2002 Shelter Retrofit Report

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Governor

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Director

State of Florida Shelter Retrofit Report

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EXECUTIVE SUMMARY:

This *2002 Shelter Retrofit Report* fulfills the requirements of Section 252.385(3), Florida Statutes, for the Department of Community Affairs, Division of Emergency Management, to annually provide a list of facilities to be retrofitted using state funds to the President of the Senate, Speaker of the House and the Governor. Retrofitting is the modification of an existing structure to make it stronger and more disaster resistant. An example would be the installation of hurricane shutters on an existing building to protect doors and windows from windborne debris. Such measures bring the safety of public shelters up to established criteria, and provide more safe spaces for Florida's residents. The retrofitting of buildings is a viable resource in the endeavor to increase and eventually provide shelter to all those seeking it.

Significant progress has been made toward reducing, and ultimately eliminating, the deficit of safe public hurricane shelter space. In Florida, 381,512 hurricane shelter spaces have been created through a combination of retrofitting and use of enhanced wind design and construction standards. Another 107,520 spaces are scheduled to be ready by the beginning of the 2003 hurricane season. Funding has also been identified for Fiscal Year 2002-2003, and is projected to create an additional 38,197 spaces. By June 2003, this will provide a total of 527,279 hurricane shelter spaces that meet the American Red Cross' *Guidelines for Hurricane Evacuation Shelter Selection* (ARC 4496, July 1992). With funding of the retrofit projects recommended in this report, the overall gain in hurricane shelter spaces will be 684,605 spaces since 1995. (Further details on hurricane shelter deficit reduction are provided in Table 2.2.)

The Department reviewed 440 project submittals for the *2002 Shelter Retrofit Report*. Proposals were submitted by county emergency management agencies in cooperation with local American Red Cross Chapters, school boards and other organizations involved in hurricane sheltering activities. After an evaluation of the projects, the Department recommends 356 prioritized retrofit projects that could potentially create 157,326 hurricane shelter spaces statewide at an estimated cost of $36,950,663.

As the following table demonstrates, the majority of the public hurricane shelter capacity created has been achieved in the past three years. This is due to several factors, but the primary source of shelter capacity increase has been availability of retrofit and mitigation-related funds. Prior to 1999, there was not a significant dedicated source of funding. The 1999 Legislature appropriated $2.265 million to retrofit school buildings that are used as public hurricane shelters with window shutters. This appropriation produced approximately 34,928 spaces in Fiscal Year 1999-2000.

In 2000, the Governor and Legislature continued to provide funding towards reduction of the hurricane shelter space deficit. An appropriation of $18 million in combined Federal, State and local resources went directly toward completing the shelter retrofit projects listed in the *1999 Shelter Retrofit Report*. Also, additional funding through the Department's Hazard Mitigation Grant Program has been earmarked to support shelter retrofit or construction

enhancement projects listed in the *2000 Shelter Retrofit Report*.

Historical Summary of *Shelter Retrofit Report* Progress
(Estimates)

Year	Shelter Retrofit Report $ Estimate	Shelter Retrofit Report Projected Spaces	Shelter Retrofit Report $ Allocated	Shelter Retrofit Report Spaces Gained	Other Spaces Gained (Non-Retrofit Report projects)	Total Spaces Gained
1994	$1,837,571	19,000	$0	0	0	0
1995	$5,978,870	26,719	$0	0	0	0
1996	$7,995,874	37,082	$0	0	0	0
1997	$8,818,251	52,832	$0	0	0	0
1998	$10,063,445	55,649	$0	0	0	0
1999	$17,882,467	88,679	$8,304,616	40,390	86,524*	126,914
2000	$40,230,545	250,362	$30,792,758	149,064	158,231	307,295
2001	$31,385,308	119,905	$3,000,000	15,223	39,650	54,873
2002	$36,950,663	157,326	$4,000,000**	38,197**	***	38,197**
Total	N/A	N/A	$46,097,374	242,874	284,405	**527,279**

* - Summation of previous years' local retrofit and new public school Enhanced Hurricane Protective Area (EHPA) construction estimates of shelter capacity gained. Capacities gained from other sources not available (or unreliable) on an individual year basis prior to 1999.
** - Projection based on $4 million from Fiscal Year 2002-2003 Appropriation 1523.
*** - Funding not yet appropriated or identified.

For the *2001 Shelter Retrofit Report*, one identified source of funding was the Florida Hurricane Catastrophe Fund, Hurricane Loss Mitigation Program. According to Section 215.559(2)(b), Florida Statutes, $3 million in funds from this program shall be used to retrofit existing facilities used as public hurricane shelters. To date, this source of funds has created about 15,223 spaces. An additional 38,197 are projected to be created by the beginning of the 2003 hurricane season. The Department will also continue to aggressively pursue other potential funding sources.

The Department's public hurricane shelter deficit elimination strategy focuses on five major components: 1) survey hurricane shelter facilities in existing local inventories to identify unused space; 2) survey facilities not currently listed in local inventories to identify additional

capacity; 3) provide funding for cost-effective retrofit or other mitigation measures on existing buildings that can provide additional shelter capacity; 4) incorporating hurricane shelter design criteria into new public building construction projects; and 5) reducing hurricane shelter demand through improved public information, education and behavioral analysis. This report focuses specifically on the retrofitting efforts occurring in Florida.

Another component of the concerted effort to increase the availability of "safe" hurricane shelter space is construction of new school facilities to comply with the Department of Education's "Public Shelter Design Criteria" (i.e., Enhanced Hurricane Protection Areas or EHPAs). Currently, about 118 school facilities that comply with the EHPA criteria have been built, and an additional 58 are planned or under construction in 44 counties across the state. Through construction of EHPA facilities, an estimated 92,013 hurricane shelter spaces have been added to the state's inventory since 1995.

In January 2002, the American Red Cross revised their hurricane shelter space planning requirements. The new planning guideline for hurricane shelter occupant capacity has been reduced to "no less than 15 square feet per person." Since the previous guideline was 20 square feet per person, this could have a significant positive impact upon the state's overall hurricane shelter deficit situation. This revised planning guidance does not affect hurricane shelters designated for Persons with Special Needs, which are based on 40 square feet per client, caregivers and staff. Based upon data from the *2002 Statewide Emergency Shelter Plan*, this revision could reduce the statewide deficit by as much as 14 percent. However, to remain consistent with the planning data presented in the *2002 Statewide Emergency Shelter Plan*, as well as other implementation issues and concerns, the hurricane shelter capacity information presented in this report is based on 20 square feet per general population space. Adjustments may be made with publication of the *2003 Shelter Retrofit Report*.

As Florida's hurricane vulnerable population continues to grow, it is vitally important that construction of hurricane shelters and retrofitting of existing buildings be considered a priority. If this State is going to meet its goal of eliminating the hurricane shelter space deficit, the incorporation of the EHPA criteria into new construction and the retrofitting of suitable existing buildings must be accomplished. The overall result of full implementation of the Department's shelter deficit reduction strategy is a greater level of preparedness, more efficient capabilities for responding to incidents, and greater ability to meet the needs of disaster victims.

I. INTRODUCTION

Purpose

Pursuant to Section 252.385(3), Florida Statutes, the purpose of this publication is to present the Department of Community Affairs' *Shelter Retrofit Report*. The *Shelter Retrofit Report* provides the Department's list of facilities recommended to be retrofitted using local, state and federal funds to the President of the Senate, the Speaker of the House of Representatives, and the Governor. This report also prioritizes facilities with specific projects and cost estimates which, when funded, will improve relative safety and reduce the hurricane shelter space deficit of this state.

Shelter Retrofit Project Identification Procedure

County emergency management officials in cooperation with local American Red Cross (ARC) Chapters, school boards, and other public and private agencies provided the data used for the *Shelter Retrofit Report*. The Department recognizes that local officials are aware of under-utilized facilities and are in a position to make recommendations that will best serve their communities. In order to identify potential shelter retrofit projects for inclusion in this year's report, the Department provided general guidance for the development of proposals in a questionnaire-type format that the counties could use for project submittal. Accurate and conscientious completion of the questionnaire (see Appendix H) guided those that prepared the project proposals through the shelter selection and retrofit proposal development process.

The questionnaire was formatted to include sufficient information to determine if the facility could meet ARC hurricane hazard safety guidelines, clearly define the project(s) to be undertaken and their impact upon hurricane shelter capacity and safety, and explains the interrelationship of the proposed project(s) and local and regional shelter strategies. The guidelines are found in *MASS CARE -- Preparedness and Operations* (ARC 3031), and *Standards for Hurricane Evacuation Shelter Selection* (ARC 4496). The cost estimates were generally provided by local agencies, commercial contractors, or in some cases, "rules of thumb" (not the preferred procedure). Department staff then reviewed and ranked the projects.

This Report also includes projects originally submitted in previous Shelter Retrofit Reports. Those projects were re-evaluated along with new projects submitted in 2001. In some cases, projects evaluated in the previous reports received different rankings in the 2002 report. This is due primarily to changes (i.e., changing regional/county deficits or updated costs) in the criteria used to prioritize projects. The criteria consists of following:

- Regional and Local Shelter Deficit Reduction
- Structural and Hazards Vulnerability Review (ARC 4496)

- Mass Care and Infrastructure Review (ARC 3031)
- Shelter Capacity Increase, Building Ownership and Availability, and Cost-Effectiveness Considerations
- Other Considerations / Demonstration of Impact Upon the Overall Shelter Deficit Situation

For more details on each criteria item, see Appendix D: "Methodology for Recommendation of Projects for Funding."

Summary of Annual Reports

The retrofit projects recommended for consideration in this Report will, if funded, substantially improve state and local hurricane preparedness. The Department has been preparing the Shelter Retrofit Report on an annual basis since September 1994. Table 1.1, which is located on the following page, provides a brief summary of the State's progress towards eliminating the deficit of hurricane shelter space since the *Shelter Retrofit Report* was first published in 1994.

Table 1.1

Historical Summary of *Shelter Retrofit Report* Progress
(Estimates)

Year	Shelter Retrofit Report $ Estimate	Shelter Retrofit Report Projected Spaces	Shelter Retrofit Report $ Allocated	Shelter Retrofit Report Spaces Gained	Other Spaces Gained (Non-Retrofit Report projects)	Total Spaces Gained
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II. BACKGROUND AND CURRENT SITUATION

Florida has experienced catastrophic events with loss of life and property on a massive scale due to hurricanes and a wide array of other disasters. Our 35 coastal counties lie along 8,436 miles of coastline, including tidal inlets, bays, and other waterways. The proximity of the population concentrations throughout the Gulf of Mexico and the Atlantic Ocean areas, coupled with generally low coastal elevations, significantly increase the State's vulnerability to hurricane damage, tidal surges, and storm-related flooding. This vulnerability has manifested itself in the need for thousands of safe public shelter spaces of which the State of Florida is experiencing a critical shortfall.

Background

On August 24, 1992, Hurricane Andrew made landfall in South Florida with sustained wind speeds of 165 miles per hour. This intensity made Hurricane Andrew only the third Category 5 hurricane to strike the United States during the 20th Century. It is estimated that 750,000 persons heeded appropriate warnings and evacuated coastal areas, inland flood prone areas, and mobile homes. In some cases, spontaneous evacuations also occurred. Though many evacuees sought shelter in motels or the homes of family and friends, many sought refuge in public shelter facilities in the affected area and in communities along evacuation routes throughout the state. This unprecedented movement of Florida's citizens and visitors in the face of an impending natural disaster stretched the resources of state, local, and private agencies to provide public shelter.

Post-disaster evaluations of evacuation and sheltering concerns by the Governor's Disaster Planning and Response Review Committee (i.e., Lewis Commission Report) identified the lack of adequate and appropriate shelter space as a critical planning issue. The Lewis Commission Report served as the driving force behind the writing of Chapter 93-128, Laws of Florida and the subsequent revision of Chapter 252, Florida Statutes, in Chapter 2000-140, Laws of Florida. The legislation stated that it was the intent of the Legislature that Florida not have a deficit of safe hurricane shelter space in any region of the state. The legislation also directs the Department's Division of Emergency Management to provide a list of facilities recommended for retrofitting using state funds, for the expressed purpose of reducing public hurricane shelter deficits, and that all recommended projects should be complete by the year 2008.

Florida's growing population, which is increasing at an average rate of more than 383,577 new residents per year and predicted to exceed 18,667,418 persons by the year 2007 (2000 United States Census), is continuing to settle in coastal areas especially susceptible to hurricane force winds and the damage caused by storm surge. Many of the new residents that are moving to inland counties are choosing to live in large manufactured housing communities that are also susceptible to the effects of hurricanes. Therefore, the regional and statewide sheltering deficit situation is not just a coastal phenomenon. Most interior counties also have significant shelter deficits. The future safety of all our citizens prior to and during a hurricane will require substantial additions to the statewide public hurricane shelter inventory.

Another major contributor to the growing statewide hurricane shelter deficit is the standard capabilities of facilities traditionally used as shelters. Many of the designated shelters do not meet major hurricane-resistance design and construction guidelines, or shelter inventories include buildings which are vulnerable to other potentially hazardous conditions. Furthermore, hurricane shelter space capacities have often been based on an "over-estimation" of usable shelter space. These over-estimations have often been caused by lack of reductions for interior walls, utility rooms, restrooms, and other spaces that were not usable as shelter space. Implementation of the ARC 4496 guidelines through shelter evaluations by local, state, and prime contracted surveyors, is identifying these structures, either for elimination from the inventory, or for appropriate retrofits to enable them meet the guidelines.

The ARC 4496 guidelines currently in use were nearly a decade in development. In 1983, the Southern Building Code Congress International researched and considered development of shelter selection criteria, but nothing was formally published at the time. The only other guidance available in 1983 was Federal Emergency Management Agency's publication *TORNADO PROTECTION -- Selecting and Designing Safe Areas in Buildings* (TR-83B, October 1982). Other attempts at conducting structural shelter evaluations were performed in the 1980's, but again no formal guidelines were prepared. Only after a shelter in McClellanville, South Carolina was inundated with 10 feet of storm surge during Hurricane Hugo was a task force created to prepare and publish hurricane shelter selection guidelines. Subsequently, *Guidelines for Hurricane Evacuation Shelter Selection* (ARC 4496, July 1992) was published by the American Red Cross.

Even before the publishing of ARC 4496, wind engineering experts were considering the effects of wind load issues on hurricane shelters. When developing the national state-of-the-art wind design standard *Minimum Design Loads for Buildings and Other Structures* (ASCE 7-88), the American Society of Civil Engineers classified hurricane shelters as an "essential facility." This classification indicates the degree of hazard to human life, and that an additional safety margin was necessary for a building intended for use as a hurricane shelter. The essential facility classification requires buildings designated as hurricane shelters to be designed and constructed to the same requirements as hospitals, police stations and emergency communications facilities.

In 1994, ARC 4496 became the basis for the development of the Department's shelter survey procedure. The criteria focuses on survivability and uses nationally recognized expert guidance, publications and standards. It should be noted that the Department's shelter selection criteria is consistent with the procedures Miami-Dade County used prior to Hurricane Andrew. Several buildings that were considered hurricane shelters prior to 1992 had been removed from the County's inventory; many of these buildings were so heavily damaged that they were razed after the storm. It is important that this lesson not be lost due to the passage of time.

The Department has endeavored to eradicate the shelter deficit with a multifaceted program. This program includes: 1) construction of new facilities using public shelter design

criteria; 2) survey of existing buildings, both public and private, to identify additional shelter capacity; 3) where cost effective (and practical), support of mitigation and retrofitting to increase shelter capacity; 4) incorporation of hurricane shelter design criteria into new public building construction projects; and 5) improvement of public information/education and behavioral analyses.

Findings of the Department's Shelter Survey Program

Historically, throughout much of Florida, the practice was to evaluate a potential hurricane shelter only using mass care criteria. The structural effects of major hurricanes on buildings were not considered. When established hurricane guidelines (i.e., ARC 4496) are applied, the listed numbers of hurricane evacuation shelter spaces have typically dropped dramatically. The guidelines identify the vulnerability of a building to hurricane effects (high winds, debris impact, storm surge, and inland flooding inundation). Application of the guidelines frequently identified characteristics (i.e., long span roofs, unreinforced masonry, unprotected windows, etc.) present in the hurricane shelter buildings. These building construction characteristics have historically performed poorly under major hurricane conditions.

Since 1993, the Department staff and contract surveyors have conducted on-site shelter surveys of over 2,277 facilities in 35 counties. In each case, local emergency managers selected the sites, based on local sheltering plans.

Table 2.1 lists the most common vulnerabilities found during the surveys. The Table includes only a sampling of the counties surveyed to indicate the range of vulnerabilities. The vulnerabilities have been identified based upon ARC 4496 guidelines.

TABLE 2.1

County	Number of Buildings Surveyed	Storm Surge (> two feet of surge in building)*	Inland Floodplains (site / access roads)*	Unreinforced Masonry Walls*	Unshuttered Windows / Skylights*	Open Span Roof*
Bay	17	0	12	53	100	18
Charlotte	30	100	43	60	83	83
Citrus	62	10	0	63	94	56
Collier	37	81	22	38	73	68
DeSoto	22	0	0	50	95	27
Dixie	33	0	0	45	91	33
Gilchrist	13	0	0	30	92	23

County	Number of Buildings Surveyed	Storm Surge (> two feet of surge in building)*	Inland Floodplains (site / access roads)*	Unreinforced Masonry Walls*	Unshuttered Windows / Skylights*	Open Span Roof*
Glades	15	13	27	60	67	27
Hendry	22	0	36	55	68	86
Hernando	47	0	0	19	98	60
Indian River	17	0	0	6	100	71
Lake	85	0	0	38	85	31
Lee	123	67	20	21	89	46
Leon	86	0	9	26	21	42
Levy	89	12	?	62	95	38
Nassau	26	0	12	38	85	31
Orange	44(sites)	0	0	98	91	11
Suwannee	12	0	0	50	100	58
Sarasota	116	28	0	22	96	50
Volusia	35(sites)	0	0	63	97	60
Average%	N/A	N/A	9	45	86	46

The “Number of Buildings Surveyed” column reflects the number of buildings fully surveyed in each county. In many cases, the surveyor was able to eliminate buildings based on a preliminary survey (i.e., utility buildings, greenhouses, Quonset huts, older unreinforced masonry buildings, etc.). Generally, this allowed the surveyor to concentrate full surveys on those facilities at each site with more hurricane shelter potential. If possible, any gyms or cafeterias on a campus were fully surveyed, due to the tendency to use such buildings for mass care shelters. When possible, the surveyors attempted to identify at least one other potential shelter building at each site.

The “Storm Surge” column is included to identify structures that are vulnerable to potential storm surge (greater than two feet deep in the building). Mitigation measures can be implemented for structures that are vulnerable to less than two feet of storm surge. Generally, surges in excess of two feet inundation of a building are difficult and costly to mitigate.

Because flooding can be expected with the heavy rainfall that normally accompanies hurricanes, care must be taken to avoid placing shelter occupants at risk from rising floodwaters.

ARC 4496 guidelines recommend against locating hurricane shelters in a 100-year floodplain. The "Inland Floodplains" column indicates those structures potentially affected by flooding.

The "Unreinforced Masonry Walls" column is included due to the propensity for poor performance of such systems under major hurricane conditions.

"Unshuttered Windows / Skylights" is included because of the high vulnerability such systems provide for both older and newer buildings. Unprotected windows on the building exterior are very vulnerable to wind load failures and windborne debris impact. Once breached, the damaged window will allow access by hurricane force winds and rains into the building interior, resulting in interior damage and subsequent roof system failures.

"Open Span Roof" systems also have performed poorly under hurricane conditions, especially when under a flat, lightweight roof (common in gyms and cafeterias in Florida). Such systems are very vulnerable to the uplift and reverse bending forces prevalent under major hurricane conditions, unless sufficient bracing is applied.

While many other concerns were also found in the surveys, the above factors were selected for tabulation since they are typical examples of common vulnerabilities found in potential hurricane shelter buildings. These findings are consistent with those of local government agencies and engineering consultant firms. As an example, URS Corporation found similar results during a survey of potential hurricane shelters in Delaware. They found that 45 percent of the buildings had weak exterior walls (typically unreinforced masonry), 80 percent had unprotected windows, and 42 percent had open span roofs.

In addition, the overestimation of usable floor space is a common factor in the reduction of pre-defined shelter spaces. The total floor area of a building (i.e., the building's "footprint") was often used to calculate the shelter area. This resulted in counting space that was actually taken up in restrooms, kitchens, utility/electrical rooms, closets, and space needed for walkways. When surveyors evaluated a building, such unusable floor area was eliminated, often resulting in significant reduction of shelter capacity.

Statewide Progress in Shelter Retrofitting and Enhanced Hurricane Protection Area Construction

The counties were polled for current information on retrofit projects and enhanced hurricane protection area (EHPA) construction, resulting in the table below. Table 2.2 shows listings of retrofitted spaces (either local, state, or federal funds) and EHPA spaces gained up through June 30, 2002, and expected gains (contracted or under construction) between July 2002 and June 2003.

Table 2.2

2002 Hurricane Evacuation Shelter Deficit Reduction Progress
"Post-1995 Success Stories"
Shelter Capacity that Meets ARC 4496 Guidelines (as of 21 Aug 2002)

(*Italicized entries indicate previous information carried forward, more current information is not yet available*)
NOTE: For sake of simplicity, all General Population Hurricane Shelter capacities are calculated based on 20 sq.ft. per evacuee, and Persons with Special Needs (PSN) Hurricane Shelters on 40 sq.ft. per evacuee.

County Name	1995 - June 30, 2002		July 1, 2002 - June 30, 2003	
	Retrofitted Shelter Capacity (# spaces @ 20sqft per evacuee)	**New School EHPA Capacity** (# spaces @ 20sqft per evacuee)	**Retrofitted Shelter Capacity** (# spaces @ 20sqft per evacuee)	**New School EHPA Capacity** (# spaces @ 20sqft per evacuee)
Alachua	**0**	**0**	**0**	**0**
Alachua/UF	**3,075**	**0**	**0**	**0**
Baker	**0**	**0**	**0**	**280**
Bay	**4,914**	**0**	**0**	**0**
Bradford	**1,644**	**0**	**0**	**0**
Brevard	**19,750**	**4,250**	**1,100**	**0**
Broward	**0**	**18,000**	**0**	**0**
Calhoun	**0**	**0**	**0**	**0**
Charlotte	**1,500**	**0**	**0**	**0**
Citrus	**0**	**0**	**0**	**544**
Clay	**1,849**	**697**	**0**	**0**
Collier	**8,500**	**500**	**1,500**	**0**
Columbia	**0**	**614**	**0**	**0**
DeSoto	**576**	**0**	**1,523**	**0**
Dixie	**0**	**460**	**0**	**0**
Duval	**10,014**	**2,467**	**0**	**0**
Escambia	**9,954**	**250**	**3,266**	**0**
Flagler	**4,267**	**0**	**0**	**0**
Franklin	**0**	**0**	**0**	**0**

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County Name	1995 - June 30, 2002		July 1, 2002 - June 30, 2003	
	Retrofitted Shelter Capacity (# spaces @ 20sqft per evacuee)	**New School EHPA Capacity** (# spaces @ 20sqft per evacuee)	**Retrofitted Shelter Capacity** (# spaces @ 20sqft per evacuee)	**New School EHPA Capacity** (# spaces @ 20sqft per evacuee)
Gadsden	**400**	**0**	**0**	**2,000**
Gilchrist	**1,795**	**0**	**0**	**0**
Glades	**607**	**0**	**0**	**0**
Gulf	**30**	**0**	**0**	**0**
Hamilton	**501**	**0**	**0**	**0**
Hardee	**0**	**514**	**0**	**0**
Hendry	*3,086*	*1,000*	*0*	*0*
Hernando	*4,253*	*0*	*0*	*0*
Highlands	**0**	**352**	**0**	**0**
Hillsborough	**16,675**	**6,720**	**1,750**	**5,717**
Holmes	**0**	**0**	**0**	**0**
Indian River	**7,520**	**0**	**0**	**0**
Jackson	**0**	**0**	**1,086**	**0**
Jefferson	**0**	**0**	**0**	**626**
Lafayette	**371**	**0**	**0**	**0**
Lake	**0**	**17,175**	**0**	**6,870+***
Lee	**13,993**	**0**	**5,500**	**1,838**
Leon	**0**	**0**	**0**	**0**
Levy	**0**	**0**	**0**	**0**
Liberty	**0**	**600**	**0**	**0**
Madison	**300**	**0**	**0**	**0**

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County Name	1995 - June 30, 2002		July 1, 2002 - June 30, 2003	
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Manatee	**6,254**	**1,707**	**8,375**	**850**
Marion	**4,915**	**1,420**	**0**	**0**
Martin	**7,494**	**1,398**	**0**	**0**
Miami-Dade	**62,023**	**0**	**0**	**0**
Monroe	**0**	**0**	**0**	**0**
Monroe/FIU	**700**	**0**	**0**	**0**
Nassau	**872**	**1,380**	**0**	**1,831**
Okaloosa	**50**	**750**	**0**	**0**
Okeechobee	**2,232**	**1,011**	**0**	**0**
Orange	**0**	**1,920**	**4,025**	**0**
Osceola	**3,159**	**3,603**	**500**	**3,000**
Palm Beach	**18,260**	**7,635**	**720**	**14,540**
Pasco	**0**	**825**	**15,580**	**3,227**
Pasco/St. Leo U.	**3,392**	**0**	**0**	**0**
Pinellas	**16,898**	**0**	**1,167**	**2,400**
Polk	**0**	**1,745**	**0**	**4,474**
Putnam	**725**	**0**	**0**	**0**
Santa Rosa	**4,953**	**352**	**1,000**	**1,000**
Sarasota	**14,926**	**7,113**	**5,584**	**2,000**
Seminole	**7,277**	**0**	**0**	**0**
St. Johns	**5,820**	**1,000**	**0**	**500**

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NOTE: For sake of simplicity, all General Population Hurricane Shelter capacities are calculated based on 20 sq.ft. per evacuee, and Persons with Special Needs (PSN) Hurricane Shelters on 40 sq.ft. per evacuee.

County Name	1995 - June 30, 2002		July 1, 2002 - June 30, 2003	
	Retrofitted Shelter Capacity (# spaces @ 20sqft per evacuee)	**New School EHPA Capacity** (# spaces @ 20sqft per evacuee)	**Retrofitted Shelter Capacity** (# spaces @ 20sqft per evacuee)	**New School EHPA Capacity** (# spaces @ 20sqft per evacuee)
St. Lucie	**3,205**	**0**	**0**	**0**
Sumter	**794**	**200**	**0**	**0**
Suwannee	**355**	**200**	**0**	**0**
Taylor	**0**	**600**	**0**	**0**
Union	**424**	**1,160**	**0**	**0**
Volusia	**5,849**	**1,422**	**2,547**	**0**
Wakulla	**1,300**	**0**	**0**	**650**
Walton	**2,048**	**2,773**	**0**	**0**
Washington	**0**	**200**	**0**	**0**
Subtotals	**289,499**	**92,013**	**55,223**	**52,347**
		GRAND TOTAL:	**489,082**	

* - Lake County School Board is currently constructing nine new school facilities with cumulative floor areas in excess of 332,400 square feet. The new facilities will incorporate EHPA criteria; shelter capacities not available as of this report's publication date.

For the *2002 Shelter Retrofit Report*, the Department is recommending a prioritized list of 356 projects with a potential to create 157,326 hurricane shelter spaces after retrofitting (see Appendix E) with an estimated cost of $36,950,663. If appropriated, the Division anticipates that at least $3,000,000 will be available to fund these prioritized projects. However, as of publication of this report, no other dedicated funding sources have been identified to support the 356 recommended projects. Appendix J contains a chart showing *Shelter Retrofit Report* projects that have already been contracted (includes non-EHPA projects from past years). A total of $34,135,667 in funding created an estimated 211,450 hurricane shelter spaces. Funding sources included the Hazard Mitigation Grant Program (HMGP), the Emergency Management Preparedness & Assistance (EMPA) grant program, and special legislative appropriations.

In addition, many local governments have aggressively addressed their local shelter

deficit problem. An excellent example is Brevard County. Brevard County is the first county in Florida to demonstrably eliminate its hurricane evacuation shelter deficit. In 1993, Brevard County contracted with an engineering firm to evaluate hurricane shelter buildings at 14 elementary and junior high schools. The buildings ranged from construction year 1963 to 1989. The firm evaluated the buildings in accordance the American Society of Civil Engineers wind design standard, *Minimum Design Loads for Buildings and Other Structures* (ASCE 7-88), and other current design codes and standards. They found that in more than half the cases (typically the older buildings), the building wall systems could only meet wind load design requirements for wind speeds up to 73 mph, and with some as low as 55 mph. The minimum wind speed for a hurricane is 74 mph. The state-of-knowledge in wind design was not as effective during the 1960's and 1970's, as that developed through research in the 1980's and 1990's.

In 1994, the State of Florida began to apply the ARC 4496 guidelines in shelter surveys across the State. By 1997, Department staff had developed a course for training local personnel in performing the surveys. In 1997, Brevard County Emergency Management hosted the first Hurricane Evacuation Shelter Selection Guidelines course, which is based on ARC 4496, to train key people to conduct hurricane-hazard surveys of existing buildings designated as storm shelters, and to find new potential storm shelter buildings.

Armed with this information, 19 course graduates conducted surveys that eliminated 6 out of 9 primary storm shelters and 10 out of 13 back up storm shelters on the Brevard County Shelter Inventory. The team then sought out and identified other schools/buildings that contained shelter space that met the ARC 4496 guidelines. Next, Brevard County began installing shutters to increase the capacity of shelter space in each building. The HMGP provided $2.5 million to install hurricane shutters on shelter buildings at 24 schools/facilities, thus increasing the shelter capacity far beyond the original capacity.

Additionally, EHPAs were constructed at three schools and additional HMGP and other grant funding have been provided to upgrade and retrofit additional buildings resulting in the elimination of the shelter deficit. Per the *2002 Statewide Emergency Shelter Plan*, Brevard County has a demand of 17,458 spaces for the year 2002, increasing to 19,056 spaces in 2007. With all the retrofits and EHPAs, Brevard County now shows a capacity of 24,000 spaces (1,550 special needs spaces, 600 special use spaces, and 21,850 general population spaces).

Legislative Solutions and Funding Issues

In November 1999, the Legislature, Governor and the Department conducted the first Statewide Shelter Summit to inform and update legislators, state agency officials and local representatives on statewide hurricane sheltering issues. The Department used the forum to educate all attendees regarding the issues associated with providing "safe" shelter spaces to its many hurricane vulnerable residents, and what measures are currently underway to address the situation. In Chapter 2000-140, Laws of Florida, the 2000 Legislature enacted statutory changes that increased the availability of state-owned and leased facilities, state university facilities, and privately owned facilities (through written agreement) for use as hurricane shelters. Additional

legal protection was also extended for those private agencies providing facilities to support hurricane shelter operations. Other changes included: elimination of the three mile exemption rule for EHPA construction; basing the EHPA requirement on regional deficits versus regional and county deficits; and appropriating $3 million, annually, from the Florida Hurricane Catastrophe Fund to support retrofit efforts.

One statutory change requires the State University System to provide access to shelter spaces on their campuses to the same extent as that provided by school districts and community colleges. This would better ensure not only the safety of Florida's university community, but the residents in communities that surround them. State University System facilities are encouraged to submit retrofit projects for this report. In addition, the statute permits including private facilities on the list of those the Department has available for surveying as appropriate shelter space.

A second statutory change requires that space leased or owned by the Department of Management Services and other state agencies, that is suitable as hurricane shelter space, be made available as public shelters. By working in partnership with other state agencies, the Department will be able to expand its ability to survey a wider range of buildings and better address the current shelter deficit. Increased legal protection was also enacted for those private agencies providing facilities to support hurricane shelter operations.

Additionally, the Legislature provided funding for the *1999 Shelter Retrofit Report* to increase hurricane shelter capacity. The 1999 Legislature provided a $2,265,000 appropriation to support hurricane shelter retrofitting activities. The appropriation stipulated that the funds were to be used to shutter school buildings for use as hurricane shelters. The Department used the *1999 Shelter Retrofit Report* to identify and prioritize projects to receive the funds. A total of 58 projects were selected that, upon completion of window shutter retrofits, provided an estimated 34,928 additional spaces.

The 2000 Legislature followed with an additional $18 million (combined federal, state and local funds) to complete the projects listed in the *1999 Shelter Retrofit Report*. Approximately $4 million in state funds, of the $18 million was used to fund future projects that are not eligible under traditional federal grant programs, such as emergency power generators and/or generator pre-wire connections. The majority of the funds were used to retrofit existing hurricane shelters to meet the ARC 4496 guidelines. Additionally, funds from the HMGP for Hurricanes Floyd and Irene were earmarked to support the State's effort to reduce the deficit of hurricane shelter space.

The 2001 Legislature appropriated $3 million in state funds to support projects listed in the *2000 Shelter Retrofit Report*, which resulted in the creation of an estimated 15,223 spaces. The 2002 Legislature appropriated $4 million to support projects in the *2001 Shelter Retrofit Report*, which is currently projected to create 38,197 spaces.

Impact of 2002 Revisions to the American Red Cross' Hurricane Shelter Selection Criteria

In January 2002, the American Red Cross revised their July, 1992 publication *Guidelines for Hurricane Evacuation Shelter Selection* (ARC 4496). The new publication is titled *Standards for Hurricane Evacuation Shelter Selection*, and continues to carry the former document number of ARC 4496. For the most part, the revisions will have minimal impact upon the state's hurricane shelter survey and retrofit programs. Besides the title change from "Guideline" to "Standard", the notable changes are:

1. The planning guideline for hurricane shelter occupant capacity has been reduced to "no less than 15 square feet per person." Since the previous guideline was 20 square feet per person, this could have a significant positive impact upon the State's overall hurricane shelter deficit situation. It has the immediate dual impact of reducing the total square footage needed to meet local and regional shelter demand planning requirements, as well as increasing the number of evacuees that can potentially occupy currently available square footage (i.e., four persons can now occupy the same space previously required for three persons). This revised planning guidance does not affect hurricane shelters designated for Persons with Special Needs, which is based on 40 square feet per client, caregivers and staff.

Based upon data from the *2002 Statewide Emergency Shelter Plan*, this revision could reduce the statewide deficit by as much as 14 percent. However, to remain consistent with the planning data presented in the *2002 Statewide Emergency Shelter Plan*, as well as other implementation issues and concerns, the hurricane shelter capacity information presented in this report is based on 20 square feet per general population space. Adjustments may be made with publication of the *2003 Shelter Retrofit Report*.

2. Long or Open Span Roofs are now defined as roofs with spans longer than 40 feet. The Division currently defines short span roofs as those that are less than 40 feet, therefore negligible impact to roofs currently ranked as "preferred." However, the revision will have an impact upon the Division's "marginal" ranking, which permitted spans up to 60 feet when a moderate roof slope was present.

3. For multi-story buildings, the revision states that lower floors no higher than 60 feet above grade should be used. The revised criteria will have negligible impact in Florida, since only a very small minority of hurricane shelters surveyed or retrofitted exceed 60 feet in height; the vast majority are one to three story buildings in height.

4. The term "marginal" has been replaced by "less preferred." Again, resulting in negligible impact to Florida's criteria since this is only a terminology change.

5. The revision requires an annual review of all approved hurricane shelters, versus the previous requirement to "review on a regular basis". This may have an impact on local government agencies, but most school boards, emergency management and ARC Chapters perform annual adjustments to their hurricane shelter inventories due to renovation and construction activities.

III. SUMMARY OF PROJECT RECOMMENDATIONS

The Department's Division of Emergency Management staff requested shelter retrofit projects from county emergency managers in October 2000. The request for retrofit projects that upon completion would meet the American Red Cross' *Guidelines for Hurricane Evacuation Shelter Selection* (ARC 4496). All remaining unfunded projects were reviewed and re-ranked. It was determined that 326 projects could meet the ARC 4496 guidelines after retrofitting. The projects were then prioritized based upon local and regional shelter deficit situations, greatest provision of space, cost-efficiency per space, etc. The list of recommended projects can be found in Appendix E.

A summary table of report findings are listed below. The table indicates counties that have recommended retrofit projects, the region the county is located within, the generator and other (typically structural) costs of the proposed projects, and the total capacity that will be gained after completion of retrofits. See Appendix I for a map of the State's regions. "Regions" refers to Regional Planning Council (RPC) regions. These RPC regions are set up to help plan and coordinate planning for economic development, growth management, emergencies, and other regional impacts.

Table 3.1

2002 Shelter Retrofit Report Submittal Log
County and Regional Recommended Project Totals

As of August 28, 2002

Region	County	Generator Costs	Other Costs	Capacity Gained (spaces)
1	Bay	$0	$612,566	3,896
1	Escambia	$90,000	$893,058	15,758
1	Holmes	$0	$600,000	168
1	Okaloosa	$50,000	$221,051	7,109
1	Washington	$0	$264,635	3,644
	Region 1 Totals	$140,000	$2,591,310	30,575
2	Gulf	$135,000	$180,000	1,787
2	Jackson	$0	$169,776	686

2002 Shelter Retrofit Report Submittal Log
County and Regional Recommended Project Totals

As of August 28, 2002

Region	County	Generator Costs	Other Costs	Capacity Gained (spaces)
2	Leon	$0	$942,850	3,752
2	Liberty	$0	$314,040	2,928
	Region 2 Totals	$135,000	$1,606,666	9,153
3	Dixie	$0	$205,650	2,007
3	Gilchrist	$0	$109,818	737
3	Lafayette	$0	$3,850	630
3	Madison	$0	$246,360	7,319
	Region 3 Totals	$0	$565,678	10,693
4	Clay	$0	$0	200
4	Duval	$4,250	$0	0
4	Nassau	$655,000	$361,000	1,785
4	Putnam	$0	$1,745,000	4,200
	Region 4 Totals	$659,250	$2,106,000	6,185
5	Citrus	$0	$313,044	2,293
5	Hernando	$0	$1,558,985	10,075
5	Levy	$0	$507,898	4,769
5	Marion	$0	$1,346,852	1,058
5	Sumter	$371,017	$547,450	4,386
	Region 5 Totals	$371,017	$4,274,229	22,581
6	Brevard	$2,970,000	$178,000	1,950
6	Lake	$0	$90,630	863

2002 Shelter Retrofit Report Submittal Log
County and Regional Recommended Project Totals

As of August 28, 2002

Region	County	Generator Costs	Other Costs	Capacity Gained (spaces)
6	Orange	$0	$5,208,286	14,443
6	Osceola	$155,000	$640,027	4,710
6	Seminole	$36,800	$1,175,818	8,286
6	Volusia	$40,000	$1,235,600	5,366
	Region 6 Totals	$3,201,800	$8,528,361	35,618
7	DeSoto	$320,543	$104,551	2,487
7	Hardee	$20,000	$48,408	1,300
7	Okeechobee	$62,060	$0	0
7	Polk	$0	$1,094,033	14,193
	Region 7 Totals	$402,603	$1,246,992	17,980
8	Hillsborough	$0	$958,635	12,947
8	Manatee	$423,625	$47,427	296
8	Pinellas	$0	$286,920	2,040
	Region 8 Totals	$423,625	$1,292,982	15,283
9	Charlotte	$10,000	$0	0
9	Collier	$20,000	$37,000	100
9	Glades	$0	$45,000	188
9	Hendry	$10,000	$0	0
9	Lee	$0	$920,000	3,620
9	Sarasota	$0	$877,337	2,771

2002 Shelter Retrofit Report Submittal Log
County and Regional Recommended Project Totals

As of August 28, 2002

Region	County	Generator Costs	Other Costs	Capacity Gained (spaces)
	Region 9 Totals	$40,000	$1,879,337	6,679
10	Indian River	$0	$16,200	0
10	Martin	$0	$1,097,211	1,149
10	Palm Beach	$4,470,000	$1,733,702	210
10	St. Luce	$147,700	$16,000	620
	Region 10 Totals	$4,617,700	$2,863,113	1,979
11	Miami-Dade	$0	$0	0
11	Monroe	$0	$5,000	600
	Region 11 Totals	$0	$5,000	600
All	All	$9,990,995	$26,959,668	157,326
Totals		$36,950,663		

If funded, the projects listed in this report will provide an estimated increase of 157,326 spaces at a cost of $36,950,663 (other costs + generator costs). It should be noted that in some cases counties show "Other Costs," but no spaces gained. Typically, this is due to retrofit projects, such as generator pre-wiring, which add usability to a shelter, but do not increase the available shelter space. Costs reflected in the "Generator Costs" column in the table above usually reflect only generator purchase costs. These type projects also add to the usability or sustainability of a shelter (provide emergency power), but do not, in themselves, increase shelter capacity.

IV. STRATEGY FOR PUBLIC SHELTER DEFICIT REDUCTION

Discussion

The Department is statutorily responsible (per Sections 252.35(2)(a)2, and 252.385(1) and (2), Florida Statutes) for developing a strategy to eliminate the deficit of "safe" public hurricane shelter space in Florida. The Department's strategy includes the following components:

Component 1 - Develop and implement model hurricane evacuation shelter selection guidelines that define minimum criteria for "safe" public shelter space.

Component 2 - Implement a shelter survey program and prepare an inventory of buildings, both public and private, that are appropriately designed and located to serve as hurricane evacuation shelters.

A. Evaluate existing shelter inventory facilities to determine their status with respect to established guidelines;

B. Determine actual hurricane evacuation shelter space capacity in existing inventory and identify additional un-utilized space; and

C. Identify and evaluate facilities not currently in local shelter inventories to provide options for increasing shelter space capacity.

Component 3 - Retrofit appropriate facilities so that, at a minimum, hurricane evacuation shelters meet model guidelines.

Component 4 - All new construction of public school facilities that are appropriate for use as hurricane evacuation shelters, are to be designed and built to conform to the Public Shelter Design Criteria as established in the 1999 *State Requirements for Educational Facilities* (SREF), and carried over into *The 2002 Florida Building Code*, Section 423.25.

Component 5- Shelter demand reduction through improved public information and education on hurricane shelter and evacuation issues.

Component 1 - Develop and Implement Model Selection Guidelines

Pursuant to Section 252.35(2)(a)2, Florida Statutes, the Department is responsible for establishing model shelter selection guidelines to gauge the relative safety of shelter facilities in conditions that may exceed their original design and construction requirements. This information is also valuable for monitoring progress in eliminating the deficit of "safe" shelter space. After considerable research, the Department recognized the American Red Cross' *Guidelines for Hurricane Evacuation Shelter Selection* (ARC 4496, July 1992 and January 2002) as the basis for its model shelter guidelines.

The Department has prepared and distributed a guidance manual, based on ARC 4496, and provided training to assist local officials in the shelter selection process. The guidance manual's target audience is emergency management officials, local American Red Cross officials, technical assistance personnel (structural and civil engineers, architects, construction technicians, building inspectors, etc.) and other agencies involved in shelter programs. The guidance manual has been prepared in a manner that leads the user through the shelter selection process and incorporates sufficient graphics, maps, photographs, and other illustrations to further clarify the procedure. The manual has been prepared for use as a formal training text and stand-alone information source.

Component 2 - Implement Shelter Survey Program

Pursuant to Section 252.385(2), Florida Statutes, the Department is required to:

> "…administer a program to survey existing schools, universities, community colleges, and other state-owned, municipally owned, and county-owned public buildings to identify those that are appropriately designed and located to serve as shelters."

Given this mandate and the critical nature of the shelter deficit, the Department's shelter survey program has focused on the evaluation and inventory of all publicly owned facilities. This inventory includes facilities that are selected to provide refuge within a storm's path, as well as those that may be used to temporarily host evacuating citizens outside the predicted impact area.

In order to assist local emergency management, school boards, and other public and private agencies with sheltering responsibilities, the Department provides technical assistance to local officials through the development of hurricane shelter studies. The objective of these studies is to eliminate the deficit of "safe" hurricane shelter space. The basic approach used to meet this objective is three fold: 1) evaluate existing shelter inventory facilities to determine their status with respect to established guidelines and, where appropriate, make mitigation/retrofit recommendations; 2) determine actual shelter space capacity in the existing

shelter inventory, and identify additional un-utilized space; and, 3) evaluate additional facilities, with respect to the established shelter guidelines, that are currently not in local inventories, to provide options for increasing local shelter space capacity. Local emergency management officials, prior to initiation of the study, provide the list of facilities to be surveyed.

