2018
Shelter Retrofit Report

September 2018

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Governor

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State of Florida Shelter Retrofit Report

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EXECUTIVE SUMMARY

The Division of Emergency Management (Division), as directed by section 252.385, Florida Statutes, publishes a shelter retrofit report annually. The report provides a list of facilities recommended to be retrofitted for use as public hurricane evacuation shelters. Retrofitting is the modification of an existing structure to make it stronger and more disaster resistant. For example, installing hurricane shutters on an existing building protects doors and windows from wind-borne debris. Such measures bring public shelters up to established safety criteria and increase the availability of public hurricane evacuation shelter spaces in the State of Florida.

Since 1999 significant progress has been made toward reducing the deficit of safe public hurricane shelter space and meeting the American Red Cross's *Standards for Hurricane Evacuation Shelter Selection* (ARC 4496, January 2002). A combination of existing building surveys, retrofitting and application of enhanced hurricane design and construction standards has increased available hurricane shelter spaces to a total of 1,073,009. Another 19,238 spaces (meeting ARC 4496 safety standards) are under retrofitting contracts at this writing. The expected minimum available shelter spaces for the public during this fiscal year is 1,092,247.

In preparation of the *2018 Shelter Retrofit Report*, the Division reviewed 431 projects submitted by county emergency management agencies in cooperation with other partner organizations (local American Red Cross chapters and school boards) that participate in hurricane shelter planning and operations. After careful evaluation of the proposed projects, the Division, by priority, recommends 278 projects for retrofitting. These projects alone will create an additional 108,104 risk recognized hurricane shelter spaces statewide at an estimated cost of $23,189,218.

A significant increase in public hurricane shelter capacity has been achieved over the past 18 years. This is largely due to the availability of retrofit and mitigation-related dollars to fund these projects. Prior to 1999, the State lacked a dedicated funding source to meet the demands for public shelter space. Since 1999, however, the Governor and the Legislature have committed to fund the State's retrofit program on a recurring basis. Per section 215.559(1)(b), Florida Statutes, the Division is provided $3 million per year to retrofit hurricane shelters as prioritized in the annually published *Shelter Retrofit Report*. The Federal Emergency Management Agency's (FEMA) Hazard Mitigation Grant Program (HMGP) has provided approximately $48 million to harden or retrofit public hurricane shelters during the history of the program. Table 1.1 summarizes the State's progress in creating needed public hurricane shelter space through retrofit of appropriate buildings

The Division's public hurricane shelter deficit reduction strategy focuses on five major components: 1) surveying hurricane shelter facilities in existing local inventories to identify unused space; 2) surveying facilities not currently listed in local inventories to identify additional capacity; 3) providing 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, and decreased evacuation need.

A significant component of the strategy to increase the availability of "safe" hurricane shelter space is construction of new school facilities that comply with the Public Shelter Design Criteria provisions of the Florida Building Code; also known Enhanced Hurricane Protection Area (EHPA) requirements. Table 2.1 illustrates a net gain of 506,686 hurricane shelter spaces since code adoption. Many Regional Planning Council (RPC) regional hurricane shelter space deficits have been eliminated, and consequently so has the requirement to design and construct new schools to the EHPA code provisions.

Since 1995, the state has made significant progress toward improving the safety and availability of public hurricane shelter space. On a statewide cumulative basis, the current capacity is about 14 percent greater than the estimated demand calculated in Table 2.1. The metrics are evidence that the comprehensive strategy is an effective means to eliminate shelter deficits. However, RPC regions 6, 7 and 8 currently have deficits per data from the *2018 Statewide Emergency Shelter Plan* (SESP). For Special Needs Shelters (SpNS) nearly all regions have a deficit.

Changes in Federal Emergency Management Agency flood and National Weather Service storm surge maps reduced the previously recognized quantity of hurricane evacuation shelter space in some regions. In addition, recent population and demographic trends reflected in evacuation studies caused an increase in shelter space demand for 2016 and beyond. These changes and their consequent impacts indicate an increased need for additional hurricane evacuation shelter space.

Specifically, forecasting for the five-year period indicates higher demand for special needs shelters. These demand figures do not take into account the aging of the current stock of public shelters nor the approaching end of the useful life of some of the original retrofit projects. As existing buildings constructed to older building codes continue to age, the Division will need to identify replacement facilities. Surveying and retrofitting, as necessary, new or recently constructed facilities is needed so that state shelter capacities meet current and future needs.

In summary, as the number of Floridians in areas vulnerable to hurricanes continues to grow, it is vitally important that construction of hurricane shelters and retrofitting of existing buildings continue. Full implementation of the Division's shelter deficit reduction strategy will create a greater level of preparedness, a more efficient capability for responding to incidents and an increased ability to meet the needs of disaster survivors.

I. INTRODUCTION

Purpose

In an effort to continue to reduce the State's public hurricane shelter deficit, the Division of Emergency Management (Division) annually issues a *Shelter Retrofit Report*, which provides a list of facilities recommended to be retrofitted using state funds. *See* Sec.252.385, Florida Statutes. Each year the President of the Senate, the Speaker of the House of Representatives and the Governor receive this report. This report recommends and prioritizes facilities to retrofit based on each Regional Planning Council's (RPC) public hurricane evacuation shelter deficit. The RPC regions are established to coordinate planning for economic development, growth management, emergencies and other regional impacts. The report's objective is to improve relative safety and reduce the hurricane evacuation shelter space deficit in the state.

Shelter Retrofit Project Identification Procedure

In collaboration with local school boards, and public and private agencies, county emergency managers provided the data used for the *2018 Shelter Retrofit Report*. The Division recognizes that local officials are aware of 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 the *2018 Shelter Retrofit Report*, the Division provided general guidance for the development of proposals in a questionnaire-type format that the counties could use for project submittal.

The questionnaire was prepared to include sufficient information to determine if the facility could meet the Division's Least Risk Decision Making hurricane hazard safety guidelines, clearly define the project(s) to be undertaken and their impact upon hurricane shelter capacity and safety, and explain the interrelationship of the proposed project(s) and local and regional shelter strategies. The hurricane safety guidelines are found in Appendix C, *Standards for Hurricane Evacuation Shelter Selection* (ARC 4496, 2002). The cost estimates were generally provided by local agencies, commercial contractors, "rough orders of magnitude" (ROM), or in some cases, past experience in the retrofit program projects. Division staff then reviewed and ranked the projects according to assigned point value criteria found in Appendix H.

