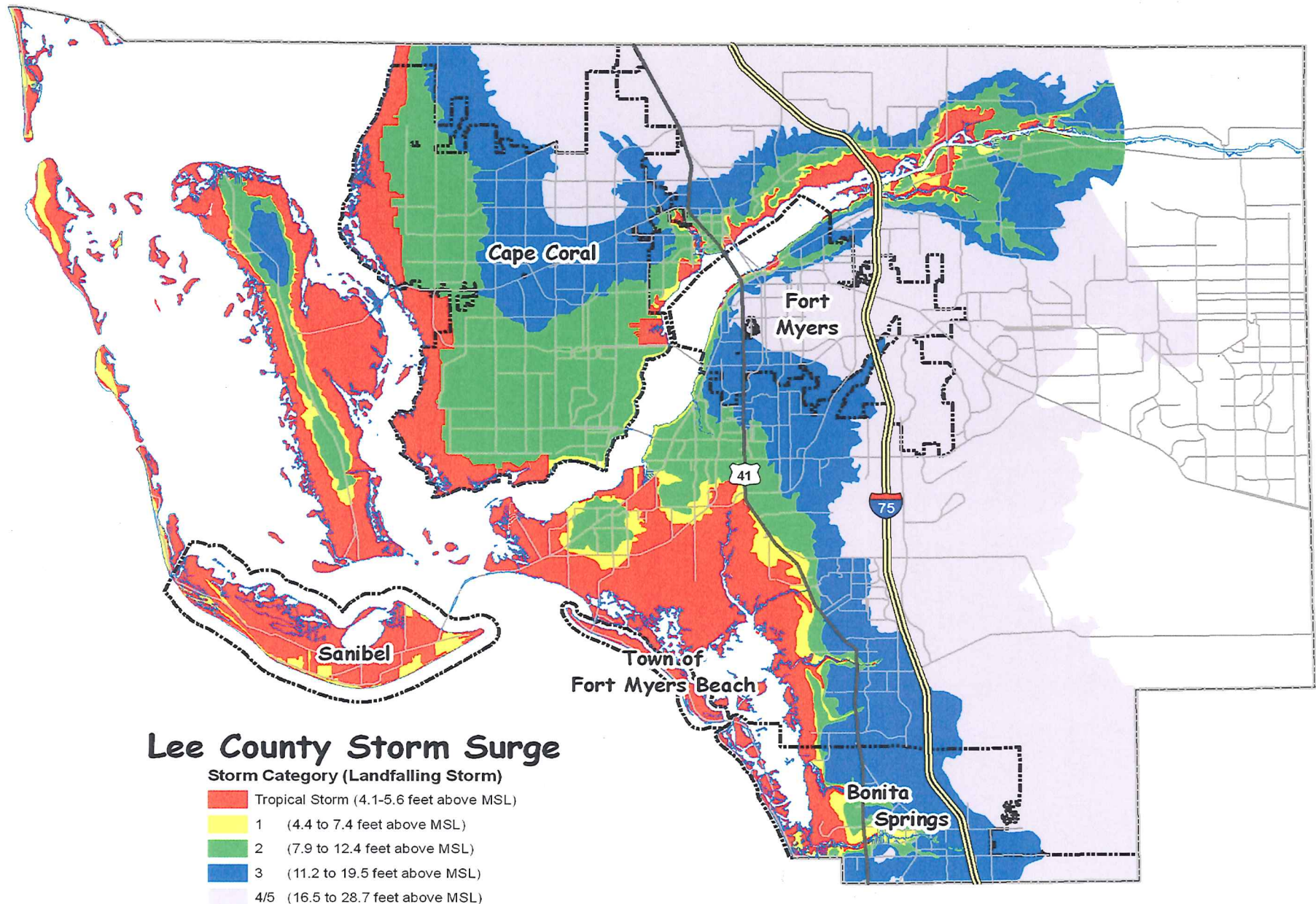
- Coastal High Hazard Area
- City Limits