The hurricane shelter studies also include tables with a summary of estimated host and risk shelter spaces. While host shelters are intended for use outside of the path of a hurricane, the risk shelters are evaluated for use in the path of a hurricane. Risk shelters are evaluated based upon criteria found in ARC 4496. These guidelines include, but are not limited to: giving preference to interior corridors and rooms, avoiding large open-span areas, avoiding areas near glass (unless the glass is protected), avoiding rooms immediately adjacent to un-reinforced masonry walls, and avoiding light steel prefabricated structures.

The Department's shelter survey program has defined the minimum requirements of a "safe" hurricane shelter as meeting the guidelines established in ARC 4496. A more detailed discussion of the Department's findings is included in Chapter II, Findings of the Department's Shelter Survey Program.

Since 1994, Department staff and contracted engineering consultant services surveyors have evaluated over 2,277 buildings in more than 35 counties (see Figure 4.1). Additionally, the Department's surveyors have provided shelter survey training to over 767 personnel in 53 classes conducted in 29 counties throughout the State (see Figure 4.2). This training provides a local resource for each county emergency manager to utilize when conducting local shelter surveys. Class participants have included American Red Cross volunteers, building inspectors, fire inspectors, engineers, architects, and emergency management personnel.

Figure 4.1

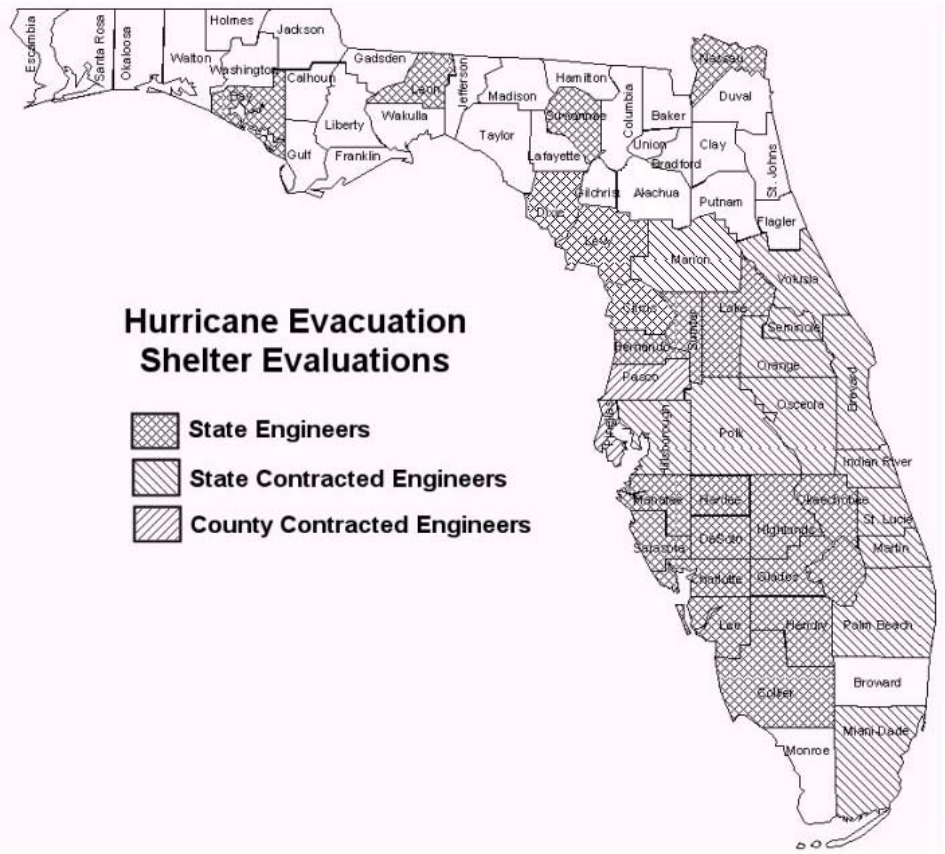
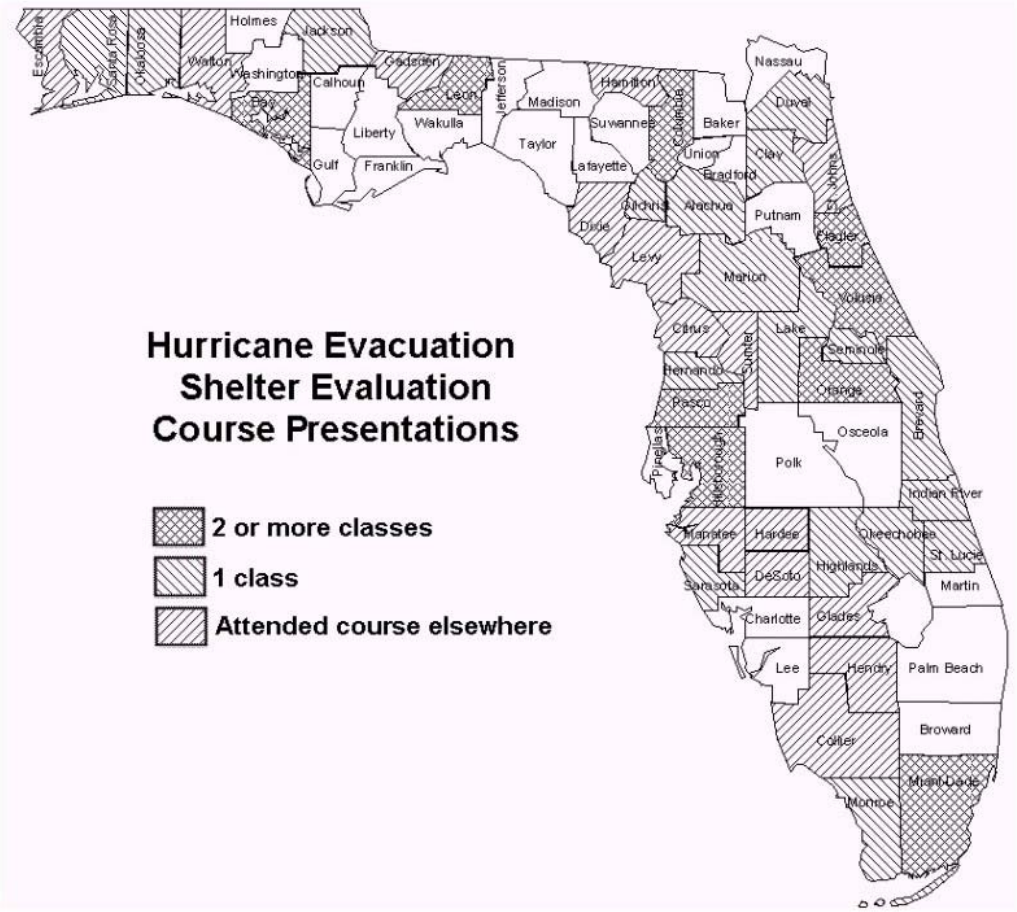

Hurricane Evacuation
Shelter Evaluations
State Engineers
State Contracted Engineers
County Contracted Engineers
Escambia
Santa Rosa
Okaloosa
Holmes
Jackson
Walton
Washington
Calhoun
Gadsden
Leon
Jefferson
Madison
Hamilton
Suwannee
Columbia
Nassau
Duval
Baker
Union
Bradford
Clay
St. Johns
Flagler
Putnam
Alachua
Gilchrist
Levy
Dixie
Taylor
Lafayette
Liberty
Wakulla
Gulf
Franklin
Bay
Marion
Volusia
Lake
Seminole
Orange
Osceola
Brevard
Polk
Indian River
Hernando
Sumter
Pasco
Pinellas
Hillsborough
Manatee
Hardee
Highlands
Okeechobee
St. Lucie
Martin
Sarasota
DeSoto
Charlotte
Glades
Lee
Hendry
Palm Beach
Collier
Broward
Miami-Dade
Monroe

Figure 4.2


Hurricane Evacuation
Shelter Evaluation
Course Presentations
2 or more classes
1 class
Attended course elsewhere
Escambia
Santa Rosa
Okaloosa
Holmes
Jackson
Walton
Washington
Calhoun
Gadsden
Leon
Jefferson
Bay
Liberty
Wakulla
Madison
Hamilton
Gulf
Franklin
Taylor
Suwannee
Columbia
Nassau
Baker
Duval
Union
Clay
Bradford
Lafayette
Alachua
Putnam
Dixie
Levy
Marion
Flagler
Volusia
Citrus
Lake
Seminole
Hernando
Sumter
Orange
Pasco
Osceola
Brevard
Pinellas
Hillsborough
Polk
Indian River
Manatee
Hardee
Okeechobee
St. Lucie
Highlands
DeSoto
Sarasota
Martin
Charlotte
Glades
Lee
Hendry
Palm Beach
Collier
Broward
Miami-Dade
Monroe

Component 3 - Retrofit Appropriate Existing Facilities

Given that many existing hurricane shelter buildings do not meet minimum criteria, cost-effective retrofitting of these facilities is an essential component of the Department's shelter deficit elimination strategy. One example of retrofitting is the sample project below. The potential hurricane shelter building is Forest Lake Elementary School Building 5 (Cafetorium) in Deltona, Volusia County, Florida. Below is a completed Least-Risk Decision Making table (Table 4.1) summarizing the ARC 4496-related characteristics of the building. This provides a snapshot for the local emergency manager to quickly evaluate the potential of a given building for use as an hurricane shelter.

Table 4.1

Least-Risk Decision Making: ARC 4496 Guideline Summary

Survey Date: 03/28/01 **County:** Volusia
Facility Name: Forest Lake E.S. Bldg. 5 **Address:** 1600 Doyle Road
City: Deltona **State:** FL **Zip Code:** 32017
Coordinates: Latitude 28° 52' 25" N* **Longitude** 81° 13' 44" W*
(*-approximate location, as determined by map)

CRITERIA	PREFERRED	MARGINAL	NEEDS FURTHER INVESTIGATION / MITIGATION
1. Storm Surge Inundation/SLOSH	Approx. 75 ft. A.M.S.L. [USGS July 1, 1985] Campus and access routes are located above any category hurricane storm surge zone.		
2. Rainfall Flooding/ Dam Consideration/ FIRM Zone	According to FEMA's online hazard mapping, the campus appears to be above the 500-year flood plain. No history of significant ponding / flooding on campus. Clean and functional drainage system.		

Least-Risk Decision Making: ARC 4496 Guideline Summary

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Coordinates: Latitude 28° 52' 25" N* **Longitude** 81° 13' 44" W*
(*-approximate location, as determined by map)

CRITERIA	PREFERRED	MARGINAL	NEEDS FURTHER INVESTIGATION / MITIGATION
3. Hazmat & Nuclear Considerations	The building is not located within the 5 or 10 mile EPZ of a nuclear power plant. There are no reportable quantities of chemicals stored within the building or on site. The building is not located within the vulnerability zones of any hazardous materials sites		
4. Lay-down Hazard Exposure	There are no hazards within lay-down range of this facility large enough at this time to inflict significant damage.		
5. Wind and Debris Exposure		The building has a limited wind and debris exposure. There are several loose items which may pose a roll-over risk (picnic tables, dumpsters, etc.). Secure these items prior to a storm.	
6. Wind Design Verification		1994 Construction. Per construction drawings, Wind design is ASCE 7-88 with 110 MPH, 1.10 importance factor, and constructed in accordance with applicable building codes of the time. No “certification” available at time of survey.	

Least-Risk Decision Making: ARC 4496 Guideline Summary

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City: Deltona **State:** FL **Zip Code:** 32017
Coordinates: Latitude 28° 52' 25" N* **Longitude** 81° 13' 44" W*
(*-approximate location, as determined by map)

CRITERIA	PREFERRED	MARGINAL	NEEDS FURTHER INVESTIGATION / MITIGATION
7. Construction Type / Load-path Verification	Single story wallbearing reinforced concrete masonry structure with steel truss roof system. Loadpath via steel roof trusses to reinforced masonry walls to foundation.		
8. Building Condition	Good condition with minimal signs of deterioration.		
9. Exterior Wall Construction	Reinforced 8" concrete masonry (rebar @ 4' o.c., typical) with a brick veneer.	Gabled ends consist of metal siding on ½ inch exterior plywood on metal studs at 16" o.c. (Marginally debris resistant)	
10. Fenestration/ Window Protection			**There is approx. 329 sq. ft. (3%) of unprotected windows with direct access to shelter areas.**
11. Roof Construction/ Roof Slope		Lightweight moderate slope (18°) 22 ga. metal decking on open web steel joists; asphalt shingles on mineral board roof cover. 11'10" roof overhang is externally supported, independent of main roof system, and separated from interior. Also, possibly ASCE7-88 design for mitigating factor.	
12. Roof Open Span	Typical roof spans are less than 40 feet.		**Maximum span at cafetorium is 66 feet; require ASCE 7 certification by a structural engineer.**

Least-Risk Decision Making: ARC 4496 Guideline Summary

Survey Date: 03/28/01 **County:** Volusia
Facility Name: Forest Lake E.S. Bldg. 5 **Address:** 1600 Doyle Road
City: Deltona **State:** FL **Zip Code:** 32017
Coordinates: Latitude 28° 52' 25" N* **Longitude** 81° 13' 44" W*
(*-approximate location, as determined by map)

CRITERIA	PREFERRED	MARGINAL	NEEDS FURTHER INVESTIGATION / MITIGATION
13. Roof Drainage/ Ponding	No parapet walls. No evidence of roof ponding nor deterioration; no reports of significant leaks.		
14. Interior Safe Space		Not applicable: No interior rooms or corridors.	
15. Life Safety/ Emergency Power Generator		No emergency generator present, and no reported issues with Emergency / Life Safety codes.	

As the table above indicates, two criteria are listed as needing "further investigation/mitigation required." Criteria 10-Window Protection indicates there are unprotected windows present that have direct exposure to occupied shelter areas. The windows will need to be protected by an adequate shutter or other protective system(s). Criteria 12-Roof Open Span indicates that a long span roof is present (i.e., 66 feet). ARC 4496 states that buildings with long or open roof spans must be avoided, unless certified as being capable of withstanding wind loads according to ASCE 7. Since the construction drawings did not have the structural-engineer-of-record's signature & seal, and the presence of an "AS BUILT" stamp, the ASCE 7 certification is necessary. A licensed structural engineer is required to certify a building to ASCE 7. Upon completion of these actions, the building will meet the hurricane shelter selection guidelines established in ARC 4496. These retrofits should be accomplished prior to use of the building as a hurricane evacuation shelter. In this case, a rough estimate of the costs would be:

Table 4.2

Retrofit Project	Quantity	Cost Rate	Total
Protect all Windows	329 sq.ft. of exterior glass	$35.00 per square foot	$11,515.00
ASCE 7 Design Certification	1 Certification by licensed Structural Engineer	$1000.00 per certification*	$1,000.00

* - Estimate based on approximately one day's consultation with expenses.

Please note that Criteria 14-Interior Safe Space is listed as "Not Applicable." This is because the interior corridors and rooms do not meet ARC 4496 guidelines independent of surrounding areas, and the surrounding areas also do not meet the guidelines (primarily due to the un-shuttered windows). ARC 4496 does not require an interior safe space, but if one is to be used, it must meet the guidelines on its own.

Figure 4-4 shows the floor plan of the potential shelter building. It indicates the areas that can be used as hurricane shelter space once retrofitting is completed. In this case, retrofitting would add approximately 6,416 square feet, or 320 shelter spaces at 20 square feet per space. At a total estimated retrofit cost of $12,515.00. This equates to $39.11 per hurricane shelter space gained.

The following table (Table 4.2) summarizes the capacity of the building to shelter evacuees. Shelter space is reported in square feet, and not in persons. The method for converting square footage into the number of persons (persons per square feet) varies by county and/or mass care agency. Many counties utilize 40 square feet per person in a host / recovery scenario and 20 square feet per person in a storm / risk scenario.

Table 4.2 – Mass Care Information

Building Number & Name	Building Floor Area (square feet)		Total Usable Potential Host/ Non-Risk Shelter Area (square feet)	Usable Storm / Risk Shelter Area (Meets ARC 4496 Guidelines – Sq. Ft.)		
	F.I.S.H. Area Est. Date: 8/16/00	Footprint Area		AS-IS	After Minor Retrofit(s) / Investigation	After Major Retrofit(s) / Investigation
Building #5 Caferteria	16,488	N/A	6,416	0 Total	6,416 Total +6,416 Gain	6,416 Total + 0 Gain
Total Usable Storm / Risk Shelter Area after all retrofits / investigations are completed (Sq. Ft.):				6,416 Total		

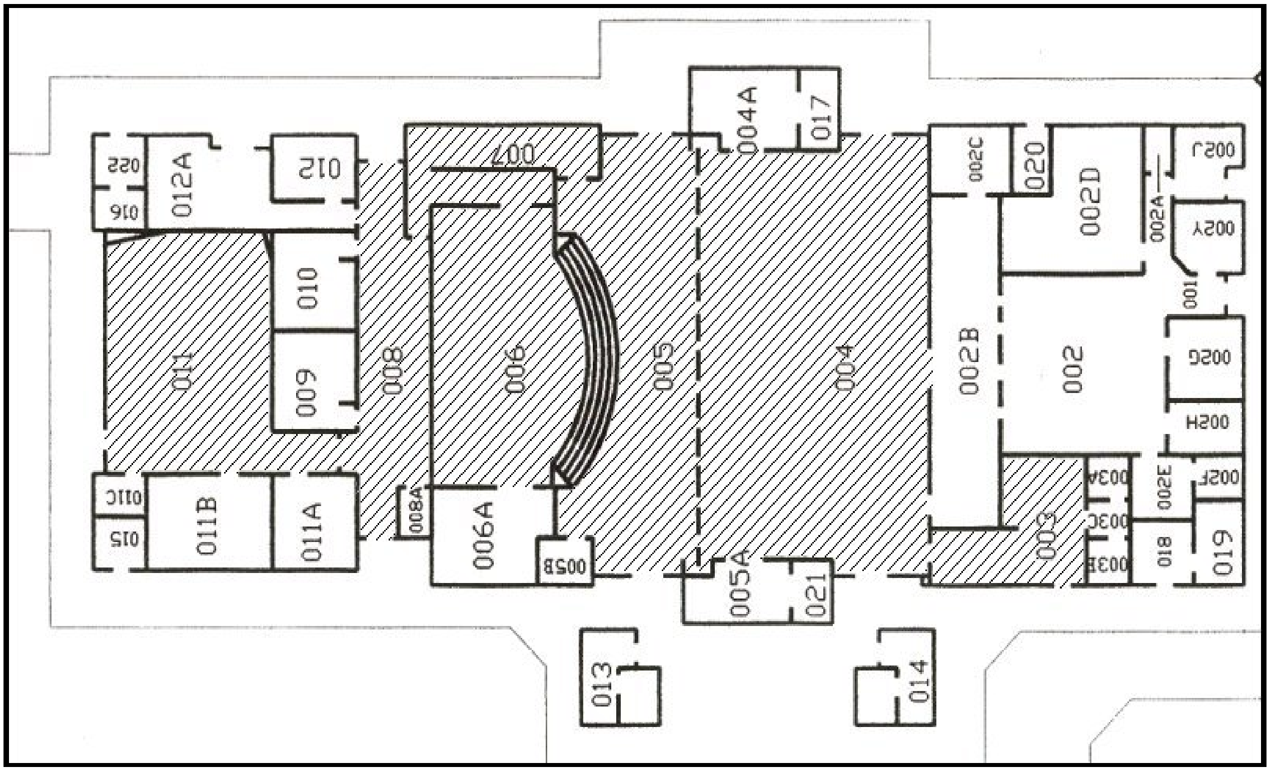
Definitions:

Building Floor Area - the total area (square footage) of the building.
F.I.S.H. Area - the total building area as reported by the Florida Inventory of School Houses.
Footprint Area – the total building area as estimated from the structural plans of the building.
Usable Potential Host/Non-Risk Shelter Area - the available shelter area after deductions for walkways, fixed furniture, etc..
Usable Storm/Risk Shelter Area - the available shelter area after deductions for walkways, fixed furniture, etc., if the area/building meets ARC 4496 guidelines.
AS-IS – the total space that currently meets ARC 4496 guidelines, and does not require further action.
After Minor Retrofit(s) / Investigation – space that will meet ARC 4496 guidelines only if minor retrofits (typically shutters or other repairs that do not involve demolition measures) are needed.
After Major Retrofit(s) / Investigation – space that will meet ARC4496 after all major retrofits (those which typically involve demolition of parts of the building structure) are completed.

Additional mass care information, such as the number of toilets, sinks, or showers; kitchen equipment, health rooms, etc. may be obtained from the Florida's Coast to Coast Chapter of the American Red Cross.

Figure 4-3

Figure 4-4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Unfortunately, the majority of buildings, which have been surveyed by the Department's staff, have proven difficult to effectively retrofit. For example, Wakeland Elementary School in Bradenton, Manatee County, was surveyed as a potential hurricane shelter, yet was found to contain significant vulnerabilities often found in buildings constructed prior to the mid-1980's. Table 4.3 shows a completed Least-Risk Decision Making table for the building.

Table 4.3

(SAMPLE) Least-Risk Decision Making: ARC 4496 Guideline Summary (SAMPLE)

Survey Date: 05-05-00 **County:** Manatee
Facility Name: Frances Wakeland Elementary **Address:** 1812 Roberto Clemente Blvd. E.
City: Bradenton **State:** FL **Zip Code:** 34208
Coordinates: Latitude 27° 28' 58" N **Longitude** 82° 31' 50" W

CRITERIA	PREFERRED	MARGINAL	NEEDS FURTHER INVESTIGATION / MITIGATION
1. Storm Surge Inundation/ SLOSH	.	This campus is located at approximately 15 feet AMSL (USGS "Bradenton,Fl" Jul/01/77).According to the October 1999 Storm Tide Atlas, this facility is partially located within Cat 5 storm surge zone, but under a Cat 2/3 storm the access routes may be inundated and the site isolated.	
2. Rainfall Flooding/ Dam Consideration/ FIRM Zone	According to FIRM Map #120155-0011C, Nov. 16, 1983, this facility is located in a Zone C: Areas of minimal flooding (above 500-year floodplain). No localized campus ponding / flooding reported.		

(SAMPLE) Least-Risk Decision Making: ARC 4496 Guideline Summary (SAMPLE)

Survey Date: 05-05-00 **County:** Manatee
Facility Name: Frances Wakeland Elementary **Address:** 1812 Roberto Clemente Blvd. E.
City: Bradenton **State:** FL **Zip Code:** 34208
Coordinates: Latitude 27° 28' 58'' N **Longitude** 82° 31' 50" W

CRITERIA	PREFERRED	MARGINAL	NEEDS FURTHER INVESTIGATION / MITIGATION
3. Hazmat & Nuclear Considerations	The building is not located within the 5 or 10 mile EPZ of a nuclear power plant. This building is not located within a vulnerability zone (VZ) of any hazardous materials sites. There are no reportable quantities of chemicals stored within the building or on site.		
4. Lay-down Hazard Exposure	.		There are numerous trees around building. There is also an 85-foot tall concrete pole/tower that present potential lay-down hazards.
5. Wind and Debris Exposure		The campus is located on flat lightly wooded terrain and commercial / residential areas. This facility has limited debris hazard exposure from adjacent buildings and roof gravel.	There are unanchored relocatable buildings and vehicle parking spaces within 100 feet of the potential shelter building.
6. Wind Design Verification		The building was designed in 1972, but the applicable building code and/or wind design is unknown. **Built in 1973.**	

(SAMPLE) Least-Risk Decision Making: ARC 4496 Guideline Summary (SAMPLE)

Survey Date: 05-05-00 **County:** Manatee
Facility Name: Frances Wakeland Elementary **Address:** 1812 Roberto Clemente Blvd. E.
City: Bradenton **State:** FL **Zip Code:** 34208
Coordinates: Latitude 27° 28' 58'' N **Longitude** 82° 31' 50" W

CRITERIA	PREFERRED	MARGINAL	NEEDS FURTHER INVESTIGATION / MITIGATION
7. Construction Type/ Load-path Verification		Single story light steel frame with unreinforced masonry curtain walls at the perimeter. Loadpath via steel roof support framing and steel columns to foundation.	
8. Building Condition	Does not have any history of damage from previous high wind storms.	The building presents minor signs of deterioration.	
9. Exterior Wall Construction			**Unreinforced masonry exterior curtain walls.**
10. Fenestration/ Window Protection			**The building has 6% (~600 sf) unprotected glass and other fenestrations with direct access to shelter areas.**
11. Roof Construction/ Roof Slope	No roof overhang is present.	Light weight, flat slope roof with 22 gage metal decking and a built-up covering with gravel.	**There are several unanchored mechanical equipment on the roof (air handling units and air conditioners).**
12. Roof Open Span			**Open spans of 70 feet throughout bldg.**

(SAMPLE) Least-Risk Decision Making: ARC 4496 Guideline Summary (SAMPLE)

Survey Date: 05-05-00 **County:** Manatee
Facility Name: Frances Wakeland Elementary **Address:** 1812 Roberto Clemente Blvd. E.
City: Bradenton **State:** FL **Zip Code:** 34208
Coordinates: Latitude 27° 28' 58'' N **Longitude** 82° 31' 50" W

CRITERIA	PREFERRED	MARGINAL	NEEDS FURTHER INVESTIGATION / MITIGATION
13. Roof Drainage/ Ponding	The building does not have parapet walls around the roof's perimeter.		**There are evidences of interior water damage in the building and ponding/roof covering deterioration.**
14. Interior Safe Space		Not applicable: No interior corridors.	
15. Life Safety/ Emergency Power Generator	A 19KW, 66A, 120/208 V, 3 phase, 4 wire natural gas fueled generator provides back-up power for emergency lighting to all on-site buildings. There are no reported issues with life safety or fire codes.		

Figure 4-5

Constructed in 1973, the building has a light steel frame with unreinforced concrete masonry curtain walls at its perimeter. These walls may collapse under high wind conditions and/or windborne debris impact by large or massive objects. Subsequently, wind, rain and debris may enter the building and present a hazard to shelter occupants. Additionally, if enough exterior wall surface collapses (approximately 5% or less), the wind can pressurize the building, resulting in other progressive wall or roof failures elsewhere in the building. An additional hazard to the building's walls and roof are numerous tall trees around the building, which can fall and crush the building.

Rooftop equipment, such as air handlers and air conditioners, do not appear to be properly anchored to the roof structure. Under high winds, these pieces of equipment can shift or tumble away, leaving behind openings in the roof. A tumbling or windborne air conditioner can also cause damage to other portions of the roof deck.

This building exhibits many of the vulnerabilities commonly found in older buildings on school campuses. Since there are numerous structural concerns listed on the table above, the best solution would be to have a structural engineer evaluate the building (structural frame, unreinforced masonry curtain walls, long span roof system, roof-top equipment attachments, anchorage of relocatable buildings, etc.) to determine what modifications are necessary for the building to be certified as capable of withstanding wind loads according to ASCE 7. In the case of this building, the modifications would probably be so extensive that it will probably not be cost effective. Figure 4.4 below shows the floor plan of the building.

Figure 4-4

The following table (Table 4.4) summarizes the capacity of the building to house shelter residents. Shelter space is reported in square feet, and not in persons. The method for converting square footage into the number of persons (persons per square feet) varies by county and/or mass care agency. Many counties utilize 40 square feet per person in a host / recovery scenario and 20 square feet per person in a storm / risk scenario.

Table 4-4

Building Number & Name	Building Floor Area (square feet)		Total Usable Potential Host/ Non-Risk Shelter Area (square feet)	Usable Storm / Risk Shelter Area (Meets ARC 4496 Guidelines – Sq. Ft.)		
	F.I.S.H. Area Est. Date: 01/19/99	Footprint Area		AS-IS	After Minor Retrofit(s) / Investigation	After Major Retrofit(s) / Investigation
Building # 1 Classrooms	50,577	53,000	32,300	0	0	32,300 Total 32,300 Gain
Total Usable Storm / Risk Shelter Area after all retrofits / investigations are completed (Sq. Ft.):				32,300 Total		

Definitions:
Building Floor Area - the total area (square footage) of the building.
F.I.S.H. Area - the total building area as reported by the Florida Inventory of School Houses.
Footprint Area – the total building area as estimated from the structural plans of the building.
Usable Potential Host/Non-Risk Shelter Area - the available shelter area after deductions for walkways, fixed furniture, etc..
Usable Storm/Risk Shelter Area - the available shelter area after deductions for walkways, fixed furniture, etc., if the area/building meets ARC 4496 guidelines.
AS-IS – the total space that currently meets ARC 4496 guidelines, and does not require further action.
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After Major Retrofit(s) / Investigation – space that will meet ARC4496 after all major retrofits (those which typically involve demolition of parts of the building structure) are completed.

Additional mass care information, such as the number of toilettes, sinks or showers; kitchen equipment, health rooms, etc. may be obtained from the Manatee County Chapter of the American Red Cross.

Component 4 - New Construction to Conform to Public Shelter Design Criteria

Given the current findings of the state's shelter survey program, existing shelter space capacity and cost-effective retrofitting of other facilities will not by themselves eliminate the shelter space deficit. Therefore, incorporating the Public Shelter Design Criteria into new facilities is an essential component of the Department's strategy to eliminate the deficit of ☐safe☐ hurricane shelter space.

Public education facilities (local schools and community colleges) have historically been used as the primary source of public shelter space. The structural damage resulting from Hurricane Andrew verified what engineers and public safety officials had feared for years. In many cases, school facilities are not designed to withstand the effects of major hurricane force winds, and therefore may not be suitable as shelters. Subsequently, the State Requirements for Educational Facilities was amended to include a Public Shelter Design Criteria. All new school facilities constructed after April 28, 1997, are required to include the criteria unless exempted. Many school boards are now constructing EHPAs in their new school facilities. The cost premiums reported to date have typically been in the two to six percent range.

The state's public universities are also responsible for constructing new facilities to a similar standard as the Public Shelter Design Criteria. Facilities have already been constructed to include the EHPAs, and others are being planned. Also, other types of facilities (both public and private) are using the Public Shelter Design Criteria during construction (i.e., community centers, churches, fraternal organizations, commercial arenas, etc.). See Table 4.4 for a listing of existing and planned EHPAs in schools statewide.

Table 4.4

Statewide Inventory of EHPA Buildings (as reported by local Emergency Management Agencies)		
County School Board, Community College or University	Number of Existing EHPA buildings	Number of EHPA buildings planned or under construction
Alachua	0	0
Baker	0	1
Bay	1	*
Bradford	0	0
Brevard	4	0
Broward	21	8
Calhoun	0	0
Charlotte	0	0
Citrus	0	1
Clay	3	1
Collier	5	0
Columbia	2	0
Miami-Dade	*	*
DeSoto	0	0
Dixie	1	0
Duval	2	*
Escambia	1	0
Flagler	0	0

Statewide Inventory of EHPA Buildings (as reported by local Emergency Management Agencies)		
County School Board, Community College or University	Number of Existing EHPA buildings	Number of EHPA buildings planned or under construction
Franklin	0	0
Gadsden	0	1
Gilchrist	0	0
Glades	0	0
Gulf	0	0
Hamilton	0	0
Hardee	3	*
Hendry	2*	*
Hernando	*	*
Highlands	0	0
Hillsborough	10	8
Holmes	0	0
Indian River	0	0
Jackson	0	1
Jefferson	0	1
Lafayette	0	0
Lake	9	10
Lee	0	1
Leon	0	0
Levy	0	0
Liberty	1	0
Madison	0	0
Manatee	3	1
Martin	2	0

Statewide Inventory of EHPA Buildings (as reported by local Emergency Management Agencies)		
County School Board, Community College or University	Number of Existing EHPA buildings	Number of EHPA buildings planned or under construction
Marion	5	0
Monroe	0	0
Nassau	2	4
Okaloosa	1	0
Okeechobee	1	0
Orange	3	*
Osceola	9	3
Palm Beach	5	3
Pasco	1	2
Pinellas	0	1
Polk	1	6
Putnam	0	*
St. Johns	2	1
St.Lucie	0	0
Santa Rosa	1	1
Sarasota	6	1
Seminole	0	0
Sumter	1	1
Suwannee	1	0
Taylor	1	0
Union	2	0
Volusia	2	1
Wakulla	0	1
Walton	1	0
Washington	1	0

Statewide Inventory of EHPA Buildings (as reported by local Emergency Management Agencies)		
County School Board, Community College or University	Number of Existing EHPA buildings	Number of EHPA buildings planned or under construction
Central Florida CC	*	*
Highlands CC	1	*
Totals	118	58

* information incomplete, unverified or not available at time of publication.

Component 5 - Shelter Demand Reduction Through Improved Public Information

The Department has undertaken several measures to reduce and more accurately predict shelter demand. The Department has educated residents on the hazards they face and how to best deal with them. A key issue is whether or not to evacuate and, if so, to where. Education on the hazards and how they effect a community will lead to residents making better informed decisions in a crisis. That effort is being supported by public service announcements, hurricane expositions, training of local responders and volunteers, and through emergency messages during times of crisis. This is expected to be a long-term process that will help to reduce the need for shelter space.

The Department distributes an educational brochure based on a board game, titled "What Should You Do If A Hurricane Threatens Your Community?" that provides hurricane preparedness information. The brochure is available both in pamphlet form and on the website at www.floridadisaster.org.

Citizens who live in manufactured homes or flood-prone areas are advised to make a plan to evacuate to the home of family, friends, co-workers, or to a hotel; preferably the shortest distance possible. The Department has also encouraged the construction of safe rooms in homes, as well as the retrofit or construction of more wind-resistant private buildings. These will provide an alternative to a public hurricane shelter.

The Division of Emergency Management maintains a Geographical Information System (GIS) into the web site to provide real-time emergency information to the public, media, and local government. The GIS based information system will provide a variety of information such as available shelters with mapping capability to allow navigation, evacuation route mapping, road closure status, and potential areas of surge and high winds. The user can enter their address and determine if they are required to evacuate, if they are in a vulnerable surge zone, and what shelters/lodging may be available for their protection.

Lastly, the Department has entered into an agreement with the Florida Public Radio Network as a primary means of disseminating emergency public information, such as shelter availability. On a continuous basis, public radio stations across the state will broadcast pertinent information originating from the State Emergency Operations Center in Tallahassee and including shelter locations and availability. This will help reduce the amount of time an evacuee needs to spend on an evacuation route.

V. CONCLUSION

As a result of Hurricane Andrew and the Lewis Commission Report, the State of Florida recognizes the necessity of providing safe shelter space for its residents during disasters. Subsequently, Section 252.385(3), Florida Statutes, was written to require the Department's Division of Emergency Management provide a list of facilities to be retrofitted using state funds. This report is prepared pursuant to this legislative requirement, and includes a total of 355 recommended projects.

Florida is faced with the necessity of eliminating regional deficits throughout the state. Through retrofitting, numerous buildings currently not used as shelters will provide additional space, thereby reducing the various regional deficits. In an effort to identify new shelters and upgrade existing facilities throughout the state, this report provides a prioritized list of specific retrofit projects and cost estimates submitted by county emergency management agencies. Initial data submitted by the counties indicates at least **157,326** new shelter spaces would be added to the state's shelter inventory, and the relative safety of several already-designated facilities could be enhanced at a cost of **$26,959,668**. Projects totaling **$9,990,995** have also been proposed by counties to purchase and install emergency power generators to enhance the ability of the various shelters to function during extended power outages (i.e., after the impact of a major hurricane). This report is also structured to provide guidance with respect to regional priorities.

Significant progress has been made toward reducing Florida's deficit of hurricane shelter space. Since 1995, more than **527,279** shelter spaces have been created/funded through a combination of retrofitting and the use of enhanced wind design and construction standards in new facilities. An additional **157,326** spaces may be created if the projects in this report are funded, resulting in a total of **684,605** spaces gained.

The Department's Division of Emergency Management is statutorily mandated to eliminate the deficits of safe shelter space in all regions of the state. This year's shelter retrofit list is not all-inclusive. Much additional work needs to be done in order to eliminate the shelter deficit in this state. However, funding the retrofit projects identified in this report will clearly have a positive impact on this mandate.

Appendix A:

Abbreviations

Appendix A: Abbreviations

ACI - American Concrete Institute

ARC - American Red Cross

ASCE - American Society of Civil Engineers

ANSI – American National Standards Institute

BFE - Base Flood Elevation

BOR - Board of Regents

CMU - Concrete Masonry Unit

DCA - Department of Community Affairs

DEM - Division of Emergency Management

DMS - Department of Management Services

DOE - Department of Education

EHPA - Enhanced Hurricane Protection Area

EMPA – Emergency Management Preparedness & Assistance

EMPATF – Emergency Management Preparedness & Assistance Trust Fund

EPCRA - the Emergency Planning and Community Right-to-Know Act

EPZ - Emergency Planning Zone

FEMA - Federal Emergency Management Agency

FIRM - Flood Insurance Rate Map

FS - Florida Statutes

Hazmat - Hazardous Material

Abbreviations (cont'd)

HES - Hurricane Evacuation Shelter

HVAC - Heating, Ventilation and Air Conditioning (equipment or system)

LRDM - Least Risk Decision Making

NCMA - National Concrete Masonry Association

NFIP - National Flood Insurance Program

NPP - Nuclear Power Plant

PEMB - Pre-engineered Metal Building

SBC - Standard Building Code

SBCCI - Southern Building Code Congress International

SESP - Statewde Emergency Shelter Plan

SFBC - South Florida Building Code

SLOSH - Sea, Lake and Overland Surges from Hurricanes

SSTD - Standard (reference from SBCCI)

SREF - State Requirements for Educational Facilities

USGS - United States Geological Survey

VZ - Vulnerability Zone

Appendix B:

Glossary
Appendix B: Glossary

Access Route - For the purposes of HES evaluations the access route is defined as a route along paved roads from the HES building to a major highway or interstate, or a resupply point (i.e., airport, train station, etc.), or to an evacuation point (airport, staging area, etc.).

Base Flood Elevation (BFE) - The elevation for an area, for which there is a one percent chance in any given year that flood levels will equal or exceed it.

Bracing - Structural elements installed to provide restraint or support (or both) to other members or structural systems so that the complete assembly forms a stable structure; may consist of knee braces, cables, rods, struts, ties, shores, diaphragms, rigid frames, etc.

Bridging - Consists of cross bracing (wood or metal) or full-depth blocking between joists that is used to stiffen the joists and resist buckling.

Brick Veneer - A facing of brick that is a single wythe in thickness (3" to 4") that is anchored or adhered to a structural backing, but not designed to carry loads other than its own weight.

Building Envelope - The external surface components that together fully enclose a building; such as walls, windows, doors, roof, floor, etc.

Built-up Roofing - A continuous roof covering made up of laminations or plies of bitumen (asphalt or coal-tar pitch) saturated or coated roofing felts, alternated with layers of bitumen as an adhesive, and surfaced with a layer of gravel or slag in a heavy coat of bitumen or finished with a cap sheet, generally used on flat- or low-pitched roofs.

Concrete Masonry Unit (CMU) - A block or brick cast of Portland cement and suitable aggregate, with or without admixtures (additives), and intended for laying up with other units, as in normal stone masonry construction.

Critical Facility - A "structure" from which essential services and functions for victim survival, continuation of public safety actions, and disaster recovery are performed or provided. Examples include: hospitals, police stations, fire/rescue stations, potable water liftstations, sewage treatment plant etc.

Exiting Hurricane - A hurricane leaving land and heading out to sea**.**

Exterior Insulation and Finish System (EIFS) - A lightweight exterior wall cladding system commonly installed on low and mid-rise commercial and multi-unit residential buildings. EIFS construction typically is composed of sheathing (e.g., gypsum board) attached to structural all framing (e.g., steel -studs), over which rigid insulation boards are glued or mechanically fastened and a weather membrane applied to the exterior surface.

Glossary (continued)

Fenestration - An opening in the surface of a structure.

Flat roof - Any roof with a slope of approximately one degree (1/4-inch pitch).

Floodproofing - Any combination of structural and non-structural additions, changes, or adjustments to properties and structures that reduce or eliminate flood damage to lands, water and sanitary facilities, structures, and building contents.

Floodshield - Permanent or temporary closures and assemblies that serve as structural barriers to resist all flood-induced loads that act on their surface(s) to include hydrostatic (pressure exerted by nonmoving water), hydrodynamic (pressures exerted by moving water), and impact loads (loads induced from collision by floating debris).

Gable-end Roof System - A ridged roof system that has triangular wall sections at the ends**.**

Generator - A machine that converts mechanical energy into electrical energy.

Generator Pre-Wiring system - See Prewiring.

Generator Ready - Generic term used to express the modification of a facility's electrical system to simplify and expedite connection with a compatible alternate power supply or generator.

Global Positioning System - A satellite-supported digital plotting used for rapidly determining longitude and latitude at a given point.

Hip (connection) - The external angle formed by the meeting of two sloping sides of a roof. See Hip-Roof System.

Hip-Roof System - Roof system that slopes up toward a ridge from all sides (similar to a pyramid), requiring a hip at each corner.

Host Shelter - A facility that is relatively safe and provides essential support services. Facilities are designated as Host Shelters when they are located in an area that is outside the projected path of an approaching hurricane or severe storm. As local conditions are not expected to present hazards such as surge inundation, rainfall flooding, high winds, or hazardous materials which exceed the building codes of the facilities in use, shelter selection guidelines in ARC 4496 do not have to be considered. The shelter population may include evacuees who flee from the threat of a hurricane or severe storm in their home counties. For planning purposes, the operational period of a Host Shelter is from 24 hours prior to landfall until 72 hours after landfall of a hurricane or severe storm. A total of 20 square feet of usable floor space per person is recommended in the calculation of shelter capacity.

Glossary (continued)

Hurricane Evacuation Shelter (HES) - A building or facility that conforms to the hurricane evacuation guidelines in ARC 4496, and is intended to shelter persons in the path of a major storm or hurricane. The designation does not imply that a facility is capable of affording complete protection or is free from hazards but only that it meets established safety criteria. See also Storm Shelter and Risk Shelter.

Inundation - The submersion of land, buildings, and infrastructure by flood waters.

Landfalling Hurricane - A hurricane that is coming to land from the sea.

Lightweight roofs - Roof systems of relatively light construction, to include wood board, plywood, fiberboard, precast cementitious fiber planks, and metal decking on wood or metal truss/joists. Typically the dead weight of these roof systems will not exceed the basic wind uplift-loading requirements of local building codes (25 psf +/-).

Load-Bearing Wall - A wall that supports any vertical loads of the building or structure in addition to its own weight.

Load Path - The structural element or combination of elements that form a continuous path for the transfer or distribution of loads to the building's foundation.

Long Span - See Open Span.

Main Wind Force Resisting System (MWFRS) - An assemblage of major structural elements designed to provide support (lateral stability, uplift resistance, etc.) for secondary members and cladding. The system typically receives wind loading from more than one direction.

Major Retrofit - A retrofit effort or project that requires major modifications to include demolition to parts or all of a building's structure.

Minor Retrofit - A retrofit effort or project that does not require significant demolition. Some examples are shuttering windows, bracing roof trusses, and other minor modifications to a building's existing structure.

Mitigation - Actions taken to prevent or reduce the risk to life, property, social, economic activities, and natural resources from natural or technological hazards.

Open Span - An area in a structure where the clear distance between supporting elements (beams, columns, etc.), in the shortest direction, is 40 feet or more.

Paralleling Hurricane - A hurricane paralleling the coastline without entering or exiting.

Glossary (continued)

Ponding - The rapid accumulation of water on a flat roof contained by parapets walls with insufficient scuppers/drains.

Partially Reinforced Concrete Masonry - Wall masonry construction that is designed as plain (unreinforced) masonry, except that vertical reinforcement is provided in some portions to provide flexual support. Vertical rebar will be spaced no more than eight feet apart, with vertical bars at wall corners, wall intersections, and on each side of window and door openings. Horizontal reinforcing must be present at roof and floor levels and above and below window or door openings. Masonry construction of this type will conform to the design criteria of NCMA TEK 63 (1975).