This Report includes projects originally submitted in previous Shelter Retrofit Reports. Previous projects have been re-ranked as appropriate.

The State's criteria consist of the following:

- Regional and Local Shelter Deficit Reduction
- Structural and Hazard Vulnerability Review

- Shelter Capacity Increase, Building Ownership and Availability, and Cost-Effectiveness Considerations
- Other Considerations / Demonstration of Impact Upon the State and Regional Shelter Deficit Situation

For more details on each criteria, please review *Methodology for Recommendation of Projects for Funding* attached hereto as Appendix D. Figure 1.1 below shows a map of the RPC regions across the State of Florida. The RPC regions are established to coordinate planning for economic development, growth management, emergencies, and other regional impacts.

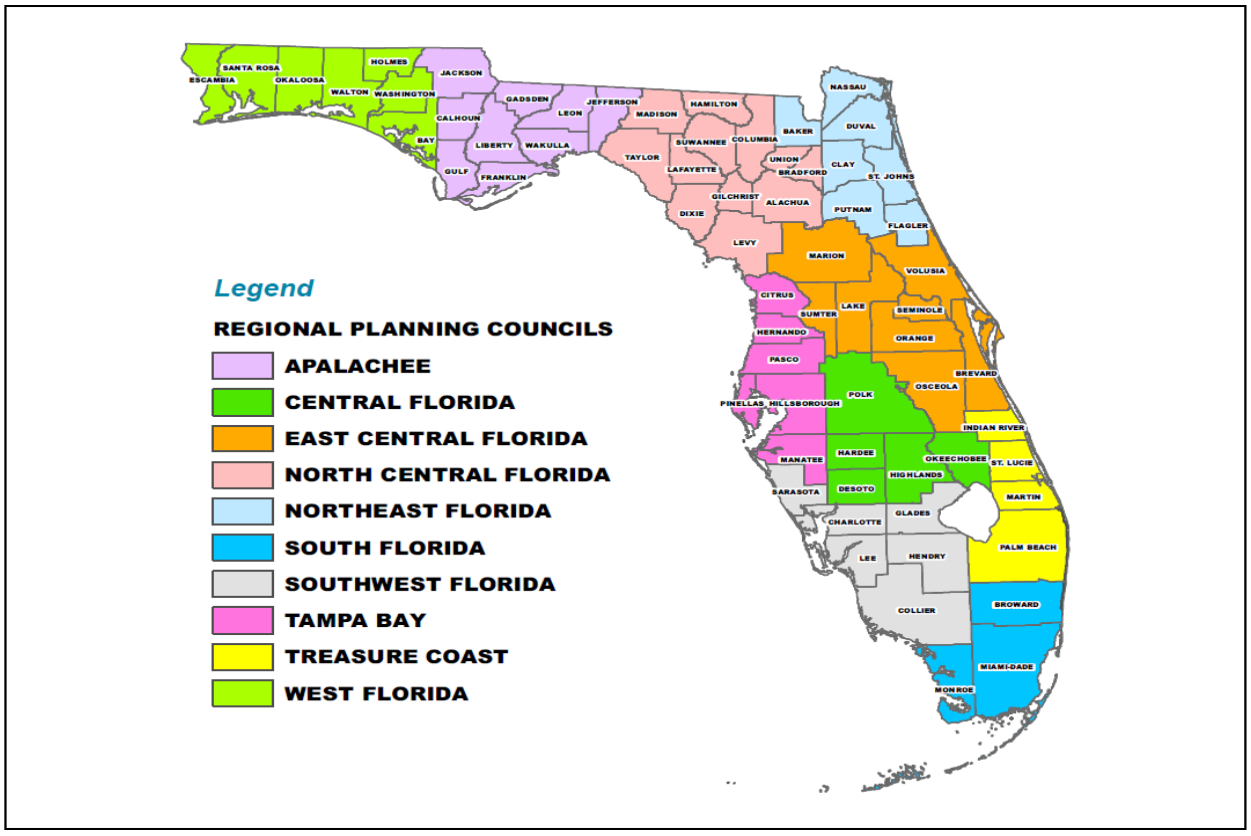


Figure 1.1 – Regional Planning Councils
Summary of Annual Reports

The retrofit projects recommended for consideration in this report will, if funded, substantially improve state and local hurricane preparedness. As Table 1.1 illustrates, the Governor and the State Legislature have demonstrated a sustained commitment to reduce the deficit of safe public hurricane shelter space. From 1999 to 2018, approximately $95 million in federal and state funds have been committed towards retrofitting suitable facilities, funding an estimated 552,896 hurricane shelter spaces.

Table 1.1
Historical Summary of Florida's Hurricane Shelter Retrofit Program

Shelter Retrofit Report Year	Annual Shelter Retrofit Report Recommended Projects Cost $ (without generators)	Annual Shelter Retrofit Report Potential Number of Spaces to Gain	Federal and State Funds Allocated to Shelter Retrofit Report Ranked and Recommended Projects	Shelter Retrofit Report Spaces gained	Cumulative Shelter Retrofit Report Spaces gained
1999	$16,185,193	88,679	$8,473,341	72,230	72,230
2000	$36,399,457	250,362	$25,572,795	119,087	191,317
2001	$26,943,516	119,905	$5,233,731	20,574	211,891
2002	$26,959,668	157,326	$4,735,113	41,710	253,601
2003	$23,349,714	137,985	$3,000,000	33,381	286,982
2004	$13,457,737	93,967	$7,500,000	68,765	355,747
2005	$11,882,722	68,882	$3,000,000	24,481	380,228
2006	$8,683,049	54,415	$3,000,000	13,820	394,048
2007	$10,956,377	82,930	[b] $6,607,263	[a] 25,645	419,693
2008	$13,432,213	85,997	$0	[c] 0	419,693
2009	$11,777,884	69,465	$3,000,000	14,427	434,120
2010	$15,634,282	120,447	$1,750,000	[d] 7,920	442,040
2011	$20,337,203	109,308	$2,250,000	14,974	457,014
2012	$14,707,717	110,394	$3,000,000	[e] 14,408	471,422
2013	$12,745,072	87,150	$3,000,000	[f] 14,810	486,232
2014	$13,994,180	107,236	$3,000,000	[g] 13,333	499,565
2015	$15,188,945	117,609	$3,000,000	[h] 13,333	512,898
2016	$13,465,342	69,541	$3,000,000	[i] 13,333	526,231
2017	$13,794,763	65,303	$3,000,000	[j] 13,333	539,564
2018	$23,189,218	108,104	$3,000,000	[k] 13,333	552,897
TOTAL	**N/A**	**N/A**	**$95,122,243**	**552,897**	**N/A**