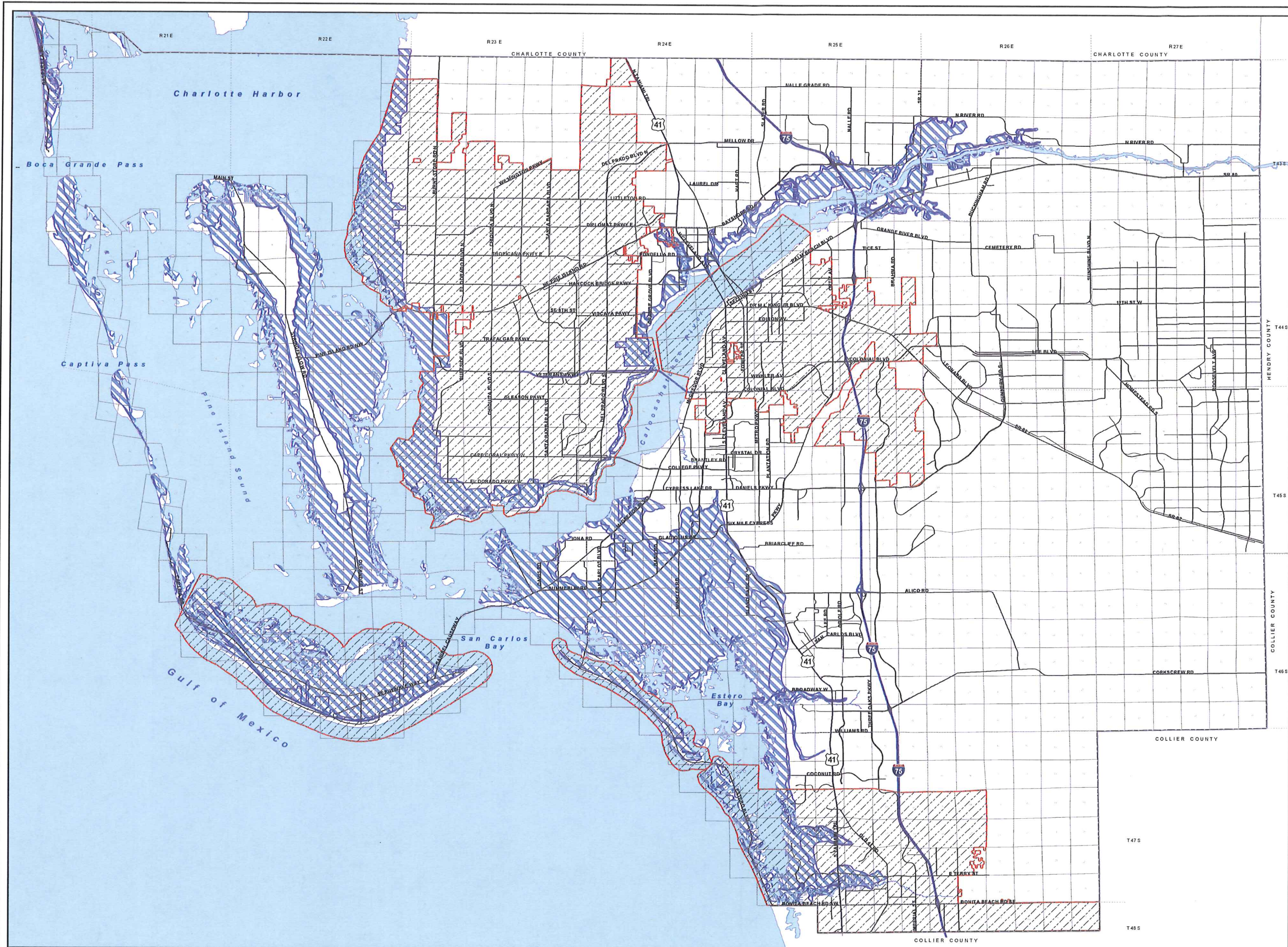


Source: SLOSH Model
(Sea, Lake and Overland Surges from Hurricanes)
Run by Southwest Florida Regional Planning Council