Pilaster - The reinforced portion of a wall that may serve as either a vertical beam or a column, or both. In masonry construction, the pilasters may or may not project beyond either face of the wall.

Precast Concrete (PC) - Cement or concrete unit with or without steel reinforcement that is cast in the form of a structural element before being placed in its final position. Precast concrete shapes may include girders and beams, spandrels, planks, "Tees" and "double Tee's," tilt-up walls.

Precast Cement-Fiber Planks (PCF Planks) - A common building material that is manufactured from cement and fiber (cementitious fiber) and cast into a composite panel or plank. Typical uses include roof decking and sound absorption panels on interior wall surfaces.

Pre-Engineered Metal Building (PEMB) - An easily recognizable prefabricated, standardized type of light steel frame building, which is found in similar form throughout the United States. It consists of two types of steel frame systems -- transverse (short axis) moment-resistant frames, typically rigid frame bents with tapered sections, and longitudinal (long axis) braced frames. This class of building is typically one story or has only a minor mezzanine/partial second story, lightweight cladding, or stud-framed walls.

Prewiring - The modification of a facilities electrical system to simplify and expedite connection with a compatible alternate power supply or generator.

Primary Host Shelter - A designation for a host shelter area, that if utilized as such, will prohibit the normal day-to-day functioning of only the building or area utilized as the shelter and is not the primary function of the remainder of the facility. For example, using a school gymnasium will only prohibit gym classes, with the remainder of the school facility continuing to function normally.

Glossary (continued)

Recovery Shelter - A facility that is relatively safe and provides essential support services. Facilities designated as Recovery Shelters are used after there is no longer a threat of hurricane or severe storm in the area. All Host Shelters and those Risk Shelters that have essential support services may be used as Recovery Shelters. As local conditions are not expected to present hazards such as surge inundation, rainfall flooding, high winds, or hazardous materials which exceed the building codes of the facilities in use, shelter selection guidelines in ARC 4496 do not have to be considered. The shelter population may include evacuees from the local area or evacuees who flee from the threat of hurricane or severe storm in their home counties and are not yet cleared to return to their homes. For planning purposes, the operational period of a Recovery Shelter is from 72 hours after landfall and beyond. A total of 40 square feet of usable floor space per person is recommended in the calculation of shelter capacity.

Refuge - A place or building that serves as an escape from real and immediate danger as a last resort to save one's life.

Reinforced Concrete Walls - Monolithically cast-in-place concrete wall construction with vertical reinforcing steel bars in both the horizontal and vertical directions, with spacing based upon design requirements. Horizontal reinforcing must be present at roof and floor levels and above and below window or door openings. Concrete construction of this type will conform to the design criteria of ACI 318.

Reinforced Concrete Masonry - Masonry wall construction in which steel reinforcement is integrally embedded in a manner that permits the two materials to act together in resisting forces. Masonry of this type shall have vertical reinforcing steel bars spaced no more than four feet apart, with vertical bars at wall corners, wall intersections, and on each side of window and door openings. Horizontal reinforcing must be present at roof and floor levels and above and below window or door openings. Masonry construction of this type will conform to the design criteria of ACI 530 or ASCE 5.

Retrofit - Modifications performed upon an existing structure or infrastructure with the goal of significantly reducing or eliminating potential damage due to a specific hazard.

Risk Shelter - A facility that complies with shelter selection guidelines prescribed in Guidelines for Hurricane Evacuation Shelter Selection (ARC 4496, July 1992). Facilities designated as Risk Shelters lie in the projected path of an approaching hurricane or severe storm and who have been directed to evacuate. The designation does not imply that a facility is capable of affording complete protection or is free from hazards but only that it meets established safety criteria. A total of 20 square feet of usable floor space per person is recommended in the calculation of shelter capacity. See Hurricane Evacuation Shelter and Storm Shelter.

Glossary (continued)

Saffir-Simpson Scale - The current prevalent system of classifying hurricanes based on five categories that relate hurricane strength and, therefore, damage potential, with the central pressure, wind velocity, and storm surge.

Scuppers - An opening (or outlet) in a wall or parapet of a building for draining overflow water from a flat or shallow slope roof.

Secondary Host Shelter - A designation for a host shelter area, that if utilized as such, will prohibit the normal day-to-day functioning of the entire campus/complex and not just the building or area utilized as the shelter. For example, using a school cafeteria or classroom area as a host shelter could result in school closure.

Shelter - A predesignated place or building of relative safety that temporarily provides essential support services with the goal of preserving life and reducing human suffering.

Shutters - Permanent or temporary closures or shields and assemblies that serve as structural barrier to resist wind induced loads that act on their surface(s) to include aerodynamic and windborne debris impact loads.

Softspot - A weakpoint in a building's envelope that is vulnerable to wind loads or windborne debris impact.

SLOSH modeling - A modeling methodology that predicts the maximum envelope and depth of coastal and inland storm surge inundation with respect to categories of hurricane.

Storm Shelter - A building or facility that conforms to the hurricane evacuation shelter guidelines as established in ARC 4496 and is intended to be used to shelter persons in the path of a severe storm or hurricane. The designation does not imply that a facility is capable of affording complete protection or is free from hazards but only that it meets established safety criteria. See also Hurricane Evacuation Shelter and Risk Shelter.

Storm Surge - An abnormal rise in water level at the shoreline of a large body of water caused by wind and pressure forces of a storm or hurricane.

Unreinforced Masonry - Masonry without vertical steel reinforcement or with vertical reinforcements spaced at distances of nine feet on-center or greater.

Appendix C:

ARC 4496 - Standards for Hurricane Evacuation Shelter Selection

Least-Risk Decision Making

Safety is the primary consideration for the American Red Cross in selecting hurricane evacuation shelters. When anticipated demands for hurricane evacuation shelter spaces exceed existing capacity as defined by the preceding standards, there may be a need to utilize less preferred facilities. It is critical that shelter selection decisions be made carefully and in consultation with local emergency management and public safety officials. This process should include the following considerations:

- No hurricane evacuation shelter should be located in an evacuation zone for obvious safety reasons. All hurricane evacuation shelters should be located outside of Category 4 storm surge inundation zones. Certain exceptions may be necessary, but only if there is a high degree of confidence that the level of wind, rain, and surge activities will not surpass established shelter safety margins.
- When a potential hurricane evacuation shelter is located in a flood zone, it is important to consider its viability. By comparing elevations of sites with FIRMs, one can determine if the shelter and a major means of egress are in any danger of flooding. Zone AH (within the 100-year flood plain and puddling of 1-3 feet expected) necessitates a closer look at the use of a particular facility as a sheltering location. Zones B, C, and D may allow some flexibility. It is essential that elevations be carefully checked to avoid unnecessary problems.
- In the absence of certification or review by a structural engineer, any building selected for use as a hurricane evacuation shelter must be in compliance with all local building and fire codes. Certain exceptions may be necessary, but only after evaluation of each facility, using the aforementioned building safety criteria.
- The Red Cross uses the planning guideline of 40-square feet of space per shelter resident. During hurricane conditions, on a short-term basis, shelter space requirements may be reduced. Ideally, this requirement should be determined using no less than 15 square feet per person. Adequate space must be set aside for registration, health services, and safety and fire considerations. Disaster Health Services areas should still be planned using a 40-square feet per person calculation. On a long-term recovery basis, shelter space requirements should follow guidelines established in ARC 3041, *Mass Care: Preparedness and Operations*.

Hurricane Evacuation Shelter Selection Process

General procedures for investigating the suitability of a building or facility for use as a hurricane evacuation shelter are as follows:

- Identify viable sites. Evacuation and transportation route models must be considered.
- Complete a risk assessment on each viable site. Gather all pertinent data from SLOSH and/or SPLASH (storm surge), FIRM (flood hazard) models; determine the facility base elevation; and obtain hazardous materials information and previous studies concerning each building's suitability.
- Have a structural engineer evaluate the facility and rate its ability to withstand wind loads according to ASCE 7-98 or ANSI A58 (1982) structural design criteria.
- Inspect the facility and complete a *Red Cross Facility Survey* (ARC Form 6564) and a *Self-Inspection Work Sheet/Off Premises Liability Checklist*, in accordance with ARC 3041. Note all potential liabilities and the type of construction. Consider the facility as a whole. One weak section may seriously jeopardize the integrity of the building.

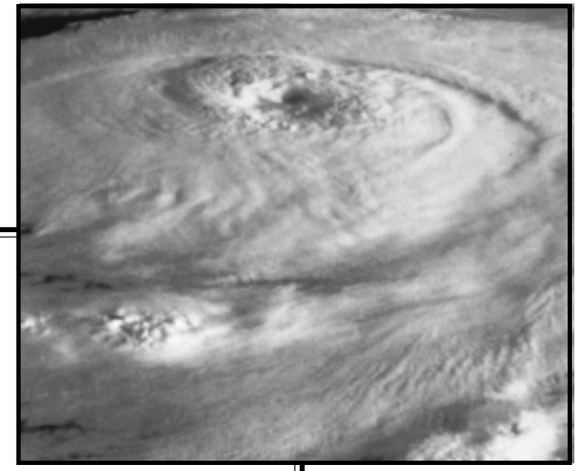
Increasing Shelter Inventory

An annual review of all approved hurricane evacuation shelters is required. Facility improvements, additions, or deterioration may change the suitability of a selected facility as a hurricane evacuation shelter. Facility enhancements may also enable previously unacceptable facilities to be used as hurricane evacuation shelters.

Work with officials, facility managers, and school districts on mitigation opportunities. Continue to advocate that the building program for new public buildings, such as schools, should include provisions to make them more resilient to possible wind damage. Suggest minor modifications of municipal, community, or school buildings, such as the addition of hurricane shutters, while buildings are being planned. Such modifications will make them useful as hurricane evacuation shelters.

Finally, add any new shelters to chapter shelter system and disaster response plans. Share shelter information with local emergency planning partners and the state lead chapter for Disaster Services for inclusion in state disaster response plans.

ARC 4496
Rev. January 2002



Standards for Hurricane Evacuation Shelter Selection

American Red Cross

Together, we can save a life

An interagency group comprised of the Federal Emergency Management Agency, the U.S. Army Corps of Engineers, the Environmental Protection Agency and Clemson University, has developed hurricane evacuation shelter selection standards. These standards reflect the application of technical data compiled in hurricane evacuation studies, other hazard information, and research findings related to wind loads and structural problems. These standards are supplemental to information contained in ARC 3041, *Mass Care: Preparedness and Operations* concerning shelter selection.

Planning considerations for hurricane evacuation shelters involve a number of factors and require close coordination with local officials responsible for public safety. Technical information contained in Hurricane Evacuation Studies, storm surge and flood mapping, and other data can now be used to make informed decisions about the suitability of shelters.

In the experience of the American Red Cross, the majority of people evacuating because of a hurricane threat generally provide for themselves or stay with friends and relatives. However, for those who do seek public shelter, safety from the hazards associated with hurricanes must be assured. These hazards include—

- Surge inundation.
- Rainfall flooding.
- High winds.
- Hazardous materials.

The following standards address the risks associated with each of these hurricane-associated hazards.

Surge Inundation

In general, hurricane evacuation shelters should not be located in areas vulnerable to hurricane surge inundation. The National Weather Service has developed mathematical models, such as Sea, Lake, and Overland Surges from Hurricanes (SLOSH) and Special Program to List Amplitudes of Surges from Hurricanes (SPLASH), that are critical in determining the potential level of surge inundation in a given area.

- Carefully review inundation maps in order to locate all hurricane evacuation shelters outside of Category 4 storm surge inundation zones.
- Avoid buildings subject to isolation by surge inundation in favor of equally suitable buildings not subject to isolation. Confirm that ground elevations for all potential shelter facilities and access routes obtained from topographic maps are accurate.
- Do not locate hurricane evacuation shelters on barrier islands.

Rainfall Flooding

Rainfall flooding must be considered in the hurricane evacuation shelter selection process. Riverine inundation areas shown on Flood Insurance Rate Maps (FIRMs), as prepared by the National Flood Insurance Program, should be reviewed. FIRMs should also be reviewed in locating shelters in inland counties.

- Locate hurricane evacuation shelters outside the 100-year floodplain.
- Avoid selecting hurricane evacuation shelters located within the 500-year floodplain.
- Avoid selecting hurricane evacuation shelters in areas likely to be isolated due to riverine inundation of roadways.
- Make sure a hurricane evacuation shelter's first floor elevation is on an equal or higher elevation than that of the base flood elevation level for the FIRM area.
- Consider the proximity of shelters to any dams and reservoirs to assess flow upon failure of containment following hurricane-related flooding.

High Winds

Consideration of any facility for use as a hurricane evacuation shelter must take into account wind hazards. Both design and construction problems may preclude a facility from being used as a shelter. Local building codes are frequently inadequate for higher wind speeds.

- If possible, select buildings that a structural engineer has certified as being capable of withstanding wind loads according to **ASCE (American Society of Engineers) 7-98** or **ANSI (American National Standards Institute) A58 (1982)** structural design criteria. Buildings must be in compliance with all local building and fire codes.
- Failing a certification (see above), request a structural engineer to rank the proposed hurricane evacuation shelters based on his or her knowledge and the criteria contained in these guidelines.
- Avoid uncertified buildings of the following types:
  —Buildings with long or open roof spans longer than 40 feet.
  —Unreinforced masonry buildings.
  —Pre-engineered (steel pre-fabricated) buildings built before the mid-1980s.
  —Buildings that will be exposed to the full force of hurricane winds.
  —Buildings with flat roofs or built with lightweight materials.
- Give preference to the following:
  —Buildings with 10°-30° pitched, hipped roofs; or with heavy concrete roofs.
  —Buildings no more than 60 feet high.
  —Buildings in sheltered areas (protected from strong winds).
  —Buildings whose access routes are not tree-lined.

Hazardous Materials

The possible impact from a spill or release of hazardous materials should be taken into account when considering any potential hurricane evacuation shelter.

All facilities manufacturing, using, or storing hazardous materials (in reportable quantities) are required to submit *Material Safety Data Sheets* (emergency and hazardous chemical inventory forms) to the Local Emergency Planning Committee (LEPC) and the local fire department. These sources can help you determine the suitability of a potential hurricane evacuation shelter or determine precautionary zones (safe distances) for facilities near potential shelters that manufacture, use or store hazardous materials.

- Facilities that store certain reportable types or quantities of hazardous materials may be inappropriate for use as hurricane evacuation shelters.
- Hurricane evacuation shelters should not be located within the ten-mile emergency planning zone (EPZ) of a nuclear power plant.
- Chapters must work with local emergency management officials to determine if hazardous materials present a concern for potential hurricane evacuation shelters.

Interior Building Safety Criteria During Hurricane Conditions

Based on storm data (e.g., arrival of gale-force winds), determine a notification procedure with local emergency managers regarding when to move the shelter population to pre-determined safer areas within the facility. Consider the following:

- Do not use rooms attached to, or immediately adjacent to, unreinforced masonry walls or buildings.
- Do not use gymnasiums, auditoriums, or other large open areas with long roof spans (longer than 40 feet) during hurricane conditions.
- Avoid areas near glass unless an adequate shutter protects the glass surface. Assume that windows and the roof will be damaged and plan accordingly.
- Use interior corridors or rooms.
- In multi-story buildings, use only the lower floors (no higher than 60 feet) and avoid corner rooms.
- Avoid any wall section that has portable or modular classrooms in close proximity, if these are used in your community.
- Avoid basements if there is any chance of flooding.

Appendix D:

Methodology for Recommendation of Projects for Funding

METHODOLOGY FOR RECOMMENDATION OF PROJECTS FOR FUNDING:

The Department has developed a point based rating system, which was used to prioritize projects. The rating system is consistent with the intent of Section 252.385, F.S., and the Department's and American Red Cross' shelter selection guidelines. Factors that were considered in the retrofit proposal review process were regional and local shelter deficits, building construction characteristics (ARC 4496), proposed shelter type, an increase in shelter capacity, ownership and day-to-day use of the facility, cost-effectiveness, etc. See Appendix H for an example of the 2001 Project Priority Worksheet. All factors considered in the prioritization process this year are generally consistent with those used in previous shelter retrofit reports. Projects carried over from the *2000 Shelter Retrofit Report* were reevaluated on changes in the shelter deficits (region and/or county), and on additional information if provided in updates from the counties (See Appendix H, Retrofit Priority Worksheet).

In prioritizing the projects the Department based its selection on the criteria listed below. If the desired information in a given line item was not provided and could not be readily determined from other sources, no points were allocated, except as otherwise noted. In some cases, certain criteria were considered "Show Stoppers" and automatically excluded the facility from recommendation. The show stopper designation was only given when a condition existed that could potentially exclude the building as a shelter, such as the presence of a long span roof or unreinforced masonry walls. Further explanations are given with the specific criteria items below. The following is a listing of the specific criteria used by the Department's staff to rank each project based upon information provided with each project proposal.

1. Proposed project is located within a region with a shelter deficit situation:

Section 252.385(3), F.S., is very specific in its intent to give priority to regions of the state where shelter deficits are greatest. This information was extracted from shelter status data that was provided by county emergency management officials and tabulated by the Department's All Hazards Planning Unit. A maximum of 75 points was given for those shelters that are location in a region with a severe (greater than 200,000) shelter deficit. Lesser point values were given to retrofit projects in regions with less severe deficits.

2. Proposed project is located with a county with a shelter deficit situation:

Section 252.385(3), F.S., also indicated its intent to give priority to counties of the state where shelter deficits are severe. Again, this information was extracted from shelter status data that was provided by county emergency management officials and tabulated by the Department's All Hazards Planning Unit. A maximum of 50 points was given to those shelters located in counties with a severe (greater than 50,000) shelter deficit. Lesser point values were given to retrofit projects in counties with less severe deficits. If all other factors being reviewed are equal in score, the combined effect of items one and two (125 total points) can have a significant impact upon a given project's priority.

3. Current status of facility is demonstrated to meet ARC 4496 guidelines:

The Department recommends that all hurricane shelters be thoroughly analyzed for consistency with the American Red Cross' "Guidelines for Hurricane Evacuation Shelter Selection," ARC 4496. Critical building envelope features (exterior wall and roof construction, percentage of glass in exterior walls, long span roof, window shutters, etc.), year built to determine design wind code requirements, presence of interior core area or storm pod, and other construction factors must be included in the decision to utilize the building as a shelter and establish its priority for retrofitting. There is only nominal value to installing window protection systems on a shelter building if there are other "weak links" that are limiting factors for the building's wind performance. Flooding and/or inclusion of the facility in a hazardous materials evacuation zone are also important factors when establishing a building as a hurricane shelter.

A maximum of 75 points was allocated based on how well the given facility is demonstrated to conform to ARC 4496 guidelines.

A. A maximum of 25 points was allocated based on what Sea, Lake and Overland Surges from Hurricanes (SLOSH) or Storm Surge evacuation zone the facility is in. Presence of the facility in a Category 1/Tropical Storm or Category 2 surge zone is a "Show Stopper" and excludes the shelter from recommendation. The point system used for this item is generally consistent with Section 235.26(9), F.S., that exempts educational facilities from the public shelter design criteria if located within a Category 1, 2, or 3 Evacuation Zone.

B. A maximum of 15 points was allocated based on the National Flood Insurance Program (NFIP) Flood zone (as established in the most recent Flood Insurance Rate Map the facility is located within). If this information was not provided, no points were allocated. Generally, buildings in the Flood Insurance Rate Map zones with an "A" designation were not recommended without detailed justification. Exception was given to those counties (such as Miami-Dade and Collier) whose populations live in areas that are extremely flat and provide very limited natural drainage.

C. A maximum of 25 points was allocated based on the building construction parameters. Here the building's structural and envelope characteristics are very important. Structures are evaluated to shelter people during a severe wind storm or major hurricane. "Show Stoppers" typically included unreinforced masonry walls, flat lightweight roofs over long spans, pre-engineered metal buildings, lack of load-path connectors, etc. The majority of "Show Stoppers" originated in this item.

D. A maximum of 10 points was allocated for other considerations. In this item, the extra items that would assist in determining the relative safety of the facility are evaluated. Examples were certification for wind speeds of 130

mph or more, in-place shutters, hip roofs, and other structural issues. If not specified, certification was not assumed.

4. Proposed project will serve to improve the structural integrity of the building envelope from wind and/or flood effects:

All retrofit projects that serve to maintain or improve the structural integrity of the building envelope will be given a high priority, as they will have an immediate impact upon the survivability of the shelter population. One of the most important things that can be done to reduce overall evacuation times, and thereby reduce the vulnerability of the population, is to provide adequate shelter space to meet the demand. Therefore, any project proposal for retrofitting that would allow for additional useable space within a structure due to improvements in the building envelope will receive priority consideration for funding.

A maximum of 25 points was allocated for projects that would improve the structural integrity of the facility. Here a window protection system would normally get 10 points since it will usually provide some additional protection against windborne debris. Exceptions were buildings (like pre-engineered metal buildings) that have historically performed poorly and on which the window protection system will have nominal impact. In those cases where a structure was considered relatively strong and the only apparent weakness was the windows, 25 points would be allocated.

5. Facility has been identified for potential use as a shelter by ARC or other sheltering agency, but is not currently in local inventory due to deficiencies to be corrected by this proposal:

In this line item there was a maximum of 25 points allocated. Points were given for projects that will remedy identified deficiencies (structural and mass care features) in a facility not currently listed in the local inventory as meeting ARC 4496 guidelines. The objective was to give priority to renovating or retrofitting structures in order to add new shelters.

6. Numerical increase in shelter capacity due to this proposed retrofit project:

A maximum of 75 points was allocated based on a numerical increase in shelter capacity. No points were allocated for shelter spaces already in inventory. This was a priority based on Florida law requiring reduction of the statewide public hurricane shelter deficit and was intended to encourage projects that add new shelter space to the inventories.

7. Building ownership and availability for use as a public shelter.

A maximum of 50 points was allocated, depending on ownership and availability status.

Public facilities received the highest priority for retrofit project recommendation based on their availability (and the use of public funds). Private facilities, such as churches, were recommended for retrofit based upon local necessity for space, previous history as a public shelter and/or existing agreements, type of project to be undertaken, and the endorsements of the local emergency management director.

8. Shutters Only Projects:

Generators and electrical work items are not considered in this item. Otherwise:

A maximum of 50 points was allocated if the retrofit project only required/listed shuttering (i.e. protection of fenestrations/doors/strengthening of doors) to meet ARC 4496.

A maximum of 25 points was allocated where shuttering (window/door protection) and engineer certifications were the only items (excluding electrical work) required/listed on the project.

If other structural work is required/listed then no points were allocated.

9. Cost-effectiveness of the proposed project:

A maximum of 50 points was allocated depending on the cost effectiveness of the project. This was based on the total structural costs (non-engineering study, non-generator) divided by the total shelter capacity gained. If the number of spaces, or costs, could not be determined, no points were allocated.

10. Project proposal is rated by the Federal Emergency Management Agency (FEMA)'s Benefit-Cost Analysis- Hurricane Wind Module with a benefit/cost ration greater than one.

A maximum of 25 points was allocated if the anaylsis resulted in a benefits/cost ratio of one or greater. Ratios less than one or if the needed information was not available, resulted in no points being allocated.

11. Project proposal has been demonstrated to have a significant impact upon the local, regional, and statewide shelter deficit situation:

In order to maintain the statewide scope in assessing which factors would be used to establish the criteria, the assigning of priorities was done on a county wide rather than

an individual shelter facility basis; therefore, all retrofit projects in a particular county were ranked equally.

The first criteria used to help classify the various counties were the overall vulnerability and severity of the evacuation and sheltering situation for a particular county or region. The state was divided into four areas, each comprised of several regions as defined by the Regional Planning Councils (RPC). Out of a total of 75 possible points for this project selection category, this criterion comprised a maximum of 50 points.

1. The RPC regions within the highly urbanized southern portion of the Florida peninsula were assigned the highest value of 50 points because of their large vulnerable populations; the relatively few alternatives regarding evacuation routs; and the large distances that must be traveled by evacuees from those regions in order to get to destinations that provide them relative safety from hurricane force winds. The intent of the high point value for this area was to also reflect the need to increase the local shelter reserves, which would thereby reduce the need for the region's evacuees to travel over long distances. This are includes the South Florida; Southwest Florida; Treasure Coast; Central Florida; and Tampa Bay Regional Planning Council Regions.

2. The Regional Planning Council regions in the central portion of the Florida Peninsula were given 30 points in order to reflect the area's less acute situation with regards to vulnerable population, evacuation distances, and relative isolation of the population. The proportionally high point assignment for this area was also intended to emphasize the need to increase regional shelter capacity not only for local evacuees, but also for the evacuees from South Florida. The Withlacoochee, North Central and East Central Florida Regional Planning Council regions are included in this area.

3. The Regional Planning Council regions for Northeast Florida, the Big Bend and the entire Panhandle were assigned a value of 15 points because their evacuation and sheltering situation is not as critical as areas in the previous two categories. This area has considerably smaller overall vulnerable populations and there exist numerous options available to local residents regarding evacuation into the inland regions of Georgia and Alabama. This area is comprised of the Northeast Florida, Apalachee and West Florida Regional Planning Council Regions.

The next criteria for assigning points to each county was whether the counties were traversed by either highway U.S. 17 or U.S. 27, or likely to be designated as a host shelter area during the implementation of the Regional Evacuation Procedures. The counties that fulfill this criteria are: Alachua; Columbia; Orange; Osceola; Leon; Marion; Sumter; Lake; Polk; Hardee; DeSoto; Highlands; Charlotte; Glades; Hendry; Palm Beach; Broward; and Miami-Dade. Out of a possible total of 75 points for this shelter retrofit project selection category, the above counties received 15 points.

The rationale for selecting counties along routes U.S. 17 and U.S. 27 as a criteria for assigning county priorities for shelter retrofitting is to reflect the increased importance of both highways as alternative evacuation routes to the more frequently considered and therefore much more congested roads, the Florida Turnpike, I-75, and I-95. The roadway segments in Marion County and south along both routes U.S. 17 and U.S. 27 will play an increasingly vital role in the development of a Statewide Evacuation and Sheltering Strategy. Due to the likely preeminence of both these highways in the future with regards to evacuation, it is imperative that shelter capacities in the counties along these roads be increased. Therefore, in an effort to address this necessity, the counties listed above were given an additional 15 points.

The final criteria for prioritizing the counties with respect to shelter retrofit projects is whether a shelter deficit exists in the county being considered. A point value of 10 points was given to a county where the number of shelter spaces is greater than the in-county demand for a category 5 storm, based on data provided in the *2000 Statewide Emergency Shelter Plan* and updates as provided by county emergency management agencies.

The basis for using this as criteria to prioritize the counties is the premise that the counties with already existing shelter space surpluses will be the counties where additional facilities will be found and regional shelter capacity increased. Many of the counties with shelter space deficits have experienced these shortfalls for many years, despite the best efforts of local emergency management staff to find additional in-county shelter capacity. Furthermore, counties with a shelter surplus have not had the need or the incentives to conduct an exhaustive search for new shelter facilities or implement innovative approaches to increase their shelter capacity. Therefore, this final criterion is a reflection of the emphasis placed on addressing the statewide shelter deficit problem by creating and augmenting regional shelter capacity rather than eradicating existing county shelter deficits.

12. Project Specified in Local Mitigation Strategy

A maximum of 50 points was allocated if the specific project building was referenced in a county's Local Mitigation Strategy.

A maximum of 25 points was allocated if the specific project campus/complex/site was referenced in a county's Local Mitigation Strategy.

Otherwise no points were allocated.

Appendix D:

Methodology for Recommendation of Projects for Funding

METHODOLOGY FOR RECOMMENDATION OF PROJECTS FOR FUNDING:

The Department has developed a point based rating system, which was used to prioritize projects. The rating system is consistent with the intent of Section 252.385, F.S., and the Department's and American Red Cross' shelter selection guidelines. Factors that were considered in the retrofit proposal review process were regional and local shelter deficits, building construction characteristics (ARC 4496), proposed shelter type, an increase in shelter capacity, ownership and day-to-day use of the facility, cost-effectiveness, etc. See Appendix H for an example of the 2001 Project Priority Worksheet. All factors considered in the prioritization process this year are generally consistent with those used in previous shelter retrofit reports. Projects carried over from the *2000 Shelter Retrofit Report* were reevaluated on changes in the shelter deficits (region and/or county), and on additional information if provided in updates from the counties (See Appendix H, Retrofit Priority Worksheet).

In prioritizing the projects the Department based its selection on the criteria listed below. If the desired information in a given line item was not provided and could not be readily determined from other sources, no points were allocated, except as otherwise noted. In some cases, certain criteria were considered "Show Stoppers" and automatically excluded the facility from recommendation. The show stopper designation was only given when a condition existed that could potentially exclude the building as a shelter, such as the presence of a long span roof or unreinforced masonry walls. Further explanations are given with the specific criteria items below. The following is a listing of the specific criteria used by the Department's staff to rank each project based upon information provided with each project proposal.

1. Proposed project is located within a region with a shelter deficit situation:

Section 252.385(3), F.S., is very specific in its intent to give priority to regions of the state where shelter deficits are greatest. This information was extracted from shelter status data that was provided by county emergency management officials and tabulated by the Department's All Hazards Planning Unit. A maximum of 75 points was given for those shelters that are location in a region with a severe (greater than 200,000) shelter deficit. Lesser point values were given to retrofit projects in regions with less severe deficits.

2. Proposed project is located with a county with a shelter deficit situation:

Section 252.385(3), F.S., also indicated its intent to give priority to counties of the state where shelter deficits are severe. Again, this information was extracted from shelter status data that was provided by county emergency management officials and tabulated by the Department's All Hazards Planning Unit. A maximum of 50 points was given to those shelters located in counties with a severe (greater than 50,000) shelter deficit. Lesser point values were given to retrofit projects in counties with less severe deficits. If all other factors being reviewed are equal in score, the combined effect of items one and two (125 total points) can have a significant impact upon a given project's priority.

3. Current status of facility is demonstrated to meet ARC 4496 guidelines:

The Department recommends that all hurricane shelters be thoroughly analyzed for consistency with the American Red Cross' "Guidelines for Hurricane Evacuation Shelter Selection," ARC 4496. Critical building envelope features (exterior wall and roof construction, percentage of glass in exterior walls, long span roof, window shutters, etc.), year built to determine design wind code requirements, presence of interior core area or storm pod, and other construction factors must be included in the decision to utilize the building as a shelter and establish its priority for retrofitting. There is only nominal value to installing window protection systems on a shelter building if there are other "weak links" that are limiting factors for the building's wind performance. Flooding and/or inclusion of the facility in a hazardous materials evacuation zone are also important factors when establishing a building as a hurricane shelter.

A maximum of 75 points was allocated based on how well the given facility is demonstrated to conform to ARC 4496 guidelines.

A. A maximum of 25 points was allocated based on what Sea, Lake and Overland Surges from Hurricanes (SLOSH) or Storm Surge evacuation zone the facility is in. Presence of the facility in a Category 1/Tropical Storm or Category 2 surge zone is a "Show Stopper" and excludes the shelter from recommendation. The point system used for this item is generally consistent with Section 235.26(9), F.S., that exempts educational facilities from the public shelter design criteria if located within a Category 1, 2, or 3 Evacuation Zone.

B. A maximum of 15 points was allocated based on the National Flood Insurance Program (NFIP) Flood zone (as established in the most recent Flood Insurance Rate Map the facility is located within). If this information was not provided, no points were allocated. Generally, buildings in the Flood Insurance Rate Map zones with an "A" designation were not recommended without detailed justification. Exception was given to those counties (such as Miami-Dade and Collier) whose populations live in areas that are extremely flat and provide very limited natural drainage.

C. A maximum of 25 points was allocated based on the building construction parameters. Here the building's structural and envelope characteristics are very important. Structures are evaluated to shelter people during a severe wind storm or major hurricane. "Show Stoppers" typically included unreinforced masonry walls, flat lightweight roofs over long spans, pre-engineered metal buildings, lack of load-path connectors, etc. The majority of "Show Stoppers" originated in this item.

D. A maximum of 10 points was allocated for other considerations. In this item, the extra items that would assist in determining the relative safety of the facility are evaluated. Examples were certification for wind speeds of 130

mph or more, in-place shutters, hip roofs, and other structural issues. If not specified, certification was not assumed.

4. Proposed project will serve to improve the structural integrity of the building envelope from wind and/or flood effects:

All retrofit projects that serve to maintain or improve the structural integrity of the building envelope will be given a high priority, as they will have an immediate impact upon the survivability of the shelter population. One of the most important things that can be done to reduce overall evacuation times, and thereby reduce the vulnerability of the population, is to provide adequate shelter space to meet the demand. Therefore, any project proposal for retrofitting that would allow for additional useable space within a structure due to improvements in the building envelope will receive priority consideration for funding.

A maximum of 25 points was allocated for projects that would improve the structural integrity of the facility. Here a window protection system would normally get 10 points since it will usually provide some additional protection against windborne debris. Exceptions were buildings (like pre-engineered metal buildings) that have historically performed poorly and on which the window protection system will have nominal impact. In those cases where a structure was considered relatively strong and the only apparent weakness was the windows, 25 points would be allocated.

5. Facility has been identified for potential use as a shelter by ARC or other sheltering agency, but is not currently in local inventory due to deficiencies to be corrected by this proposal:

In this line item there was a maximum of 25 points allocated. Points were given for projects that will remedy identified deficiencies (structural and mass care features) in a facility not currently listed in the local inventory as meeting ARC 4496 guidelines. The objective was to give priority to renovating or retrofitting structures in order to add new shelters.

6. Numerical increase in shelter capacity due to this proposed retrofit project:

A maximum of 75 points was allocated based on a numerical increase in shelter capacity. No points were allocated for shelter spaces already in inventory. This was a priority based on Florida law requiring reduction of the statewide public hurricane shelter deficit and was intended to encourage projects that add new shelter space to the inventories.

7. Building ownership and availability for use as a public shelter.

A maximum of 50 points was allocated, depending on ownership and availability status.

Public facilities received the highest priority for retrofit project recommendation based on their availability (and the use of public funds). Private facilities, such as churches, were recommended for retrofit based upon local necessity for space, previous history as a public shelter and/or existing agreements, type of project to be undertaken, and the endorsements of the local emergency management director.

8. Shutters Only Projects:

Generators and electrical work items are not considered in this item. Otherwise:

A maximum of 50 points was allocated if the retrofit project only required/listed shuttering (i.e. protection of fenestrations/doors/strengthening of doors) to meet ARC 4496.

A maximum of 25 points was allocated where shuttering (window/door protection) and engineer certifications were the only items (excluding electrical work) required/listed on the project.

If other structural work is required/listed then no points were allocated.

9. Cost-effectiveness of the proposed project:

A maximum of 50 points was allocated depending on the cost effectiveness of the project. This was based on the total structural costs (non-engineering study, non-generator) divided by the total shelter capacity gained. If the number of spaces, or costs, could not be determined, no points were allocated.

10. Project proposal is rated by the Federal Emergency Management Agency (FEMA)'s Benefit-Cost Analysis- Hurricane Wind Module with a benefit/cost ration greater than one.

A maximum of 25 points was allocated if the anaylsis resulted in a benefits/cost ratio of one or greater. Ratios less than one or if the needed information was not available, resulted in no points being allocated.

11. Project proposal has been demonstrated to have a significant impact upon the local, regional, and statewide shelter deficit situation:

In order to maintain the statewide scope in assessing which factors would be used to establish the criteria, the assigning of priorities was done on a county wide rather than

an individual shelter facility basis; therefore, all retrofit projects in a particular county were ranked equally.

The first criteria used to help classify the various counties were the overall vulnerability and severity of the evacuation and sheltering situation for a particular county or region. The state was divided into four areas, each comprised of several regions as defined by the Regional Planning Councils (RPC). Out of a total of 75 possible points for this project selection category, this criterion comprised a maximum of 50 points.

1. The RPC regions within the highly urbanized southern portion of the Florida peninsula were assigned the highest value of 50 points because of their large vulnerable populations; the relatively few alternatives regarding evacuation routs; and the large distances that must be traveled by evacuees from those regions in order to get to destinations that provide them relative safety from hurricane force winds. The intent of the high point value for this area was to also reflect the need to increase the local shelter reserves, which would thereby reduce the need for the region's evacuees to travel over long distances. This are includes the South Florida; Southwest Florida; Treasure Coast; Central Florida; and Tampa Bay Regional Planning Council Regions.

2. The Regional Planning Council regions in the central portion of the Florida Peninsula were given 30 points in order to reflect the area's less acute situation with regards to vulnerable population, evacuation distances, and relative isolation of the population. The proportionally high point assignment for this area was also intended to emphasize the need to increase regional shelter capacity not only for local evacuees, but also for the evacuees from South Florida. The Withlacoochee, North Central and East Central Florida Regional Planning Council regions are included in this area.

3. The Regional Planning Council regions for Northeast Florida, the Big Bend and the entire Panhandle were assigned a value of 15 points because their evacuation and sheltering situation is not as critical as areas in the previous two categories. This area has considerably smaller overall vulnerable populations and there exist numerous options available to local residents regarding evacuation into the inland regions of Georgia and Alabama. This area is comprised of the Northeast Florida, Apalachee and West Florida Regional Planning Council Regions.

The next criteria for assigning points to each county was whether the counties were traversed by either highway U.S. 17 or U.S. 27, or likely to be designated as a host shelter area during the implementation of the Regional Evacuation Procedures. The counties that fulfill this criteria are: Alachua; Columbia; Orange; Osceola; Leon; Marion; Sumter; Lake; Polk; Hardee; DeSoto; Highlands; Charlotte; Glades; Hendry; Palm Beach; Broward; and Miami-Dade. Out of a possible total of 75 points for this shelter retrofit project selection category, the above counties received 15 points.

The rationale for selecting counties along routes U.S. 17 and U.S. 27 as a criteria for assigning county priorities for shelter retrofitting is to reflect the increased importance of both highways as alternative evacuation routes to the more frequently considered and therefore much more congested roads, the Florida Turnpike, I-75, and I-95. The roadway segments in Marion County and south along both routes U.S. 17 and U.S. 27 will play an increasingly vital role in the development of a Statewide Evacuation and Sheltering Strategy. Due to the likely preeminence of both these highways in the future with regards to evacuation, it is imperative that shelter capacities in the counties along these roads be increased. Therefore, in an effort to address this necessity, the counties listed above were given an additional 15 points.

The final criteria for prioritizing the counties with respect to shelter retrofit projects is whether a shelter deficit exists in the county being considered. A point value of 10 points was given to a county where the number of shelter spaces is greater than the in-county demand for a category 5 storm, based on data provided in the *2000 Statewide Emergency Shelter Plan* and updates as provided by county emergency management agencies.

The basis for using this as criteria to prioritize the counties is the premise that the counties with already existing shelter space surpluses will be the counties where additional facilities will be found and regional shelter capacity increased. Many of the counties with shelter space deficits have experienced these shortfalls for many years, despite the best efforts of local emergency management staff to find additional in-county shelter capacity. Furthermore, counties with a shelter surplus have not had the need or the incentives to conduct an exhaustive search for new shelter facilities or implement innovative approaches to increase their shelter capacity. Therefore, this final criterion is a reflection of the emphasis placed on addressing the statewide shelter deficit problem by creating and augmenting regional shelter capacity rather than eradicating existing county shelter deficits.

12. Project Specified in Local Mitigation Strategy

A maximum of 50 points was allocated if the specific project building was referenced in a county's Local Mitigation Strategy.

A maximum of 25 points was allocated if the specific project campus/complex/site was referenced in a county's Local Mitigation Strategy.

Otherwise no points were allocated.