[a] – 25,645 spaces were gained from HB 7121 & 1621X shelter retrofit projects

[b] – $6,607,263 was based on federal funds plus state funds match for HB7121 and non-federal matched projects from Special Appropriation 1621X

[c] – For Fiscal Year 08-09, no funds were appropriated for the Shelter Retrofit Report list

[d] – 7,920 reflects estimated gain from Specific Appropriation 1617 (FY 2010-2011 @ $1,750,000)

[e] – 14,427 reflects estimated gain from Specific Appropriation 1515A (FY 2011-2012 @ $3,000,000)

[f] – 14,810 reflects estimated gain from Specific Appropriation 2571 (FY 2013-2014 @ $3,000,000)

[g] – 13,333 is preliminary estimate of spaces to be gained from Specific Appropriation 2593 (FY 2014-2015 @ $3,000,000) based upon $225 a space

[h] – 13,333 is preliminary estimate of spaces to be gained from Specific Appropriation 2581 (FY 2015-2016 @ $3,000,000) based upon $225 a space

[i] – 13,333 is preliminary estimate of spaces to be gained from Specific Appropriation 2568 (FY 2016-2017 @ $3,000,000) based upon $225 a space

[j] – 13,333 is preliminary estimate of spaces to be gained from Specific Appropriation 2597 (FY 2017-2018 @ $3,000,000) based upon $225 a space

[k] – 13,333 is preliminary estimate of spaces to be gained from Specific Appropriation 2587 (FY 2018-2019 @ $3,000,000) based upon $225 a space

II. CURRENT SITUATION

During the last two decades, Florida has experienced major disasters with loss of life and property due to tropical storms, hurricanes and a wide array of other disasters. Of the state's sixty-seven (67) counties, thirty-five (35) of them lie along 8,426 miles of coastline, including tidal inlets, bays, and other waterways. The National Hurricane Center asserts that 40 percent of Florida residents live in areas vulnerable to storm surge.

The proximity of population concentrations along the Gulf of Mexico and the Atlantic Ocean, 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 hurricane shelter spaces.

The need for safe public shelter space is critical. Nearly 80 percent of Florida's population has settled in coastal areas, which are susceptible to hurricane force winds and damage caused by storm surge. The statewide sheltering deficit situation is not just a coastal phenomenon. The future safety of all our vulnerable citizens prior to and during a hurricane will require additions to the statewide public hurricane shelter inventory. Improved methodology in evacuation studies and a renewed emphasis on registration for persons with special needs created an increase in demand for risk shelters that can accommodate persons with a variety of special needs. Risk shelters for people with special needs require electrical generation capability and more space per client, so the retrofit process is more expensive and the resulting spaces do not contribute to deficit reduction as efficiently.

Since recognizing the American Red Cross standard 4496 as the minimum hurricane safety criteria, the Division has endeavored to eliminate the shelter deficit using a multifaceted approach. This approach includes: 1) surveying hurricane shelter facilities in existing local inventories to identify additional spaces 2) surveying facilities not currently listed in local inventories to identify unused capacity; 3) providing funding for cost-effective retrofit or other mitigation measures on existing buildings that can provide additional shelter spaces; 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, and decreased evacuation need.

Statewide Progress in Shelter Retrofitting and Enhanced Hurricane Protection Area Construction

Every spring county emergency management offices complete a report with information on their retrofit projects and/or new school facility Enhanced Hurricane Protection Area (EHPA) construction projects. Table 2.1 shows listings of retrofitted spaces, EHPA spaces created through June 2018, and projected gains (contracted or under construction) between September 2018 and August 2019. Additionally, Table 2.1 shows the estimated shelter demand for 2018-2019 (provided via the Division's evacuation studies), the hurricane shelter space adequacy/deficit in each county, and for the state as a whole. There is still need for further effort statewide even with the significant progress demonstrated.

All General Population hurricane shelter capacities are calculated based on 20 sq.ft. per evacuee and Persons with Special Needs (PSN) capacities on 60 sq.ft. per client.

Table 2.1								
Hurricane Evacuation Shelter Deficit Reduction Progress 2018-2019								
Shelter Capacity That Meets ARC 4496 Guidelines "Post - 1995 Success Stories"								
Regional Planning Council	**Is the Region in Deficit?**	**County**	**1995–8/2018 Retrofit & As-Is Shelter Spaces**	**Cumulative New School EHPA Capacity**	**Retrofit Shelter Capacity Under Contract**	**Total Hurricane Shelter Capacity 08/31/2018**	**Category 5 Demand (General Population and SpNS)**	**2019 Capacity Sufficient Estimate**
3	No	Alachua	9,733	1,600	1,642	12,975	13,064	(89)
4	No	Baker	1,675	1,612	0	3,287	2,697	590
1	No	Bay	14,944	956	1,828	17,728	8,155	9,573
3	No	Bradford	1,695	0	0	1,695	1,454	241
5	No	Brevard	30,381	12,063	0	42,444	33,559	8,885
10	No	Broward	500	60,005	0	60,505	29,576	30,929
2	No	Calhoun	2,239	172	0	2,411	1,110	1,301
8	Yes	Charlotte	0	0	0	0	13,366	(13,366)
7	Yes	Citrus	3,647	208	0	3,855	13,374	(9,519)
4	No	Clay	4,613	2,985	2,815	10,413	11,531	(1,118)
8	Yes	Collier	5,784	0	0	5,784	31,975	(26,191)
3	No	Columbia	4,949	4,105	0	9,054	5,099	3,955
6	Yes	Desoto	2,602	151	0	2,753	3,279	(526)
3	No	Dixie	2,562	1,256	0	3,818	1,974	1,844
4	No	Duval	35,630	15,343	0	50,973	45,064	5,909
1	No	Escambia	25,510	1,803	0	27,313	11,180	16,133
4	No	Flagler	24,608	3,034	0	27,642	6,555	21,087
2	No	Franklin	0	0	0	0	533	(533)
2	No	Gadsden	2,000	5,732	0	7,732	3,904	3,828
3	No	Gilchrist	3,129	0	0	3,129	1,199	1,930
8	Yes	Glades	567	388	83	1,038	1,613	(575)
2	No	Gulf	232	228	0	460	740	(280)
3	No	Hamilton	1,835	1,196	0	3,031	1,114	1,917
6	Yes	Hardee	139	4,623	146	4,908	2,203	2,705
8	Yes	Hendry	5,263	1,000	0	6,263	3,489	2,774
7	Yes	Hernando	1,416	8,051	1,422	10,889	11,609	(720)
6	Yes	Highlands	2,550	6,137	0	8,687	11,838	(3,151)
7	Yes	Hillsborough	27,004	65,699	1,400	94,103	55,243	38,860
1	No	Holmes	1,815	4,133	405	6,353	1,112	5,241
9	No	Indian River	10,507	0	0	10,507	6,306	4,201
2	No	Jackson	499	3,365	0	3,864	1,900	1,964
2	No	Jefferson	0	809	0	809	942	(133)
3	No	Lafayette	1,136	0	0	1,136	622	514
5	No	Lake	3,414	24,546	2,507	30,467	26,374	4,093
8	Yes	Lee	500	0	0	500	74,695	(74,195)
2	No	Leon	21,267	1,245	40	22,552	4,587	17,965
3	No	Levy	5,057	354	0	5,411	4,203	1,208
2	No	Liberty	836	822	0	1,658	742	916
3	No	Madison	4,236	0	0	4,236	1,326	2,910
7	Yes	Manatee	9,735	21,702	0	31,437	24,800	6,637
	Page 1 Subtotals:		**274,209**	**255,323**	**12,288**	**541,820**	**474,106**	**67,714**