Map Generated: September 2008
City Limits current to date of map generation

Lee Plan Map 5





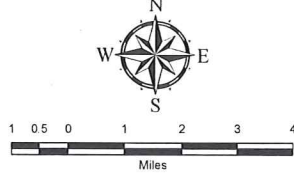


PROPOSED LEE COUNTY

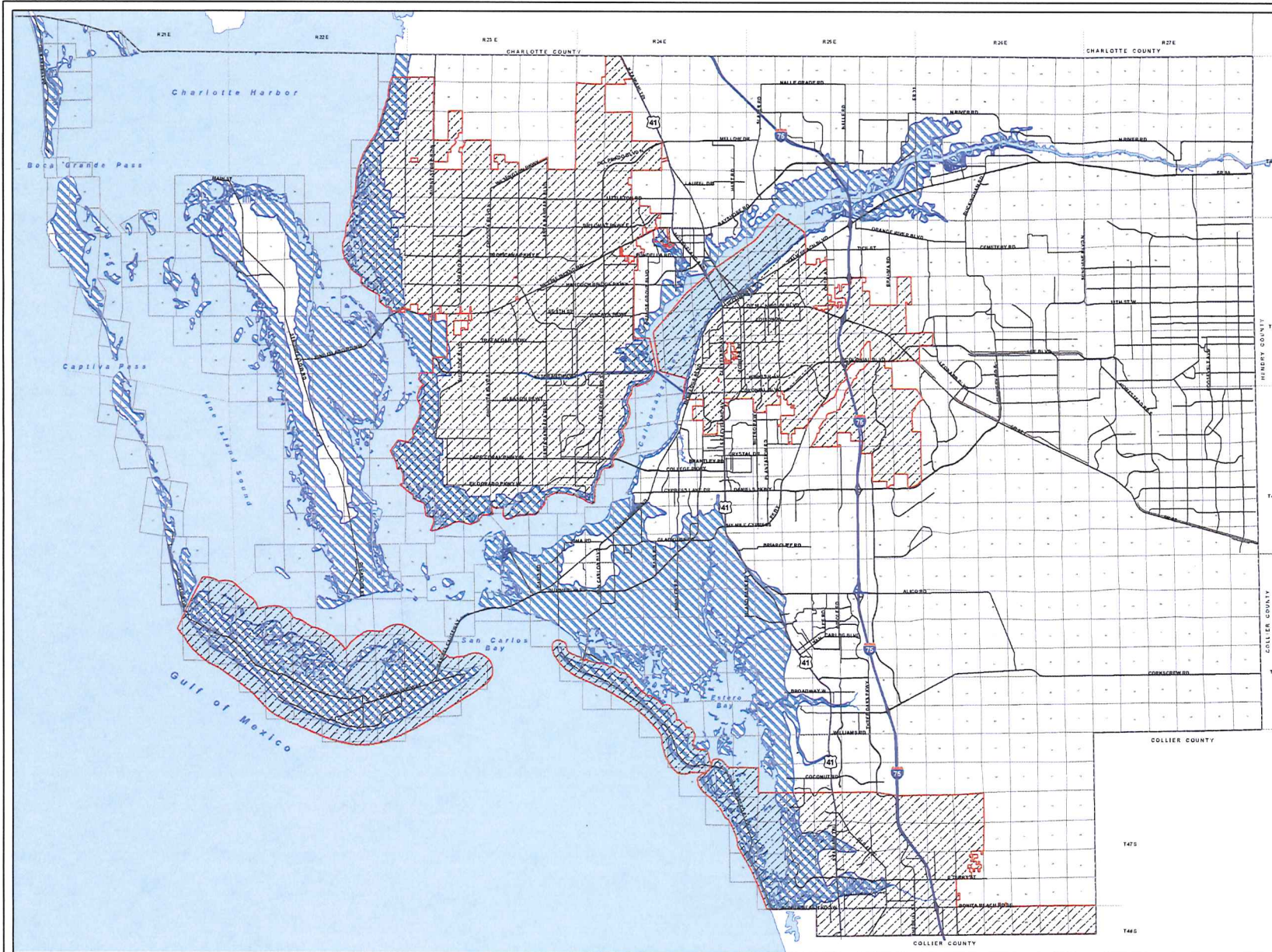
COASTAL HIGH HAZARD AREA (CHHA)

Legend

-  Coastal High Hazard Area
-  City Limits



Map Generated: September 2008
City Limits current to date of map generation



PROPOSED LEE COUNTY

COASTAL HIGH HAZARD AREA (CHHA)

Legend

-  Coastal High Hazard Area
-  City Limits



Source: SLOSH Model
(Sea, Lake and Overland Surges from Hurricanes)
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Map Generated: September 2008
City Limits current to date of map generation

Lee Plan Map 5