Appendix E:
Prioritized List of Recommended Projects

2002 Shelter Retrofit Report Submittal Log

Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Hillsborough	Symmes ES Bldg 3 (2001)	Install 8 impact doors Enclose open stairwells Enclose open breezeways	$32,000	826	575	2002 Retrofit List	Yes, ARC4496 attach LRDM attach Need stairwell cost
Hillsborough	Symmes ES Bldg 4 (2001)	Install 8 impact doors Enclose open stairwells Enclose open breezeways	$32,000	784	575	2002 Retrofit List	yes, ARC4496 attach LRDM attach Need stairwell cost
Hillsborough	Sulphur Springs ES Bldg 1 (1999)	Cover exterior fenestrations	$67,687	1,534	545	2002 Retrofit List	Yes, ARC4496 attach LRDM attach
Hillsborough	Young MS Bldg 8 (1998)	Cover exterior fenestrations Replace corridor doors	$30,694	527	540	2002 Retrofit List	Yes, ARC 4496 attach LRDM attach
Hillsborough	McLane MS Bldg 20 (1997)	Cover unprotected fenestrations Replace corridor doors	$66,983	1,071	535	2002 Retrofit List	Yes ARC4496 attach. LRDM attach
Hillsborough	Sligh MS Bldg 15 (1999)	Cover exterior Fenestrations	$35,508	589	535	2002 Retrofit List	yes, ARC4496 attach LRDM attach

2002 Shelter Retrofit Report Submittal Log

Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Hillsborough	Springhead ES Bldg 14 (1999)	Cover exterior Fenestrations	$38,887	513	535	2002 Retrofit List	Yes, ARC4496 attach LRDM attach
Hillsborough	Crestwood ES Bldg 13	Cover exterior fenestrations Replace exterior single latch doors Cover Breezeways	$84,050	995	530	2002 Retrofit List	Yes, LRDM attached.
Hillsborough	Oak Park ES Bldg 2 (1992)	Cover exterior fenestrations Cover breezeways Replace doors	$66,194	798	530	2002 Retrofit List	Yes, ARC4496 attach
Hillsborough	Oak Park ES Bldg 3 (1992)	Cover exterior fenestrations Cover breezeways Replace doors	$45,600	596	525	2002 Retrofit List	Yes, ARC4496 attach
DeSoto	DeSoto MS Bldg E/ Gym (2001)	Shutters	$8,713	583	515	2002 Shelter List	Yes

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Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Pinellas	Doug Jamerson ES (Elem. School "D") Bldg 5 (2002)	Install Exeter Barriers on all 1st floor windows/doors	$47,820	340	515	2002 Retrofit List	Yes *Note: ASCE 7 indicated.
Pinellas	Doug Jamerson ES (Elem. School "D") Bldg 4 (2002)	Install Exeter Barriers on all 1st floor windows/doors	$47,820	340	515	2002 Retrofit List	Yes, *Note: ASCE 7 indicated
Pinellas	Fairmount Park ES Bldg 4 (2002)	install Exeter Barriers on 1st floor windows	$47,820	340	515	2002 Retrofit List	Yes, *Note: ASCE 7 indicated
Pinellas	Fairmount Park ES Bldg 5 (2002)	install Exerter Barriers on 1st floor windows	$47,820	340	515	2002 Retrofit List	yes, *Note: ASCE 7 indicated
Pinellas	James Sanderlin ES (Elem. School "C") Bldg 4 (2002)	install Exerter Barriers on 1st floor windows/doors	$47,820	340	515	2002 Retrofit List	Yes, *Note: ASCE 7 indicated
Pinellas	James Sanderlin ES (Elem. School "C") Bldg 5 (2002)	install Exerter Barriers on 1st floor windows/doors	$47,820	340	515	2002 Retrofit List	Yes, *Note: ASCE 7 indicated

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Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Hillsborough	Robinson ES Bldg 12 (2000)	Cover exterior fenestrations Cover Corridor ends	$36,961	563	510	2002 Retrofit list	YES, ARC4496 attach LRDM attach
Hillsborough	Williams Ms Bldg 2 (1995)	Cover exterior fenestrations	$40,592	650	510	2002 Retrofit list	Yes, ARC4496 attach LRDM attach
Hillsborough	Wilson ES Bldg 3 (1999)	Cover exterior fenestrations	$38,174	721	510	2002 Retrofit List	Yes, ARC4496 attach LRDM attach
Hillsborough	Limona ES Bldg 9 (1999)	Cover fenestrations Install 3pt latch doors	$17,072	184	505	2002 Retrofit List	yes, ARC4496 attach LRDM attach
Hillsborough	Robles ES Bldg 16 (2001)	Cover Exterior fenestrations Replace corridor doors	$14,438	171	500	2002 Retrofit List	yes, ARC 4496 attach LRDM attach
Hillsborough	Robles ES Bldg 15 (2000)	Cover Exterior fenestrations Replace corridor doors	$32,385	351	500	2002 Retrofit List	Yes, ARC 4496 attach LRDM attach
Hillsborough	Lake Magdelene ES Bldg 14 (2000)	Cover fenestrations	$48,048	455	495	2002 Retrofit List	Yes, ARC4496 attach LRDM attach

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Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Hillsborough	Valrico ES Bldg3, first floor (1996)	Cover exterior fenestrations Cover open corridor endings Install Doors	$29,074	423	485	2002 Retrofit List	yes, ARC4496 attach LRDM attach
Hillsborough	Valrico ES Bldg 4, first floor (1996)	Cover exterior fenestrations Cover open corridor openings Install doors	$26,257	480	485	2002 Retrofit list	Yes, ARC4496 attach. LRDM attach
Escambia	Northview HS Gym (1993)	Eng Eval of open span roof	$2,000	764	480	2002 Retrofit List	Yes
Escambia	Pensacola Civic Center	Eng Eval of Dome roof	$25,000	4,341	475	2002 Retrofit List	Yes
Escambia	Tate HS Bldg 39 / Cafeteria (1999)	Eng Eval of open span roof	$2,000	548	475	2002 Retrofit List	Yes
Escambia	Beulah ES Main Bldg (1980)	Eng Eval of six foot overhangs	$2,000	2,569	470	2002 Retrofit List	Yes
Seminole	Chiles MS Bldg 4/ Gym (built 2000)	window & door protectiion	$24,952	1,000	465	2002 Retrofit List	yes, *Note: indicates ASCE 7-93 used
Seminole	Chiles MS Bldg 5/ Cafeteria (built 2000)	Window & door protection	$24,952	1,000	465	2002 Retrofit List	yes *Note: indicates ASCE-7-93 used

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Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Hillsborough	Lockhart ES Bldg 2 (1994)	Cover exterior fenestrations	$90,053	308	460	2002 Retrofit List	Yes, ARc4496 attach.
Hillsborough	Lockhart ES Bldg 5 (1994)	Cover exterior fenestrations	$85,978	408	460	2002 Retrofit List	yes, ARC4496attach.
Madison	Madison Central Bldg 2 Media Center	Shutter (136 sf)	$5,440	721	460	2002 Report List	yes
Madison	Madison Central Bldg 5 Kindergarten & 1st	Shutter (884sf)	$35,360	833	460	2002 Report List	yes
Madison	Madison Central Bldg 7 3rd grade	Shutter (476sf)	$19,040	728	460	2002 Report List	yes
Madison	Madison Central Bldg 8 4th & 5th Grade	Shutter (816sf)	$32,640	796	460	2002 Report List	yes
Madison	Madison Central Bldg 9 6th grade	Shutter (586sf)	$23,440	659	460	2002 Report List	yes
Madison	Madison Central Bldg 10 7th & 8th grade	Shutter (830sf)	$33,200	802	460	2002 Repor List	yes

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Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Madsion	Madison Central Bldg 6 2nd grade	Shutter (612sf)	$24,480	768	460	2002 Report List	yes
Escambia	Bellview ES 2001 Classroom Additon	Shutters	$17,820	352	455	2002 Retrofit List	Yes
Escambia	Beulah ES 2000 Classroom Addition	Shutters	$6,401	352	455	2002 Retrofit List	Yes
Escambia	Ferry Pass ES/ 2001 classroom addition	Shutters	$35,654	629	455	2002 Retrofit List	Yes
Escambia	Sherwood ES 2001 Classroom addition	shutter	$18,897	454	455	2002 Retrofit List	Yes
Escambia	West Pensacola ES 2000 Addition	Shutters	$13,370	352	455	2002 Retrofit list	Yes
Madison	Madison Central Bldg 11 Band/Vocal/Art	Shutter (102sf)	$4,080	518	455	2002 Report List	yes

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Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Polk	Lake Region HS/ Bldg 2 (1st floor)	Window Protection 1,008 sqft of glass	$47,979	473	455	2002 list moved from 2000 list	*Yes,* *HMGP#1300-235 ($47,979)* withdrawn by schoolboard funding refused/ in 2002
Polk	Lake Region HS/ Bldg 2 (2nd floor)	Window Protection 1,098 sq ft of glass	$32,940	578	455	2002 list moved from 2000 list	Yes *HMGP#1300-270 ($57,346) withdrawn/ denied* funding refused/ in 2002
Dixie	Old Town ES Bldg 2	Shutters (491sf)	$22,095	460	450	2002 Report List	yes
Polk	Lake Region HS/ bldg 3 (1st floor)	Window Protection 960 sq ft of glass	$43,409	514	445	2002 list moved from 2000 list	*yes,* *HMGP#1300-236 ($43,409)* withdrawn by schoolboard funding refused/ in 2002

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Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Polk	Lake Region HS/ Bldg 4 (1st floor)	Window Protection 1,486 sq ft of glass	$50,263	568	445	2002 list moved from 2000 list	*yes,* *HMGP#1300-237 ($50,263)* withdrawn by schoolboard funding refused/ in 2002
Sarasota	Gulf Gate ES Bldg 1/ Cafeteria (2001 const)	Protect windows (319sf) Protect doors (96sf)	$28,858	344	445	2002 Retrofit list	Yes ASCE-7 indicated
Seminole	Winter Springs HS Bldg 5 (built 1994)	window and door protection	$69,344	873	440	2002 Shelter List	yes *Note: ANSI A58.1 indicated
Seminole	Winter Springs HS Bldg 6 (built 1994)	window and door protection	$52,855	873	440	2002 Shelter List	yes, *Note: ANSI A58.1 indicated
Levy	Bronson ES Bldg 6 Admin/ Media (1999)	Shutter (1,211sf)	$54,495	622	435	2002 Shelter List	YES

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Listed by Rank Score

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County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Madison	Madison Central Bldg 1 Admin (2001)	Shutter (751sf)	$30,040	518	435	2002 Report List	yes
Madison	Madison Central Bldg 3 Technical Ed	Shutter (170sf)	$6,800	490	435	2002 Report List	yes
Madison	Madison Central Bldg 4 Pre-kindergarten	Shutter (102sf)	$4,080	265	435	2002 Report List	yes
Escambia	Bailey MS Whole bldg (1993)	Shutter	$469,746	2,619	430	2002 Retrofit List	Yes
Escambia	Ferry Pass MS/ Bldg 4	Window Protection	$30,000	444	430	2002 Retrofit list	Yes
Escambia	Longleadf ES/ New Classroom Bldg	Window Protection	$84,852	534	430	2002 Retrofit list	Yes
Polk	Loughman Oaks ES / Bldg 1 (built 1992)	Window protection Generator Prewiring	$14,328	250	430	2002 list moved from 2001 list	Yes funding refused/in 2002
Polk	Loughman Oaks ES / Bldg 2 (built 1992)	Window protection Generator. Prewiring	$15,032	450	430	2002 list moved from 2001 list	Yes funding refused/in 2002

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Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Polk	Loughman Oaks ES / Bldg 3 (built 1992, additions in 1995)	Window protection Generator Prewiring	$38,000	500	430	2002 list moved from 2001 list	Yes funding refused/in 2002
Polk	Loughman Oaks ES / Bldg 4 (built 1992)	Window protection Generator Prewiring	$56,612	800	430	2002 list moved from 2001 list	Yes funding refused/in 2002
Polk	Loughman Oaks ES / Bldg 5 (built 1992)	Window protection Generator Prewiring	$38,000	550	430	2002 list moved from 2001 list	Yes funding refused/in 2002
Polk	Loughman Oaks ES / Bldg 6 (built 1992)	Window protection Generator Prewiring	$50,980	650	430	2002 list moved from 2001 list	Yes funding refused/in 2002
Polk	Stambaugh MS/ Bldg 1 (1st floor)	Window Protection 1,332 sq ft of glass	$40,588	656	430	2002 list moved from 2000 list	Yes, HMGP#1300-243 ($40,588) withdrawn by schoolboard funding refused/in 2002
Dixie	Old Town ES Bldg 4	Shutters (267sf)	$12,015	165	425	2002 Report List	yes
Escambia	Workman MS/ Bldg 3	Window Protection	$65,318	600	425	2002 Retrofit List	Yes

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Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Levy	Williston HS Bldg 6 (2001)	Shutter (600sf)	$27,000	488	425	2002 Report List	yes
3mil	73 projects		$2,990,623	49,040			
Polk	Haines City HS/ Bldg 1	Window Shutters 1,764 sqft of glass	$25,200	504	425	2002 list moved from 2000 list	yes, HMGP#1300-238 ($25,200) withdrawn by schoolboard funding refused/ in 2002
Polk	Stambaugh MS/ Bldg 8	Window Protection 1,102 sq ft of glass	$10,117	638	425	2002 list moved from 2000 list	Yes, Need ASCE 7 cert on roof? Two-story. HMGP#1300-245 ($10,117) withdrawn by schoolboard funding refused/in 2002
Dixie	Old Town ES Bldg 5	Shutters (266sf)	$11,970	175	420	2002 Report List	yes
Dixie	Ruth Rains MS Bldg 1 South	Shutter (720sf)	$32,400	332	420	2002 Report List	yes

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Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Hardee	Wauchula ES Main Bldg, Bldg 01 (1971, add 1999)	Shutter doors/windows Gen Prewire	$68,408	1,300	420	2001 Report List Per county dated Feb 27, 2001	Yes, based on information provided.
Levy	Bronson ES Bldg 7 (1999)	Shutter (1,381sf)	$69,050	580	420	2002 Shelter List	YES
Levy	Bullock ES Bldg 5 (1999)	Shutter (1,200sf)	$60,000	525	420	2002 Shelter List	YES
Polk	Ridgeview ES / Bldg 4 (built 2000)	Window protection Generator Prewiring	$64,092	620	420	2002 list moved from 2001 list	Yes funding refused/in 2002
Seminole	Lake Brantley HS Bldg 6 (built 1999/2000)	window & door protection	$138,478	666	420	2002 Retrofit List	yes, *Note: ASCE 7-93 indicated
Seminole	Lake Brantley HS Bldg 7 (built 1999/2000)	Windows & Door Protection	$150,664	666	420	2002 Retrofit List	yes, *Note: ASCE 7-93 indicated Note: "will provide 2,000 spaces for Host Shelter"

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Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Seminole	Lake Brantley Hs Bldg 8 (built 1999/2000)	Windows & Door Protection	$158,404	668	420	2002 Retrofit List	yes, *Note: ASCE 7-93 indicated
DeSoto	Turner Agri-civic center	Plan to construct to meet ARC 4496 Metal Bldg to 140mph Concrete and masonry design to 140mph	$72,438	1,500	415	2001 Retrofit List memo frm county dated April 27, 2001 updated Feb 27, 2002	Yes, ARC 4496 provided indicates ASCE 7-93 (140mph)
Levy	Williston MS Health Bldg (1995)	Shutter (192.5sf)	$8,663	130	415	2002 Report List	yes
Seminole	Winter Springs HS Bldg 7 (built 1994)	window & door Protection	$109,336	1,000	415	2002 Shelter List	yes, *Note: "will provide additional 2,000 spaces total for Host Shelters"
4mil	86 projects		$3,969,843	58,344			
Levy	Chiefland ES Bldg 200 (1991)	Shutter (1,348sf)	$60,660	666	410	2002 Report List	yes

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Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Dixie	Ruth Rains MS Bldg 1 North	Shutter (720sf)	$32,400	157	405	2002 Report List	yes
Manatee	Kinnan ES/ Bldg 01	window & door protection	$57,427	296	405	2000 Shelter list	Yes funds refused 2002
Dixie	Old Town Es Bldg 3	Shutters (395sf)	$17,775	321	400	2002 Report List	yes
Dixie	Ruth Rains MS Bldg 3 Classrooms Only	Shutter (908sf)	$40,860	160	400	2002 Report List	yes, but check 86 ft span
Levy	Williston MS Bldg 12 (1999)	Shutter (1,200sf)	$60,000	495	400	2002 Report List	yes
Madison	Pinetta ES Bldg 1 (“D”) Classroom	Shutter (422sf)	$16,880	176	400	2002 Report List	yes
Polk	Ridgeview ES / Bldg 3 (built 2000)	Window protection Generator Prewiring	$40,068	390	395	2002 list moved from 2001 list	Yes funding refused/in 2002
Polk	Ridgeview ES / Bldg 5 (built 2000)	Window protection Generator Prewiring	$45,788	470	395	2002 list moved from 2001 list	Yes funding refused/in 2002

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Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Sumter	Lake Panasoffkee ES/ bldg 11	Window Protection	$29,160	504	395	2002 list moved from 2000 list	Yes funding refused/in 2002
Sumter	North Sumter PS/ Classrooms Bldg 17	Window Protection	$29,160	504	395	2002 list moved from 2000 list	Yes funding refused/ in 2002
Seminole	Winter Springs HS Bldg 4 (built 1994)	window and door protection	$83,577	440	390	2002 Shelter List	yes, *Note: ANSI A58.1 inducated
Lake	Umatilla HS/ Bldg 11	Window Protection	$6,180	163	385	2002 list moved from 2000 list	Yes Dropped Spec Approp. (1543) ($6,180) 02PR-37-06-45-01-004-funding refused refused again on 7/12/02 (will be under extensive renovation)

2002 Shelter Retrofit Report Submittal Log

Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Liberty	W.R. Tolar Bldg 1 Admin/library/ Classrooms	Shutter (2,064sf)	$82,560	1,050	385	2002 Report list	yes
Polk	Dundee Ridge MS / Bldg 2 (built 1999)	Window protection. Generator. Prewiring	$38,792	500	385	2002 list moved from 2001 list	Yes, but need Asce-7 cert of long span (47ft) funding refused/in 2002
Polk	Dundee Ridge MS / Bldg 3 (built 1999)	Window protection. Generator. Prewiring	$38,792	500	385	2002 list moved from 2001 list	Yes, but need Asce-7 cert of long span (47ft) funding refused/ in 2002
Polk	Dundee Ridge MS / Bldg 4 (built 1999)	Window protection. Generator. Prewiring	$38,792	500	385	2002 list moved from 2001 list	Yes, but need Asce-7 cert of long span (47ft) funding refused/in 2002
Dixie	Ruth Rains MS Bldg 5	Shutter (208sf)	$9,360	70	380	2002 Report List	yes
Dixie	Ruth Rains MS Bldg 2	Shutter (216sf)	$9,720	61	380	2002 Report List	yes

2002 Shelter Retrofit Report Submittal Log

Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Escambia	Univ of West Fla Bldg #13 (classrooms)	Shutters	$25,000	500	380	2001 Report List Per County Dec 27,2000	Yes,
Leon	Tallahassee Senior Citizen's Center Main Bldg (1935)	window protection (570sf) entry door protection	$43,500	168	380	2002 Shelter List	Yes
Polk	Haines City HS/ Bldg 18 (1st floor)	Window Shutters 480 sqft of glass	$19,140	319	380	2000 Retrofit list DR1300, dated 6/19/00	*yes* *HMGP#1300-242 ($19,140) withdrawn by schoolboard*
Polk	Lake Region HS/ Bldg 1	Door & Window protection	$78,296	357	380	2002 list moved from 2000 list	yes, HMGP#1300-234 ($78,296) withdrawn by schoolboard funding refused/ in 2002
Dixie	Old Town ES Bldg 1	Shutter (379sf)	$17,055	106	375	2002 Report List	yes
Liberty	W.R. Tolar Bldg 2 Classrooms	Shutter (1,512sf)	$60,480	502	375	2002 Report List	yes

2002 Shelter Retrofit Report Submittal Log

Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Sarasota	Tuttle ES Bldg 301/ Cafeteria (1991 const)	Protect windows (360sf) Protect doors (416 sf) Structural tie downs (roof-span 80ft)	$153,488	267	375	2002 Retrofit List	Yes
Volusia	Daytona Beach Comm. Col./ Bldg 16	Rolldown shutters 2nd flr window film	$24,500	428	375	2000 Retrofit list per DR1300 dated 12/01/99	Yes HMGP#1300-248 ($7,570) contract mailed
Leon	Florida State Univ Schools/ Bldg 4	Shutters (3,330sf)	$166,500	734	370	2002 Shelter List	Yes
Leon	Florida State Univ Schools/ Bldg 3	Shutters (3,295sf)	$164,750	743	370	2002 Shelter List	Yes
Leon	Florida State Univ Schools/ Bldg 8	Shutters (2,455 sf)	$122,750	643	370	2002 Shelter List	yes
Levy	Chiefland ES Bldg 100 (1991)	Shutter (1,234 sf)	$55,530	380	370	2002 Shelter List	YES
Levy	Chiefland ES Bldg 300 (1991)	Shutter (1,350sf)	$60,750	440	370	2002 Report List	yes
Levy	Chiefland ES Bldg 400 (1991)	Shutter (1,150sf)	$51,750	443	370	2002 Report List	yes

2002 Shelter Retrofit Report Submittal Log

Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Sumter	Lake Panasoffkee ES/ bldg 3	Window protection	$31,950	476	370	2002 list moved from 2000 list	Yes
Sumter	South Sumter HS/ Bldg 4	Window Protection	$26,460	352	370	2002 list moved from 2000 list	Yes
Citrus	Citrus Senior HS Building #17 Classroom	Shutters (650 sq ft)	$30,330	226	365	2002 Retrofit List	Yes
Citrus	Citrus Springs MS Building #1 Administration	Shutters (940 sq ft)	$50,910	365	365	2002 Retrofit List	Yes
Citrus	Citrus Springs MS Building #2 Classroom	Shutters (900 sq ft)	$48,744	230	365	2002 Retrofit List	Yes
Citrus	Citrus Springs MS Building #3 Classroom	Shutters (940 sq ft)	$50,910	438	365	2002 Retrofit List	Yes
Citrus	Citrus Springs MS Building #4 Classroom	Shutters (940 sq ft)	$50,910	438	365	2002 Retrofit List	Yes

2002 Shelter Retrofit Report Submittal Log

Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Citrus	Citrus Springs MS Building #8 Bandroom	Shutters (940 sq ft)	$50,910	370	365	2002 Retrofit List	Yes
Nassau	Yulee MS "BB" education/ gym	increase SREF EHPA design 40mph to 160mph	$171,400	837	365	2002 Shelter List	yes
Orange	Memorial MS	Remove Laydown Structural Retrofits Shutters Direct Phone Generator Prewire Contingent	$99,060	866	365	1999 Shelter Retrofit Report	Yes
Orange	Westridge MS	Remove Laydown Structural Retrofits Shutters Direct Phone Generator Prewire Contingent	$106,860	922	365	1999 Shelter Retrofit Report	Yes
Orange	Winter Park HS	Remove Laydown Structural Retrofits Shutters Direct Phone Generator Prewire Contingent	$139,620	1,251	365	1999 Shelter Retrofit Report	Yes

2002 Shelter Retrofit Report Submittal Log

Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Sumter	South Sumter MS/ Bldg 23	Window Protection	$27,540	318	365	2002 list moved from 2000 list	Yes
Sumter	South Sumter MS/ Bldg 24	Window Protection	$27,540	318	365	2002 list moved from 2000 list	Yes
Sumter	South Sumter HS/ bldg 36	Window Protection	$27,540	318	365	2002 list moved from 2000 list	Yes
Sumter	Wildwood HS/ Bldg 4	Window Protection	$30,240	368	365	2002 list moved from 2000 list	Yes
Sumter	Wildwood MS/ Bldg 15	Window Protection	$27,540	318	365	2002 list moved from 2000 list	Yes
Washington	Vernon MS Bldgs 2,3,4, 5 (2000)	shutters	$66,780	1,060	365	2001 Retrofit List per county recvd 26 Jun 01	Yes
Citrus	Citrus Senior HS Building #16 Classroom	Shutters (650 sq ft)	$30,330	226	360	2002 Retrofit List	Yes
Madison	Pinetta ES Bldg 2 (“C”) Admin/ Library	Shutter (272sf)	$10,880	45	360	2002 Report List	yes
Okaloosa	Crestview HS/ Main Bldg 1	Shutters	$148,885	2,641	360	2000 Retrofit list	Yes

2002 Shelter Retrofit Report Submittal Log

Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Orange	Gotha MS	Remove Laydown Structural Retrofits Shutters Direct Phone Generator Prewire Contingent	$114,660	680	355	1999 Shelter Retrofit Report	Yes
Orange	Oak Ridge HS	Remove Laydown Structural Retrofits Shutters Direct Phone Generator Prewire Contingent	$142,460	600	355	1999 Shelter Retrofit Report	Yes
Orange	Piedmont Lakes MS	Remove Laydown Structural Retrofits Shutters Direct Phone Generator Prewire Contingent	$114,660	680	355	1999 Shelter Retrofit Report	Yes
Seminole	Lawton Chiles ES / Bldgs 4 & 5 (built in 1999/2000)	Shutters Generator Prewiring	$174,406	1,000	355	2001 Report List Per county dated 12/27/00 Updated per DEM Retrofit Review	Yes HMGP#1300-134 ($79,652) withdrawn/ denied
Washington	Chipley HS (1999)	shutters	$197,855	2,584	355	2001 Retrofit List per county recvd 26 Jun 01	Yes

2002 Shelter Retrofit Report Submittal Log

Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Indian River	Oslo MS open corridor connecting Bldg 500 and Bldg 600	Protective Wind Screen (840sf)	$12,600	0	350	2002 Retrofit list	Yes
Volusia	Daytona Beach Comm. Col/ Bldg 5	Accordion Shutters	$55,000	236	350	2000 Retrofit list per DR1300 dated 12/01/99	Yes
DeSoto	Trinity United Meth. Church , Bldg 2	Shutter Pre-wire Brace gable ends	$13,400	140	347	1999 Shelter Retrofit Report per DR1300 dated 12/27/99	Yes *HMGP#1300-119 (Denied*)
Clay	St Johns River CC, Thrasher-Horn Center for the Arts	protect doors	$0	200	345	2001 Report List Per county dated Dec 28, 2000	Yes, but, need more info (to be designed to EHPA)
Leon	Florida State Univ Schools/ bldg 9	Shutters (1,489sf)	$74,450	452	345	2002 Shelter List	yes
Liberty	W.R. Tolar Bldg 3	Shutter (896sf)	$35,840	338	345	2002 Report List	yes

2002 Shelter Retrofit Report Submittal Log

Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Nassau	New Yulee MS "BB" education/ cafeteria	increase SREF EHPA design 40mph to 160mph 300KW generator/ wiring/switch	$87,000	435	345	2002 Shelter List	yes
Nassau	Yulee MS "BB" (under construction) Music/Classrooms	increase SREF EHPA design 40mph to 160mph	$35,200	176	345	2002 Shelter List	yes
Orange	Hunters Creek MS	Remove Laydown Structural Retrofits Shutters Direct Phone Generator Prewire Contingent	$130,260	680	345	1999 Shelter Retrofit Report	Yes
Sarasota	Ashton ES/ Bldg 1	Roof open span bracing, reinforcing of exterior CMU walls Structural Engineer	$112,000	695	345	2002 List moved from 2000 Retrofit list per DR1300 dated 7-25-00	yes funding refused 2002.

2002 Shelter Retrofit Report Submittal Log

Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Seminole	Bently ES Bldg 1 (built 2000/2001)	Window/door protection	$188,850	100	345	2002 Retrofit List	yes, *Note: "will provide 100 addition people with Special Needs or 500 people for Host Shelters." Note: indicates ASCE 7-98 used
Orange	Apopka MS	Remove Laydown Structural Retrofits Shutters Direct Phone Generator Prewire Contingent	$286,260	585	340	1999 Shelter Retrofit Report	Yes
Orange	Conway MS	Remove Laydown Structural Retrofits Shutters Direct Phone Generator Prewire Contingent	$153,660	572	340	1999 Shelter Retrofit Report	Yes

2002 Shelter Retrofit Report Submittal Log

Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Volusia	Palm Terrace ES	Shutters prewire	$115,000	2,540 after minor retrofit *	340	2001 Retrofit List Per data from county Updated per DEM Retrofit Review	Yes. Certain specified areas. Other isolated sections have open roof spans requiring ASCE 7 review LRDM attached
DeSoto	Childs Christian Center, bldg 1 special needs (First Baptist)	Shutter Braced gable ends	$10,000	264	335	1999 Shelter Retrofit Report per DR1300 dated 12/27/99	Yes *HMGP#1300-118 (Denied)*
Lake	South Lake HS/ Bldg 4	Window Protection	$34,665	245	335	2000 Retrofit list per county	Yes
Lake	South Lake HS/ Bldg 5	Window Protection	$34,665	245	335	2000 Retrofit list per county	Yes
Liberty	W.R. Tolar Bldg 4 Gymnasium	Shutter (1,512sf)	$60,480	464	335	2002 Report List	yes, but need ASCE 7 cert on 85 ft span.

2002 Shelter Retrofit Report Submittal Log

Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Marion	Saddlewood ES Bldg 3	Relocate Microwave tower from the bldg (laydown hazard)	$23,000	307	335	2000 Retrofit list per county data received Nov 17, 2000	Yes, bldgs are shuttered and appear to meet EHPA standards except for tower near Bldg 3. HMGP #1300-294 ($23,000) withdrawn/ denied
Polk	Dundee Ridge MS / Bldg 6 (built 1999)	Window protection. Generator. Prewiring	$27,968	194	335	2001 Report List Per county dated 12/13/00	Yes, but need Asce-7 cert of long span (47ft)
Polk	Dundee Ridge MS / Bldg 8 (built 1999)	Window protection. Generator. Prewiring.	$33,996	167	335	2001 Report List Per county dated 12/13/00	Yes, but need Asce-7 cert of long span (47ft)
St. Lucie	F.K. Sweet ES/ Cafeteria	Window Protection	$4,000	155	335	1999 Shelter Retrofit Report per data from county dated July 28, 2000	Yes , Eng certification in process
St. Lucie	Fairlawn ES/ Cafeteria	Window Protection	$4,000	155	335	2000 Retrofit list per data from county dated July 28, 2000	Yes, Eng certification in process

2002 Shelter Retrofit Report Submittal Log

Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
St. Lucie	Port St. Lucie ES/ Cafeteria	Window Protection	$4,000	155	335	2000 Retrofit list per data from county dated July 28, 2000	Yes, Eng certification in process
Volusia	Atlantic HS / Bldg 3 (Special Educ)	Shutters Gen. Prewire/enclosure	$105,000	389	335	2001 Retrofit List Per data from county Updated per DEM Retrofit Review	Yes LRDM attached
Lake	Umatilla HS/ Bldg 13	Window Protection	$5,760	98	330	2000 Retrofit list per county	Yes
Orange	Boone HS	Remove Laydown Structural Retrofits Shutters Direct Phone Generator Prewire Contingent	$165,420	845	330	1999 Shelter Retrofit Report	Yes
Sarasota	Gocio ES/ Bldg 5 (1992 const)	Structural modifications of roof, gable ends, and exterior walls Structural Engineer pre-wire Window protection	$105,500	250	330	2002 list moved from 2000 Retrofit list per DR1300 dated 7-25-00	yes funded refused 2002

2002 Shelter Retrofit Report Submittal Log

Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Sarasota	Gocio ES/ Bldg 3 (1980 const)	Structural modifications of roof, gable ends, and exterior walls Structural Engineer pre-wire Window protection	$116,500	250	330	2002 Retrofit list moved from 2000 list per DR1300 dated 7-25-00	Yes, contingent upon ASCE7 certification of roof (54 ft open span) funding refused/2002
Brevard	Central Jr. High, West Melbourne	Shutters 2nd Flr	$70,000	600	325	1999 Shelter Retrofit Report updated 2002	Yes. - shutters already funded for 1st flr

2002 Shelter Retrofit Report Submittal Log

Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Okaloosa	Choctawhatchee HS/	Shutters (storm barriers)	$72,166	4,468	325	2000 Retrofit list per HMGP application (Note: applicant plans to use a polymer screen to protect walls/windows and the open span areas can be avoided (sealed off).	Yes, if retrofit will protect walls and if the open span areas are isolated., [needs retrofits on walls (gypsum wallboard stud walls and/or unreinforced masonry walls) and roof (open span areas- if these areas cannot be avoided)]
Collier	Lake Trafford ES/ Bldg 1	Eng Assessment Shutters Pre-wire	$37,000	100	320	1999 Shelter Retrofit Report per DR1300 dated 12/5/99	Yes, Phase I- Eng Study , open spans (62ft) and overhangs (4ft)
Jackson	Graceville HS Bldg 2	window/door protection (960sf) softspot protection (49sf)	$50,500	293	320	2002 Report List	Yes

2002 Shelter Retrofit Report Submittal Log

Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Jackson	Malone SHS Bldg 14	window/door protection (864 sf) softspot protection (390sf)	$62,700	239	320	2002 Report List	Yes
Lake	Umatilla HS/ Bldg 15	Window Protection	$9,360	112	320	2000 Retrofit list per county	Yes
Lee	Colonial ES Bldg 4 (1990)	Shutters, drawbolts, gen hookup, ceiling famns	$60,000	383	320	2002 List moved from 2001 Report List per county	Yes, In Cat 4/5 storm surge zone (landfalling) . Up to 5.7 ft of surge in bldg.
Lee	Colonial ES Bldg 6 (1990)	Shutters, drawbolts, gen hookup, ceiling famns	$50,000	288	320	2002 List moved from 2001 Report List per county	Yes, In Cat 4/5 storm surge zone (landfalling) . Up to 5.7 ft of surge in bldg.
Lee	Colonial ES Bldg 7 (1990)	Shutters, drawbolts, gen hookup, ceiling famns	$50,000	288	320	2002 List moved from 2001 Report List per county	Yes, In Cat 4/5 storm surge zone (landfalling) . Up to 5.7 ft of surge in bldg.
Lee	Colonial ES Bldg 9 (1990)	Shutters, drawbolts, gen hookup, ceiling famns	$90,000	585	320	2002 List moved from 2001 Report List per county	Yes, In Cat 4/5 storm surge zone (landfalling) . Up to 5.7 ft of surge in bldg

2002 Shelter Retrofit Report Submittal Log

Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Lee	Colonial ES Bldg 12 (1990)	Shutters, drawbolts, gen hookup, ceiling famns	$100,000	181	320	2002 List moved from 2001 Report List per county	Yes, In Cat 4/5 storm surge zone (landfalling) . Up to 5.7 ft of surge in bldg
Lee	Lee MS Bldg 2 (1994)	shutters, anchorage, bracing, gen, prewire etc.	$90,000	318	320	2001 Report List per county letter dated Dec 20, 2000	yes, In Cat 4/5 storm surge zone (landfalling) . Up to 7.8 ft of surge in bldg.
Lee	Lee MS Bldg 8 (1994)	Shutters, anchorage, bracing, gen prewire, etc	$90,000	318	320	2001 Report List per county letter dated Dec 20, 2000	Yes, In Cat 4/5 storm surge zone (landfalling) . Up to 7.8ft of surge in bldg.
Lee	Lee MS Bldg 3 (1994)	Shutters, anchorage, bracing, gen prewire, etc.	$120,000	319	320	2001 Report List per county letter dated Dec 20, 2000	Yes, In Cat 4/5 storm surge zone (landfalling) Up to 7.8 ft of surge in bldg.
Lee	Lee MS Bldg 6 (1994)	Shutters, anchorage, bracing, gen prewire, etc.	$70,000	245	320	2001 Report List per county letter dated Dec 20, 2000	Yes, In Cat 4/5 storm surge zone (landfalling) . Up to 7.8ft of surge in bldg.

2002 Shelter Retrofit Report Submittal Log

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Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Lee	Lee MS Bldg 7 (1994)	Shutters, anchorage, bracing, gen prewire, etc	$100,000	398	320	2001 Report List per county letter dated Dec 20, 2000	Yes, In Cat 4/5 storm surge zone (landfalling) . Up to 7.8 ft of surge in bldg.
Leon	Florida State Univ Schools/ Bldg 1	Shutters (1,714sf)	$85,700	234	320	2002 Shelter List	Yes
Leon	Florida State Univ Schools/ Bldg 5	Shutters (2,859sf)	$142,950	367	320	2002 Shelter List	Yes
Leon	Florida State Univ Schools/ Bldg 6	Shutters (2,845sf)	$142,250	411	320	2002 Shelter List	yes
Monroe	Key West HS	new Construction, under design. estimated cost of shelter requirements upgrades	$2,500	300	320	2000 Retrofit list per DR1300 dated 12/16/99	Yes, ff at 9ft above MSL. Cat 5 surge at 11ft above MSL.
Nassau	New Yulee MS “BB” education/ classrooms	increase SREF EHPA design 40mph to 160mph	$67,400	337	320	2002 Shelter List	yes
Sumter	Lake Pansoffkee ES/ Bldg 5	Window Protection	$11,160	106	320	2002 list moved from 2000 list	Yes

2002 Shelter Retrofit Report Submittal Log

Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Indian River	Gifford MS open corridor btwn Bldg 12 & Bldg 6	Protective windscreen (240 sf)	$3,600	0	315	2002 Shelter List	Yes
Lee	Lee MS Bldg 9 (1994)	Shutters, anchorage, bracing, gen prewire, etc	$100,000	298	315	2001 Report List per county letter dated Dec 20, 2000	Yes, In Cat 4/5 storm surge zone (landfalling) . Up to 7.8ft of surge in bldg.
Orange	Aloma ES	Remove Laydown Structural Retrofits Shutters Direct Phone Generator Prewire Contingent	$106,860	200	315	1999 Shelter Retrofit Report	Yes
Orange	Carver MS	Remove Laydown Structural Retrofits Shutters Direct Phone Generator Prewire Contingent	$528,060	695	315	1999 Shelter Retrofit Report	Yes

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Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Orange	Edgewater HS	Remove Laydown Structural Retrofits Shutters Direct Phone Generator Prewire Contingent	$305,560	792	315	1999 Shelter Retrofit Report	Yes
Orange	Glenridge MS	Remove Laydown Structural Retrofits Shutters Direct Phone Generator Prewire Contingent	$216,060	535	315	1999 Shelter Retrofit Report	Yes
Orange	Jackson MS	Remove Laydown Structural Retrofits Shutters Direct Phone Generator Prewire Contingent	$169,260	714	315	1999 Shelter Retrofit Report	Yes
Orange	Jones HS	Remove Laydown Structural Retrofits Shutters Direct Phone Generator Prewire Contingent	$607,620	679	315	1999 Shelter Retrofit Report	Yes

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Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Orange	Lakeview MS	Remove Laydown Structural Retrofits Shutters Direct Phone Generator Prewire Contingent	$372,060	631	315	1999 Shelter Retrofit Report	Yes
Orange	Lockhart MS	Remove Laydown Structural Retrofits Shutters Direct Phone Generator Prewire Contingent	$208,260	772	315	1999 Shelter Retrofit Report	Yes
Orange	Maitland MS	Remove Laydown Structural Retrofits Shutters Direct Phone Generator Prewire Contingent	$434,460	587	315	1999 Shelter Retrofit Report	Yes
Orange	Meadowlbrook MS	Remove Laydown Structural Retrofits Shutters Direct Phone Generator Prewire Contingent	$234,780	572	315	1999 Shelter Retrofit Report	Yes

2002 Shelter Retrofit Report Submittal Log

Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Orange	Robert E. Lee MS	Remove Laydown Structural Retrofits Shutters Direct Phone Generator Prewire Contingent	$265,980	585	315	1999 Shelter Retrofit Report	Yes
Osceola	Hickory Tree (1983)	wind hazards Eng study Shuttering	$42,317	870	315	1999 Shelter Retrofit Report per project submittal dated 07-05-99 *per county	Yes, Phase I- Eng Study (unreinforced masonry, open spans, 9ft overhangs, etc.) HMGP#1300-252 ($12,500) contract mailed
Osceola	Parkway MS (1986)	Wind Hazards Shuttering Eng Study	$33,094	1,000	315	1999 Shelter Retrofit Report per project submittal dated 07-05-99 *per county	Yes, Phase I- Eng Study (open span, 7ft overhangs, floodplain) HMGP#1300-250 ($12,500) contract mailed eng study only

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Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Putnam	Browning-Pearce ES Bldg #04	Remove trees Secure Wind Debris Install Hurricane Shutters Hazard Protect Generator	$33,000	500	315	2002 Shelter List	yes, but may have been done alread
Sarasota	Laurel MS/ Bldg 4 (1991 const)	Window protection Bracing of roof span and overhang supports Structural Engineer pre-wire	$100,600	250	315	2000 Retrofit list per DR1300 dated 7-25-00	Yes, (exiting storm only)
Sarasota	Laurel MS/ Bldg 6 (1991 const)	Window protection Bracing of roof span and appendages and overhang supports Structural Engineer pre-wire	$132,600	465	315	2000 Retrofit list per DR1300 dated 7-25-00	Yes, (exiting storm only)
Volusia	Galaxy MS/ Bldg 3	Reanchor portables Protect windows Gen. Prewire	$143,700	100	315	1999 Shelter Retrofit Report per DR1300 dated 12-17-99	Yes,

2002 Shelter Retrofit Report Submittal Log

Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Hernando	Central HS/ Bldg 2 (1989)	Engineer evaluation of roof frame Window Protection	$10,000	1,604	310	2000 Retrofit list per DR-1300, dated 1-17-00	Yes, Phase I - Eng Study, Evals submitted. But decisions on retrofits by County not made.
Martin	Martin County Health Department	Construct addition for special needs shelter	$916,225	200	310	2000 Retrofit list per fax from county dated Aug 01, 2000	Yes, to be designed to ASCE7 with impact windows.
Osceola	Ventura ES (1988)	Wind Hazards Shutters Eng Study	$51,327	550	310	1999 Shelter Retrofit Report per project submittal dated 07-05-99 *per county	Yes, Phase I- Eng Study (open spans) HMGP#1300-255 ($12,500) contract mailed eng study only
Sarasota	Ed Smith Sports Complex Clubhouse	window protection	$127,791	250	310	2001 Report List From HMGP list	Yes, if ASCE 7 cert on open span (50ft) HMGP 1300-121 ($127,791) withdrawn/ denied

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Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Brevard	Eau Gallie HS/ Science Bldg (2-story)	Shutters for Storefront Doors	$20,000	750	305	2000 Retrofit list per county letter dated Nov 15, 2000	Yes, built to Ehpa, per county,
Escambia	Univ of West Fla Bldg #51 (Classrooms)	Shutters Gen Prewire	$20,000	200	305	2001 Report List Per county dated Dec 27, 2000	Yes, but need shutters, roof repair (leaks),layd own, ASCE-7 of roof span (41'),
Glades	American Legion Post 299 (1956 const.)	Install metal roof system to replace old roof Reinforce walls upgrade to 110mph	$45,000	188	305	2000 Retrofit list per data from county dated 25 Jul 00	Yes, Updated with engineer letter March 11, 2002
Hernando	Central HS/ Bldg 1 (1989)	Engineer evaluation of roof frame Window Protection	$10,000	1,062	305	2000 Retrofit list per DR-1300, dated 1-17-00	Yes, Phase I - Eng. Study , Evals submitted. But decisions on retrofits by County not made.
Liberty	Woodmen of the World Camp, Dorms	Shutter (550sf)	$22,000	257	305	2002 Retrofit list	Yes

2002 Shelter Retrofit Report Submittal Log

Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

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County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Orange	Endeavor ES		$103,236		305	2001 Report List per HMGP list	Yes, HMGP #1300-139 ($103,236) withdrawn/ denied
Orange	Lakeville ES		$100,391		305	2001 Report List per HMGP list	Yes, HMGP #1300-140 ($100,391) withdrawn/ denied
Orange	Lawton Chiles ES		$102,779		305	2001 Report List per HMGP list	Yes, HMGP #1300-141 ($102,779) withdrawn/ denied
Palm Beach	New Hope Health & Education Center	Water storage tanks Kitchen equip	$58,000	210	305	2002 Shelter List	yes, but will meet ARC4496 anyway
Palm Beach	New Hope Health & Education Center	Generator	$130,000	0	305	2002 Shelter List	yes
Palm Beach	Palm Beach Community College Education and Training Center Bldg 1400	Electrical generator costs	$90,000	0	305	2002 Shelter List	Yes, *Note: Bldg 1400 to be built to EHPA stnds. Also seeking $300,000 from EMPATF for bldg.

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Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Hernando	Parrot MS/ Bldg 1 (1987)	Window Protection	$	3,356	300	2000 Retrofit list per DR-1300, dated 1-17-00	Yes , Evals submitted. But decisions on retrofits by County not made.
Hernando	Suncoast ES/ Bldg 3 (1993)	window protection	$	641	300	2000 Retrofit list per DR-1300 dated 1-17-00	Yes , Evals submitted. But decisions on retrofits by County not made yet.
Hernando	Suncoast ES/ Bldg 4 (1993)	window protection	$	641	300	2000 Retrofit list per DR-1300 dated 1-17-00	Yes , Evals submitted. But decisions on retrofits by County not made yet.
Hernando	Suncoast ES/ Bldg 2 (1993)	window protection	$	622	300	2000 Retrofit list per DR-1300 dated 1-17-00	Yes , Evals submitted. But decisions on retrofits by County not made yet.
Marion	Dunellon MS Multipurpose (1957) Bldg 1 & 2	Retrofit Bldgs 1&2 to meet ARC 4496	$1,323,852	751	300	2001 Report List per city of dunellon info- 27 Apr 01	Yes

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Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
St. Lucie	White City ES/ Cafeteria	Window Protection	$4,000	155	300	2000 Retrofit list per data from county dated July 28, 2000	Yes, Eng certification in process Need LRdm.
Bay	Northside ES	Structural Retrofit Electrical Retrofit HVAC Retrofit Potable Water Retrofit Sanitation Retrofit	$273,318	2,132	295	1999 Shelter Retrofit Report (already shuttered)	Yes (already shuttered)
Escambia	Univ of West Fla. Bldg #22 (support and event facility)	Shutters	$75,000	500	295	2001 Report List Per County Dec 27, 2000	Yes, but specify which parts of bldg. first floor partially shuttered. some sections shutter only, some have long spans (45')

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Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Monroe	Coral Shores HS	new Construction, under design. estimated cost of shelter requirements upgrades	$2,500	300	295	1999 Shelter Retrofit Report per DR 1300 dated 12/16/99	Yes, ff at 12-13 ft above MSL. Cat 5 surge at 11ft above MSL.
Putnam	Jenkins MS / Bldg 5	Secure wind debris Reinforce walls Shutters Reinforce roof Generator Prewiring	$538,000	505	295	2001 Report List Per county DR 1300 dated 12/07/00	Yes, LRDM attached
Putnam	Kelley Smith ES / Bldg 6	Secure wind debris Reinforce walls Shutters Reinforce roof	$284,000	920	295	2001 Report List Per county DR 1300 dated 12/07/00	Yes, LRDM attached
Putnam	Palatka HS / Bldg 1	Secure wind debris Reinforce walls Shutters Haz. protect generator	$81,000	510	295	2001 Report List Per county DR 1300 dated 12/07/00	yes, LRDM attached
Liberty	Hosford School Bldg 12	Shutter (767sf) & remove laydowns	$30,680	219	290	2002 Report List	yes

2002 Shelter Retrofit Report Submittal Log

Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Manatee	Manatee Technical Institute Special Needs Shelter	Generator w/enclosure	$413,625	0	290	2000 Retrofit list per county email	Yes, facility constructed to meet SREF per EMPA grant
Martin	Palm City ES/ Bldgs 1,2,3,4,9,10,11,12, 13, 16.	Shutters Proved exeter protection for all door lites, all bldgs. Safety rails on shutters Retrofit Roof vents Anchor fuel tank Reinforce masonry walls (Bldgs 1, 2, 9, 10, 11, & 16)	$180,986	949	290	2000 Retrofit list per DR1300 dated 12/28/99	Yes
Osceola	Technical Education Center (1992)	Wind Hazards Shutters	$203,713	400	290	1999 Shelter Retrofit Report per project submittal dated 07-05-99	Yes, Phase I- Eng Study (open spans) HMGP#1300-254 ($12,500) contract mailed eng study

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Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Polk	Berkley ES/ Bldg 4	Window Shutters 1,321 sqft of glass	$39,630	610	290	2000 Retrofit list DR1300 dated 6/19/00	Yes, but need LRDM
Polk	Sandhill ES/ Bldg 4	Window Protection 1,347 sq ft of glass	$40,410	610	290	2000 Retrofit list DR1300 dated 6/19/00	Yes, but need LRDM
Volusia	Galaxy MS/ Bldg 4	Reanchor portables Protect windows	$133,700	0	290	1999 Shelter Retrofit Report per DR1300 dated 12-17-99	Yes
Volusia	Galaxy MS/ Bldg 6	Reanchor portables Protect windows	$133,700	0	290	1999 Shelter Retrofit Report per DR1300 dated 12-17-99	Yes
Seminole	Holy Cross Lutheran Church	Protect windows	$0	0	285	2000 Retrofit list	Yes

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Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Bay	Tommy Smith ES/	Structural Retrofit Electrical Retrofit HVAC Retrofit Potable Water Retrofit Sanitation Retrofit	$339,248	1,764	280	1999 Shelter Retrofit Report (already shuttered)	Yes (already shuttered)
Hernando	Central HS/ Bldg 6 (1989)	Engineer evaluation of roof frame Window Protection	$10,000	302	280	2000 Retrofit list per DR-1300, dated 1-17-00	Yes, Phase I - Eng. Study , Evals submitted. But decisions on retrofits by County not made.
Hernando	Central HS/ Bldg 3 (1989)	Engineer evaluation of roof frame Window Protection	$10,000	237	280	2000 Retrofit list per DR-1300, dated 1-17-00	Yes, Phase I - Eng Study , Evals submitted. But decisions on retrofits by County not made.
Hernando	Central HS/ Bldg 4 (1989)	Engineer evaluation of roof frame Window Protection	$10,000	259	280	2000 Retrofit list per DR-1300, dated 1-17-00	Yes, Phase I - Eng. Study , Evals submitted. But decisions on retrofits by County not made.