Table 2.1								
Hurricane Evacuation Shelter Deficit Reduction Progress 2018-2019								
Shelter Capacity That Meets ARC 4496 Guidelines "Post - 1995 Success Stories"								
Regional Planning Council	**Is the Region in Deficit?**	**County**	**1995–8/2018 Retrofit & As-Is Shelter Spaces**	**Cumulative New School EHPA Capacity**	**Retrofit Shelter Capacity Under Contract**	**Total Hurricane Shelter Capacity 08/31/2018**	**Category 5 Demand (General Population and SpNS)**	**2019 Capacity Sufficient Estimate**
5	No	Marion	7,930	10,257	0	18,187	19,166	(979)
9	No	Martin	11,383	10,047	0	21,430	5,731	15,699
10	No	Miami-Dade	77,529	26,454	0	103,983	100,572	3,411
10	No	Monroe	723	0	0	723	3,051	(2,328)
4	No	Nassau	1,822	4,554	0	6,376	5,526	850
1	No	Okaloosa	11,574	2,025	0	13,599	6,027	7,572
6	Yes	Okeechobee	1,891	1,175	0	3,066	8,615	(5,549)
5	No	Orange	2,530	28,678	0	31,208	31,752	(544)
5	No	Osceola	18,001	7,982	0	25,983	10,811	15,172
9	No	Palm Beach	22,793	48,355	0	71,148	32,274	38,874
7	Yes	Pasco	10,199	17,556	0	27,755	32,260	(4,505)
7	Yes	Pinellas	24,250	10,150	600	35,000	46,178	(11,178)
6	Yes	Polk	2,423	33,157	0	35,580	45,503	(9,923)
4	No	Putnam	3,495	1,196	825	5,516	4,848	668
4	No	Saint Johns	10,437	7,198	3,394	21,029	11,840	9,189
9	No	Saint Lucie	12,997	4,388	0	17,385	10,684	6,701
1	No	Santa Rosa	7,536	5,471	0	13,007	6,025	6,982
8	Yes	Sarasota	4,597	9,296	0	13,893	31,726	(17,833)
5	No	Seminole	30,220	1,206	2,131	33,557	12,195	21,362
5	No	Sumter	725	200	0	925	9,818	(8,893)
3	No	Suwannee	50	3,484	0	3,534	3,964	(430)
3	No	Taylor	2,582	2,424	0	5,006	1,776	3,230
3	No	Union	1,371	345	0	1,716	751	965
5	No	Volusia	15,291	8,879	0	24,170	39,601	(15,431)
2	No	Wakulla	0	400	0	400	944	(544)
1	No	Walton	4,028	5,269	0	9,297	1,957	7,340
1	No	Washington	5,737	1,217	0	6,954	1,696	5,258
	Page 1 Totals:		**274,209**	**255,323**	**12,288**	**541,820**	**474,106**	**67,714**
	Page 2 Totals:		**292,114**	**251,363**	**6,950**	**550,427**	**485,291**	**65,136**
	Subtotals:		**566,323**	**506,686**				
	Totals:		**1,073,009**		**19,238**	**1,092,247**		
	Grand Totals:		**1,092,247**				**959,397**	**132,850**

III. SUMMARY OF PROJECT RECOMMENDATIONS

In fiscal year 2017-2018, the Division requested county emergency managers to submit new shelter retrofit projects and confirm or delete any shelter retrofit projects on the current Shelter Retrofit Report lists. Each proposed retrofit project is required to fall within the preferred or marginal category on the Least Risk Decision Making shelter report upon completion. The Division identified 365 (278 constructed/structural retrofits plus 87 generator) projects that would meet the standard after retrofitting. All projects were ranked using such factors as: local and regional shelter space deficit; greatest provision of space; cost efficiency per space; and vulnerability to winds and surge. *See* Appendices E and F for lists of recommended projects.

Table 3.1 provides a summary of the proposed shelter retrofit projects, the region served, the construction-related costs and the generator-related costs of the proposed projects, and the total hurricane shelter space capacity that will be created after completion of retrofits. *See* Figure 1.1 for a map of the State's RPC regions.