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Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Volusia	Forest Lake ES / Bldg 5 (café/music) Built in 1995	Shutters Prewire	$105,000	389	280	2001 Retrofit List Per data from county Updated per DEM Retrofit Review	Yes, LRDM attached may need open span review.
Hernando	Parrot MS/ Bldg 3 (1987)	window Protection	$0	171	275	2000 Retrofit list per DR-1300 dated 1-17-00	Yes, Evals submitted. But decisions on retrofits by County not made yet.
Sumter	Wildwood Meeting Hall/ EM Shelter	construct shelter (new)	$250,000	300	275	2002 list moved from 2001 list	yes 1395B Additional to 01-EO-38-05-70-02-002 above.
Hernando	Suncoast ES/ Bldg 1 (1993)	Window Protection	$0	208	270	2000 Retrofit list per DR-1300 dated 1-17-00	Yes , Evals submitted. But decisions on retrofits by County not made yet..
Putnam	Crescent City HS / Bldg 1	Reinforce walls Shutters Reinforce roof Haz. protect generator	$245,000	360	270	2001 Report List Per county DR 1300 dated 12/07/00	Yes, LRDM attached

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Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Putnam	Interlachen HS / Bldg 1	Reinforce walls Shutters Reinforce roof Haz. Protect generator	$245,000	360	270	2001 Report List Per county DR 1300 dated 12/07/00	Yes, LRDM attached
Putnam	Middleton Burney ES / Bldg 1	Secure wind debris Reinforce walls Shutters Reinforce roof Generator Prewiring	$289,000	805	270	2001 Report List Per county DR 1300 dated 12/07/00	Yes, LRDM attached
Putnam	Ocwilla ES Bldg 4	Secure wind debris Install shutters Connect Walls to Girt Generator Prewire	$30,000	240	270	2002 Shelter List	Yes, but may have been done already. LRDM data attached.
Sumter	North Sumter IS/ Café Bldg 18	Generator	$133,972	0	270	2002 list moved from 2000 list	Yes
Volusia	Timbercrest ES / Bldg 200 (café / art)	Shutters Gen. Prewire/enclosure	$105,000	321	270	2001 Retrofit List Per data from county Updated per DEM Retrofit Review	Yes

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Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
DeSoto	DeSoto MS Bldg E/ Gym (2001)	Generator (100kw)	$40,000	0	265	2002 Shelter List	Yes
Duval	Twin Lakes MS (253)/ Bldg B	Shutters	$0	0	265	2000 Retrofit list Cost & Capacity gained data being developed by county	Yes HMGP#1300-102 tech revw
Duval	Twin Lakes MS (253)/ Bldg C	Shutters	$0	0	265	2000 Retrofit list Cost & Capacity gained data being developed by county	Yes HMGP#1300-102 tech revw
Duval	Twin Lakes MS (253)/ bldg A	Shutters	$0	0	265	2000 Retrofit list Cost & Capacity gained data being developed by county	Yes HMGP#1300-102 tech revw
Hernando	The Enrichment Center	Construct bldg to meet ASCE 7-95	$1,498,985	750	265	2001 Report List Applicant Letter dated Mar 29,2001	Yes, Private, nonprofit org.

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Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Osceola	Celebration (1997)	lay down Shuttering	$180,059	1,500	265	2000 Retrofit list per project submittal dated 07-05-99 *per county	Yes, Phase I- Eng Study (10ft overhangs, open spans) HMGP#1300-251 ($12,500) eng study
Polk	Berkley ES/ Bldg 3	Window Shutters 800 sqft of glass	$24,000	396	265	2000 Retrofit list DR1300 dated 6/19/00	Yes, but need LRDM
Polk	Berkley ES/ Bldg 5	Window Shutters 930 sqft of glass	$27,900	472	265	2000 Retrofit list DR1300 dated 6/19/00	Yes, but need LRDM
Polk	Sandhill ES/ Bldg 3	Window Protection 800 sq ft of glass	$24,000	396	265	2000 Retrofit list DR1300 dated 6/19/00	Yes, but need LRDM
Polk	Sandhill ES/ Bldg 5	Window Protection 930 sq ft of glass	$27,900	472	265	2000 Retrofit list DR1300 dated 6/19/00	Yes, but need LRDM

2002 Shelter Retrofit Report Submittal Log

Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Volusia	Pathways ES / Bldg 5 (café/music) Built in 1995	Shutters Emerg. Prewiring	$105,000	321	265	2001 Retrofit List Per data from county received 12/06/00-09:36 AM. Updated per DEM Retrofit Review	Yes, need long span ASCE 7 cert. LRDM attached
Volusia	Sweetwater ES / Bldg 5 (café/music) Built in 1992.	Shutters Gen. Prewire/enclosure	$105,000	321	265	2001 Retrofit List Per data from county. Updated per DEM Retrofit Review	Yes, LRDM attached, need ASCe 7 cert on open span
Volusia	Volusia Pines ES / Bldg 5 (café/music) Built in 1995	Shutters Gen Prewire/enclouse	$105,000	321	265	2001 Retrofit List Per data from county. Updated per DEM Retrofit Review	Yes, LRDM attached
Lafayette	Lafayette HS/ Bldg 3, 4, & 6	Shutters	$3,850	630	257	1999 Shelter Retrofit Report	Yes, but prewire done
Gilchrist	Trenton HS Bldg 34 Gym	Shutters	$7,817	432	255	2002 Shelter Retrofit Report per county HMGP application	Yes, pending lrdm Data HMGP#1300-097

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Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Hernando	Central HS/ Bldg 5 (1989)	Engineer evaluation of roof frame Window Protection	$10,000	18	255	2000 Retrofit list per DR-1300, dated 1-17-00	Yes, Phase I - Eng. Study, Evals submitted. But decisions on retrofits by County not made.
Osceola	Mill Creek (bldg 2 & 3)? (1987)	Wind Hazards Roof degradation Eng Study Shuttering	$129,517	390	255	1999 Shelter Retrofit Report per project submittal dated 07-05-99	Yes, Phase I- Eng Study (open spans, overhangs) *HMGP#1300-253 ($12,500) contract mailed Eng Study only*
Palm Beach	Town of Jupiter Community Center	Alt 1: Upgrade long span roof to 150mph, plus other work Alt 2: Upgrade gym to 150 mph Alt 3: Design gym to 150 mph ASCE 7, plus two 500kw generators	$1,675,702	0	255	2001 Report List per county letter dated Nov 27, 2000	Yes, In Cat 2 sure zone. But finished floor to be above Cat 5 surge elevation. HMGP#1300-120 ($1,675,702) application incomplete

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Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

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County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Polk	Stambaugh MS/ Bldg 3	Window Protection 288 sq ft of glass	$21,021	89	255	2000 Retrofit list DR1300, dated 6/19/00	yes, HMGP#1300-244 ($21,021) withdrawn by schoolboard
Hernando	Parrot MS/ Bldg 2 (1987)	Window Protection	$0	184	250	2000 Retrofit list per DR-1300, dated 1-17-00	Yes , Evals submitted. But decisions on retrofits by County not made.
Hernando	Suncoast ES/ Bldg 5 (1993)	window protection	$0	20	245	2000 Retrofit list per DR-1300 dated 1-17-00	Yes , Evals submitted. But decisions on retrofits by County not made yet.
Holmes	East Pittman Evacuation Shelter	construct new bldg (firestation/shelter) install well generator	$300,000	84	245	2001 Report List EMPA (1083/ 1092) per county recvd 26 Jun 01	Yes, arc4496 (built as ehpa?)
Holmes	New Hope Evacuation Shelter	construct new bldg (firestation/shelter) install well generator	$300,000	84	245	2001 Report List EMPA 1091 per county recvd 26 Jun 01	Yes, arc4496 (built as ehpa?)

2002 Shelter Retrofit Report Submittal Log

Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Jackson	First Baptist Church/ Family Life Center	Window/door protection (1st floor - $28,288) (2nd floor - $28,288)	$56,576	154	245	2000 Retrofit list Recommended by engineer prescreen..	Yes HMGP#1300-258 ($42,814) project denied
Nassau	Hilliard M/Senior HS CFI #119 2000-2001	500KW generator/ enclosure	$250,000	0	245	2002 Shelter List	Yes, *Note: constructed to SREF-EHPA
Nassau	New Yulee MS "BB" education/ cafeteria	300kw generator/ wiring/ switch	$155,000	0	245	2002 Shelter List	yes
Hendry	Hendry County Public Health Unit	Pre-wire	$10,000	0	242	1999 Shelter Retrofit	Yes , already shuttered
Brevard	Space Coast MS	Shutters 2nd Flr	$70,000	600	240	1999 Shelter Retrofit Report updated 2002	Yes. Shutters already funded (cat 1999)on First floor.
DeSoto	Turner Agri-civic Center	Generator/ electrical	$280,543	0	240	2001 Retrofit List (updated Feb 27, 2002)	Yes, ARC 4496 provided indicates ASCE 7-93 (140mph)
Liberty	Woodmen of the World Camp, Dining Facility	Shutters (550sf)	$22,000	98	240	2002 Retrofit list	Yes, check laydowns

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Listed by Rank Score

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County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Nassau	West Nassau County HS / CFI #114 (2000-2001)	500kw generator/ enclosure	$250,000	0	240	2002 Shelter List	yes constructed to SREF
Okaloosa	Antioch ES	Add Emergency Generator	$50,000	0	235	2000 Retrofit list per county fax dated Aug 01, 2000	Yes, based on information provided
Palm Beach	Town of Jupiter Community Center	two 500kw geneators	$300,000	0	230	2001 Report List EMPA (1170) per county recvd	Yes, but may be duped in other town of jupiter project
Collier	Village Oaks ES/	Pre-wire	$10,000	0	225	1999 Shelter Retrofit Report per DR1300 dated 12/5/99	Yes
Gulf	Gulf County Public Library (new construction -upgrade design)	Eng Study Retrofitting Meeting room Pre-wire Generator	$210,000	50	225	2000 Retrofit list Per fax from county dated Aug 01, 2000	Yes, contingent upon shelter area design being upgraded to EHPA standards.

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Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

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County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Palm Beach	Carver Community MS	Replace generator/tank New automatic transfer switch New panels/feeders New central controls for ventilitation	$450,000	0	225	2002 Shelter List	yes
Sumter	North Sumter PS/ Cafeteria Bldg 18	Generator	$153,545	0	220	2002 list moved from 2000 list	Yes
Sumter	Webster ES/ Café Bldg 14	Generator	$83,500	0	220	2002 list moved from 2000 list	Yes
Sumter	Webster ES/ Bldg 17	Window Protection	$29,160	504	220	2002 list moved from 2000 list	Yes
Brevard	Port St. John Community Center	Generator	$185,000	0	215	2000 Retrofit list per HMGP application per county letter dated Nov 15, 2000	Yes, shutters previously funded
Brevard	South Mainland Community Center/ Gymnasium	Generator	$185,000	0	215	2000 Retrofit List	Yes

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Listed by Rank Score

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County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Palm Beach	Bear Lakes MS	Replace generator/tank New automatic transfer switch New panels/feeders New central controls for ventilitation	$450,000	0	215	2002 Shelter List	yes
Palm Beach	Glades Central HS	provide a new automatic transfer switch provide new panels/feeders provide centrail controls for ventilation systems on emerg power	$450,000	0	215	2002 Shelter List	yes
Palm Beach	Lake Worth MS	Replace generator/tank New automatic transfer switch New panels/feeders New central controls for ventilitation	$450,000	0	215	2002 Shelter List	yes

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Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

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County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Palm Beach	Olympic Heights Community HS	provide a new automatic transfer switch provide new panels/feeders provide centrail controls for ventilation systems on emerg power.	$450,000	0	215	2002 Shelter Lists	yes
Palm Beach	Omni MS	Replace generator fuel tank with new tank New automatic transfer switch New panels/feeders central controls for ventilation systems	$350,000	0	215	2002 Shelter List	yes
Palm Beach	Watson B. Duncan Community School	Replace generator/tank New automatic transfer switch New panels/feeders New central controls for ventilitation	$450,000	0	215	2002 Shelter List	yes

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County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Palm Beach	Wellington Landings MS	Replace generator/tank New automatic transfer switch New panels/feeders New central controls for ventilitation	$450,000	0	215	2002 Shelter List	yes
Palm Beach	William T. Dwyers HS	provide a new automatic transfer switch provide new panels/feeders provide centrail controls for ventilation systems on emerg power	$450,000	0	215	2002 Shelter List	Yes
Seminole	Sanford MS/ Bldg 2 (1998 constructio n)	Gen Prewire Shutters	$10,000	0	215	1999 Shelter Retrofit Report per project submittal dated 07-08-99	Yes. shutters not funded Cat 1999.
Seminole	Wicklow ES/ All bldgs	Gen. Prewire Shutters	$10,000	0	215	1999 Shelter Retrofit Report per project submittal dated 07-08-99	Yes. shutters not funded Cat 1999.

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County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
St. Lucie	Windmill Pointe ES	Protective enclosure for Generator Gen. Prewire	$15,600	0	210	1999 Shelter Retrofit Report	Yes. Shutters already funded (cat 1999)
Gilchrist	Bell HS Bld 14	Shutters	$57,491	305	205	2002 Shelter Retrofit Report (Bldg 14) per HMGP List	Yes, but need lrdm HMPG#1300-098
Osceola	Celebration (1997)	100kw generator/ plus wiring	$155,000	0	205	2000 Retrofit list	Yes, Phase I- Eng Study (10ft overhangs, open spans)
St. Lucie	Bayshore ES	Protective enclosure for Generator Gen. Prewire	$15,600	0	205	1999 Shelter Retrofit Report	Yes. Shutters already funded (cat 1999)
St. Lucie	Parkway ES	Protective enclosure for Generator Gen. Prewire Storage	$18,800	0	205	1999 Shelter Retrofit Report	Yes. Shutters already funded (cat 1999)

2002 Shelter Retrofit Report Submittal Log

Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Okeechobee	County Health Department Special Needs Shelter	150KW generator	$25,650	0	200	2001 Shelter List EMPA (1142) per county data	Yes, EMPA number 1142 Has 60ft long span, 4ft overhangs - needs ASCE7 certification
St. Lucie	Floresta ES	Protective enclosure for Generator Gen. Prewire Storage	$18,800	0	200	1999 Shelter Retrofit Report	Yes. Shutters already funded (cat 1999)
St. Lucie	Fort Pierce Westwood HS	Gen Prewire Storage	$15,100	0	200	1999 Shelter Retrofit Report	Yes. Shutters already funded (cat 1999)
St. Lucie	Lakewood Park ES	Protective enclosure for Generator Gen. Prewire Storage	$18,800	0	200	1999 Shelter Retrofit Report	Yes. Shutters already funded (cat 1999)

2002 Shelter Retrofit Report Submittal Log

Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
St. Lucie	Means Court, Fort Pierce	Gen Prewire	$10,600	0	200	1999 Shelter Retrofit Report	Yes. Shutters already funded (cat 1999)??? spec approp: 00-EO-C9-13-00-015 ($4,500) ?????
St. Lucie	Morningside ES	Protective enclosure for Generator Gen. Prewire Storage	$18,800	0	200	1999 Shelter Retrofit Report	Yes. Shutters already funded (cat 1999)
St. Lucie	Village Green ES	Protective enclosure for generator Prewire	$15,600	0	200	1999 Shelter Retrofit Report	Yes. Shutters already funded (cat 1999)
Brevard	Rockledge HS	Generator	$185,000	0	195	2001 Report List Per county phone dated 08 Feb 01	Yes, Previously shuttered
Brevard	Westside ES Palm Bay	A/C intake Vent Protection	$6,000	0	195	1999 Shelter Retrofit Report per county letter dated Nov 15, 2000	Yes. - Shutters funded per Cat 1999

2002 Shelter Retrofit Report Submittal Log

Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Brevard	Westside ES Palm Bay	Generator	$195,000	0	195	1999 Shelter Retrofit Report per county letter dated Nov 15, 2000	Yes. - Shutters funded per Cat 1999
Charlotte	Liberty ES/	Gen. Prewire	$10,000	0	195	1999 Shelter Retrofit Report -	Yes. Shutters already funded (cat 1999)
Escambia	Univ of West Fla Bldg #13 (classrooms	Generator (500kw) /Prewire	$90,000	0	195	2001 Report List Per County Dec 27,2000	Yes
Volusia	Daytona Beach Comm Col/ Bldg 5	Pre-wire Generator	$20,000	0	195	2000 Retrofit Lisst	Yes
Volusia	Daytona Beach Comm. Col. Bldg 16	Generator/ Prewire	$20,000	0	195	2000 Retrofit list	Yes
Breavard	Longleaf ES/ Melbourne	A/C intake Vent Protection	$6,000	0	190	1999 Shelter Retrofit Report per county letter dated Nov 15, 2000	Yes. - shutters already funded (cat 1999)

2002 Shelter Retrofit Report Submittal Log

Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Brevard	Anderson ES, Rockledge	Generator	$195,000	0	190	1999 Shelter Retrofit Report per county letter dated Nov 15, 2000	Yes. - shutters already funded (Cat 1999)
Brevard	Apollo ES/ bldgs 2,3, & 4	Generator	$215,000	0	190	1999 Shelter Retrofit Report per county letter dated Nov 15, 2000	Yes. - shutters already funded
Brevard	Central Jr. High, West Melbourne	Generator	$195,000	0	190	1999 Shelter Retrofit Report per county letter dated Nov 15, 2000	Yes. - shutters already funded for 1st flr.
Brevard	Imperial Estates ES, Bldg 5,6,7 & 8	Generator	$225,000	0	190	1999 Shelter Retrofit Report per county letter dated Nov 15, 2000	Yes. - shutters already funded
Brevard	Longleadf ES/ Melbourne	Generator	$195,000	0	190	1999 Shelter Retrofit Report per county letter dated Nov 15, 2000	Yes. - shutters already funded (cat 1999)

2002 Shelter Retrofit Report Submittal Log

Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Brevard	Melbourne HS/ Bldgs 1&8	Generator	$205,000	0	190	1999 Shelter Retrofit Report per county letter dated Nov 15, 2000	Yes. - shutters already funded
Brevard	Pinewood ES/ Bldg 4	Generator	$195,000	0	190	1999 Shelter Retrofit Report - per county letter dated Nov 15, 2000	Yes. shutters already funded
Brevard	Sherwood ES, Melbourne	A/C Intake Vent Protection	$6,000	0	190	1999 Shelter Retrofit Report- per county letter dated Nov 15, 2000	YEs
Collier	Pine Ridge MS/ Bldg 290	Pre-wire	$10,000	0	190	1999 Shelter Retrofit Report per DR1300 dated 12/5/99,	Yes
Gilchrist	Bell ES Bldg 5		$22,167		185	2001 Report List fm HMGP List	Yes, pending lrdm information HMGP #1300-98 ($22,167) tech revw

2002 Shelter Retrofit Report Submittal Log

Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Seminole	Lake Mary HS. Entire 1st floor (built 1979, additions 1983-1988)	Generator Prewiring	$16,800	0	185	2001 Report List Per county dated 12/27/00	Yes, Refer to G & O report
Gulf	Wewahitchka HS	Eng Study Pre-wire Generator	$65,000	771	180	2000 Retrofit list Per fax from county dated Aug 01, 2000	Yes, Phase I- Eng Study ., Needs retrofitting of roof (partial tectum decking), also walls (letter or reinforcing), and shutters. Needs study to determine how to retrofit.

2002 Shelter Retrofit Report Submittal Log

Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Gulf	Wewahitchka ES	Eng Study Pre-wire Generator	$40,000	966	175	2000 Retrofit list Per fax from county dated Aug 01, 2000	Yes, Phase I- Eng Study , Has laydown hazard (comm tower), walls appeared unreinforced. Windows need shutters. Long span in Cafeteria. Needs study to determine how to upgrade.
Brevard	Central Reference Library (bldg #1)	Generator	$200,000	0	170	2000 Retrofit list per HMGP application	Yes, shutters previously funded
Brevard	Brevard CC - Cocoa Allied Health Bldg Bldg #20	Generator (230KW) Freezer & oven/range	$215,000	0	165	2001 Report List Per county letter dated 30 Apr 01	Yes
Brevard	Brevard CC- Cocoa Life Long Learning Center	Generator (230kw)	$185,000	0	165	2001 Report List Per county letter dated 09 Feb 01	Yes, shutters done previously

2002 Shelter Retrofit Report Submittal Log

Prioritized List of Recommended Shelter Retrofit Projects (Not Yet Funded)
Listed by Rank Score

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Brevard	Space Coast MS	Generator	$195,000	0	165	1999 Shelter Retrofit Report per county letter dated Nov 15, 2000	Yes. Shutters already funded (cat 1999)on First floor.
Okeechobee	Moose Lodge	Generator pre-wire	$36,410	0	165	1999 Shelter Retrofit Report	Yes (generator purchased already by county)
Duval	Lincoln Villa Comm Center	Gen Prewire	$4,250	0	162	1999 Shelter Retrofit Report	Yes.
Gilchrist	Trenton ES Bldg 2		$22,343		160	2001 Report List fm HMGP list	yes, pending lrdm data HMGP #1300-097 ($22,343) tech revw
Totals	Projects: 356		$36,950,663	157,326			

Appendix F:
Priortized List of Projects Not Yet Recommended
Listed by County

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects
(new scores- 2002)

Prioritized List of Not Yet Recommended Projects for 2002 Shelter Retrofit Report

As of August 11, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Collier	Immokalee HS/ Bldg 1	Installation of shutters on entrance around gym area and main entrance	$10,000	1,000	465	2002 Retrofit Report	No (75ft long span not addressed)-
Pasco	Cypress ES/ Bldg 1 Halls/rooms	?	$24,700	1,490	435	2000 Retrofit list per data from county dated July 24, 2000	No, long span (kelly style) HMGP#1300-165 ($4,500) contracted - Eng study only
Pasco	Northwest ES/ Bldg 1 Hallways/ Rooms	?	$24,700	833	435	2000 Retrofit list per data from county dated July 24, 2000	No, long span (kelly style) *HMGP#1300-164 ($4,500) contracted- eng study only*
Pasco	Shady Hills ES Bldg 1 Halls/Rooms	shutters	$24,700	1,575	435	2000 Retrofit list per data from county dated July 24, 2000	No, long span (kelly style)

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects
(new scores- 2002)

Prioritized List of Not Yet Recommended Projects for 2002 Shelter Retrofit Report

As of August 11, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Pasco	Hudson HS/ Bldg 1	window protection	$24,629	3,143	430	2000 Retrofit list per HMGP application 07/28/00	No, wall reinforcement? Long span. HMGP#1300-053(out) HMGP#1300-170 ($4,500) contract mailed eng study only
Collier	Pelican Marsh ES Bldg 4 (built 1991)	Shutters windows and doors	$15,000	343	425	2002 Retrofit List	No 76 ft open span Cat 3 storm surge (landfalling)
Manatee	Lakewood Ranch HS/ Bldg 2B	Brace Overhead Doors pre-wire	$3500 $10,000	543	425	2000 Retrofit list per data dated Nov 14, 2000	No , (100ft span) (543 spaces)
Manatee	Lee MS/ Bldg 1G	Door & Window protection pre-wire	$12,629 $10,000	391	410	2000 Retrofit list per data dated Nov 14, 2000	No , (92ft span), (391 spaces)

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects
(new scores- 2002)

Prioritized List of Not Yet Recommended Projects for 2002 Shelter Retrofit Report

As of August 11, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Manatee	Lincoln MS/ Bldg 1G	Door & Window protection pre-wire	$12,629 $10,000	0	410	2000 Retrofit list per data dated Nov 14, 2000	No , (92ft span) (391 spaces)
Pasco	Anclote Bldg 1 Halls/rooms	?	$24,700	1,267	410	2000 Retrofit list per data from county dated July 24, 2000	No, long span, (kelly style) *HMGP#1300-166 ($4,500) contracted - Eng study only*
Pasco	Bayonet Pt MS/ Bldg 1 Hallways/ rooms	?	$24,700	2,541	410	2000 Retrofit list per data from county dated July 24, 2000	No, long span (kelly style)
Pasco	Pineview MS/ Bldg 1 hallways, etc	window protection	$39,000	758	410	2000 Retrofit list per data from county dated July 24, 2000	No, longspan and need info on ext wall reinforcement. HMGP#1300-160 ($4,500) contract mailed eng study only

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects
(new scores- 2002)

Prioritized List of Not Yet Recommended Projects for 2002 Shelter Retrofit Report

As of August 11, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Pinellas	Eisenhower ES Bldg 01 (1970, add 1992/1997)	window protection	$68,800	614	400	2001 Shelter List per county recvd 26 June 01	No, longspans need addressing.
Pasco	River Ridge MS/HS Bldg 21 (Gymnasium)		$28,000		395	2000 Retrofit list per data from county dated July 24, 2000	No , gym has long span. Uses halls and lock rooms. wall reinf?
Pasco	Northwest ES/ Bldg 4 Classrooms	?	$25,400		390	2000 Retrofit list per data from county dated July 24, 2000	No, long span
Sarasota	Sarasota Hospital Memorial Health Care Systems	Shutters Window film Structural Eng. Eval Proj Mgmt address unreinforced walls	$491,465 $ 72,820 $ 3,300 $29,000 $70,000 $666,585	845	385	2001 Report List From HMGP list	No, Need LRDm and information also >$300k HMGP 1300-249 ($526,007) withdrawn/ denied

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects
(new scores- 2002)

Prioritized List of Not Yet Recommended Projects for 2002 Shelter Retrofit Report

As of August 11, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Manatee	Braden River MS/ Bldg 3	Door & Window protection pre-wire	$126,548 $10,000	620	380	2000 Retrofit list per data dated Nov 14, 2000	No (100ft span) (620 potential spaces),
Manatee	Manatee HS/ Bldg 4	Door & Window protection pre-wire	$112,451 $10,000	718	380	2000 Retrofit list per data dated Nov 14, 2000	No , (112ft span) (718 spaces)
Sarasota	Booker ES/ Bldg 6 (1989 constr)	Window Protection Roof overhang supports/gable end bracing pre-wire	$49,450 $56,800 $27,000		380	2000 Retrofit list per DR1300 dated July 24, 2000	No ,(74ft span) &overhang (6ft)
Manatee	Lakewood Ranch HS/ Bldg 5	Door & Window protection pre-wire	$367,340 $10,000	2,207	375	2000 Retrofit list per data dated Nov 14, 2000	No ,(42-81 ft spans) (2207 spaces

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects
(new scores- 2002)

Prioritized List of Not Yet Recommended Projects for 2002 Shelter Retrofit Report

As of August 11, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Manatee	Lakewood Ranch HS/ Bldg 6	Door & Window protection pre-wire	$134,676 $10,000	707	375	2000 Retrofit list per data dated Nov 14, 2000)	No , (42-81 ft spans) (707 spaces)
Collier	Lely ES/ Bldgs 2 & 4	Secure the common roof area from wind invasion thru additional shutters and interior roof barriers and engineering	$22,000	20	370	2002 Retrofit List	no, in cat 3 storm surge zone
Pinellas	Bardmoor ES/ Bldg 01 (1971)	window protection	$25,000	105	370	2001 Shelter List per county recvd 26 Jun 01	No, longspans need addressing

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects
(new scores- 2002)

Prioritized List of Not Yet Recommended Projects for 2002 Shelter Retrofit Report

As of August 11, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Pasco	Shady Hills Bldg 5 Classrooms	shutters	$6,000	116	365	2000 Retrofit list per data from county dated July 24, 2000	No, unreinforced masonry exterior walls. Potential heavy lofted debris.
Hardee	Zolfo Springs ES Main Bldg Bldg 02 (1971, add 1995)	Shutter doors/windows Gen Prewire	$58,945 $10,000 $68,945	600	355	2001 Report List Per county dated Feb 27, 2001	No, unreinforced walls, 62 ft open span, 1967 const.
Manatee	Tillman ES/ Bldg 1	Door & Window protection pre-wire	$47,427 $10,000	0	355	2000 Retrofit list per data dated Nov 14, 2000	No, (70ft span) (296 spaces)
Hardee	Hardee Junior HS Bldg 01 (1948, additions 1952)	Shutter doors/windows Gen Prewire	$10,152 $10,000 $20,152	213	350	2001 Report List Per county dated Feb 27, 2001	No, need Eng. certification pre1960 constr. Unreinforced walls not addressed.

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects
(new scores- 2002)

Prioritized List of Not Yet Recommended Projects for 2002 Shelter Retrofit Report

As of August 11, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Manatee	Lakewood Ranch HS/ Bldg 2A	Door & Window protection pre-wire	$275,138 $10,000	306	350	2000 Retrofit list per data dated Nov 14, 2000	No, (107 ft span) (306 spaces)
Manatee	Lakewood Ranch HS/ Bldg 4	Door & Window protection pre-wire	$134,616 $10,000	472	350	2000 Retrofit list per data dated Nov 14, 2000	No , (42-81 ft spans) (472 space)
Manatee	Lakewood Ranch HS/ Bldg 3	Door & Window protection Brace Overhead Doors pre-wire	$317,881 $10,000	467	350	2000 Retrofit list per data dated Nov 14, 2000	No , (118 ft span) (467 spaces)
Pasco	J.W. Mitchell HS/ Bldg 3 Class/Hallways		$55,300	1,074	350	2000 Retrofit list per data from county dated July 24, 2000	No, pending submission of add inform.

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects
(new scores- 2002)

Prioritized List of Not Yet Recommended Projects for 2002 Shelter Retrofit Report

As of August 11, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Pasco	J.W. Mitchell HS/ Bldg 5 Classes/Hallways		$67,300	1,309	350	2000 Retrofit list per data from county dated July 24, 2000	No, pending submission of add inform
Pasco	J.W. Mitchell HS/ Bldg 6 Gym Classes		$17,300	336	350	2000 Retrofit list per data from county dated July 24, 2000	No, pending submission of add inform
Pasco	J.W. Mitchell HS/ Bldg 7 Classes/ Hallways		$62,200	1,209	350	2000 Retrofit list per data from county dated July 24, 2000	No, pending submission of add inform
Pasco	J.W. Mitchell HS/ Bldg 8 Classes/ Hallways		$43,900	854	350	2000 Retrofit list per data from county dated July 24, 2000	No, pending submission of add inform

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects
(new scores- 2002)

Prioritized List of Not Yet Recommended Projects for 2002 Shelter Retrofit Report

As of August 11, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Hardee	Zolfo Springs ES Media Center Bldg 09 (1995)	Shutter doors/windows Gen Prewire	$30,436 $10,000 $40,436	600	340	2001 Report List Per county dated Feb 27, 2001	No , need LRDm
Hillsborough	Brandon HS	Shutters & Roof mods Gen. Prewire	$0	0	340	1999 Shelter Retrofit Report	No, roof mods, walls need work also
Pasco	River Ridge MS/HS Bldg 22 (Library)		$6,600		340	2000 Retrofit list per data from county dated July 24, 2000	No , long span in library, overhang (8-10ft), wall reinf?
Lee	Riverdale HS Bldg 1 (1972, add 1990/1994)	Shutters, anchor, brace, prewire, laydown, drawbolts	$350,000	1,148	335	2002 Shelter Retrofit moved from 2001 list per county request	No, In Cat 2/3 surge zone (landfalling). Up to 14.8 ft of surge expected in bldg in Cat 4/5 storm. Exiting storm heights not specified.

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects (new scores- 2002) Prioritized List of Not Yet Recommended Projects for 2002 Shelter Retrofit Report							
As of August 11, 2002							
County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Pasco	J.W. Mitchell HS/ Bldg 4 Music/Band		$15,700	304	325	2000 Retrofit list per data from county dated July 24, 2000	No, pending submission of add inform
Hardee	Zolfo Springs ES Admin Bldg Bldg 01 (1971, add 1995)	Shutter doors/windows Gen Prewire	$27,174 $10,000 $37,174	600	315	2001 Report List Per county dated Feb 27, 2001	No, Need LRDM
Polk	Haines City HS/ Bldg 3	Window Shutters 423 sqft of glass	$15,700	456	315	2000 Retrofit list DR1300, dated 6/19/00	No, Need LRDM/ more infor. HMGP#1300-239 ($15,700) withdrawn by schoolboard
Madison	Lee ES Bldg 3 Classroom	Shutter (380sf)	$15,200	176	310	2002 Report List	No gwb walls with brick veneer

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects
(new scores- 2002)

Prioritized List of Not Yet Recommended Projects for 2002 Shelter Retrofit Report

As of August 11, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Escambia	Univ of West Fla Bldg #52 (Classrooms)	Shutters Gen Prewire	$10,000 $10,000 $20,000	250	300	2001 Report List Per county dated Dec 27, 2000	No, long span (58') not addressed. also need roof repair (leaks).
St. Lucie	St. Lucie County Civic Center (Special Needs)	Generator & Prewiring Restroom retrofit Roof structural retrofit Parking lot design	$ 180,500 TBD TBD TBD	400	300	2001 Retrofit List Per county dated 04/19/01	No, need information
Madison	Lee ES Bldg 2 Classroom	Shutter (580sf)	$23,200	176	295	2002 Reprot List	No, gwb walls with brick veneer
Washington	Washington County Special Needs Shelter Council on Aging (1986)	shutter windows	$2,752	65	295	2001 Retrofit List EMPA 1338 per county recvd 26 Jun 01	No, addition has brick veneer on wallboard walls.

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects (new scores- 2002) Prioritized List of Not Yet Recommended Projects for 2002 Shelter Retrofit Report							
As of August 11, 2002							
County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Pinellas	Countryside HS/ Bldg 1	Protect windows (dade cty standards	$89,040		290	2000 Retrofit list per DR1300 dated 12/08/99	No, need wall reinf info, longspan info.
Polk	Haines City HS/ Bldg 6	Window Shutters 336 sqft of glass	$13,255	201	290	2000 Retrofit list DR1300, dated 6/19/00	No, need LRDM/ more infor. HMGP#1300-240 ($13,255) withdrawn by schoolboard
Polk	Haines City HS/ Bldg 13	Window Shutters 288 sqft of glass	$8,400	226	290	2000 Retrofit list DR1300, dated 6/19/00	No, need LRDM/ more infor. HMGP#1300-241 ($8,400) withdrawn by schoolboard
Lee	TECO Arena Hurricane Shelter	1500 kw generator and modifications	$450,000	0	280	2002 Shelter List	No, >$300K
Madison	Lee ES Bldg 1 Admin (2002)	Shutter (290sf)	$11,600	97	270	2002 Report List	No, long span (60ft), gwb walls with brick veneer

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects (new scores- 2002) Prioritized List of Not Yet Recommended Projects for 2002 Shelter Retrofit Report							
As of August 11, 2002							
County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Volusia	Ormond Beach Performing Arts Center (PAC) (multistory)	Protect windows	$72,127		265	2000 Retrofit list per DR1300 dated 12/16/99	No, In Cat 3 surge (and in AE flood zone). Max surge ht- 12.9 ft. FF of bldg at 7.1ft. That leaves up to 5.8 ft of surge in bldg in Cat 5.
Volusia	Debary ES/ Bldg 4 (cafeteria) Daytona Beach	Shutters	$55,000	294	260	2001 Retrofit list	No. Soft spots, roof overhangs (7ft) & roof open span (80f). Requries ASCE 7 review.
Volusia	Horizon ES / Bldg 7 (café/music)	Shutters Prewire	$55,000 $50,000 $105,000	190	260	2001 Retrofit List Per data from county Updated per DEM Retrofit Review	No. Open roof span (70'8"/7ft overhangs) Requires ASCE 7 review LRDM attached

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects
(new scores- 2002)

Prioritized List of Not Yet Recommended Projects for 2002 Shelter Retrofit Report

As of August 11, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Gilchrist	Trenton HS Bldg 34 Gym	Shutters	$7,817	432	255	2002 Shelter Retrofit Report per county HMGP application	No Lrdm HMGP#1300-097
Marion	Maplewood ES (1992 constr)	Shutters Gen. PRewire	$0		255	1999 Shelter Retrofit Report	No, longs spans (406 potential spaces)
Seminole	Lake Brantley HS / Bldgs 3, 4 & 5 (built in 1972, additions in 1998/1999)	Shutters Generator Prewiring	$ 297,943 $ 16,800 $314,743	2,000	251	2001 Report List Per county dated 12 27/00 Updated per DEM Retrofit review	No, tectum decking.. Non-debris resistant walls, open roof spans, exterior access rooms. HMGP#1300-136 ($270,857) withdrawn/ denied
Okeechobee	Sacred Heart Catholic Church	Shutters	$3,190		215	1999 Shelter Retrofit Report	No, (verify vertical reinforcement - no plans)

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects
(new scores- 2002)

Prioritized List of Not Yet Recommended Projects for 2002 Shelter Retrofit Report

As of August 11, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Sumter	West Street School	Construct Core Facility	$3,500,000	300	210	2002 list moved from 2000 list	No, need infor
Gilchrist	Bell HS Bld 14	Shutters	$57,491	305	205	2002 Shelter Retrofit Report (Bldg 14) per HMGP List	No, no lrdm inform. HMPG#1300-098
Volusia	Debary ES / Bldg 4 (cafeteria) Daytona Beach	Emerg. Prewiring	$50,000	0	195	2001 Retrofit List Per data from county received 12/06/00-09:36 AM. Updated per DEM Retrofit Review	No. Soft spots, roof overhangs (7'10") and roof open span (80'). Requires ASCE 7 review. LRDM attached
Gilchrist	Bell ES Bldg 5		$22,167		185	2001 Report List fm HMGP List	No, need information. HMGP #1300-98 ($22,167) tech revw

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects (new scores- 2002) Prioritized List of Not Yet Recommended Projects for 2002 Shelter Retrofit Report							
As of August 11, 2002							
County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Volusia	City of New Smyrna Admin/Recreation 1000 Live Oak Str	new building structural costs increase architectural increase Electrical increase	$28,000 $41,000 $35,000 $104,000		185	2000 Retrofit list per DR1300 dated 12/15/99	No (in Cat 2 storm surge zone)
Volusia	City of New Smyrna Babe James Center	planned new addition Structural increase Architectural increase Mechanical increase Electrical increase	$23,000 $56,000 $15,000 $3,000 $97,000	230	185	2000 Retrofit list per DR1300 dated 12/21/99	No (in Cat 2 storm surge zone)

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects
(new scores- 2002)

Prioritized List of Not Yet Recommended Projects for 2002 Shelter Retrofit Report

As of August 11, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Escambia	Univ of West Fla Bldg #54 (Gym)	Gen. Prewire	$50,000		180	2001 Report List Per county dated Dec 27, 2000	No, long span (115') not addressed. Unreinforced CMU, large overhangs. Intended for host shelter only.
Gulf	Wewahitcka Comm. Bldg				180	2001 Report List Per county dated dec 22, 2000	No, unreinforced masonry walls not addressed.
St. Lucie	Regional Disaster Center (construct new staging area /PSN shelter)	Plan and create infrastructure for staging area.	$2,000,000		175	2001 Retrofit List Per county dated 04/19/01	No, need inform. >$300k
Taylor	Forest Capital Hall	New roof & insulation HVAC Doors & panic hardware	$256,000 $40,000 $5,000 $301,000		175	2002 Shelter List	No, *Note: Host shelter designation only.

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects
(new scores- 2002)

Prioritized List of Not Yet Recommended Projects for 2002 Shelter Retrofit Report

As of August 11, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Okeechobee	First Baptist Church	Shutters	$540		165	1999 Shelter Retrofit Report	No, (Evaluate for vertical reinforcement. survey= 12' pilasters- no plans)
Okeechobee	Okeechobee Presbyterian Church	Shutters Prewire Generator	$220 $0 $0		165	1999 Shelter Retrofit Report	No (verify vertical reinforcement- no plans) (have generator and doing prewiring)
Gilchrist	Trenton ES Bldg 2		$22,343		160	2001 Report List fm HMGP list	No, need information, HMGP #1300-097 ($22,343) tech revw
Gulf	Port St. Joe Cen				130	2001 Report List Per county dated dec 22, 2000	No, insufficient info
Gulf	Port St. Joe HS				130	2001 Report List Per county dated dec 22, 2000	No, insufficient info

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects (new scores- 2002) Prioritized List of Not Yet Recommended Projects for 2002 Shelter Retrofit Report							
As of August 11, 2002							
County	Site	Work	Costs	Risk Capacity Gained (spaces)	Rank Score	Source of information	Technical Review: Recommended ?
Gulf	Port St. Joe ES				130	2001 Report List Per county dated dec 22, 2000	No, insufficient info
Brevard	Brevard CC - Cocoa Bldg B	Reinforcing masonry retrofit Shutters	$30,000 $44,800 $74,800	?	105	2000 Retrofit list per county letter dated Nov 15, 2000	No, need lrdm / information
Brevard	Brevard CC- Cocoa Bldg C	Reinforcing masonry retrofit Shutters	$30,000 $44,800 $74,800	?	105	2000 Retrofit list per county letter dated Nov 15, 2000	No, need information
Totals	Projects: 77		$11,208,691	35,126			

Appendix G:

Florida Department of Education

Public Shelter Design Criteria

State Requirements for Educational Facilities (SREF) Chapter 7 paragraph 24

with different color or type of flooring materials, by permanent low partitions or by other means to prevent blockage of the path of egress to exits by partitions or furniture. When open plan schools are partitioned, the work shall conform to the code requirements for new construction. Demountable or movable partitions in open plan classroom areas shall be a maximum of five (5) feet in height and shall terminate a minimum of five (5) feet from any permanent wall. All circulation openings in open plan areas shall be a minimum of five (5) feet wide. Movable furnishings shall not exceed five (5) feet in height and shall have a stable base.

(24) PUBLIC SHELTER DESIGN CRITERIA.

(a) New Facilities. New educational facilities for school boards and community college boards, unless specifically exempted by the board with the written concurrence of the applicable local emergency management agency or the Department of Community Affairs (DCA), shall have appropriate core facility areas designed as Enhanced Hurricane Protection Areas (EHPAs) in compliance with this section.

Exception: Facilities located, or proposed to be located, in a category 1, 2, or 3 evacuation zone shall not be subject to these requirements. Also, if more than one (1) facility is being constructed within any three (3) mile radius, no more than one (1) facility, which shall be selected on the basis of cost-effectiveness and greatest provision of shelter space, shall be required to incorporate the public shelter design criteria into its construction.

1. Enhanced Hurricane Protection Areas (EHPA). The EHPA areas shall provide emergency shelter and protection for people for a period of up to eight (8) hours during a hurricane.
   a. The EHPA shall be designed to withstand wind loads and missile impact from hurricanes.
   b. The EHPA criteria apply only to the specific portions of kindergarten through grade twelve (K-12) and community college educational facilities that are designated as EHPAs.
2. The EHPAs and related spaces shall serve the primary educational or auxiliary use during nonshelter occupancy.

(b) Site. Factors such as low evacuation demand, size, location, accessibility, and storm surge may be considered by the board, with written concurrence of the local emergency management agency or the DCA, in exempting a particular facility.

1. Emergency Access. EHPAs shall have at least one (1) route for emergency vehicle access. The emergency route shall be above the one-hundred (100) year floodplain. This requirement may be waived by the board, with concurrence of the local emergency management agency or the DCA.
2. Landscaping. Landscaping around the EHPA shall be designed to preserve safety and emergency access. Trees shall not conflict with the functioning of overhead or underground utility lines, or cause laydown or impact hazard to the building envelope.
3. Parking. During an emergency condition, vehicle parking shall be prohibited within fifty (50) feet of an EHPA. Designated EHPA parking areas may be unpaved.
4. Signage. Floor plans of the facility, indicating EHPAs, shall be mounted in the emergency manager's office/area.

(c) Design. EHPAs may be above or below ground and may have more than one (1) story, provided the design satisfies the wind load and missile impact criteria. Modular and open-plan buildings may serve as EHPAs provided the design satisfies the wind load and missile impact criteria.

1. Excluded Spaces. Spaces such as mechanical and electrical rooms, storage rooms, open corridors, kitchens, science rooms and labs, vocational shop areas and labs, computer rooms,

attic and crawl spaces, shall not be used as EHPAs.

2. Capacity. Fifty percent (50%) of the net square feet of a designated educational facility shall be constructed as EHPAs. The net square feet shall be determined by subtracting from the gross square feet those spaces such as mechanical and electrical rooms, storage rooms, open corridors, kitchens, science rooms and labs, vocation shop areas and labs, computer rooms, attic and crawl spaces that shall not be used as EHPAs. The board, with concurrence of the applicable local emergency management agency or DCA, may adjust this requirement if it is determined to be in its best interest. The capacity of an EHPA shall be calculated at twenty (20) square feet per occupant (adults and children five years or older) for up to eight (8) hours during a hurricane.
3. Toilets. Toilet and hand washing facilities should be located within the EHPAs and provided at one (1) toilet and one (1) sink per forty (40) occupants. These required toilet and hand washing facilities are not in addition to those required for normal school occupancy and shall be included in the overall facility fixture count.
   a. Support systems for the toilets, e.g., bladders, portable toilets, water storage tanks, etc., shall be capable of supplying water and containing waste, for the designed capacity of the EHPAs.
   b. Plumbing and valve systems of "normal" toilets within the EHPAs may be designed for conversion to emergency operation to meet the required demand.
4. Food Service. Where feasible, include countertops for food distribution functions in the EHPAs.
5. Manager's Office. An EHPA manager's office shall be located within the EHPA. The office shall have provisions for standby power, lighting, communications, and storage for the manager's equipment. The fire alarm panel shall be located in the EHPA manager's office.

(d) Structural Standard for Wind Loads. At a minimum, EHPAs shall be designed for wind loads in accordance with ASCE 7-98, "Minimum Design Loads for Buildings and Other Structures, Category III (Essential Buildings)." Openings shall withstand the impact of wind-borne debris missiles in accordance with the impact and cyclic loading criteria per SBC/SSTD 12-99. *Based on a research document, `Emergency Shelter Design Criteria for Educational Facilities," 1993, by the University of FLorida for the DOA it is highly recommended by the Department that the shelter be designed using the map wind speed plus forty, (40) mph, with an importance factor of 1.0.*

1. Missile Impact Criteria. The building enclosure, including walls, roofs, glazed openings, louvers, and doors, shall not be perforated or penetrated by a flying object. For walls and roofs, the missile criteria is as provided in SBCISSTD 12-99.
   a. Materials used for walls, roofs, windows, louvers, and doors shall be certified for resistance to missile impact criteria..
   b. The glazed openings or permanent protective systems over glazed openings shall be designed for cyclic loading.
2. Roofs. Roof decks shall be cast-in-place four (4) inch, or more, normal weight concrete. Concrete decks shall be waterproof. Systems other than cast-in-place concrete shall have adequate bearing, anchorage against wind uplift, diaphragm action, and resistance to rain that are equivalent to a cast-in-place system.
   Exception: Structural pre-cast concrete roofs, composite metal decks with normal weight concrete roofs, or other systems and materials that meet the wind load and missile impact criteria

may be used.

a. Light weight concrete or insulating concrete may be used on roof decks of EHPAs provided the roof decks are at least four (4) inch cast-in-place normal weight concrete or other structural systems of equivalent strength.

b. Roof openings (e.g., HVAC fans, ducts, skylights) shall be designed to meet the wind load and missile impact criteria.

c. Roof coverings shall be specified and designed according to the latest ASTM and Factory Mutual Standards for materials and wind uplift forces. Roofs shall be inspected by a licensed engineer/architect and a representative of the roofing manufacturer.

d. Roofs shall have adequate slope and drains sized for normal use and shall have emergency overflow scuppers which will accommodate a two (2) inch per hour rain for six (6) hours.

e. Parapets shall satisfy the wind load and missile impact criteria; roof overhangs shall resist uplift forces.

3. Windows. All unprotected window assemblies and their anchoring systems shall be designed and installed to meet the wind load and missile impact criteria.

a. Windows may be provided with permanent protective systems provided the protective system is designed and installed to meet the wind load and missile impact criteria and completely covers the window assembly and anchoring system.

b. EHPAs without windows shall have mechanical ventilation systems.

4. Doors. All exterior and interior doors subject to possible wind exposure and/or missile impact shall have doors, frames, anchoring devices, and vision panels designed and installed to resist the wind load and missile impact criteria or such doors, frames, anchoring devices, and vision panels shall be covered with permanent protective systems designed and installed to resist the wind load and missile impact criteria.

5. Exterior Envelope. The exterior envelope, louvers over air intakes and vents, and gooseneck type intakes and vents of EHPAs shall be designed and installed to meet the wind load and missile impact criteria.

a. HVAC equipment mounted on roofs and anchoring systems shall be designed and installed to meet the wind load criteria.

b. Roof mounted HVAC equipment shall have a twelve (12) inch high curb around the roof opening and be designed to prevent the entry of rain water.

6. Foundations and Floor Slabs. Foundations shall be designed to resist all appropriate loads and load combinations, including overturning moments due to wind. The floor elevation and necessary life safety and other emergency support systems of EHPAs shall be elevated above the maximum storm surge inundation elevation associated with a category four (4) hurricane event. Storm surge elevations shall be identified by the most current edition of the regional Sea Lake and Overland Surges from Hurricanes (SLOSH) studies and atlases. This information can be obtained from the Department of Community Affairs, Division of Emergency Management, 2555 Shumard Oak Boulevard, Tallahassee, Florida, 32399-2100, or from the local government emergency management office.

(e) Electrical and Emergency Power System. The EHPA shall be provided with an emergency electrical power system which shall have an outlet for coupling a backup portable generator. Emergency power, per NFPA 70, Article 700, shall be provided for operation of emergency lights, exit

signs, and fire alarm systems in the EHPA. The fire alarm panel shall be located in the EHPA manager's office. A remote annunciator panel shall be located in or adjacent to the school administrator's office. Where economically feasible, an equivalent photovoltaic system may be provided. When generators are installed, the facility shall include an enclosed area designed to protect the generators from winds and missile impact. Air intakes and exhausts shall be designed and installed to meet the wind load and missile impact criteria.

1. EHPA Lighting. Standby lighting within the EHPAs, toilet rooms, and generator spaces should provide at least ten (10) footcandles of general illumination which can be reduced to one-half (½) footcandle in the sleeping areas during the night.
2. Standby Circuits. Selected ventilation fans, intercom system, and other standby circuits shall be connected to the standby power system per NFPA 70, Article 702 (optional standby circuits). The fire alarm, emergency lighting, and exit signs throughout the entire campus shall remain operational and shall receive first priority to the power provided by the facility's emergency power system per Article 700 of NFPA 70.
3. Receptacle Outlets. A minimum of four (4) electrical outlets, served with power from the standby circuits, shall be provided in the EHPA manager's office.

(f) Inspections. EHPAs shall be considered "threshold buildings" in accordance with Section 553.71(7), F.S., and shall comply with Sections 553.79(5), (7), and (8), F.S.

1. Construction of EHPAs shall be inspected during the construction process by the design arch itect/engineer(s) and threshold inspectors for compliance with applicable rules and laws.
2. The emergency electrical systems shall be inspected during the construction process by Florida registered professional engineers skilled in electrical design.
3. EHPAs shall be inspected and recertified, for compliance with the structural requirements of this section, every five (5) years by a Florida registered professional engineer skilled in structural design. If any structural system, as specified in this section, is damaged or replaced, the recertification shall be obtained prior to the beginning of the next hurricane season.
4. All shutter systems, roofs, overflow scuppers, and structural systems of EHPAs shall be inspected and maintained annually prior to hurricane season and after a major event. All emergency generators shall be inspected under load conditions including activation of the fire alarms, emergency lights as per applicable equipment codes and NFPA standards, and including mechanical systems and receptacles connected to the emergency power.

(25) TIME-OUT ROOMS.

(a) Locking an individual inside a space without a means of opening the door from within that space is contrary to the exiting philosophy of the building codes and fire safety codes for educational facilities. The educational program which requires containment of the out-of-control student can be accommodated within this context only if the primary locking system requires full-time human contact and observation of the student while in confinement, and there are redundant systems for automatic release of the locks in case of power failure or fire. If the observer walks away from observation status, the lock shall release. Doors to time out rooms shall not be held closed by the placement of any object which prohibits free opening of the door upon release of the locking mechanism. If timeout rooms are used, they shall comply with the provisions of this section.

(b) Electro-Magnetic Locking Device. When a time-out room is to be locked, an electro-magnetic locking device may be used and shall have the following features:

Appendix H:
Data Forms and Worksheets

1. **2002 Shelter Retrofit Proposal Submittal Form**
2. **2002 Shelter Retrofit List Report Form**

3. 2002 SHELTER RETROFIT PROJECT SUBMITTAL
Ref: Section 252.385(3), Florida Statutes

Instructions and Clarifications

1. Please review ARC 4496 (found in Appendix C, 2001 Shelter Retrofit Report) before beginning the project identification process. Note all construction deficiencies with respect to ARC 4496 for individual buildings, and address each deficiency with a corrective action.

2. Prepare an individual Shelter Retrofit Project Submittal form for each individual building being evaluated. DO NOT combine several buildings or a campus onto a single submittal form. An Open Plan building that has a common exterior wall and roof system (building envelope) may be considered a single building. If there are significant differences in construction found in the same building (i.e., major addition constructed to a more wind-resistant design), prepare separate forms and indicate structural separation barrier on a sketch.

3. For entries that provide a multiple choice format, choose the response that is "typical" for the individual building being evaluated. For buildings that have multiple construction materials (or characteristics) and can not be described with a single entry, provide a description (and sketches) of the building. Also assume the weakest materials will be a softspot, and therefore the limiting factor with respect to wind performance.

4. Multiple projects can be submitted for each individual building (e.g., window shuttering, door head and foot bolts, gableend bracing, generator prewiring, etc.). Please describe the tangible benefits that will be provided by each individual project (e.g., 250 additional shelter spaces if shuttering is performed) and a costestimate for each individual project.

5. Please note the definition of reinforced and partially reinforced masonry, as defined in Wall Construction Type descriptions, when determining applicable General Construction Type entries. For the purposes of this submittal form, use the following prescriptive definitions:

Partially Reinforced Masonry - For 8-inch hollow concrete masonry units (CMU), the maximum spacing of vertical reinforcement (rebar) at exterior walls shall be 8'-0"; 12" CMU rebar can be extended up to 11'-4". Rebar shall be provided at each side of wall openings, corners and wall-to-wall intersections. An alternative to reinforced cell construction is tie-column (or pilaster) and beam systems. For 8-inch CMU, the maximum spacing between tie-columns shall not exceed 13'-6"; 12-inch CMU tie-columns can be extended to 20'-0". Horizontal reinforcement must be present at roof and floor levels, and above and below wall openings. Interior masonry bearing and/or "core area" walls shall meet the same reinforcement requirements as exterior walls.

Reinforced masonry - Reinforced masonry has the same definition as partially reinforced masonry above, except the maximum spacing of the principal vertical reinforcement can not exceed six (6) times the wall thickness or 4'-0". The presence of tie-columns does not have an effect upon a masonry walls classification as reinforced masonry.

6. For the purposes of this report, standard weight (wgt) concrete will have a minimum density of 100 pounds per cubic foot and minimum compressive strength of 2500 pounds per square inch.

7. These additional limitations shall be applied to 2002 Shelter Retrofit Report projects:

a) A maximum of $300,000 total per project site/campus (excluding generators/electrical work), or:

b) $200 per shelter space, or

c) Up to 5% of the total construction costs in the case of a project that is upgrading the design of new construction to meet enhanced hurricane protection area (EHPA) standards.

d) whichever is greatest.

e) Generators/electrical work shall be considered separately from the $300,000 limit in item a) above. Generators/electrical work shall also be limited to $300,000 total per project site/campus. (Thus potentially a limit of $300,000 in generators/electrical work, plus $300,000 in other mitigation work, for a combined total limit of $600,000.)

2002 SHELTER RETROFIT PROJECT SUBMITTAL (ARC 4496 Questionnaire)

County: _____

Latitude: _____ Longitude: _____

Facility Name:_____

Building Number or ID: _____

Address: _____

Current Ownership of Facility: (Public, Private) _____

Is Facility currently used as a high wind shelter? Yes _____ No _____

If answer is No, why? _____

_____

Is the facility located within one mile of the ocean or a large body of water (greater than 1 mile in width or diameter)? Yes _____ No _____

Is the building located on a coastal barrier island? Yes _____ No _____

Storm Surge (SLOSH) Zone that Facility is located within, circle appropriate response:

1* 2 3 4 5 None * includes Tropical Storm

NFIP Flood (FIRM) Zone that Facility is located within, circle appropriate response:

A_____ B C D X V zones will not be considered!

If applicable, is the Facility/Shelter floor elevation above Base Flood Elevation (BFE) and SLOSH Category 4 flood inundation elevation? Yes _____ No _____

Additional comments concerning flooding issues: _____

_____

_____

FACILITY DESCRIPTION:

Year Built _____ , Major Addition(s) _____ , _____

Has building been inspected by structural engineer, architect, construction technician, or other knowledgeable building construction inspector? Yes _____ No_____

Are construction drawings (architectural & structural) and specifications available? Yes _____ No_____

Which **wind design standard(s)** was used in the design and construction of this facility?

☐ SBC or MBMA, Edition_19_____ ☐ ANSI A58.1-1982

☐ SFBC, Edition_19_____ ☐ ASCE 7, Edition_19_____

General Construction Classification, **check only one response** as appropriate:

Light Steel Frame* _____ Heavy Steel Frame (I or Wsection)_____

Reinforced Concrete Frame _____ Reinforced Concrete or Tilt-up Wall_____

Fully or Partially Reinforced Masonry _____ Unreinforced Masonry wall-brg _____

Heavy Timber or Glulam Frame _____ Light Metal or Wood Stud wall-brg _____

*includes Preengineered Metal Building (PEMB) Frames.

Exterior Wall Construction, **check only one response** as appropriate:

Reinforced Masonry (Rebar @ 4 ft. o.c. or closer) _____

Partially Reinforced Masonry (Rebar @ 8 ft. o.c. or closer) or reinforced pilasters @ 13.5 ft. o.c. _____

Unreinforced Masonry (exceeds above listed spacings)/Rebar spacing unknown _____

Reinforced Concrete or Precast Concrete Panels (2" min. thickness) _____

Light Wood or Metal Stud w/ ½ inch or thicker plywood _____

Light Wood or Metal Stud w/ light nonplywood sheathing (Includes EIFS) _____

Large Panel Glass or other Glazed Panel or Block System _____

Metal Sheets or panels or other Light Architectural Panel Systems _____

FACILITY DESCRIPTION (cont'd):

Do the exterior walls have a brick or stone veneer (3 to 4 inches thick) **or** ½ + thick stucco on metal lath?
Yes _____ No _____

What percentage (to the closest 5 %) of the total exterior wall area is glass? _____ %

Are there portions (softspots) of exterior walls consisting of gypsum wallboard and/or EIFS/vinyl finishes? Yes ____ No _____ If so, what percentage of exterior wall area is composed of this system (use worst-case wall face)? _____%

Are there "storefront", atrium, or clerestory sections of glazing in the exterior walls?
Yes _____ No _____

Are there fixed or operable shutters or other window coverings that will protect windows from large debris impact?
Yes _____ No _____

Roof Construction, **check only one response** as appropriate:

Castinplace Reinforced Concrete (standard wgt concrete, 3 inch min.)	_____	Plywood on wood or metal joist or truss	_____
Precast Concrete Panels ("T's", "Double T's", Planks, etc.)	_____	Wood boards or T & G deck on wood joist or truss	_____
Metal Decking w/ standard wgt concrete (3 inch min.) on metal joist, truss or beam	_____	Cement-fiber panels (i.e.,"Tectum"-type) on wood or metal joist or truss	_____
Other Metal Decking Systems (insulating concrete and/or rigid insulation or other light coverings)	_____	Poured Gypsum on Formboard Decking on wood or metal joist or truss	_____

Roof Geometry, check appropriate response:

Flat or low slope (< 1:12) _____ Gable-end _____ Hip System _____

Shed System _____ Other _____

Is the Roof Slope greater than 30 degrees (6:12)? Yes _____ No _____ N/A _____

FACILITY DESCRIPTION (cont'd):

Does the roof have a long span area (span of greater than 40 ft. between vertical supports)?
Yes _____ No _____

If yes, what is the maximum span?_____

Are Roof Eaves/Overhangs (width greater than 2 ft.) present that connect directly to the roof structure?
Yes _____ No _____

Are appropriate loadpath connections present for the building's construction type?
(e.g., hurricane clips and straps for woodframe construction)
Yes _____ No _____

If Parapet(s) are present and roof ponding is a hazard, are emergency overflow scuppers present?
Yes _____ No _____

Are Skylights or other overhead glass or plastic units present?
Yes _____ No _____

Are there any tall structures/trees that are close enough and large enough, that if they fell over, they could strike the building with enough force to significantly breach the roof/walls?
Yes _____ No _____

If yes, describe the tree(s) or structures:_____

_____

_____

_____

_____

FACILITY DESCRIPTION (cont'd):

Describe General Condition of the Building:

_____

_____

_____

_____

_____

_____

Describe other construction features (features that enhance and detract from shelter usage) and/or site specific special hazards (e.g., close proximity debris sources or laydown hazards, etc.) associated with this facility that should be considered by the Division of Emergency Management:

_____

_____

_____

_____

_____

_____

Describe wind or other storm effects damage history of this facility (e.g., severe roof leaks, etc.):

_____

_____

_____

_____

FACILITY DESCRIPTION (cont'd):

NOTE: DO NOT COMPLETE THIS SECTION IF ARC 6564 HAS BEEN COMPLETED AND ATTACHED TO PROPOSAL!

Which of the following descriptions best describes the food preparation capabilities of this facility?

Full Kitchen _____ Warming Kitchen _____ HomeEc clrm _____ None _____

Which of the following descriptions best describes the food serving capabilities of this facility?

Restaurant _____ Cafeteria _____ Other _____ None _____

Seating Capacity, if known? _____ persons

Are Sanitary Facilities directly accessible from the shelter area(s)?

	Yes	No	Quantity
Toilets	_____	_____	_____
Showers	_____	_____	_____
Potable Water	_____	_____	N/A

Which of the following descriptions best describes the potable water source of this facility?

Public Utility _____ Onsite Well _____ Other _____

Which of the following descriptions best describes the sanitation utility of this facility?

Public Utility _____ Onsite Septic _____ Other _____

Describe normal/daily function and availability of this facility for use as a shelter:

_____

_____

_____

FACILITY DESCRIPTION (cont'd):

Benefit-Cost Data (HMGP Model)

Building Data:

(1) **Select Building Type**	□ **Non-Engineered Wood** – Wood buildings do not receive specific engineering attention. Examples include single and multi-family residences, some 1 or 2 story apartment units, and some small commercial buildings.
	□ **Non-Engineered Masonry** – These masonry buildings do not receive specific engineering attention. Examples include single and multi-family residences, some 1 or 2 story apartment units, and some small commercial buildings.
	□ **Manufactured Building** – These buildings are typically light metal structures or manufactured housing units (e.g. mobile homes). Manufactured buildings are produced in large numbers of identical or similar units.
	□ **Lightly Engineered** – These buildings may combine masonry with steel framing, open-web steel joists, wood framing, and wood rafters. Some parts of the building receive engineering attention while others do not. Examples include motels, commercial, and light industrial buildings.
	□ **Fully Engineered** – Usually these buildings are designed for a specific site and thus receive specific, individualized design attention from professional architects and engineers. Examples include high-rise office and hotel buildings, hospitals, and most public buildings.
	□ **Other** – These buildings do not fit into any of the descriptions listed above.
(2) **Building Site (Miles Inland)**	
(3) **Number of Stories Above Grade**	
(4) **Construction Date (Year)**	
(5) **Historic Building Controls** (Yes only if building over 50years old and is registered as historic, otherwise No).	□ Yes □ No

FACILITY DESCRIPTION (cont'd):

Building Size and Use:

Describe the normal day-to-day function of the facility: _____
_____

Total Floor area: _____ (sf)

Area occupied by owner or Public/Non-profit Agencies: _____(sf)

For the following, enter the square feet for the applicable:	Building Existing (SF)	Area to be used Proposed (SF)
Critical Facility	0	0
Host Shelter	0	0
Hurricane Evacuation Shelter (HES)	0	0
Primary Host Shelter	0	0
Recovery Shelter	0	0
Refuge	0	0
Risk Shelter	0	0
Secondary Host Shelter	0	0
Other (attach explanation)	0	0

Building Replacement Value: _____

Building Contents:

Contents Description: _____

Total Value of Contents: _____

Value of Public Non-Profit Service:

	Existing	Proposed
Description of Services Provided		
Number of Persons Served by Facility or Capacity		
Average Cost to Operate Facility ($/day)		

Project Useful Life (Years): _____

Annual Maintenance Costs ($/year maintenance for the shutters, etc.): _____

SHELTER RETROFIT/MITIGATION PROJECT PROPOSAL:

Describe type of project(s) to be undertaken and what impact it will have upon the shelter characteristics of the facility (e.g.., shuttering, generator pre-wiring, roof bracing, etc.); indicate the pre and post retrofit shelter capacity and whether the retrofits will only improve the safety of existing spaces; describe what impact the project will have upon the local and regional shelter deficit situation; provide cost estimates (+/- 15%), source of cost estimates, copies of cost estimate takeoffs if available; and, the time period necessary to complete all projects if construction is performed concurrently. Also provide detailed information on availability of other cost-sharing sources (local or other). Attach additional sheets if necessary.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

	Project Description	Impact (safety/capacity)	Cost estimate
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____

Is this project listed in the County's Local Mitigation Strategy? □ Yes □ No

If yes, is the project listed by specific building _____, or by campus only_____?

2002 Shelter Retrofit List Report
Project Priority Worksheet

County: _____

Building Name: _____

Address: _____

	ITEM	MAX POINT	SCORE
1.	Regional Shelter Deficit	(75)	_____
2.	County Shelter Deficit	(50)	_____
3.	Facility Currently Conforms to ARC 4496	(75)	_____
4.	Proposal Will Improve Structural Integrity	(25)	_____
5.	Proposal Will Correct Identified Deficiencies	(25)	_____
6.	Numerical Increase in Shelter Capacity	(75)	_____
7.	Building Ownership and Availability	(50)	_____
8.	Shutters Only Projects _____	(50)	
9.	Cost-Effectiveness Considerations	(50)	_____
10.	Benefits-Cost Ratio	(25)	_____
11.	Proposal Demonstrates Impact Upon Shelter Deficit	(75)	_____
12.	Project Specified in Local Mitigation Strategy	(50)	_____
	TOTAL POINTS	(625)	_____

COMMENTS: _____

_____

1. Proposed project is located within a region with a shelter deficit situation: (Maximum: 75 points)

Regional shelter deficit 200,000 spaces or greater	(75)	_____
Regional shelter deficit 100,000 to 199,999 spaces	(50)	_____
Regional shelter deficit 99,999 to 10,000 spaces	(25)	_____
No regional shelter space deficit	(0)	_____

2. Proposed project is located within a county with a shelter deficit situation: (Maximum 50 Points)

County shelter deficit 50,000 spaces or greater	(50)	_____
County shelter deficit 49,999 to 10,000 spaces	(25)	_____
County shelter deficit 9,999 to 1 spaces	(15)	_____
No county shelter space deficit	(0)	_____

3. Current status of facility is demonstrated to conform to ARC4496 guidelines: (Maximum 75 Points)

A. <u>SLOSH Zone Considerations</u>

Outside Cat 5 evacuation zone	(25)	_____
Inside Cat 4/5 evacuation zone, floor above Cat 4 flood	(15)	_____
Inside Cat 3 evacuation zone, floor above Cat 4 flood	(5)	_____
Inside Cat 3 evacuation zone, floor below Cat 4 flood	(0)	_____

B. <u>NFIP Flood Considerations</u>

FIRM Zones B, C, D, X	(15)	_____
FIRM Zone A (See Note 1)	(0)	_____

C. Building Construction

Heavy Construction	(25)	_____
Moderate Hurricane Resistance	(15)	_____
Some Hurricane Resistance	(5)	_____
Light Construction/ Info not available	(0)	_____

D. Other Considerations(Building Certification, in-place shutters,etc.)

_____	(10)	_____

4. Proposed project will serve to improve the structural integrity of the building envelope from wind and/or flood effects?
(Maximum 25 Points)

YES	(25)	_____
NO	(0)	_____

5. Facility has been identified for potential use as a hurricane shelter by ARC or other sheltering agency, but is not currently in local inventory due to deficiencies to be corrected by this proposal. Will this project(s) mitigate the identified deficiencies?
(Maximum 25 points)

YES	(25)	_____
NO	(0)	_____

6. Numerical increase in shelter capacity due to this retrofit project:
(Maximum 75 Points)

500 or greater additional spaces	(75)	_____
499-150 additional spaces	(50)	_____
149-1 additional spaces	(25)	_____
No increase in shelter capacity	(0)	_____

7. Building ownership and availability for use as a public shelter:
(Maximum 50 Points)

Public Facility/ Full Availability	(50)	_____
Private Facility/ Full Availability	(25)	_____
Public Facility/ Limited Availability	(15)	_____
Private Facility/Limited Availability	(0)	_____

8. Shutters ONLY Project(s) (Generators/electrical work not considered)
(Maximum 50 Points)

Only Shutters (fenestration/door protection/latch) required/listed	(50)	_____
Shutters and Engineer certifications only required	(25)	_____
More structural work than shutters/engineer certificates	(0)	_____

9. Cost-effectiveness of project(s):
(Maximum 50 Points)

$50 or less per total shelter spaces	(50)	_____
$51 to $75 per total shelter spaces	(25)	_____
$76 to $100 per total shelter spaces	(15)	_____
In excess of $100 per total shelter spaces	(0)	_____

10. Benefits-Cost Ratio:
(Maximum 25 Points)

Benefits-Cost Ratio of one or greater	(25)	_____
Benefits-Cost Ratio of less than one	(0)	_____

11. Project proposal has been demonstrated to have a significant impact upon the local, regional and statewide shelter deficit situation: (Maximum 75 Points)

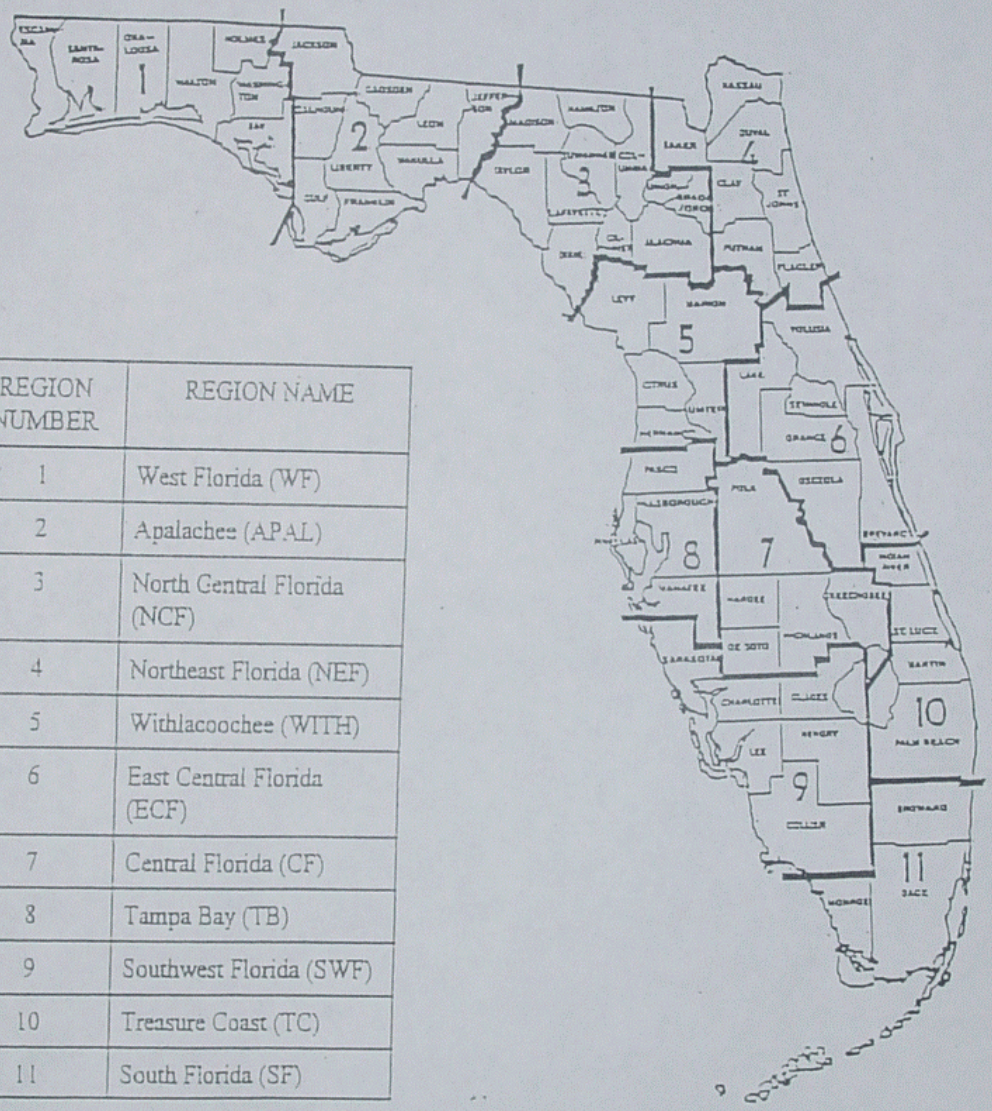
---

12. Project Specified in Local Mitigation Strategy (Maximum 50 Points)

Specific Building referenced in LMS	(50)	_____
Specific Campus/Complex referenced in LMS	(25)	_____
No Specific references to project(s) in LMS	(0)	_____

Appendix I:
Regional Planning Council
Area Boundaries

Regional Planning Council Area Boundaries



REGION NUMBER	REGION NAME
1	West Florida (WF)
2	Apalachee (APAL)
3	North Central Florida (NCF)
4	Northeast Florida (NEF)
5	Withlacoochee (WITH)
6	East Central Florida (ECF)
7	Central Florida (CF)
8	Tampa Bay (TB)
9	Southwest Florida (SWF)
10	Treasure Coast (TC)
11	South Florida (SF)

Appendix J:
List of Retrofit Projects Contracted

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects

Projects Contracted/Contract Mailed
Listed by County

As of August 16, 2002

County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Alachua	Univ of Florida Reitz Union Expansion	protect windows	$0	$296,046	700	2001 Report List EMPA (1087)	EMPA numbe 1087 EMPA contract number 01CP-10-13-00-05-123 ($296,046)
Alachua	Univ of Florida SW Recreational Center, bldg 316	protect windows	$0	$114,296	1,750	2001 Report List EMPA (1089)	EMPA number 1089 EMPA contract number 01CP-10-13-00-05-122
Alachua	Univ of Florida SW Recreational Center, bldg 316	Generator (install)	$120,000	$0	0	2001 Report List EMPA (1089)	EMPA number 1089 EMPA contract number 01CP-10-13-00-05-122
Bradford	Lawtey Comm. School/ Bldg #6	shutters	$0	$8,416	350	2000 Retrofit list per HMGP application	HMGP#1300-032 ($8,416) contract mailed
Bradford	Southside ES/ Bldg #10	shutters laydown	$0	$30,806	350	1999 Shelter Retrofit Report per HMGP application	*HMGP#1300-033 ($30,806) contract mailed*
Bradford	Starke ES/ Total Bldgs 1-6	shutters	$0	$135,080	3,529	2000 Retrofit list per HMGP application	HMGP#1300-034 ($135,080) contract mailed

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects

Projects Contracted/Contract Mailed
Listed by County

As of August 16, 2002

County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Brevard	Astronaut High special Education Wing	shutters	$0	$71,256	500	1999 Shelter Retrofit Report	1118A spec approp 00-EO-C9-13-00-22-011
Brevard	Astronaut High Special Education Wing	Generator	$80,000	$0	0	1999 Shelter Retrofit Report spec	1395A spec appropriation: 01-EO-37-06-15-01-005 (generator - $80K)
Brevard	Atlantis ES (Bldgs 1,2,3,4,5,6)	Shutters (1,2,3,4,5, 6)	$0	$96,362	1,500	1999 Shelter Retrofit Report per HMGP application per county letter dated Nov 15, 2000	*HMGP#1300-074 ($57,762) Contracted.* all has been funded. per county dated 30 Apr 01
Brevard	Atlantis ES	Generator	$185,000	$0	0	1999 Shelter List	1395A spec appropriation: 01-EO-37-06-15-01-005 (generator - $185K)
Brevard	Brevard CC Melbourne Bldg 10 (Student Center)	Shutters	$0	$384,000	500	1999 Shelter Retrofit Report per HMGP application	HMGP#1300-084 ($384,000) contract mailed

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects

Projects Contracted/Contract Mailed
Listed by County

As of August 16, 2002

County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Brevard	Brevard CC Melbourne Bldg 1 ("O" bldg)	Shutters	$0	$286,000	1,500	1999 Shelter Retrofit Report per HMGP application	HMGP#1300-083 ($286,000) contract mailed
Brevard	Brevard CC Melbourne Bldg 1 ("O" Bldg)	Generator	$155,000	$0	0	1999 Shelter Retrofit Report	1395A spec appropriation: 01-EO-37-06-15-01-005 (generator - $155K)
Brevard	Brevard CC - Cocoa Allied Health Bldg Bldg #20	shutters	$0	$135,173	500	1999 Shelter Report List	1118A spec approp 00-EO-C9-13-00-22-011
Brevard	Central Reference Library (Bldg #1)	Shutters	$0	$165,464	2,000	2000 Retrofit list per HMGP application	HMGP#1300-074 ($165,464) contract mailed
Brevard	City of Palm Bay EOC/Shelter	construct EOC/shelter	$0	$250,000	150	2001 Report List special legislation	1543A spec approp: 02-PR-37-06-15-02-011
Brevard	Discovery	Generator	$185,000	$0	0	1999 Shelter List	1395A spec appropriation: 01-EO-37-06-15-01-005 (generator - $185K

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects

Projects Contracted/Contract Mailed
Listed by County

As of August 16, 2002

County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Brevard	Discovery (Bldgs 1,2,3,4,5,6)	Shutters (1,2,3,4,5, 6)	$0	$96,362	1,500	1999 Shelter Retrofit Report per HMGP application per county letter dated Nov 15, 2000	*HMGP#1300-074 ($57,762) contracted* all has been funded. per county dated 30 Apr 01
Brevard	Enterprise	Generator	$185,000	$0	0	1999 Shelter List	1395A spec appropriation: 01-EO-37-06-15-01-005 (generator - $185K
Brevard	Enterprise (Bldgs 1,2,3,4,5, 6)	Shutters (1,2,3,4,5, 6)	$0	$96,362	1,500	1999 Shelter Retrofit Report per HMGP application per county letter dated Nov 15, 2000	*HMGP#1300-074 ($57,762) contracted*) all has been funded. per county dated 30 Apr 01
Brevard	Jupiter	Generator	$185,000	$0	0	1999 Shelter List	1395A spec appropriation: 01-EO-37-06-15-01-005 (generator - $185K)

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects

Projects Contracted/Contract Mailed
Listed by County

As of August 16, 2002

County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Brevard	Jupiter ((Bldgs 1,2,3,4,5,6)	Shutters (1,2,3,4,5, 6)	$0	$96,362	1,500	1999 Shelter Retrofit Report per HMGP application per county letter dated Nov 15, 2000	*HMGP#1300-074 ($57,762) contracted* all has been funded. per county dated 30 Apr 01
Brevard	Meadowlan e ES	Generator	$185,000	$0	0	1999 Shelter List	1395A spec appropriation: 01-EO-37-06-15-01-005 (generator - $185K)
Brevard	Meadowlan e ES ((Bldgs 1,2,3,4,5,6)	Shutters (1,2,3,4,5, 6)	$0	$96,362	1,500	1999 Shelter Retrofit Report per HMGP application per county letter dated Nov 15, 2000	*HMGP#1300-074 ($57,762) contracted* all has been funded. per county dated 30 Apr 01
Brevard	Oak Park ES	Generator (230KW)	$185,000	$0	0	2001 Report List Per county phone dated 08 Feb 01	1395A spec appropriation 01-EO-37-06-15-01-005

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects

Projects Contracted/Contract Mailed
Listed by County

As of August 16, 2002

County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Brevard	Port St. John Communit y Center	Shutters	$0	$33,000	600	2000 Retrofit list per HMGP application per county letter dated Nov 15, 2000	HMGP#1300-074 ($33,000) contract mailed
Brevard	Riviera	Generator	$185,000	$0	0	1999 Shelter List	1395A spec appropriation: 01-EO-37-06-15-01-005 (generator-$185K)
Brevard	Riviera ((Bldgs 1,2,3,4,5,6)	Shutters (1,2,3,4,5, 6)	$0	$96,362	1,500	1999 Shelter Retrofit Report per HMGP application per county letter dated Nov 15, 2000	*HMGP#1300-074 ($57,762) contracted* all has been funded. per county dated 30 Apr 01
Brevard	Rockledge HS	shutters	$0	$68,659	500	1999 Shelter Retrofit Report	1118A spec approp 00-EO-C9-13-00-22-011
Brevard	Sherwood ES, Melbourne	Generator	$185,000	$0	0	1999 Shelter Retrofit Report- per county letter dated Nov 15, 2000	1395A Spec approp. 01-EO-37-06-15-01-005

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects

Projects Contracted/Contract Mailed
Listed by County

As of August 16, 2002

County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Brevard	South Mainland Community Center/ Center Bldg	Window and door protection	$0	$4,810	150	2000 Retrofit list per HMGP application	HMGP#1300-089 ($4810) contract mailed Gym?
Brevard	South Mainland Community Center/ Gymnasium	Cost of increasing construction to EHPA standards of 150mph	$0	$73,885	650	2000 Retrofit list per HMGP application	HMGP#1300-088 ($73,885) contract mailed
Brevard	Suntree ES ((Bldgs 1,2,3,4,5,6)	Shutters (1,2,3,4,5, 6)	$0	$57,762	1,500	1999 Shelter Retrofit Report (bldgs 300 & 600) per HMGP application per county letter dated Nov 15, 2000	*HMGP#1300-074 ($57,762) contracted* all has been funded. per county dated 30 Apr 01
Brevard	Suntree ES	Generator	$185,000	$0	0	1999 Shelter List	1395A spec appropriation: 01-EO-37-06-15-01-005 (generator - $185K)
Brevard	Westside ES	shutters	$0	$36,318	1,501	1999 Shelter Retrofit Report	1118A spec approp 00-EO-C9-13-00-22-011

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects

Projects Contracted/Contract Mailed
Listed by County

As of August 16, 2002

County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Broward	Tamarac, city of Communit y Center	generator	$105,000	$0	0	2001 Shelter List EMPA (1130)	EMPA number 1130 EMPA contract number 02CP-10-11-16-02-126 ($105,000)
C lay	Town of Penney Farms Retirement Comm., Barrows Hall (built 1995)	Generator /Prewire	$63,000	$0	0	2001 Report List Per County dated Dec 28, 2000	empa grant 03CG-04-04-20-02-119
Clay	Clay Hill ES/ Bldg 5	Shutters	$0	$27,362	263	2000 Retrofit list per HMGP application	HMGP#1300-001 ($27,362) contract mailed
Clay	Green Cove Springs and Clay High lift station	generator (two 50kw)	$50,000	$0	0	2002 Retrofit List	EMPA 03CG-04-04-20-02-106
Clay	Lake Asbury ES/ Bldg 6	Shutters	$0	$25,343	265	2000 Retrofit list per HMGP application	HMGP#1300-003 ($25,343) contract mailed
Clay	Lake Asbury ES/ Bldg 7	Shutters	$0	$18,477	265	2000 Retrofit list per HMGP application	HMGP#1300-004 ($18,477) contract mailed

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects

Projects Contracted/Contract Mailed
Listed by County

As of August 16, 2002

County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Clay	Lakeside ES/ Bldg 7	Shutters	$0	$25,343	265	2000 Retrofit list per HMGP application	HMGP#1300-006 ($25,343) contract mailed
Clay	Lakeside ES/ Bldg 6	Shutters	$0	$25,343	265	2000 Retrofit list per HMGP application	HMGP#1300-005 ($25,343) contract mailed
Clay	Montclair ES/ Bldg 4	Shutters	$0	$27,986	265	2000 Retrofit list per HMGP application	HMGP#1300-002 ($27,986) contract mailed
Clay	Montclair ES, Bldg 5	Shutters	$0	$5,300	265	2001 Report List Per county dated Dec 28, 2000	EMPA contract number 01CP-10-04-2003-103)
Clay	Montclair ES/ bldgs 5	generator	$71,845	$0	0	2001 Report List EMPA (1309)	EMPA number 1309 EMPA contract number 01CP-10-04-2003-103 ($71,845)generator only
Clay	RideOut ES	Upgrade new EHPA construction	$0	$94,445	395	2000 Retrofit list per data from county	HMGP#1300-072 ($94,445) contract mailed
Clay	St. Johns River CC, Bldg V	window protection	$0	$12,000	147	1999 Shelter Retrofit Report	1118A spec approp 00-EO-C9-13-00-22-017

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects Projects Contracted/Contract Mailed Listed by County							
As of August 16, 2002							
County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Clay	Town of Penney Farms Retirement Comm., Barrows Hall (built 1995)	Protection glass doors	$0	$3,000	154	2001 Report List Per County dated Dec 28, 2000	empa grant 03CG-04-04-20-02-119
Collier	Barron Collier HS /	Shutters	$0	$22,563	100	2000 Retrofit list per HMGP application	HMGP#1300-008 ($22,563) contract mailed
Collier	Big Cypress ES/ Bldg 2	Eng Assessment Roof Retrofit Add. Shutters	$0	$29,000	200	2000 Retrofit list per DR1300 dated 12/5/99	1543 Spec Approp ($29,000) 02PR-37-09-21-01-001 Yes, in Cat 4/5 storm surge zone with up to 6 ft of surge in bldg (landfalling). Above Cat 4/5 for exiting storms. ARC exempted.