Table 3.1

2018 Shelter Retrofit Report County and Regional Recommended Project Totals

August 31, 2018

Region	County	Construction-related Costs, $	Hurricane Shelter Capacity Gained, spaces	Generator-related Costs, $
1	BAY	$170,000	494	$0
1	ESCAMBIA	$0	0	$1,280,028
1	HOLMES	$0	0	$20,000
1	OKALOOSA	$0	0	$50,000
1	SANTA ROSA	$0	0	$0
1	WALTON	$0	0	$0
1	WASHINGTON	$0	0	$0
	Region 1 Totals:	**$170,000**	**494**	**$1,350,028**
2	CALHOUN	$193,500	387	$0
2	FRANKLIN	$0	0	$0
2	GADSDEN	$538,223	1,957	$0
2	GULF	$0	0	$0
2	JACKSON	$0	0	$72,318

Table 3.1				
2018 Shelter Retrofit Report County and Regional Recommended Project Totals				
August 31, 2018				
Region	**County**	**Construction-related Costs, $**	**Hurricane Shelter Capacity Gained, spaces**	**Generator-related Costs, $**
2	JEFFERSON	$371,290	1,964	$0
2	LEON	$940,150	4,376	$0
2	LIBERTY	$0	0	$0
2	WAKULLA	$1,173,825	5,217	$0
	Region 2 Totals:	**$3,216,988**	**13,901**	**$72,318**
3	ALACHUA	$860,740	3,654	$0
3	BRADFORD	$0	0	$0
3	COLUMBIA	$579,822	1,562	$0
3	DIXIE	$0	0	$150,000
3	GILCHRIST	$0	0	$0
3	HAMILTON	$674,100	2,996	$0
3	LAFAYETTE	$193,500	860	$0
3	LEVY	$0	0	$0
3	MADISON	$0	0	$0
3	SUWANNEE	$0	0	$0
3	TAYLOR	$412,720	1,876	$0
3	UNION	$0	0	$0
	Region 3 Totals:	**$2,720,882**	**10,948**	**$150,000**
4	BAKER	$0	0	$0
4	CLAY	$160,000	285	$0
4	DUVAL	$748,925	4,579	$4,250
4	FLAGLER	$1,033,085	5,666	$180,000
4	NASSAU	$928,975	4,662	$405,000
4	PUTNAM	$57,980	260	$0

Table 3.1				
2018 Shelter Retrofit Report County and Regional Recommended Project Totals				
August 31, 2018				
Region	**County**	**Construction-related Costs, $**	**Hurricane Shelter Capacity Gained, spaces**	**Generator-related Costs, $**
4	SAINT JOHNS	$0	0	$0
	Region 4 Totals:	**$2,928,965**	**15,452**	**$589,250**
5	BREVARD	$0	0	$3,796,377
5	LAKE	$1,018,886	3,580	$193,700
5	MARION	$0	0	$0
5	ORANGE	$4,985,955	25,313	$0
5	OSCEOLA	$72,450	322	$1,004,750
5	SEMINOLE	$175,780	799	$0
5	SUMTER	$345,600	1,565	$287,517
5	VOLUSIA	$1,339,075	5,951	$40,000
	Region 5 Totals:	**$7,937,746**	**37,530**	**$5,322,344**
6	DESOTO	$138,375	615	$40,000
6	HARDEE	$437,150	1442	$144,168
6	HIGHLANDS	$31,875	490	$0
6	OKEECHOBEE	$0	0	$25,650
6	POLK	$324,120	2,246	$124,000
	Region 6 Totals:	**$931,520**	**4,793**	**$333,818**
7	CITRUS	$160,000	858	$0
7	HERNANDO	$172,450	426	$0
7	HILLSBOROUGH	$0	0	$0
7	MANATEE	$429,563	3,574	$0
7	PASCO	$188,750	1,450	$1,535,171
7	PINELLAS	$0	0	$0
	Region 7 Totals:	**$950,763**	**6,308**	**$1,535,171**

Table 3.1				
2018 Shelter Retrofit Report County and Regional Recommended Project Totals				
August 31, 2018				
Region	**County**	**Construction-related Costs, $**	**Hurricane Shelter Capacity Gained, spaces**	**Generator-related Costs, $**
8	CHARLOTTE	$0	0	$101,000
8	COLLIER	$0	0	$45,000
8	GLADES	$52,875	235	$0
8	HENDRY	$0	0	$0
8	LEE	$2,022,965	9,191	$0
8	SARASOTA	$763,425	3,143	$0
	Region 8 Totals:	**$2,839,265**	**12,569**	**$146,000**
9	INDIAN RIVER	$216,989	818	$0
9	MARTIN	$571,100	3,031	$728,255
9	PALM BEACH	$111,500	500	$1,290,000
9	SAINT LUCIE	$0	0	$972,404
	Region 9 Totals:	**$899,589**	**4,349**	**$2,990,659**
10	BROWARD	$385,000	900	$0
10	MIAMI-DADE	$208,500	860	$0
10	MONROE	$0	0	$0
	Region 10 Totals:	**$593,500**	**1,760**	**$0**
	Totals:	**$23,189,218**	**108,104**	**$12,489,588**

If funded, the projects listed in this report will provide an estimated increase of 108,104 hurricane shelter spaces at a cost of $23,189,218 (construction-related costs). Costs reflected in the "Generator-related Costs" column usually reflect only generator purchase and installation costs. Projects that include a generator for emergency or standby electric power add to the overall functionality and sustainability of a shelter, but do not singularly increase shelter space capacity.

IV STRATEGY FOR PUBLIC SHELTER DEFICIT REDUCTION

The Division is responsible for developing a strategy to eliminate the deficit of "safe" public hurricane shelter space in Florida Statutes; *See* Secs. 252.35(2)(a)2 and 252.385(1), (2) and (3), Florida Statutes. The Division's strategy includes the following components:

Component 1 –Develop and Implement Model Shelter Survey and Selection Guidelines

The Division is responsible for administering a survey program of existing schools, universities, community colleges, and other state, county and municipally-owned public buildings. Also, the Division is responsible for providing a list of facilities annually that are recommended to be retrofitted using state funds. To accomplish these tasks, the Division utilizes a Least Risk Decision Making (LRDM) survey. In 1997 the Division received confirmation from the American Red Cross that the LRDM met the intent of the ARC's *Standards for Hurricane Evacuation Shelter Selection* (ARC 4496) as minimum safety criteria; *See* Appendix C. The criteria include safety standards for storm surge, rainfall flooding and wind hazards, plus a basic least-risk decision making process. However, to apply the criteria to field conditions and typical building stock, the Division expanded its interpretation of ARC 4496 into a *descriptive* least-risk decision making model. The model is qualitative and based largely upon building performance assessments following Hurricane Andrew. The performance assessments give preference to building qualities, or characteristics that performed well in Hurricane Andrew and avoids (or mitigates) those that performed poorly, and has been updated to accommodate modern building codes, standards, and practices.