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects

Projects Contracted/Contract Mailed
Listed by County

As of August 16, 2002

County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Collier	Golden Terrace ES/ bldg 2	Eng Assessment Roof Retrofit Shutters	$0	$29,000	400	2000 Retrofit list per DR1300 dated 12/5/99	1543 Spec Approp ($29,000) 02PR-37-09-21-01-001 Yes, in Cat 3 storm surge zone w/up to 8.6 ft of surge in bldg in Cat 4/5 (landfalling). ARC Exempted for Exiting storm only.
Collier	Gulf Coast HS (interior courtyard entrances)	Shutters	$0	$9,945	400	2000 Retrofit list per HMGP application	*HMGP#1300-007 ($9,945) contracted*

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects

Projects Contracted/Contract Mailed
Listed by County

As of August 16, 2002

County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Collier	Immokalee Friendship House Emergency Shelter	installed impact-resistant windows (coatings), reinforced roofing and walls installed heavy duty hurrican e resistant shingles	$0	$190,000	600	2001 Report List EMPA (1255)	EMPA number (1255) EMPA contract number 01CP-10-09-21-08-111 ($285,000)
Collier	Pine Ridge MS	shutters	$0	$14,264	300	1999 Shelter Retrofit Report	1118A spec approp 00-EO-C9-13-00-22-018
Collier	Village Oaks ES/	Shutters	$0	$11,922	250	1999 Shelter Retrofit Report	1118A spec approp: 00-EO-C9-13-00-22-018
DeSoto	Admin Bldg 1	Shutters	$0	$277,216	600	1999 Shelter Retrofit Report per DR1300 dated 12/27/99	*HMGP#1300-116 ($277,216) contracted*

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects

Projects Contracted/Contract Mailed
Listed by County

As of August 16, 2002

County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
DeSoto	DeSoto Co. Library	Shutter fix overhangs Pre-wire ($3,000)	$3,000	$37,021	215	2000 Retrofit list per DR1300 dated 12/27/99	HMGP#1300-117 ($37,021) contract mailed
Duval	Abess Park ES (263)/ main Bldg	Shutters	$0	$46,160	0	2000 Retrofit list per HMGP list	HMGP#1300-108 ($33,150) tech revw
Duval	Andrew Robinson ES (whole school)	Shutters	$0	$174,520	0	2000 Retrofit list per HMGP list	HMGP#1300-106($174,520) tech revw
Duval	Chets Creek ES (264)/ main Bldg	Shutters	$0	$46,160	0	2000 Retrofit list per HMGP list	HMGP#1300-107 ($33,150)
Duval	Chimney Lakes ES (232)/ Sect D & A	Shutters	$0	$94,149	1,430	2000 Retrofit list per HMGP list	HMGP#1300-105 ($152,925)
Duval	Crystal Springs ES (263)	Shutters	$0	$94,149	1,430	2000 Report List Fm HMGP list	HMGP#1300-111
Duval	Enterprise Academy ES (255), Main Bldg	Shutters	$0	$46,160	150	2000 Retrofit list per HMGP list	HMGP#1300-103

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects

Projects Contracted/Contract Mailed
Listed by County

As of August 16, 2002

County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Duval	Greenland Pines, Bldg 1-Sect C 1 - Sect A 1-Sect B	Shutters window/ protect softspot Shutters, Eng letter on longspans (getting) Shutters	$0	$149,100	0	2000 Retrofit list per HMGP list	HMGP#1300-109 ($149,100)
Duval	Mandarin Oaks ES (258)/ Sect A &D	Shutters	$0	$152,925	1,430	2000 Retrofit list per HMGP list	HMGP#1300-104 ($152,925)
Duval	Sable Palms ES (239)/ Sect A &D	Shutters	$0	$94,149	1,430	2000 Retrofit list per HMGP list	HMGP#1300-110
Duval	Twin Lakes ES (251)/ main bldg, 1st floor	Shutters	$0	$46,160	0	2000 Retrofit list Per HMGP list	HMGP#1300-102
Escambia	Beggs Educationa l/ Bldg 1	Window Protection	$0	$30,106	2,500	2000 Retrofit list per HMGP list	HMGP#1300-282 ($30,106) contract mailed
Escambia	Beggs Educationa l Bldg 2	Window Protection	$0	$40,967	2,500	2000 Retrofit list per HMGP list	HMGP#1300-296 ($40,967) contract mailed
Flagler	Buddy Taylor MS/ main bldg	Shutter windows, Fix roof	$0	$57,908	2,330	2000 Retrofit list per HMGP application	HMGP#1300-014 ($57,908) contract mailed
Flagler	Palm Coast HS/ Bldg 200	Shutters	$0	$112,743	556	2000 Retrofit list per HMGP list	HMGP#1300-051($112,743) contract mailed

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects

Projects Contracted/Contract Mailed
Listed by County

As of August 16, 2002

County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Flagler	Palm Coast HS/ Bldg 700	Shutters	$0	$86,963	556	2000 Retrofit list per HMGP list	HMGP#1300-051 ($86,963) contract mailed
Flagler	Palm Coast HS/ Bldg 800	Shutters	$0	$30,605	697	2000 Retrofit list per HMGP list	HMGP#1300-051 ($30,605) contract mailed
Flagler	Wadsworth ES	entire bldg on campus	$0	$221,718	1,281	2000 Retrofit list per HMGP application	(HMGP#1300-016 ($221,718) contract mailed
Gilchrist	Bell Campus/ Bldg 16	Shutters Gen Prewire	$0	$6,575	1,794	1999 Shelter Retrofit Report (bldg 14) per HMGP list .	*HMGP#1300-081 ($6,575) contracted*
Gilchrist	Bell Campus (bldg 20)	Shutters	$0	$23,224	253	1999 Shelter Retrofit Report (bldg 14) per HMPG list .	*HMGP#1300-082 ($23,224) contracted*
Gilchrist	Trenton Campus Bldg 27	Shutters,	$0	$43,763	342	1999 Shelter Retrofit Report per HMGP list	*HMGP #1300-079 ($43,763) contracted*

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects

Projects Contracted/Contract Mailed
Listed by County

As of August 16, 2002

County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Gilchrist	Trenton Campus Bldg 28	Shutters,	$0	$56,331	455	1999 Shelter Retrofit Report per HMGP list .	*HMGP#1300-080 ($56,331) contracted*
Gilchrist	Trenton Campus bldg 30	Shutters, Eng letter or mod roof Gen Prewire	$0	$32,999	278	1999 Shelter Retrofit Report	HMGP#1300-078 ($32,999) contracted.
Glades	Glades County Multi-Use Shelter	construct shelter	$0	$250,000	92	2000 Retrofit list special legistlation	1395B spec approp contract: 01-EO-39-09-32-01-022
Gulf	Wewahitchka, City of Special Needs Shelter -geneator	generator	$15,000	$0	0	2001 Report List EMPA 2032	EMPA number 2032 EMPA contract number 02CP-04-02-33-02-233 ($15,000)
Hamilton	Greenwood School bldg 3	Shutters Laydown	$0	$20,636	118	1999 Shelter Retrofit Report Recommended by engineer prescreen. No application submitted yet.	*HMGP#1300-099 ($20,636) contracted*

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County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Hamilton	Hamilton City Central ES/ Kindergarden	Shutters	$0	$20,636	118	1999 Shelter Retrofit Report Recommended by engineer prescreen. No application submitted yet.	*HMGP#1300-100 ($20,636) contracted*
Hamilton	Jennings, Town of Fire/Shelter /EOC Bldg	construct new bldg	$0	$50,000	144	2001 Report List EMPA 2040	EMPA number 2040 EMPA contract number 02CP-04-03-34-02-214 ($50,000)
Hamilton	North Hamilton ES/ Bldg 2	Shutters	$0	$20,636	118	2000 Retrofit list Recommended by engineer prescreen. No application submitted yet.	*HGMP#1300-101 ($20,636) contracted*
Highlands	Highlands County Hurricane Shelter Retrofit	Upgrade to meet SREF (building at south florida comm. col)	$0	$250,000	360	2000 Retrofit list special legislation	1395B spec approp contract 01-EO-39-07-38-01-023
Hillsborough	Benito MS/ Bldg 3	Window & Door Protection	$0	$25,860	758	2000 Retrofit list(per fax July 26, 2000)	*HMGP#1300-267 ($25,860) contracted*
Hillsborough	Benito MS/ Bldg 6	Window & Door Protection	$0	$43,296	1,133	2000 Retrofit list (per fax July 26, 2000)	*HMGP#1300-268 ($43,296) contracted*

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County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Hillsborough	Benito MS/ Bldg 2	Window & Door Protection	$0	$28,755	896	2000 Retrofit list (per fax July 26, 2000)	*HMGP#1300-266 ($28,755) contracted*
Hillsborough	Burnett MS/ Bldgs A (Bldg 1) (1994)	Window & Door Protection Cover Breezeway	$0	$80,703	740	2000 Retrofit list (per fax July 26, 2000) per county data	HMGP#1300-262 ($51,548) contracted
Hillsborough	Burnett MS/ Bldg B (Bldg 2)	Window & Door Protection	$0	$57,769	477	2000 Retrofit list (per fax July 26, 2000)	Yes 263($40,880) application incomplete dropped per county 26 Jun 01
Hillsborough	Burnett MS/ Bldgs E (Bldg 5)	Window & Door Protection	$0	$4,392	203	2000 Retrofit list (per fax July 26, 2000)	*HMGP#1300-265 ($4,392) contracted*
Hillsborough	Burnett MS/ Bldg C (Bldg 3)	Window & Door Protection	$0	$53,408	450	2000 Retrofit list (per fax July 26, 2000)	HMGP#1300-264 ($53,408) contracted
Hillsborough	Durant HS/ Bldg 1	Window & Door Protection	$0	$35,094	211	2000 Retrofit list (per fax July 26, 2000)	HMGP#1300-273 ($35,094) contracted
Hillsborough	Durant HS/ Bldg 2	Window & Door Protection	$0	$96,113	887	2000 Retrofit list (per fax July 26, 2000)	HMGP#1300-274 ($) contracted
Hillsborough	Durant HS/ Bldg 3	Window & Door Protection	$0	$38,418	483	2000 Retrofit list (per fax July 26, 2000)	HMGP#1300-275 () contracted

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Hillsborough	Durant HS/ Bldg 4	Window & Door Protection	$0	$27,918	175	2000 Retrofit list (per fax July 26, 2000)	HMGP#1300-276 ($27,918)
Hillsborough	Durant HS/ Bldg 5	Window & Door Protection	$0	$47,686	377	2000 Retrofit list (per fax July 26, 2000)	HMGP#1300-277 ($47,686) contracted
Hillsborough	Durant HS/ Bldg 6	Window & Door Protection	$0	$53,170	416	2000 Retrofit list (per fax July 26, 2000)	HMGP#1300-278 ($53,170) contracted
Hillsborough	Durant HS/ Bldg 7	Window & Door Protection	$0	$96,313	847	2000 Retrofit list (per fax July 26, 2000)	HMGP#1300-279 ($96,313) contracted
Hillsborough	Randall MS/ Bldg 1	Window & Door Protection	$0	$87,234	1,785	2000 Retrofit list (per fax July 26, 2000)	*HMGP#1300-269 ($87,234) contracted*
Hillsborough	Randall MS/ Bldg 3	Window & Door Protection	$0	$57,346	1,273	2000 Retrofit list (per fax July 26, 2000)	*HMGP#1300-270 ($57,346) contracted*
Hillsborough	Riverview HS/ Bldg 5	Window & Door Protection	$0	$39,992	872	2000 Retrofit list(per fax July 26, 2000)	*HMGP#1300-280 ($39,992) contracted*
Hillsborough	Riverview HS/ Bldg 10	Window & Door Protection	$0	$59,542	938	2000 Retrofit list (per fax July 26, 2000)	HMGP#1300-281 ($59,542) contracted

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Hillsborough	Rodgers MS/ Bldg 1 (1997)	Window & Door protection Cover Breezeways	$0	$204,420	1,667	2000 Retrofit list per county data date	1543 Spec Approp ($204,420) 02PR-37-08-39-..-002
Hillsborough	Sickles HS/ bldg 2 (1st floor) (1995)	Window & Door Protection	$0	$24,128	280	2000 Retrofit list per county data.	1543 Spec Approp ($24,128) 02PR-37-08-39-..-002
Hillsborough	Sickles HS/ bldg 3 (1st floor) (1995)	Window & Door Protection	$0	$43,085	218	2000 Retrofit list per county data..	1543 Spec Approp ($43,085) 02PR-37-08-39-..-002
Hillsborough	Sickles HS/ bldg 7 (1st floor) (1995)	Window & Door Protection	$0	$48,610	572	2000 Retrofit list per county data.	1543 Spec Approp ($48,610) 02PR-37-08-39-..-002
Hillsborough	Wharton HS/ bldg 4	Window & Door Protection	$0	$37,674	1,454	2000 Retrofit list (per fax July 26, 2000)	HMGP#1300-271 ($37,674) contracted
Hillsborough	Wharton HS/ bldg 9	Window & Door Protection	$0	$41,614	628	2000 Retrofit list (per fax July 26, 2000)	HMGP#1300-272 ($41,614) contracted
Indian River	Fellsmere ES Bldg 700	Window Protection	$0	$14,272	335	2000 Retrofit list per data dated Jan 20, 2000	HMGP#1300-147 ($14,272) contract mailed

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Indian River	Gifford MS	Window Protection	$0	$3,224	0	1999 Shelter List	1118A spec approp: 00-EO-C9-13-00-22-016 ($3,224) shutters only
Indian River	Gifford MS Bldg 12 (Bldg 1200)	Window Protection	$0	$18,729	261	2000 Retrofit list per LRDM revised 3/14/01	*HMGP#1300-150 ($18,729) contract mailed*
Indian River	Gifford MS bldg 600	Window Protection	$0	$6,092	220	1999 Shelter Retrofit Report per data dated Jan 20, 2000	*HMGP#1300-150 ($6,092) contract mailed*
Indian River	Indian River Council on Aging, Inc Sebastian Senior Center-Shelter Retrofit	protect windows generator personnel costs	$40,000	$38,000	140	2001 Report List EMPA (1186)	EMPA number: 1186 EMPA contract: 01CP-10-10-40-08-112 ($78,000)
Indian River	J.A. Thompson ES	eng study??	$0	$2,621	0	2000 Retrofit List	HMGP#1300-145 ($2,621) contracted
Indian River	Oslo MS	?eng study?	$0	$1,426	0	2000 Retrofit list	HJMGP#1300 -154 ($1,426)
Indian River	Oslo MS Bldgs E&F (*see breakout below)	Window Protection	$0	$23,325	680	2000 Retrofit list per data dated Jan 20, 2000	*HMGP#1300-154 ($1,426) contract mailed*
Indian River	Oslo MS (Bldg #2) (Bldg 200)	Window Protection (also skylights)	$0	$35,842	344	2000 Retrofit list per LRDM revised 3/14/01	HMGP#1300-154A

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Indian River	Oslo MS, Bldg F Bldg #6 (Bldg 600)	Window Protection	$0	$1,426	352	2000 Retrofit list per LRDM revised 3/14/01	HMGP#1300-154B ($1,426) contract mailed
Indian River	Oslo MS, Bldg #7 (Bldg 700)	Window Protection	$0	$35,842	344	2000 Retrofit list per LRDM revised 3/14/01	HMGP#1300-154C
Indian River	Oslo MS, Bldg #9 (Bldg 900)	Window Protection	$0	$35,842	344	2000 Retrofit list per LRDM revised 3/14/01	HMGP#1300-154D ($35,842) contracted
Indian River	Pelican Island ES	eng study	$0	$2,520	0	2000 Retrofit List	HMGP#1300-146 ($2,520) contract mailed eng study?
Indian River	Sebastian Ri ver HS Bldg #13 (N Wing) (two-story bldg)	Window Protection	$0	$16,430	96	2000 Retrofit list per LRDM revised 3/14/01	HMGP
Indian River	Sebastian River ES	Window Protection	$0	$3,305	0	1999 Shelter List	1118A spec approp: 00-EO-C9-13-00-2-016 (shutters only)
Indian River	Sebastian River MS classrooms	Window Protection	$0	$86,323	855	2000 Retrofit list per data dated Jan 20, 2000	HMGP#1300-153 ($86,323) contract mailed
Indian River	Sebastian River HS Bldg #1 (A Wing)	Window Protection	$0	$1,271	138	2000 Retrofit list per LRDM revised 3/14/01	HMPG Yes,(avoid rm A101 & A121) HMGP

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Indian River	Sebastian River HS Bldg #3 (C-Wing)	Window Protection	$0	$9,819	108	2000 Retrofit list per LRDM revised 3/14/01	HMGP
Indian River	Sebastian River ES (bldg #6) (Wing 600)	Wall reinforcement Window Protection	$0	$23,676	215	2000 Retrofit list per LRDM revised 3/14/01 per HMGP list	Yes, ASCE 7 certification needed for overhang.
Indian River	Sebastian River HS Bldg #6 (F Wing)	Window Protection	$0	$16,092	72	2000 Retrofit list per LRDM revised 3/14/01	HMGP
Indian River	Sebastian River HS Bldg #7 (G wing)	Window Protection	$0	$14,040	54	2000 Retrofit list per LRDM revised 3/14/01	HMGP
Indian River	Sebastian River HS Bldg #9 (J Wing)	Window Protection	$0	$53,622	144	2000 Retrofit list per LRDM revised 3/14/01	HMGP#1300-151 ($53,622) contract mailed
Indian River	Sebastian River HS Bldg #10 (K wing)	window protection	$0	$2,052	12	2000 Retrofit list per Shelter deficit reduction report fm county	HMGP
Indian River	Sebastian River HS Bldg #11 (L Wing)	Window Protection	$0	$25,668	41	2000 Retrofit list per LRDM revised 3/14/01	HMGP Yes, need ASCE 7 certification for open span (46ft)

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Indian River	Sebastian River HS Bldg #12 (M wing)	Window Protection	$0	$32,645	149	2000 Retrofit list per LRDM revised 3/14/01	HMGP
Indian River	Sebastian River HS Bldg #21 (V wing)	Window Protection	$0	$44,033	586	2000 Retrofit list Per LRDM revised 3/14/01	1543 Spec Approp ($44,033) 02PR-37-10-40-01-003
Indian River	Sebastian River ES Bldg 900	Window Protection	$0	$23,676	215	1999 Shelter Retrofit Report per data dated Jan 20, 2000	*HMGP#1300-152 ($23,676) contract mailed.*
Indian River	Vero Beach HS. Freshman Learning Center	Window Protection	$0	$80,832	855	2000 Retrofit list per data dated Jan 20, 2000	*HMGP#1300-155 ($80,831) contract mailed*
Jackson	Golson ES/ West expansion	Window/ door protection	$0	$46,883	193	2000 Retrofit list Recommended by engineer prescreen.	HMGP#1300-260 ($46,883) contract mailed
Jackson	Public Services Center (Chipola Junior College)	Window/ door protection	$0	$112,122	499	2000 Retrofit list Recommended by engineer prescreen.	HMGP#1300-261 ($112,122) contract mailed

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County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Madison	Lee, Town of Public Safety/ Emergency Shelter Facility (Fire Station)	build to ARC 4496 standards (7000sf)	$0	$50,000	300	2001 Report List EMPA (2005)	EMPA number 2005 EMPA contract number 01CP-04-03-50-02-217 ($50,000)
Manatee	Bashaw ES/ Bldg 2	Door & Window protection Gen prewire	$0	$65,518	500	1999 Shelter Retrofit Report per data dated Nov 14, 2000	*1543 Spec Approp 02-PR-37-08-51-01-005 ($65,518)*
Manatee	Bashaw ES/ Bldg 3	Door & Window protection Gen prewire	$0	$71,703	500	1999 Shelter Retrofit Report per data dated Nov 14, 2000	*HMGP#1300-202 ($71,703) contracted*
Manatee	Bashaw ES/ Bldg 4	Door & Window protection Gen prewire	$0	$46,974	460	1999 Shelter Retrofit Report per data dated Nov 14, 2000	*HMGP#1300-201 ($46,974) contracted*
Manatee	Bashaw ES/ Bldg 5	Door & Window protection Gem prewire	$0	$58,320	465	1999 Shelter Retrofit Report per data dated Nov 14, 2000	*HMGP#1300-226 ($58,320) contracted*

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Manatee	Braden River MS/ Bldg2	Door & Window protection pre-wire	$10,000	$111,807	447	2000 Retrofit list per data dated Nov 14, 2000	HMGP#1300-179 ($111,807)
Manatee	Braden River ES/ Bldg 2	Door & Window protection pre-wire	$0	$154,996	436	2000 Retrofit list per data dated Nov 14, 2000	HMGP#1300-199 ($154,996)
Manatee	Braden River ES/ Bldg 3	Door & Window protection pre-wire	$0	$66,847	436	2000 Retrofit list per data dated Nov 14, 2000	1543 spec approp 1543 02-PR-37-08-51-01-005 ($66847)
Manatee	Braden River MS/ Bldg 4	Door & Window protection pre-wire	$0	$74,682	394	2000 Retrofit list per data dated Nov 14, 2000	HMGP#1300-172 ($95,025)
Manatee	Braden River ES/ Bldg 4	Door & Window protection pre-wire	$0	$56,865	388	2000 Retrofit list per data dated Nov 14, 2000	1543 Spec Approp (1543) ($56,865) 02PR-37-08-51-01-005
Manatee	Braden River ES/ Bldg 5	Door & Window protection pre-wire	$0	$62,398	401	2000 Retrofit list per data dated Nov 14, 2000	1543 spec approp 1543 02-PR-37-08-51-01-005

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Manatee	Braden River MS/ Bldg 5	Door & Window protection pre-wire	$0	$134,205	183	2000 Retrofit list per data dated Nov 16,2000	1543 SPEC APPROP 1543 02-PR-37-08-51-01-005 (134,205)
Manatee	Braden River MS/ Bldg 6	Door & Window protection pre-wire	$0	$111,468	354	2000 Retrofit list per data dated Nov 14, 2000	1543 spec approp 02-PR-37-08-51-01-005 ($111,469)
Manatee	C. Haile MS/ Bldg 2	Door & Window protection pre-wire	$0	$59,929	233	1999 Shelter Retrofit Report per data dated Nov 14, 2000	*HMGP#1300-200 ($59,929)*
Manatee	C. Haile MS/ Bldg 3A	Door & Window Protection pre-wire	$0	$19,902	294	1999 Shelter Retrofit Report per data dated Nov 14, 2000	*HMGP#1300-191 ($19,902) contracted*
Manatee	C. Haile MS/ Bldg 4	Door & Window protection pre-wire	$0	$64,910	747	1999 Shelter Retrofit Report per data dated Nov 14, 2000	*HMGP#1300-192 ($64,910) temp withdrawn*
Manatee	C. Haile MS/ bldg 5	Door & Window protection	$0	$120,816	588	1999 Shelter Retrofit Report per data dated Nov 14, 2000	1118A funded per Spec Approp: 00-EO-C9-13-00-22-019 (shutters only)

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Manatee	G. Witt ES/ Bldg 1	Door & Window protection pre-wire	$0	$53,911	258	1999 Shelter Retrofit Report per data dated Nov 14, 2000	*HMGP#1300-215 ($53,911) temp withdrawn*
Manatee	G. Witt ES/ Bldg 3	Door & Window protection pre-wire	$0	$47,175	520	1999 Shelter Retrofit Report per data dated Nov 14, 2000	*HMGP#1300-214 ($47,175) contracted*
Manatee	G. Witt ES/ Bldg 4	Door & Window protection pre-wire	$0	$42,856	1,822	1999 Shelter Retrofit Report per data dated Nov 14, 2000	*HMGP#1300-213 ($42,856) contracted*
Manatee	G. Witt ES/ bldg 5	Door & Window protection pre-wire	$0	$46,956	394	1999 Shelter Retrofit Report per data dated Nov 14, 2000	*HMGP#1300-209 ($46,956) contracted*
Manatee	Kinnan ES/ Bldg 4	Door & Window protection pre-wire	$0	$32,153	145	2000 Retrofit list per data dated Nov 14, 2000	HMGP#1300-180 ($64,064)
Manatee	L. Johnson MS/ Bldg 2	Door & Window protection pre-wire	$0	$106,565	512	1999 Shelter Retrofit Report per data dated Nov 14, 2000	*HMGP#1300-193 ($106,585)*

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Manatee	L. Johnson MS/ Bldg 4	Door & Window protection pre-wire	$0	$127,650	535	1999 Shelter Retrofit Report per data dated Nov 14, 2000	*HMGP#1300-194 ($127,650)*
Manatee	L. Johnson MS/ Bldg 5	Shutters	$0	$262,311	0	1999 Shelter Retrofit Report per data dated Nov 14, 2000 -shutters funded (cat 1999)	1543 Spec Approp (1543) ($262,311) 02PR-37-08-51-01-005
Manatee	L. Johnson MS/ Bldg 6	Door & Window protection	$102,838	$102,838	395	1999 Shelter Retrofit Report per data dated Nov 14, 2000	*HMGP#1300-196 ($102,838)*
Manatee	Manatee HS/ Bldg 2	Door & Window protection	$0	$137,478	1,293	2000 Retrofit list per data dated Nov 14, 2000	*HMGP#1300-206 ($137,478) contracted*
Manatee	Manatee HS/ Bldg 3	Door & Window protection pre-wire	$0	$151,153	443	2000 Retrofit list per data dated Nov 14, 2000	1543 Spec Approp ($151,153) 02PR-37-08-51-01-005 HMGP 1300-207 ($)

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Manatee	Manatee Technical Institute Special Needs Shelter	construct Health Occupations Facility to meet SREF reqs.	$0	$239,995	1,162	2001 Report List EMPA (1108)	EMPA number : 1108 EMPA contract number: 01CP-10-08-51-01-113 ($239,995)
Manatee	Myakka City ES/ Bldg 2	Door & Window protection pre-wire	$0	$19,489	153	2000 Retrofit list per data dated Nov 14, 2000	*HMGP#1300-208 ($19,489)*
Manatee	Myakka City ES/ Bldg 3	Door & Window protection	$0	$32,500	290	2000 Retrofit list per data dated Nov 14, 2000	HMGP#1300-210
Manatee	Myakka City ES/ Bldg 4	Door & Window protection	$0	$32,500	155	2000 Retrofit list per data dated Nov 14, 2000	HMGP#1300-211
Manatee	Myakka City ES/ Bldg 6	Door & Window protection pre-wire	$0	$31,800	293	2000 Retrofit list per data dated Nov 14, 2000	HMGP#1300-220 ($94,925)
Manatee	Myakka City ES/ Bldg 7	Door & Window protection pre-wire	$0	$16,140	127	2000 Retrofit list per data dated Nov 14, 2000	Yes HMGP#1300-177 ($94,926) contracting
Manatee	Oneco ES/ bldg 1	Door & Window protection pre-wire	$0	$33,978	282	2000 Retrofit list per data dated Nov 14, 2000	*HMGP#1300-212*

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Manatee	Oneco ES/ Bldg 4	Door & Window protection pre-wire	$0	$111,226	303	2000 Retrofit list per data dated Nov 14, 2000	1543 spec approp 1543 02-PR-37-08-51-01-005
Manatee	Oneco ES/ Bldg 6	Door & Window protection pre-wire	$0	$111,226	297	2000 Retrofit list per data dated Nov 14, 2000	1543 spec approp 1543 02-PR-37-08-51-01-005
Manatee	Palmetto ES/ Bldg 4	Door & Window protection pre-wire	$0	$87,045	321	1999 Shelter Retrofit Report per data dated Nov 14, 2000	*HMGP#1300-187*
Manatee	Palmetto ES/ Bldg 5	Door & Window protection pre-wire	$0	$45,247	171	1999 Shelter Retrofit Report per data dated Nov 14, 2000	*HMGP#1300-175*
Manatee	Palmetto ES/ Bldg 6	Door & Window protection pre-wire	$0	$43,796	291	1999 Shelter Retrofit Report per data dated Nov 14, 2000	*HMGP#1300-188*
Manatee	Rowlett ES/ Bldg 3	Door & Window protection pre-wire	$0	$84,585	530	2000 Retrofit list per data dated Nov 14, 2000	*HMGP#1300-181 ($84,585) contracted* ?tech revw?

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Manatee	Rowlett ES/ Bldg 4 (first floor)	Door & Window protection pre-wire	$0	$32,153	145	2000 Retrofit list per data dated Nov 14, 2000	Yes HMGP#1300-182 ($32,153) contracting
Manatee	SeaBreeze ES/ Bldg 1	Door & Window protection pre-wire	$0	$41,577	263	1999 Shelter Retrofit Report per data dated Nov 14, 2000	*HMGP#1300-183 ($41,577)*
Manatee	SeaBreeze ES/ Bldg 2	Door & Window protection pre-wire	$0	$164,996	521	1999 Shelter Retrofit Report per data dated Nov 14, 2000	1118A per spec approp: 00-EO–C9-13-00-22-019 (shutters only) *HMGP#1300-184 (withdrawn by county)*
Manatee	SeaBreeze ES/ Bldg 3	Door & Window protection pre-wire	$0	$56,399	521	1999 Shelter Retrofit Report per data dated Nov 14, 2000	*HMGP#1300-185 ($58,399) contracted*
Manatee	SeaBreeze ES/ Bldg 4	Door & Window protection pre-wire	$0	$44,960	402	1999 Shelter Retrofit Report per data dated Nov 14, 2000	*HMGP#1300-221 ($44,960) contracted*

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County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Manatee	SeaBreeze ES/ Bldg 5	Door & Window protection pre-wire	$0	$51,202	488	1999 Shelter Retrofit Report per data dated Nov 14, 2000	*HMGP#1300-222 ($51,202) contracted*
Manatee	Tillman ES/ bldg 3	Door & Window protection pre-wire	$0	$64,118	530	2000 Retrofit list per data dated Nov 14, 2000	*HMGP#1300-174 ($64,118) contracted*
Manatee	Tillman ES/ bldg 4	Door & Window protection pre-wire	$0	$52,883	145	2000 Retrofit list per data dated Nov 14, 2000	*HMGP#1300-223 ($52,883) contracted*
Marion	Belleview MS Bldg 2	Shutters	$0	$18,000	641	1999 Shelter Retrofit Report Per county data received Nov 17, 2000	HMGP#1300-288 ($18000) contract mailed
Marion	Belleview MS Bldg 3	Shutters	$0	$18,000	650	1999 Shelter Retrofit Report Per county data received Nov 17, 2000	HMGP#1300-289 ($18,000) contract mailed
Marion	Belleview MS Bldg 4	Shutters	$0	$18,000	738	1999 Shelter Retrofit Report Per county data received Nov 17, 2000	HMGP#1300-290 ($18000) contract mailed

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Marion	City of Dunnellon Regional Comm Evac Shelter (upgrade Hard Rock School Gymnasium)	protect windows, reinforce walls, modify roof	$0	$300,000	500	2001 Report List EMPA (1345)	EMPA number: 1345 EMPA contract: 01CP-10-05-52-02-104 ($300,000)
Marion	Ft. McCoy School Bldg 4	Shutters	$0	$29,363	297	1999 Shelter Retrofit Report Per county data received Nov 17, 2000	HMGP#1300-284 ($29,363) contract mailed.
Marion	Ft. McCoy School Bldg 5	Shutters	$0	$29,363	297	1999 Shelter Retrofit Report Per county data received Nov 17, 2000	HMGP#1300-285 ($29,363) contract mailed
Marion	Ft. McCoy School Bldg 6	Shutters	$0	$29,363	297	1999 Shelter Retrofit Report Per county data received Nov 17, 2000	HMGP#1300-286 ($29,363) contract mailed
Marion	Ft. McCoy School Bldg 8	Shutters	$0	$29,363	297	1999 Shelter Retrofit Report Per county data received Nov 17, 2000	HMGP#1300-287 ($29,363) contract mailed

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County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Marion	Lake Weir HS (1974 construction)	Reinforce Ext Walls Shutters Prewiring Roof Attachment	$0	$336,500	1,400	1999 Shelter Retrofit Report Per county data received Nov 17, 2000	HMGP#1300-291 ($336,500) contract mailed -
Marion	Lake Weir HS	200 kw generator	$45,500			1999 Shelter Retrofit Reprot	1395A spec appropriation: 01-EO-37-05-52-01-001 (generator
Marion	Madison Street School	generator	$45,500		0	1999 Shelter Retrofit Report	1395A spec approp: 01-EO-37-05-52-01-001 (generator)
Marion	Saddlewood ES	generator	$45,500			1999 Shelter Retrofit Report	1395A Spec Approp 01-EO-37-05-52-01-001
Marion	Vanguard HS (1969,1974 const)	Reinforce Ext Walls Shutters Prewiring Roof Attach.	$0	$336,500	1,400	1999 Shelter Retrofit Report per county data received Nov 17, 2000	HMGP#1300-295 ($336,500) contract mailed

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County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Marion	Vanguard HS	200 Kw generator	$45,500		0	1999 Shelter Retrofit Report	1395A spec appropriation: 01-EO-37-05-52-01-001 (generator -
Miami-Dade	American Senior/ project 13	Remove stairwell skylights Deadbolts	$0	$63,000	4,000	2000 Retrofit list per DR1300 dated 12/27/99 (updated: 08/15/00)	*HMGP#1300-030 ($63,000) contracted*
Miami-Dade	Miami Southridge Senior HS/ Bldg 1 project 5	Install panels Deadbolts	$0	$51,000	1,100	2000 Retrofit list per DR1300 dated 12/27/99 (update: 08/15/00)	*HMGP#1300-023 ($51,000) contracted*
Miami-Dade	Miami Springs Senior HS/ Bldg 1 project 11	Install panels Deadbolts	$0	$186,264	2,300	2000 Retrofit list per DR1300 dated 12/27/99 (update: 08/15/00)	*HMGP#1300-028 ($186,264) contract mailed*
Miami-Dade	Miami-Dade Homeless Assistance Center	Strengthe n frames and install hurricane glass on all windows	$0	$98,152	1,000	2000 Retrofit list Per DR1300, dated April 18, 2000	HMGP#1300-283 ($98,152.41) contracted
Miami-Dade	North Miami MS/ Bldg 1 project 6	Install panels Deadbolts	$0	$596,367	950	2000 Retrofit list per DR1300 dated 12/27/99 (update: 08/15/00)	HMGP#1300-024 ($596,367) contract mailed

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County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Miami-Dade	Van Blanton ES/ Bldg 1 project 9	Reinforced A/C installation Deadbolts	$0	$153,000	1,440	2000 Retrofit list per DR1300 dated 12/27/99 (update: 08/15/00)	*HMGP#1300-026 ($153,000) contracted*
Miami-Dade	Village of Key Biscayne Village Hall/ Police Dept Facility	Generator (250KW)	$50,000		0	2001 Retrofit List EMPA	EMPA 02CP-04-11-23-02-216
Miami-Dade	W.R. Thomas MS/ Bldg 1 project 8	Install panels Deadbolts	$0	$22,200	1,200	2000 Retrofit list per DR1300 dated 12/27/99	1543 Spec Approp (1543) 02PR-37-11-23-01-007
Monroe	Coral Shores HS	80kw &20kw geneator	$45,219		0	1999 Shelter Retrofit Report	1395A spec approp: 01-EO-37-11-54-01-004 ($45,219)
Monroe	Disabled American Veterans Post 122 Marathon	15 KW generator	$12,500		0	1999 Shelter Retrofit Report	1395A spec approp: 01-EO-37-11-54-01-004 (generators - $12,500))
Monroe	Key Largo ES (Café) mile marker 105	80kw generator	$32,055		0	1999 Shelter Retrofit Report	1395A spec approp: 01-EO-37-11-54-01-004 (generators - $32,055)

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County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Nassau	Fernandina Beach City of Police Station	Shutter police station for use as shelter	$0	$35,000	35	2002 Shelter List	EMPA 03CG-04-04-55-02-103
Okeechobee	First Baptist Church	Generator (15kw)	$25,118		0	1999 Shelter Retrofit Report	1395A spec approp 01-EO-37-07-57-01-007
Okeechobee	Osceola MS/ Bldg3	Shutters	$0	$8,268	298	2000 Retrofit list per HMGP list	HMGP#1300-095(8,268) contracted
Okeechobee	Osceola MS/ Bldg 6	Shutters	$0	$8,268	297	2000 Retrofit list per HMGP list	HMGP#1300-095 ($8,268) contracted
Okeechobee	Osceola MS/ Bldg 7	Shutters	$0	$19,476	298	2000 Retrofit list per HMGP list	HMGP#1300-095 ($19,476) contracted
Okeechobee	Sacred Heart Catholic Church	15kw generator	$25,118		0	1999 Shelter Retrofit Report	1395A spec approp 01-EO-37-07-57-01-007
Okeechobee	Yearling MS	Shutters	$0	$12,132	500	2000 Retrofit list application dated Nov 2, 2000	HMGP#1300-096 ($12,132) contracted
Orange	Cypress Creek HS cafe/gym	Remove Laydown Structural Retrofits Shutters Direct Phone Generator Prewire Contingent	$0	$368,483	1,551	1999 Shelter Retrofit Report	*HMGP#1300-137 ($368,483)* *Cafe/Gym*

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County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Orange	Dr. Phillips HS	Remove Laydown Structural Retrofits Shutters Direct Phone Generator Prewire Contingent	$0	$500,171	1,209	1999 Shelter Retrofit Report	*HMGP#1300-138 ($500,171)* *Cafe/Gym*
Orange	Union Park MS Classrooms	Remove Laydown Structural Retrofits Shutters Direct Phone Generator Prewire Contingent	$0	$82,821	250	1999 Shelter Retrofit Report	*HMGP#1300-142A*
Orange	Union Park MS gym	work	$0	$230,014	-	1999 Shelter Retrofit Report	HMGP#1300-142b
Osceol	Hickory Tree	Eng study	$0	$12,500		1999 Shelter Retrofit Report	HMGP#1300-252 ($12,500) contract mailed
Osceola	Hickory Tree	100kw generator	$155,000		0	1999 Shelter Retrofit Report	1395A spec appropriation: 01-EO-37-06-59-01-002 (generator - $155K)

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County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Osceola	Horizon MS (1993)	wind hazards Shuttering	$0	$70,751	555	1999 Shelter Retrofit Report per project submittal dated 07-05-99	1118A spec approp: 00-EO-C9-13-00-22-014 ($70,751) shutters only
Osceola	Horizon MS	Generator (100kw)	$155,000		0	1999 Shelter	1395A spec appropriation: 01-EO-37-06-59-01-002 (generator - $155K)
Osceola	Kissimmee MS (1995)	Shuttering	$0	$70,751	2,853	1999 Shelter Retrofit Report per project submittal dated 07-05-99	1118A spec approp: 00-EO-C9-13-00-22-014 ($70,751) shutters only
Osceola	Kissimmee MS	Generator (100kw)	$155,000		0	1999 Shelter List	1395A spec appropriation: 01-EO-37-06-59-01-002 (generator - $155K)
Osceola	Mill Creek ES	eng study?	$0	$12,500	0	1999 Shelter Retrofit Report	HMGP#1300-253- Eng Study only

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County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Osceola	Mill Creek (bldg 2 #3)	Generator (100kw)	$155,000		0	1999 Shelter Retrofit Report	1395A spec appropriation: 01-EO-37-06-59-01-002 (generator - $155K)
Osceola	Multi-Use Shelter St. Cloud	construct shelter	$0	$297,000	500	2001 Report List EMPA (1280)	1543A spec approp: 02PR-39-06-59-02-001
Osceola	Osceola County Council on Aging	shutters	$0	$129,200		2000 EMPA	EMPA 00CP-07-06-59-08-120
Osceola	Reedy Creek ES	shutters	$0	$115,306	2,443	1999 Shelter Retrofit Report	1118A spec approp 00-EO-C9-13-00-22-014
Osceola	Technical Education Center	Eng Study	$0	$12,500		1999 Shelter Retrofit Report	HMGP#1300-254 ($12,500) contract mailed eng study
Osceola	Technical Education Center	100 kw generator	$155,000		0	1999 Shelter Retrofit Report	1395A spec appropriation: 01-EO-37-06-59-01-002 (generator - $155K)

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County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Osceola	Ventura ES	100kw generator	$155,000		0	1999 Shelter Retrofit Report	1395A spec appropriation: 01-EO-37-06-59-01-002 (generator - $155K)
Oseola	Celebration	eng study	$0	$12,500		2000 Retrofit List	HMGP#1300-251 ($12,500) eng study
Palm Beach	Bear Lakes MS	shutters	$0	$49,200	1,600	1999 Shelter Retrofit Report	1118A spec approp: 00-EO-C9-13-00-22-013 ($49,200) shutters only
Palm Beach	Carver Community MS	shutters	$0	$70,268	1,460	1999 Shelter Retrofit Report	1118A spec approp: 00-EO-C9-13-00-22-013 ($70,268) shutters only
Palm Beach	Christa McAuliffe MS/	shutters	$0	$65,700	1,200	2000 Retrofit list per county data	1543 Spec approp (1543) ($65,700) 02PR-37-10-60-01-008
Palm Beach	Glades Central HS	Shutters	$0	$89,857	3,800	1999 Shelter Retrofit Report	1118A spec approp: 00-EO-C9-13-00-22-013 ($89,857) shutters only

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County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Palm Beach	Lake Worth MS	shutters	$0	$49,200	1,600	1999 Shelter Retrofit report	1118A spec approp: 00-EO-C9-13-00-22-013 ($49,200) shutters only
Palm Beach	Olympic Heights Communit y HS	shutters	$0	$239,362	1,900	1999 Shelter Retrofit Report	1118A spec approp: 00-EO-C9-13-00-22-013 ($239,362) shutters only
Palm Beach	Omni MS	shutters	$0	$49,200	1,600	1999 Shelter Retrofit Report	1118A spec approp: 00-EO-C9-13-00-22-013 ($49,200) shutters only
Palm Beach	Watson B. Duncan Communit y School	shutters	$0	$49,200	1,600	1999 Shelter Retrofit Report	1118A spec approp: 00-EO-C9-13-00-22-013 ($49,200) shutters only
Palm Beach	Wellington Landings MS	shutters	$0	$49,200	1,600	1999 Shelter Retrofit Report	1118A spec approp: 00-EO-C9-13-00-22-013 ($49,200) shutters only
Palm Beach	William T. Dwyer HS	shutters	$0	$237,827	1,900	1999 Shelter Retrofit Report	1118A spec approp: 00-EO-C9-13-00-22-013 ($237,827) shutters only

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County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Pasco	Anclote Bldg 1	eng study only	$0	$4,500	0	2000 Retrofit list	HMGP#1300-166 ($4,500) contracted eng study only
Pasco	Calusa ES/ Bldg 04	Shutters	$0	$12,900	181	2000 Retrofit list per HMGP application	HMGP#1300-045 ($12,900) contract mailed
Pasco	Cypress ES/ Bldg 1	eng study only	$0	$4,500	0	2000 Retrofit list	HMGP#1300-165($4,500) contracted eng study only
Pasco	Denham Oaks ES/ Bldg 01	Shutters	$0	$33,000	292	2000 Retrofit list per HMGP application	HMGP#1300-039 ($81,209) contract mailed.
Pasco	Denham Oaks ES/ Bldg 02	Shutters	$0	$36,900	478	2000 Retrofit list per HMGP application	HMGP#1300-040 ($36,900) contract mailed
Pasco	Denham Oaks ES/ Bldg 03	Shutters	$0	$44,750	184	2000 Retrofit list per HMGP application	HMGP#1300-041 ($44,750) contract mailed
Pasco	Denham Oaks ES/ Bldg 05	Shutters	$0	$17,000	244	2000 Retrofit list per HMGP application	HMGP#1300-042 ($17,000) contract mailed
Pasco	Denham Oaks ES/ bldg 06	Shutters	$0	$34,000	430	2000 Retrofit list per HMGP application	HMGP#1300-043 ($34,000) contract mailed
Pasco	Denham Oaks ES/ bldg 07	Shutters	$0	$29,875	260	2000 Retrofit list per HMGP application	HMGP#1300-044 ($29,875) contract mailed

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County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Pasco	Gulf HS/ Bldg 1	eng study only	$0	$4,500	0	2000 Retrofit list	HMGP#1300-162 ($4,500) contract mailed eng study only
Pasco	Gulf HS/ Bldg 8	eng study only	$0	$4,500	0	2000 Retrofit list	HMGP#1300-163 ($4,500) eng study
Pasco	Hudson HS/ Bldg 1	eng study	$0	$4,500	0	2000 Retrofit list	HMGP#1300-170 ($4,500) contract mailed eng study only
Pasco	Hudson HS/ Bldg 10	engineering study	$0	$4,500	0	2000 Retrofit list	HMGP#1300-171 ($4,500) eng study contracting
Pasco	Lacoochee ES/ bldg 11	Shutters	$0	$8,800	158	2000 Retrofit list per HMGP application	Yes HMGP#1300-048 ($8,800) contract mailed
Pasco	Lacoochee ES/ bldg 12	Shutters	$0	$31,475	503	2000 Retrofit list per HMGP application	Yes HMGP#1300-049 ($31,475) contract mailed
Pasco	Lacoochee ES/ bldg 13	Shutters	$0	$9,958	110	2000 Retrofit list per HMGP application	Yes HMGP#1300-050 ($9,958) contract mailed
Pasco	Northwest ES/ Bldg 1	engineering study only	$0	$4,500	0	2000 Retrofit list	HMGP#1300-164 ($4,500) contracted eng study only

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Pasco	Pasco Comp. HS/ bldg 16	door & window protection	$0	$21,405	204	2000 Retrofit list	HMGP#1300-056 ($21,405) contract mailed
Pasco	Pasco Comp. HS/ bldg 17	door & window protection	$0	$29,800	296	2000 Retrofit list	HMGP#1300-057 ($29,800) contract mailed
Pasco	Pasco Comp. HS/ bldg 18	door & window protection	$	$13,200	110	2000 Retrofit list .	HMPG#1300-058 ($13,200) contract mailed
Pasco	Pineview MS/ Bldg 1	eng study only	$	$4,500	0	2000 Retrofit list	HMGP#1300-160 ($4,500) contract mailed eng study only
Pasco	Pineview MS/ bldg 5 locker rooms	door & window protection	$	$6,700	153	2000 Retrofit list per data from county dated July 24, 2000	HMGP#1300-161 ($6,700) contract mailed
Pasco	R.B. Stewart MS/ bldg 9A Admin/Voc	window protection	$	$47,800	122	2000 Retrofit list per data from county dated July 24, 2000	HMGP#1300-046 ($47,800) contract mailed
Pasco	R.B. Stewart MS/ Bldg 10	Shutters	$	$67,800	242	2000 Retrofit list per HMGP application	HMGP#1300-047 ($67,800) contract mailed
Pasco	River Ridge MS/HS bldg 1	door & window protection	$	$74,937	240	2000 Retrofit list per HMGP application 07/28/00.	HMGP#1300-059 ($74,907) contract mailed

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Pasco	River Ridge MS/HS bldg 2	door & window protection	$	$26,625	527	2000 Retrofit list per HMGP application 07/28/00.	HMGP#1300-060 ($26,625) contract mailed
Pasco	River Ridge MS/HS bldg 3	door & window protection	$	$48,300	874	2000 Retrofit list per HMGP application 07/28/00.	HMGP#1300-061 ($48,300) contract mailed
Pasco	River Ridge MS/HS bldg 4	door & window protection	$	$32,700	468	2000 Retrofit list per HMGP application 07/28/00.	HMGP#1300-062 ($32,700) contract mailed
Pasco	River Ridge MS/HS bldg 5	door & window protection	$	$33,000	401	2000 Retrofit list per HMGP application 07/28/00.	HMGP#1300-063 ($33,000) contract mailed
Pasco	River Ridge MS/HS Bldg 23 (Classrooms)			$125,000	333	2000 Retrofit list per data from county dated July 24, 2000	*HMGP#1300-157 ($125,000) contract mailed*
Pasco	River Ridge MS/HS Bldg 24 (Home Ec)		$	$3,900	102	2000 Retrofit list per data from county dated July 24, 2000	HMGP#1300-158 ($3,900) contract mailed
Pasco	River Ridge MS/HS bldg 31	door & window protection	$	$8,281	295	2000 Retrofit list per HMGP application 07/28/00.	HMGP#1300-064 ($8,281) contract mailed
Pasco	Seven Springs MS/ C classrooms	shuttters	$	$78,950	1,180	1999 Retrofit list	EMPA 00CP-07-08-61-01-125

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Pasco	Shady Hills ES Bldg 1	engineering study only	$	$4,500	0	2000 Retrofit list per data from county dated July 24, 2000	HMGP#1300-167 ($4,500) contracted - eng study only
Pasco	Shady Hills ES/ Bldg 5	engineering study	$	$4,500	0	2000 Retrofit list per data from county dated July 24, 2000	HMGP#1300-168 ($4,500) contract mailed eng study only
Pasco	St. Leo University Hurricane Shelter	purchase generator purchae generator & shutter windows	$550,000			2000 Retrofit list special legislation	1395B spec approp contracts 01-EO-39-08-61-05-019 (generator) 01-CP-07-08-61-05-125 (generator/ shutters)
Pasco	T. Weightman MS/ Bldg 2	door & window protection	$	$46,600	541	2000 Retrofit list per HMGP application 07/28/00.	*HMGP#1300-065 ($46,600) contract mailed*
Pasco	T. Weightman MS/ bldg 3	door & window protection	$	$3,920	137	2000 Retrofit list per HMGP application 07/28/00..	HMGP#1300-066 ($3,920) contract mailed
Pasco	T. Weightman MS/ Bldg 4	door & window protection	$	$37,540	548	2000 Retrofit list per HMGP application 07/28/00.	*HMGP#1300-067 ($37,540) contract mailed*
Pasco	T. Weightman MS/ Bldg 5	door & window protection	$	$38,490	293	2000 Retrofit list per HMGP application 07/28/00.	HMGP#1300-068 ($38,490) contract mailed

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Pasco	T. Weightman MS/ Bldg 6 Classrooms	door & window protection	$	$45,600	379	2000 Retrofit list per data from county dated July 24, 2000	*HMGP#1300-159 ($45,600) contract mailed*
Pasco	T. Weightman MS/ Bldg 8	door & window protection	$	$49,740	548	2000 Retrofit list per HMGP application 07/28/00.	*HMGP#1300-069 ($49,740) contract mailed*
Pasco	Zephyr hills HS/ Bldg 1	wall reinforce long span roof	$	$24,629	2,623	2000 Retrofit list per HMGP application 07/28/00.	HMGP#1300-052 ($24,629) contract mailed
Pasco	Zephyr Hills H.S. Bldg 11 (Music Suite)	window protection	$	$2,500	117	2000 Retrofit list per HMGP application 07/28/00.	HMGP#1300-070 ($2,500) contract mailed
Pinellas	Brooker Creek ES Bldg 4	window protection	$	$47,820	340	2000 Retrofit list DR-1300, dated 12/06/99	*HMGP#1300-090 ($47,820) contract mailed*
Pinellas	Brooker Creek ES Bldg 5	window protection	$	$47,820	340	2000 Retrofit list DR-1300, dated 12/06/99	*HMGP#1300-090C ($47,820) contract mailed*
Pinellas	Countryside HS/ Bldg 6	Protect windows (dade cty standards	$	$31,842	196	2000 Retrofit list per HMGP application (updated by msg dated 8/7/00)	*HMGP#1300-073A ($31,842) contracted*
Pinellas	East Lake HS Bldg 2	window protection	$	$30,720	334	2000 Retrofit list DR-1300, dated 02/28/00	1395B spec approp: contract 01-EO-39-08-62-01-017

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Pinellas	East Lake HS Bldg 3	window protection	$	$119,920	625	2000 Retrofit list DR-1300, dated 02/28/00	1395B spec approp: contract 01-EO-39-08-62-01-017
Pinellas	East Lake HS Bldg 6	window protection	$	$17,680	500	2000 Retrofit list DR-1300, dated 02/28/00	1395B spec approp: contract 01-EO-39-08-62-01-017
Pinellas	East Lake HS Bldg 9	window protection		$184,600	635	2000 Retrofit list DR-1300, dated 02/28/00	1395B spec approp: contract 01-EO-39-08-62-01-017
Pinellas	Joseph Carwise MS Bldg 5	window protection		$107,320	786	2000 Retrofit list DR-1300, dated 02/29/00	HMGP#1300-090 ($107,320) contract mailed
Pinellas	Joseph Carwise MS Bldg 6	window protection	$	$107,320	786	2000 Retrofit list DR-1300, dated 02/29/00	HMGP#1300-090 ($107,320) contract mailed
Pinellas	McMullen Booth ES/ Bldg 4	window protection	$	$46,379	340	2000 Retrofit list per county msg dated 8/7/00 (clone of Brooker ES)	HMGP#1300-115 contract mailed
Pinellas	McMullen Booth ES/ Bldg 5	window protection	$	$46,379	340	2000 Retrofit list	HMGP#1300-115 contract mailed

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects

Projects Contracted/Contract Mailed
Listed by County

As of August 16, 2002

County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Pinellas	Palm Harbor Univ HS/ Bldg 5	Protect windows (dade cty standards	$	$62,673	552	2000 Retrofit list per HMGP application (updated by msg dated 8/7/00)	HMGP#1300-073C ($62,673) contract mailed
Pinellas	Palm Harbor Univ HS/ Bldg 11	Protect windows (dade cty standards	$	$58,929	543	2000 Retrofit list per HMGP application (updated by msg dated 8/7/00)	HMGP#1300-073B ($58,929) contract mailed
Pinellas	Palm Harbor MS / Bldg 4	windows	$	$72,884	988	2001 Report List LRDM from county	*HMGP#1300-115 () contract mailed*
Pinellas	Palm Harbor MS / Bldg 5	windows	$	$72,884	1,029	2001Report List Memo from county dated 10/24/00. LRDM from county	*HMGP#1300-115 (contract mailed*
Pinellas	Pinellas Park HS/ Bldg 1		$	$23,520	786	2000 Retrofit list Per data from county dated Aug 01, 2000	HMGP#1300-090 ($23,520) contract mailed
Pinellas	St. Petersburg HS/ Bldg 4	Protect windows (dade cty standards)	$	$138,099	543	2000 Retrofit list per HMGP application (updated by msg dated 8/7/00)	HMPG#1300-073E ($138,099) contract mailed

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects

Projects Contracted/Contract Mailed
Listed by County

As of August 16, 2002

County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Pinellas	St. Petersburg HS/ Bldg 5	Protect windows (dade cty standards	$	$118,131	458	2000 Retrofit list per HMGP application (updated by msg dated 8/7/00)	HMGP#1300-073D ($118,131) contract mailed
Polk	Adult Day Care Centers (Haines City [400 spaces] and Bartow [300 spaces])	protect windows	$	$73,500	700	2001 Report List EMPA (1127)	EMPA number 1127 EMPA contract number 01CP-10-07-63-01-120 ($73,500)
Putnam	Browning-Pearce Bldg 200A/200B /200C/ 100B/100C (one bldg done)	Shutters	$	$6,021	255	1999 Shelter Retrofit Report Shutters partially funded @ $4,000 (cat 1999)	1118A spec approp: 00-EO-C9-13-00-22-020 (shutters only)
Putnam	Browning-Pearce ES	250kw generator	$250,000		0	1999 Shelter Retrofit Report	1395A spec appropriation: 01-EO-37-04-64-01-006 (generator)
Putnam	Ochwilla ES	500kw generator	$250,000		0	1999 Shelter list	1395A spec appropriation: 01-EO-37-07-57-01-007 (generators

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects

Projects Contracted/Contract Mailed
Listed by County

As of August 16, 2002

County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Putnam	Ochwilla ES Bldgs 01-06 (bldg 04 done?)	shutters	$	$12,205	869	1999 Shelter Retrofit Report shutters partially funded at $1,500+ (cat 1999)	1118A spec approp: 00-EO-C9-13-00-22-020 (shutters only)
Santa Rosa	Avalon MS/ Bldg 1	Shutters Eng Revw	$	$169,627	1,494	2000 Retrofit list per HMGP application	HMGP#1300-075 ($169,627) contract mailed
Santa Rosa	Dixon Intermediate/ Bldg 1	Shutters Eng Revw	$	$270,826	2,193	2000 Retrofit list per HMGP application	HMGP#1300-076 ($270,826) contract mailed
Santa Rosa	Milton Disaster Center	construct 130mph wind resistant facility (1543A) structural		$750,000	1,000	2001 Report List EMPA (2082)	1543A spec approp: 02PR-63-01-67-02-101
Santa Rosa	Milton Disaster Center (continued)	Construct 130mph wind resistant facility (cont.) (2082) structural		$50,000	0	2001 Report List	EMPA contracts" 01CP-04-01-67-02-222 ($50,000)

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects Projects Contracted/Contract Mailed Listed by County							
As of August 16, 2002							
County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Santa Rosa	Sims MS/ Bldg 1	shutters Eng Rvw	$	$180,662	1,266	2000 Retrofit list per HMGP application	HMGP#1300-077 ($180,662) contract mailed
Sarasota	Booker MS/ Bldg 6 (1990 constr.)	Window Protection Overhang and gable end support and bracing pre-wire		$131,100	475	2000 Retrofit list per DR1300 dated July 24, 2000	1543 Yes, contingent upon ASCE7 certification of roof (68ft span)
Sarasota	Booker MS/ Bldg 7	Window Protection Overhang support & Gable end bracing Pre-wire		$123,000	400	2000 Retrofit list per DR1300 dated July 24, 2000	1543 Spec approp 02PR-37-09-68-03-009
Sarasota	Brookside MS/ Bldg 5	Window Protection	$	$47,500	355	2000 Retrofit list per HMGP application dated March 13, 2001	*HMGP#1300-009 ($47,500) contract mailed*

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects

Projects Contracted/Contract Mailed
Listed by County

As of August 16, 2002

County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Sarasota	Glenallen ES/ Section 300	Shutters Elec.disconnect, major bracing etc. Incidentals , drawbolts etc.		$78,075	427	2000 Retrofit list per HMGP application	HMGP#1300-013 ($78,075) contract mailed
Sarasota	Glenallen ES/ Section 400	Shutters Elec disconnect, major bracing Drawbolts , anchors etc.	$	$73,150	404	2000 Retrofit list per HMGP application	HMGP#1300-012 ($73,150) contract mailed
Sarasota	Lakeview ES/ Bldg 1 Section 300 (1986 const)	Window protection Bracing of roof span & overhang Overhang Support Pre-wire		$170,000	425	2000 Retrofit list per DR1300 dated 7-25-00	1543 Spec approp (1543) 02PR-37-09-68-03-009

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects

Projects Contracted/Contract Mailed
Listed by County

As of August 16, 2002

County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Sarasota	Lakeview ES/ Bldg 1 Section 400 (1986 const)	Window protection Overhang support Structural Engineer Pre-wire		$95,000	400	2000 Retrofit list per DR1300 dated 7-25-00	1543 Spec approp 02PR-37-09-68-03-009
Sarasota	Lakeview ES/ Bldg 1 Section 500 (1986 const)	Window protection Overhang Support pre-wire		$95,000	400	2000 Retrofit list per DR1300 dated 7-25-00	1543 Spec approp (1543) 02PR-37-09-68-03-009
Sarasota	Oak Park School Devleopmental Bldg 2A	Replace windows Generator quick connect		$87,672	342	2000 Retrofit list per DR1300 dated 4-11-00	HMGP#1300-124 ($87,672) contract mailed
Sarasota	Oak Park School Developmental Bldg 2B	Replace windows Generator quick connect		$79,824	395	2000 Retrofit list per DR1300 dated 4-11-00	HMGP#1300-125 ($79,824) contract mailed
Sarasota	Oak Park School Behavioral Bldg 3A	Replace windows Generator quick connect		$104,749	1,006	2000 Retrofit list per DR1300 dated 4-11-00	HMGP#1300-126 ($104,749) contract mailed

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects

Projects Contracted/Contract Mailed
Listed by County

As of August 16, 2002

County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Sarasota	Oak Park School	800KW generator	$120,860		0	2001 Shelter List EMPA 1204	EMPA number 1204 EMPA contract number 02CP-10-09-68-01-125 ($120,860)
Sarasota	Oak Park School Behavorial Bldg 3b	Replace windows Generator quick connect		$87,614	644	2000 Retrofit list per DR1300 dated 4-11-00	HMGP#1300-127 ($87,614) contract mailed
Sarasota	Oak Park School Cafeteria Bldg 4	Replace windows Generator quick-connect		$134,407	324	2000 Retrofit list per DR1300 dated 4-11-00	HMGP#1300-128 ($134,407) contract mailed
Sarasota	Pine View School Bldg 1 (1992 const)	Window protection Gable Ends Bracing Pre-wire		$62,000	325	2000 Retrofit list per DR1300 dated 7-25-00	1543 Spec approp (1543) 02PR-37-09-68-03-009
Sarasota	Pine View School Bldg 2 (1992 const)	Window protection Gable ends bracing pre-wire		$83,000	270	2000 Retrofit list per DR1300 dated 7-25-00	1543 Spec approp (1543) 02PR-37-09-68-03-009

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects

Projects Contracted/Contract Mailed
Listed by County

As of August 16, 2002

County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Sarasota	Pine View School Bldg 11 (1992 const)	Window protection Gable ends bracing roof appendage bracing Structural Engineer pre-wire		$99,000	270	2000 Retrofit list per DR1300 dated 7-25-00	1543 Spec approp (1543) 02PR-37-09-68-03-009
Sarasota	Sarasota HS/ Bldg 13	Shutters Generator Disconnect Roof inspections, drawbolts, etc.		$161,772	982	2000 Retrofit list per HMGP application	HMGP#1300-010 ($161,772) contract mailed
Sarasota	Sarasota HS/ Bldg 14	Shutters Elec disconnect, roof bracing inspection Drawbolts, anchoring etc.		$307,385	759	2000 Retrofit list per HMGP application	HMGP#1300-011 ($296,166) contract mailed

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects

Projects Contracted/Contract Mailed
Listed by County

As of August 16, 2002

County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Sarasota	Sarasota MS/ Bldg 4 (1991 const)	Window protection Overhang and gable end bracing pre-wire		$116,000	350	2000 Retrofit list per DR1300 dated 7-24-00	1543 Spec approp (1543) 02PR-37-09-68-03-009
Sarasota	Sarasota MS/ Bldg 6 (1991 const)	Window protection Overhang and gable end bracing pre-wire		$127,000	350	2000 Retrofit list per DR1300 dated 7-24-00	1543 Spec approp (1543) 02PR-37-09-68-03-009
Sarasota	Sarasota MS/ Bldg 7 (1991 const)	Window protection overhang and gable end bracing pre-wire		$119,000	350	2000 Retrofit list per DR1300 dated 7-24-00	1543 Spec approp (1543) 02PR-37-09-68-03-009
Sarasota	Taylor Ranch ES/ Bldg 5 (1989 const)	Window protection Bracing of roof span and overhang supports Structural Engineer pre-wire		$153,000	250	2000 Retrofit list per DR1300 dated 7-25-00	1543 Spec approp (1543) 02PR-37-09-68-03-009

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects

Projects Contracted/Contract Mailed
Listed by County

As of August 16, 2002

County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Sarasota	Taylor Ranch ES/ Bldg 6 (1989 const)	Window protection Roof system overhang/ communi cation tower Structural Engineer pre-wire		$120,500	415	2000 Retrofit list per DR1300 dated 7-25-00	1543 Spec approp (1543) 02PR-37-09-68-03-009
Seminole	English Estates ES / Bldg 100 (built 1963, addition 1988)	Shutters Generator Prewiring		$88,733	500	2000 Retrofit list Per county, dated 12/27/00. Updated per DEM Retrofit Review per project submittal dated 07-08-99	HMGP#1300-130 ($88,733) contract mailed
Seminole	Evans ES, 1st floor (one bldg., built in 1999-2000)	Shutters Generator Prewiring	$	$144,005	500	2000 Retrofit list Per county dated 12/27/00 Updated per DEM Retrofit Review	HMGP#1300-131 ($144,005) contract mailed

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects

Projects Contracted/Contract Mailed
Listed by County

As of August 16, 2002

County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Seminole	Geneva ES / Bldg 4 (built 1986)	Shutters		$70,289	500	2000 Retrofit list per project submittal dated 07-08-99 Per county dated 12/27/00 Updated per DEM Retrofit Review	HMGP#1300-135 ($70,289) contract mailed
Seminole	Highlands ES/ Bldg 1	shutters		$103,402	500	1999 Shelter Retrofit Report	1118A Spec approp 00-EO-C9-13-00-22-010
Seminole	Lake Mary HS	Shutters		$153,402	2,000	1999 Shelter Report	1118A spec approp 00-EO-C9-13-00-22-010
Seminole	Lyman HS	Shutters		$158,060	1,000	1999 Shelter Retrofit Report	*HMGP#1300-129 ($158,060) contract mailed*
Seminole	Millenium MS / Bldgs 2 & 3 (built in 1999/2000)	Shutters		$206,171	1,000	2001 Report List Per county dated 12/27/00 Updated per DEM Retrofit Review	*HMGP#1300-132 ($206,171) contract mailed*
St. Lucie	Bayshore ES	shutters	$	$2,922	100	1999 Shelter Retrofit Report	1118A spec approp: 00-EO-C9-13-00-22-015

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects

Projects Contracted/Contract Mailed
Listed by County

As of August 16, 2002

County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
St. Lucie	C.A. Moore ES/ (café, stage, music room)	Window Protection		$4,000	412	2000 Retrofit list per data from county dated July 28, 2000	1543 Spec Approp 02PR-37-10-66-01-010
St. Johns	Cunningham Creek/ Main	Window Protection		$73,658	800	2000 Retrofit list per HMGP application	HMGP#1300-035 ($73,658) contract mailed
St. Lucie	Floresta ES	Shutters	$	$14,057	120	1999 Shelter Retrofit Report	1118A spec approp: 00-EO-C9-13-00-015
St. Lucie	Fort Pierce Westwood HS	shutters	$	$5,482		1999 Shelter Retrofit Report	1118A spec approp: 00-EO-C9-13-00-015
St. Johns	Hastings Special Needs Evac Shelter	structural work		$250,000	800	2000 Retrofit list CBIR-special legislation	1395B spec approp contract: 01-EO-38-04-65-01-005
St. Lucie	Lakewood Park ES	shutters		$4,522	150	1999 Shelter Retrofit Report	1118A spec approp: 00-EO-C9-13-00-015
St. Johns	Mill Creek ES/ Main	Window Protection	$	$59,068	800	2000 Retrofit list per HMGP application	HMGP#1300-036 ($59,068) contract mailed
St. Lucie	Morningside ES	shutters		$4,522	160	1999 Shelter Retrofit Report	1118A spec approp: 00-EO-C9-13-00-015

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects

Projects Contracted/Contract Mailed
Listed by County

As of August 16, 2002

County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
St. Johns	Osceola ES/ Main	Window Protection	$	$73,658	800	2000 Retrofit list per HMGP application	HMGP#1300-037 ($73,568) contract mailed
St. Johns	Otis Mason ES/ Main	Window Protection	$	$73,658	800	2000 Retrofit list per HMGP application	HMGP#1300-038 ($73,568) contract mailed
St. Lucie	Village Green ES	shutters	$	$2,922	120	1999 Shelter Retrofit Report	1118A spec approp: 00-EO-C9-13-00-015
St. Lucie	Windmill Pointe ES	shutters	$	$2,922	100	1999 Shelter Retrofit Report	1118A spec approp: 00-EO-C9-13-00-015
Sumter	North Sumter PS/ Cafeteria Bldg 18	Shutters		$175,705	178	2000 Retrofit list per DR1300 dated 4/17/00	HMGP#1300-112 contract mailed
Sumter	North Sumter IS/ Café Bldg 18	Shutters		$155,252	178	2000 Retrofit list per DR1300 dated 4/17/00	HMGP#1300-113 contract mailed
Sumter	Webster ES/ Café Bldg 14	Shutters		$108,840	138	2000 Retrofit list per DR1300 dated 4/17/00	HMGP#1300-114 contract mailed
Sumter	Wildwood Meeting Hall/ EM Shelter	construct shelter (new)		$250,000	300	2000 Retrofit list CBIR-special legislation EMPA 1013	1395B spec approp contract 01-EO-38-05-70-02-002
Suwannee	Suwannee Elem East	Generator (150kw)	$30,000		0	1999 Shelter	1395A spec approp 01-EO-37-03-71-01-003

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects

Projects Contracted/Contract Mailed
Listed by County

As of August 16, 2002

County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Union	Lake Butler MS/ bldg E & B	Shutter laydown	$	$244,419	424	1999 Shelter Retrofit Report	HMGP#1300-122 ($244,419) contract mailed
Volusia	City of Port Orange Allen Green Civic Center	Shutter	$	$59,000	600	2002 Retrofit list	EMPA 03CG-10-06-74-02-091
Volusia	City of Port Orange Allen Green Civic Center/ Fire Station	Install generator/ housing/ swithches etc.	$156,000		0	2002 Retrofit List	EMPA 03CG-10-06-74-02-091
Volusia	Galaxy MS/ Bldg 2&10	shutters	$	$35,680	100	1999 Shelter Retrofit Report	1118A spec approp: 00-EO-C9-13-00-22-021 ($35,680) shutters only
Volusia	James Street Park/ Youth Activity Cntr (1999)	Protect windows	$	$3,684	65	2000 Retrofit list per DR1300 dated 12/23/99	1395B spec approp: 01-EO-38-06-74-02-012
Volusia	Piggotte Comm Center/	Protect windows	$	$6,340	100	2000 Retrofit list per DR1300 dated 12/23/99	1395B spec approp: 01-EO-38-06-74-02-012

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects

Projects Contracted/Contract Mailed
Listed by County

As of August 16, 2002

County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Volusia	YMCA addtion (city of port orange)	addition of 2500 square feet - shelter area	$	$250,000	125	2000 Retrofit list special legislation	1395B spec approp contract: 01-EO-39-06-74-02-018
Wakulla	Shadeville School	Door/window protect.	$	$27,225	1,000	2001 Retrofit List Per HMGP application (submitted 08/30/00)	Yes. HMGP# 1300-087 ($27,224) file review LRDM attached advoid café long span.
Brevard	Eau Gallie HS/ Science Bldg	Generator	$80,000		0	1999 Shelter Retrofit Report	1395A Spec Appro: 01-EO-37-06-15-01-005
Brevard	Melbourne, City of	Generator bldg	$19,000		0	2002 Shelter List	EMPA 03CG-04-06-15-02–115
Collier	Immokalee Friendship House Emergency Shelter	Generator (3 of them)	$95,000		0	2001 Report List EMPA (1255)	EMPA number (1255) EMPA contract number 01CP-10-09-21-08-111 ($285,000
Jackson	Family Services Center	Window/ door protection	$	$32,298	179	2000 Retrofit list Recommended by engineer prescreen.	HMGP#1300-257 ($32,298) contract mailed

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects

Projects Contracted/Contract Mailed
Listed by County

As of August 16, 2002

County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Jackson	Golson ES/ East expansion	Window/ door protection	$	$62,440	215	2000 Retrofit list Recommended by engineer prescreen.	HMGP#1300-259 ($62,440) contract mailed
Manatee	Lee MS/ bldg 1C	Door & Window protection pre-wire	$	$34,464	321	2000 Retrofit list per county data provided (31 July 2000)	HMGP#1300-176 ($34,464)
Manatee	Lee MS/ Bldg A	Door & Window protection pre-wire		$54,292	326	2000 Retrofit list per data dated Nov 14, 2000	1543 spec approp 1543 02-PR-37-08-51-01-005 ($54,292)
Manatee	Lee MS/ Bldg C	Door & Window protection pre-wire	$	$46,550	326	2000 Retrofit list per data dated Nov 14, 2000	1543 spec approp 1543 02-PR-37-08-51-01-005 ($46,551)
Manatee	Lee MS/ Bldg B	Door & Window protection pre-wire	$	$50,397	326	2000 Retrofit list per data dated Nov 14, 2000	1543 spec approp 1543 02-PR-37-08-51-01-005 ($50,398)

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects Projects Contracted/Contract Mailed Listed by County							
As of August 16, 2002							
County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Manatee	Lincoln MS/ Bldg B	Door & Window protection pre-wire	$	$50,397	326	2000 Retrofit list per data dated Nov 14, 2000	HMGP#1300-216($81,209)
Manatee	Lincoln MS/ Bldg C	Door & Window protection pre-wire	$	$46,049	326	2000 Retrofit list per data dated Nov 14, 2000	HMGP#1300-217....($81,209)
Manatee	Lincoln MS/ Bldg A	Door & Window protection pre-wire	$	$54,292	326	2000 Retrofit list per data dated Nov 14, 2000	HMGP#1300-198 ($81,209)
Orange	University HS	Remove Laydown Structural Retrofits Shutters Direct Phone Generator Prewire Contingent		$248,097	700	1999 Shelter Retrofit Report	*HMGP#1300-143 ($248,097)*

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects

Projects Contracted/Contract Mailed
Listed by County

As of August 16, 2002

County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Orange	Walker MS	Remove Laydown Structural Retrofits Shutters Direct Phone Generator Prewire Continge nt		$312,835	572	1999 Shelter Retrofit Report	*HMGP#1300-144 ($312,835) tech revw*
Osceola	Parkway MS	generator (100 kw)	$155,000		0	1999 Shelter Retrofit Report	1395A spec appropriation: 01-EO-37-06-59-01-002 (generator - $155K))
Osceola	Ventura ES	Eng Study	$	$12,500	0	1999 Shelter Retrofit Report	HMGP#1300-255 ($12,500) contract mailed eng study only
Osecola	Parkway MS	Eng Study	$	$12,500		1999 Shelter Retrofit Report	HMGP#1300-250 ($12,500) contract mailed eng study only

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects

Projects Contracted/Contract Mailed
Listed by County

As of August 16, 2002

County	Site	Work	Generator Costs	Other Costs	Risk Capacity Gained (spaces)	Source of information	Funding Source
Palm Beach	Glacier Ice and Snow Arena, Delray Beach (new constructio n)	See breakout in project folder. Upgrades design to be shelter.	$	$873,973	4,100	2000 Retrofit list per project submittal dated July 25, 2000	*HMGP#1300-123 ($873,973)*
St. Lucie	Parkway ES	Shutters	$	$2,922	100	1999 Shelter Retrofit Report	1118A spec approp: 00-EO-C9-13-00-015
Sumter	Wildwood Meeting Hall/ EM shelter	Generator (400KW)	$50,000		0	2002 list	EMPA 03CG-04-05-70-02-128
Wakulla	Crawfordvi lle ES/ bldg 1	door & window protection	$	$27,225	1,000	2000 Retrofit list per HMGP application	HMGP#1300-085 ($27,224)
Wakulla	Medart ES/ Bdlg 1	door & window protection	$	$27,225	1,000	2000 Retrofit list per HMGP application	HMGP#1300-086 ($27,224)
Walton	Childrens Home Comm. Cntr	Shutters	$	$2,880	60	2000 Retrofit list Recommended by engineer pre-screen.	*HMGP#1300-229 ($2,880)*
Sub-Totals	Projects: 403		$5,538,553	$28,597,114	211,450		
Totals	Projects: 403		$34,135,667		211,450		

Appendix K:
List of Contracts-In-Progress Projects

Shelter Retrofit List for 1999 and 2000 , 2001, and 2002 Projects

Contracts-In-Process List
Listed by County

As of August 28, 2002

County	Site	Work	Costs	Risk Capacity Gained (spaces)	Source of information	Technical Review: Recommended ?
Brevard	Brevard CC Melbourne Bldg #5	Shutters	$290,000	1,000	2001 Retrofit Report per county letter April 30, 2001 (attached ARc 4496)	contract-in-process Spec Approp 1523- 2002
Citrus	Forest Ridge ES Bldg 1	Window Protection	$130,000	2,800	2001 Retrofit Report	contract-in-process Spec Approp 1523-2002
Collier	Laurel Oak ES/ Bldg 2	Eng Assessment Roof Retrofit Shutters	$45,000	400	2000 Retrofit list per DR1300 dated 12/5/99	contract-in-process Spec Approp 1523-2002
Collier	Immokalee MS/ Bldg 8&9	Eng Assessment Pre-wire Shutters	$37,000	150	1999 Shelter Retrofit Report per DR1300 dated 12/5/99	contract-in-process Spec approp 1523-2002 Yes, Phase I-Eng Study , open span (74ft) and overhangs (6ft)
Collier	Vineyards ES/ Bldg 2	Add. Shutters Roof Eng. & retrofit	$42,000	400	2000 Retrofit list per DR1300 dated 12/5/99	contract-in-process Spec Approp 1523-2002

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County	Site	Work	Costs	Risk Capacity Gained (spaces)	Source of information	Technical Review: Recommended ?
Hardee	Wauchula JHS Media Bldg Bldg 06 (1999)	Shutter doors/windows Gen Prewire	$20,080	650	2001 Report List Per county dated Feb 27, 2001	contract-in-process Spec Approp 1523-2002 Yes, contingent upon ASCE 7 certification of 56ft open span
Hardee	Wauchula ES ESE Bldg Bldg 05 (1999)	Shutter doors/ windows Gen Prewire	$27,774	650	2001 Report List Per county dated Feb 27, 2001	contract-in-process Spec Approp 1523-2002 Yes, if ASCE-7 certification of open span (80ft)
Hillsborough	Marshall MS Bldg #12 (1997)	window & door protection	$15,501	509	2001 Shelter List per county data recvd 25 jun 01	contract-in-process Spec Approp 1523-2002
Hillsborough	Memorial MS/ Bldg 06 (2000)	window & door protection cover breezeway	$53,446	332	2001 Shelter List per county recvd 26 Jun 01	contract-in-process Spec Approp 1523-2002
Hillsborough	Pizzo ES Bldg #2	Window & Door protection	$39,000	710	2001 Shelter Retrofit Report per county data recvd 15Jun01	contract-in-process Spec Approp 1523-2002

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Hillsborough	Bloomingdale HS Bldg #13 (1999)	Shutter windows/doors	$65,500	480	2001 Shelter Retrofit Report per county data on 15 Jun 01	contract-in-process Spec Approp 1523-2002 Yes, LRDM attached with ARC4496 questionaire
Hillsborough	Pizzo ES Bldg #3 (1997)	Window & Door Protection	$39,000	710	2001 Shelter Retrofit Report per county data recvd 15 Jun 01	contract-in-process Spec Approp 1523-2002
Hillsborough	Pizzo ES Bldg #4	Window & Door protection	$39,000	710	2001 Shelter Retrofit Report per county data recvd 15Jun01	contract-in-process Spec Approp 1523-2002
Hillsborough	Plant City HS/ Bldg #18 (PBSJ-#3) (1999)	protect windows/doors door latches	$53,416	545	2001 Shelter List per county email dated 6/21/01	contract-in-process Spec Approp 1523-2002
Hillsborough	Tomlin MS/ bldg #6 (2000)	window & Door protection	$28,088	573	2001 Shelter List per county dated Jun 25, 2001	contract-in-process Spec Approp 1523-2002

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Hillsborough	Turkey Creek MS/ Bldg #8 (1997)	window & door protection	$34,065	603	2001 Shelter List per county dated 25 Jun 2001	contract-in-process Spec Approp 1523-2002 Yes, contingent on ASCE 7 cert of open span (45ft)
Hillsborough	Walker MS/ Bldg 2 (1995)	Protect windows/doors enhance door latch systems	$4,340	207	2001 Retrofit List per county email dated 6/21/01	contract-in-process Spec Approp 1523-2002
Hillsborough	Walker MS/ Bldg 3 (1995)	protect windows/doors	$145,252	952	2001 Retrofit List per county email dated 6/21/01	contract-in-process Spec Approp 1523-2002
Hillsborough	Wharton HS/ Bldg 2 (1995)	Window & Door Protection Cover Breezeways	$194,939	1,292	2001 Retrofit LIst (per fax July 26, 2000)	contract-in-process Spec Approp 1523-2002
Hillsborough	Wharton HS/ bldg 3 (1995)	Window & Door Protection Cover Breezeways	$198,120	597	2001 Retrofit LIst (per fax July 26, 2000)	contract-in-process Spec Approp 1523-2002
Lake	Seminole Springs ES/ Bldg 4	Window Protection	$3,600	171	2000 Retrofit list per county	contract-in-process Spec Approp 1523-2002

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Lake	South Lake HS/ Bldg 1	Window Protection Gen. Prewire	$44,080	598	2000 Retrofit list per county	contract-in-process Spec Approp 1523-2002 Dropped Spec Approp. (1543) ($44,080) 02PR-37-06-45-01-004 - funding refused.
Lake	South Lake HS/ Bldg 2	Window Protection	$36,975	566	2000 Retrofit list per county	contract-in-process Spec Approp 1523-2002 Dropped Spec Approp. (1543) ($36,975) 02PR-37-06-45-01-004- funding refused
Lake	South Lake HS/ Bldg 3	Window Protection	$36,975	566	2000 Retrofit list per county	contract-in-process Spec Approp 1523-2002 Dropped Spec Approp. (1543) ($36,975) 02PR-37-06-45-01-004- funding refused

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County	Site	Work	Costs	Risk Capacity Gained (spaces)	Source of information	Technical Review: Recommended ?
Lake	Spring Creek ES/ Bldg 1	Window Protection Gen. Prewire	$18,790	167	2000 Retrofit list per county	contract-in-process Spec Approp 1523-2002
Lake	Seminole Springs ES/ bldg 1	Window Protection Gen. Prewire	$18,790	167	2000 Retrofit list per county	contract-in-process Spec Approp 1523-2002
Lake	Spring Creek ES/ Bldg 4	Window Protection	$3,600	171	2000 Retrofit list per county	contract-in-process Spec Approp 1523-2002 Dropped Spec Approp. (1543) ($3,600) 02PR-37-06-45-01-004-funding refused
Manatee	Kinnan ES/ Bldg 03	window & door protection prewire	$85,824	530	2000 Shelter list	contract-in-process Spec Apprp 1523-2002
Marion	Dunnellon HS Bldg 24 (1999 const)	Shutters Prewire	$53,840	334	2000 Retrofit list Per county data received Nov 17, 2000	contract-in-process Spec Approp 1523-2002 Yes, based on information provided HMGP #1300-293 ($33,840) withdrawn/ denied

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County	Site	Work	Costs	Risk Capacity Gained (spaces)	Source of information	Technical Review: Recommended ?
Marion	Dunnellon HS Bldg 23 (1999 const)	shutters prewire	$44,800	251	2000 Retrofit list Per county data received Nov 17, 2000	contract-in-process Spec Approp 1523-2002 Yes, based on information provided HMGP #1300-292 ($24,800) withdrawn/ denied
Miami-Dade	Barbara Goleman Senior HS/ Bldg 1 project 2	Window/Door Protection	$98,186	1,500	2000 Retrofit list per DR1300 dated 12/27/99 (update: 08/15/00)	contract-in-process Spec Approp 1523-2002
Miami-Dade	Barbara Goleman Senior HS/ Bldg 4,5, 8,and 9 project 3	Window/door/ glazing protection	$74,770	830	2000 Retrofit list per DR1300 dated 12/27/99 (update: 08/15/00)	contract-in-process Spec Approp 1523-2002
Miami-Dade	Citrus Grove MS/ Bdlg 1 project 1	Brace window grilles .	$7,424	2,641	2000 Retrofit list per DR1300 dated 12/27/99 (update: 08/15/00)	contract-in-process Spec Approp 1523-2002
Miami-Dade	Miami Coral Park Senior HS/ Bldg 1 project 4	Window and Door Protection	$468,745	500	2000 list	HMGP#1300-022 ($236,977)

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Miami-Dade	Miami Northwestern/ Bldg 1 project 12	Window & Door Protection	$111,348	2,420	2000 Retrofit list per DR1300 dated 12/27/99 (updated: 08/15/00)	Contract-in-process (Spec Approp-1523 - 2002) HMGP#1300-029 ($525,900)
Miami-Dade	Miami Sunset HS/ Bldg 1&4 project 10	Door Protection Roof anchorings/ skylight protection.	$77,405	2,440	2000 Retrofit list per DR1300 dated 12/27/99 (update 08/15/00)	contract-in-process Spec Approp 1523-2002
Miami-Dade	South Miami Senior/ project 14/ Building 1	Window Protection Door Protection Roof tie-downs	$79,870	2,000	2000 Retrofit list per DR1300 dated 12/27/99 (updated: 08/15/00)	contract-in-process Spec Approp 1523-2002
Miami-Dade	Southwood MS/ Bldg 1 project 7	Window Protection roof structure tie-downs	$48,027	1,200	2000 Retrofit list per DR1300 dated 12/27/99 (update: 08/15/00)	contract-in-process Spec Approp 1523-2002
Okaloosa	Antioch ES	Add Metal Shutters	$120,000	1,500	2000 Retrofit list per county fax dated Aug 01, 2000	contract-in-process Spec Approp 1523-2002 Yes, based on information provided

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Orange	Corner Lakes MS	Remove Laydown Structural Retrofits Shutters Direct Phone Generator Prewire Contingent	$114,660	680	1999 Shelter Retrofit Report	contract-in-process Spec approp 1523-2002
Orange	Discovery MS	Remove Laydown Structural Retrofits Shutters Direct Phone Generator Prewire Contingent	$88,140	680	1999 Shelter Retrofit Report	contract-in-process Spec approp 1523-2002
Orange	Southwest MS	Remove Laydown Structural Retrofits Shutters Direct Phone Generator Prewire Contingent	$88,140	680	1999 Shelter Retrofit Report	contract-in-process Spec approp 1523-2002

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County	Site	Work	Costs	Risk Capacity Gained (spaces)	Source of information	Technical Review: Recommended ?
Pasco	Gulf HS/ Bldg 8 (Music Suite)	window protection	$5,250	243	2000 Retrofit list per HMGP application 07/28/00	contract-in-process Spec Approp 1523-2002 Yes, contingent upon engineer's letter HMGP#1300-054 (out) HMGP#1300-163 ($4,500) eng study
Pasco	Hudson HS/ Bldg 10 (Music Suite)	window protection	$2,500	82	2000 Retrofit list per HMGP application 07/28/00	contract-in-process Spec approp 1523-2002 Yes, contingent engineer's letter HMGP#1300-055 (out) HMGP#1300-171 ($4,500) eng study contracting

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Polk	Sandhill ES/ Cafeteria- Bldg 2	window protection pre-wire	$37,000	440	2001 Report list	contract-in-process Spec Approp 1523-2002 contract-in-process Spec Approp 1523-2002 yes, but need lrdm (in process)
Polk	Ridgeview ES/ Cafeteria - Bldg 2	window protection prewire	$37,000	440	2001 List	contract-in-process Spec Approp 1523-2002
Sarasota	Toledo Blade ES/ Bldg 5 (cafeteria) (1991 const)	Window protection Bracing of roof span and overhang supports Structural Engineer pre-wire	$123,000	425	2000 Retrofit list per DR1300 dated 7-25-00	contract-in-process Spec approp 1523-2002
Sarasota	Toledo Blade ES/ Bldg 4 (1991 const)	Window protection Bracing of roof span and overhang Structural Engineer pre-wire	$112,500	350	2000 Retrofit list per DR1300 dated 7-25-00	contract-in-process Spec approp 1523-2002

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County	Site	Work	Costs	Risk Capacity Gained (spaces)	Source of information	Technical Review: Recommended ?
Sarasota	Toledo Blade ES/ Bldg 1 (1991 const)	Window protection Overhang support Structural Engineer pre-wire	$112,500	320	2000 Retrofit list per DR1300 dated 7-25-00	contract-in-process Spec approp 1523-2002
Sarasota	Toledo Blade ES/ Bldg 6 (1991 const)	Window protection Bracing of roof span and overhang Structural Engineer pre-wire	$117,500	350	2000 Retrofit list per DR1300 dated 7-25-00	contract-in-process Spec approp 1523-2002
St. Lucie	Savanna Ridge ES/ (café, stage, music room)	Window Protection	$4,000	412	2000 Retrofit list per data from county dated July 28, 2000	contract-in-process Spec Approp 1523-2002 Yes, based on info provided by county
St. Lucie	Weatherbee ES/ (café, stage, music room)	Window Protection	$4,000	273	2000 Retrofit list per data from county dated July 28, 2000	contract-in-process Spec Approp 1523-2002 Yes, based on info from county
Totals	Projects: 52		$3,780,760	38,197		