Component 2 – Implement Shelter Survey Program

To date, the Division has completed the first statewide baseline survey, and initiated a second baseline survey to improve accuracy and capture changes in the statewide inventory. The results of the surveys are used by state and local agencies to prepare and implement strategies to reduce, and ultimately eliminate, the deficit of recognized hurricane evacuation shelter space. Between 1999 and 2018, more than 5,845 buildings were surveyed utilizing in house surveyors and private-sector consultants. The survey program has not only identified about 105,535 "as-is" spaces, but also directly, or in some cases indirectly, led to creation of more than 460,788 retrofitted shelter spaces. These totals combined with the EHPA construction of 506,686 spaces results in a total capacity of 1,073,009 spaces.

Component 3 – Retrofit appropriate facilities to meet Guidelines

Since 1999, the State Legislature has annually provided funds for retrofit projects listed in the annual *Shelter Retrofit Report*. The retrofit projects identified through the survey program, are recommended only when the retrofit can create spaces that meet the intent of ARC 4496 and the Division's LRDM survey.

For Fiscal Year 2018-2019, the State Legislature appropriated $3 million to structurally enhance or retrofit public hurricane evacuation shelters. Funding will create an estimated 13,333 spaces during the life of the appropriation.

Component 4 – New construction of public school facilities as Shelters

Florida Department of Education (FDOE) appointed a committee to develop a public shelter design criterion for use in new school facility construction projects. The committee included representatives from many stakeholder agencies (e.g., state and local emergency management, school board, community college and university officials, the American Red Cross, architects, engineers, etc.). The charge of the committee was to develop a set of practical and cost-effective design criteria to ensure that appropriate new educational facilities can serve as public shelters for emergency management purposes. The final criterion recommended by the committee was consistent with the intent of the hurricane safety criteria of ARC 4496.

The recommended wind design criterion was the American Society of Civil Engineers Standard 7 (ASCE 7) with a 40 mile per hour increase in basic map wind speed and an importance factor I=1.00. In addition, the hurricane shelter's exterior envelope (walls, roofs, windows, doors, louvers, etc.) must all meet a basic wind-borne debris impact standard (i.e., SSTD 12; 9lb 2x4 @ 34 mph). However, school board officials successfully protested the increase in base wind speed, so the minimum wind design criterion was reduced to ASCE 7 at basic map wind speed with an essential facility importance factor I=1.15. The 40 mile per hour increase in base wind speed was still recommended within the code, but not required. The criteria were promulgated into the State Requirements for Educational Facilities in April, 1997. The Division's model hurricane shelter evaluation criteria's preferred recognition was adjusted to be consistent with FDOE's public shelter design criteria (also known as the Enhanced Hurricane Protection Area or EHPA criteria).

Schools are funded primarily by state and local capital outlay funds, and school districts are generally reporting that the EHPA construction cost premium is about three to nine percent. Since 1997, EHPA construction has created 506,686 spaces (Table 2.1), which accounts for about 47 percent of the statewide risk recognized space inventory.

Component 5 – Shelter demand reduction through improved public information and education and through decreased evacuation

Hurricane evacuation studies have historically indicated that at least 25 percent of a vulnerable population would seek public shelter during an evacuation event. However, recent studies indicate that only about 15 percent will actually seek public shelter. This is consistent with the findings of recent post-storm assessments that indicate less than 10 percent of vulnerable populations seek public shelter.

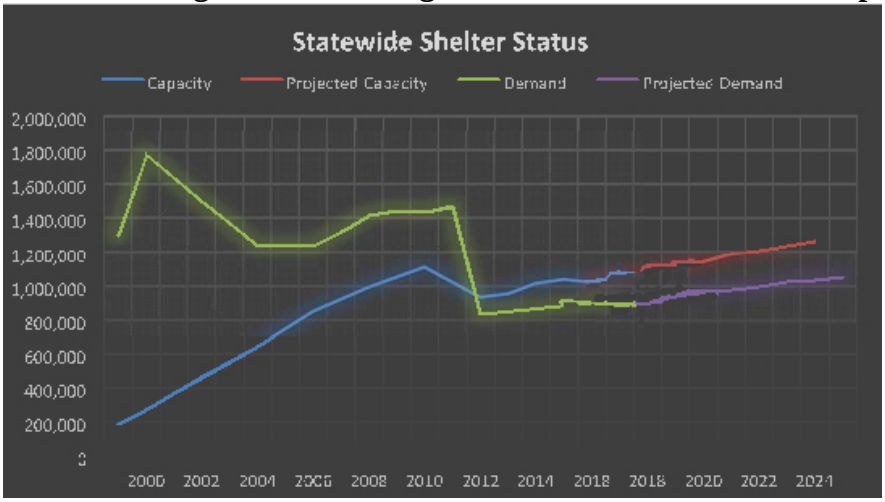
The public shelter demand resulting from hurricane evacuation was significantly reduced from 1995 to 2018 due to improvements in public education and information, and more accurate

storm surge/evacuation zone modeling with the use of the LiDAR (Light Detection and Ranging). However, changes in Federal Emergency Management Agency flood and storm surge maps coupled with recent population and demographic trends reflected in evacuation studies, created a significant increase in shelter demand for 2016, which continues to impact 2018. Forecasting for the five-year period indicates higher demand for special needs shelters, specifically. These demand figures do not take into account the aging of the current stock of public shelters nor the approaching end of the useful life of the original retrofit projects. The *2018 Statewide Regional Evacuation Studies* (SRES) resulted in a small statewide aggregate hurricane evacuation shelter space decrease in demand spaces. Florida's projected statewide hurricane evacuation shelter space demand for 2018 is 959,397 spaces.

Statewide Progress in Shelter Deficit Reduction

Since 1995, Florida has made significant progress toward improving the safety and availability of public hurricane shelter space. A comprehensive strategy of surveys, retrofitting, new construction, evacuation studies and public education is the basis for the success. An expansion in storm surge/evacuation zones, aging building stock and consequent decommissioned buildings plus changes in planned local use has resulted in a decrease of nearly 20 percent since 2012. Losing hard won space is difficult when the State of Florida has made so much progress in increasing the overall state capacity. However, the usable life of buildings and the aging of the retrofits provided is a factor impacting the program. For example, the minimum useful life of storm screen retrofits was determined to be about 15 years. It remains critical to ensure the safety of public hurricane shelter space by replacing the capacity of older buildings with those built to more recent codes, and retrofitting new projects with a longer life expectancy. Improved evacuation studies also benefitted the estimated total shelter demand with an aggregated reduction of more than 45 percent. This year, adequate public hurricane shelter space is available in 42 counties. RPC regions 6, 7 and 8, when standing alone, have a deficit in shelter space, even though the statewide availability of space is sufficient.

Figure 4.1 Florida's Progress in Reducing Statewide Hurricane Shelter Space Deficit



V. CONCLUSION

The State of Florida recognizes the necessity of providing safe hurricane evacuation shelter space for its residents during disasters. Hurricane Andrew (1992) made the need clear and the Lewis Commission Report following Hurricane Floyd (1999) concurred. The State remains steadfast in its commitment to provide safe hurricane evacuation shelter space to all during a disaster. Through funding of the recommended *2018 Shelter Retrofit Report* projects, Florida will continue to see improvements in shelter capacity.

Since 1995 hurricane shelter spaces have been identified, or created through retrofitting of existing buildings or by new construction. In the past two years, some hurricane shelters have been decommissioned due to new storm surge mapping, age, remodeling or reuse that is incompatible with mass care shelter operations, deterioration or removal of window protection products, or other reasons. Changes in storm hazard maps (e.g., SLOSH, national flood insurance, etc.) also affect a site's ability to be risk recognized. Therefore, the *2018 Shelter Retrofit Report* of available and currently funded retrofit space totals 1,092,247 shelter spaces.

In 2015, an additional provision, Sec. 252.355 Florida Statutes, established new requirements for special needs registries under county emergency managers. Although shelters for persons with specials needs have been available, the additional statutory provision increased demand because physicians have been encouraged to register their patients. Additionally, digital marketing is required for the registry. In 2016, and in the following years, changes in evacuation studies, demographics and public awareness increased the demand for shelters for persons with special needs. Special needs shelters require more space per client and additional physical accommodations compared to general population shelters. They are more expensive to retrofit, as the spaces generated per dollar invested are fewer. As a result, half of Florida's counties have a special needs deficit in 2018.

An additional 108,104 spaces could be created if the projects in this report are funded, resulting in 1,200,351 spaces available to be used for risk hurricane evacuation shelters. Some projects could receive greater funding for special needs retrofitting, reducing overall spaces but providing safe haven for Florida's most vulnerable population. Demand for general population shelters increased in FY 2017-2018 to 959,397.

In 2018 three (3) regions of the state still report a deficit of hurricane evacuation shelter space. Regions that have an adequate number of hurricane evacuation shelter spaces currently will need to maintain their inventory. Since 2017, more than 50,000 spaces previously risk recognized were removed from inventory due to changes in hazard maps (e.g., surge and flood maps) that will continue to affect a facilities' recognition of meeting hurricane safety criteria. Over time, more hurricane shelters will be decommissioned. Thus, even though the aggregate statewide deficit is reduced in the *2018 Shelter Retrofit Report*, a "maintenance level" of shelter space production will be necessary to avoid falling back into a deficit situation.

Appendix A

List of Abbreviations

List of Abbreviations

ANSI:	American National Standards Institute
AHJ:	Authority Having Jurisdiction
ARC:	American Red Cross
ASCE:	American Society of Civil Engineers
BFE:	Base Flood Elevation
CMU:	Concrete Masonry Unit
EHPA:	Enhanced Hurricane Protection Area
EPZ:	Emergency Planning Zone
FBC:	Florida Building Code
FDOE:	Florida Department of Education
FEMA:	Federal Emergency Management Agency
FFE:	Finished Floor Elevation

FIRM: Flood Insurance Rate Map

HLMP: Hurricane Loss Mitigation Program (Florida)

HMGP: Hazard Mitigation Grant Program (federal)

LEPC: Local Emergency Planning Committee

LiDAR: Light Detection and Ranging

LMS: Local Mitigation Strategy

LRDM: Least Risk Decision Making

NFIP: National Flood Insurance Program

PRM: Partially Reinforced Masonry

PSN: Persons with Special Needs

ROM: Rough Order of Magnitude

RPC: Regional Planning Council

SES: Standby Electrical System

SESP: Statewide Emergency Shelter Plan

SLOSH: Sea, Lake and Overland Surges from Hurricanes

SPLASH: Special Program to List Amplitudes of Surges from Hurricanes

SpNS: Special Needs Shelter (also SNS)

SRES: Statewide Regional Evacuation Studies

SRR: Shelter Retrofit Report

Appendix B

Glossary

Glossary

Approved: Acceptable to the authority having jurisdiction.

As-Is: Current or existing condition at the time of survey or review of the applicable documentation.

Barrier Island (Coastal): Geological features which lie above the line of mean high water and are completely surrounded by open marine waters that front upon the Gulf of Mexico, Atlantic Ocean, Florida Bay or Straits of Florida; reference Section 161.54(2), Florida Statutes.

Base Flood Elevation: 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.

Brick Veneer: A facing of brick masonry 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.

Buildings: Structures, usually enclosed by walls and a roof, constructed to provide support or shelter for an intended occupancy.

Building Enclosure: Exterior cladding, roof deck, walls, window and door assemblies, skylight assemblies, and other components enclosing a building and serving as a barrier between exterior and interior environments. Also known as building envelope.

Building Envelope: See Building Enclosure.

Certify: Statement in writing by a duly licensed professional attesting to compliance with a standard. Also, Certification.

Concrete Masonry Unit: 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 Support Systems: Structures, systems and components required to ensure the health, safety and well-being of occupants. Critical support systems include, but not limited to, life safety systems, potable and waste water systems, electrical power systems and heating, ventilation and air-conditioning (HVAC) systems.

Enclosed: A condition where there is insufficient opening area in the exterior enclosure of a building to cause unbalanced or excessive air pressure differences (either positive or negative) between the interior and exterior of the enclosure during a windstorm event.

Enhanced Hurricane Protection Area: A new educational facility, or portion thereof, designed, constructed, inspected and maintained in accordance with the Public Shelter Design Criteria, Section 453.25, *Florida Building Code—Building* in affect at the time of permitting by the Authority Having Jurisdiction.

Essential Facilities: Facilities that are classified as Risk Category IV in Table 1.5-1 of ASCE 7-10; Buildings and other structures that are intended to remain operational in the event of an extreme environmental loading condition (e.g., wind and flood).

Evacuation Shelter: A safe congregate care facility that provides services and is utilized for populations displaced by an emergency or disaster incident. An evacuation shelter may be located either inside (risk shelter) or outside (host shelter) of the disaster impact area and are typically operational for a period to not normally exceed 72 hours. Typically, these capacities are determined based on 20 square feet per person.

> **Risk Shelter:** Facilities designated as risk shelters may be located within the hazard risk zone (i.e., lie in the forecast path and associated error cone of an approaching hurricane or severe storm). Construction of these facilities meets established minimum safety requirements considered for least-risk decision making for the community.
>
> **Host Shelter:** A facility that is safe and provides services, and is located outside of a hazard risk zone.

Evacuees: Persons that have temporarily fled from flood-prone areas, manufactured housing or other wind-vulnerable structures.

Excluded Space: Spaces such as mechanical, electrical and telecommunication equipment rooms, storage rooms, exterior/outside circulation and open corridors, restrooms and shower areas, kitchen and food preparation rooms, science rooms and labs, computer and information technology labs, vocational and industrial technology shops and labs, library and media rooms and labs, administrative office and support areas, record vaults, attics and crawl spaces. Reference Section 453.25.3.1, *Florida Building Code—Building*.

Exiting Hurricane: Hurricanes that have crossed over land and approach a coastal area from an inland direction. Storm surge effects for a given category of storm are generally less intense in an Exiting hurricane than for a landfalling hurricane.

Fenestration: Design and placement of windows, doors, louvers, vents and other assemblies that penetrate through the exterior surface of a building or structure.

General Population Shelter: Location(s) that are, in whole or in part, to provide shelter and services to persons who have no other option for sheltering. These shelters provide basics such as food, water and basic first aid. Persons evacuating to a pet friendly shelter should bring their own supplies such as pet food, pet cages/carriers, blankets, toiletries/hygiene items, medications and clothing. To the extent possible, back-up generator power may be made available.

Guideline: Criterion, process or method established to assist to determine a course of action, but not necessarily required or enforceable by law. A framework that can assist in decision-making.

Hurricane Shelter: A building, structure, or portion(s) thereof, designated to serve as a place of relative safety during a threatening, imminent or occurring hurricane incident. Also known as Evacuation Shelter.

Included Space: All rooms and areas not included in the definition of excluded space.

Landfalling Hurricane: Hurricanes that approach a coastal area from a seaward direction. Storm surge effects for a given category of storm are more intense in a landfalling hurricane than for an Exiting or paralleling hurricane.

Leeward: Facing away from the direction of the oncoming wind flow; projected building surfaces on the opposite side than the wind encounters causing pulling loads or negative pressures.

Loadpath: The assemblage of structural components and connections that transfer wind loads from point or area of application through to the main wind force resisting system and then to the foundation.

Long Span (Roof): See Open Span.

Marginal: Lower end of suitability; less than preferred.

Mass-Care: Emergency provision of life sustaining services to ensure the health, safety and wellbeing of a congregate or collective population, to include shelter, food and water, sanitation, first aid, security, etc.

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

New Construction: Means any construction of a building or unit of a building in which the entire work is new. An addition connected to an existing building which adds square footage to the space inventory is considered new construction. See S.423.5.8, FBC-building.

Occupancy: The purpose for which a building or other structure, or part thereof, is used or intended to be used.

Occupant Support Areas: Areas required to ensure the health, safety and well-being of occupants. Occupant support areas may include, but not limited to, shelter management, food preparation, water and food storage, electrical and mechanical rooms, toilet and other sanitation rooms, and first-aid stations.

On-site: Means located either inside, immediately adjacent to, or on the same contiguous property grounds of a facility, building or place and under the control of the owner or lawful tenant.

Opening(s): Apertures or holes in a building enclosure (or envelope) which allow air to flow through into and out of a building.

Partially Enclosed: A condition where sufficient opening area in the exterior enclosure of a building may cause unbalanced or excessive air pressure differences (either positive or negative) between the interior and exterior of the enclosure during a windstorm event.

Person(s) with Special Needs: Someone who during periods of evacuation or emergency require sheltering assistance due to physical impairment, mental impairment, cognitive impairment, or sensory disabilities. See Rule 64-3.010(1), Florida Administrative Code.

Pet Friendly Shelter: Location(s) that are, in whole or in part, to provide shelter and services to persons with companion animals (pets) who have no other option for sheltering. These shelters may allow caregivers to remain with pets. These shelters provide basics such as food, water and basic first aid. Persons evacuating to a pet friendly shelter should bring their own supplies such as pet food, pet cages/carriers, blankets, toiletries/hygiene items, medications and clothing.

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; also, Standby Electrical System.

Qualitative: Assessment based upon empirical methods and observed qualities and characteristics.

Recognize: Acceptance or acknowledgement of validity based upon available observations, facts, documents and certifications. Also, recognition.

Reinforced 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. Reinforced masonry can generally be recognized by observing vertical reinforcement (rebar) spacing that do not exceed six times the nominal thickness (6t) of the masonry unit (this is 4 feet o.c. for 8” masonry). Partially reinforced masonry can generally be recognized by observing vertical rebar spacings greater than 6t, but less than about 10t (typically 8 feet o.c. for 8” masonry), or an acceptable alternative.

Remodeling: Means the changing of existing facilities by rearrangement of spaces and their use and includes, but is not limited to, the conversion of two classrooms to a science laboratory or the conversion of a closed plan arrangement to an open plan configuration.

Renovation: Means the rejuvenating or upgrading of existing facilities by installation or replacement of materials and equipment and includes, but is not limited to, interior or exterior reconditioning of facilities and spaces; air-conditioning, heating, or ventilating equipment; fire alarm systems; emergency

lighting; electrical systems; and complete roofing or roof replacement, including replacement of membrane or structure.

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

Roof cover: The exterior weather protection membrane of a roof assembly that is intended to prevent rainwater intrusion into the interior of a building.

Safe: Affording protection that is consistent with the intent of American Red Cross publication *Standards for Hurricane Evacuation Shelter Selection* (ARC 4496). Also, Safer and Safest.

Saffir-Simpson Hurricane Scale: The current prevalent system of classifying hurricane intensity in the Atlantic, Caribbean and East Pacific oceans. Hurricanes are categorized on a scale of 1 (minimum) to 5 (extreme) based on wind velocity and provides examples of types of damage and impacts in the United States associated with winds of the indicated intensity.

Sea, Lake and Overland Surges from Hurricanes (SLOSH): A computerized numerical model developed by the National Weather Service to estimate storm surge heights resulting from historical, hypothetical or predicted hurricanes by taking into account atmospheric pressure, size, forward speed and track data. These parameters are used to create a model of the wind field which drives the storm surge.

Shelter: A designated place, building or facility of relative safety that temporarily provides services with the goal of preserving life and reducing human suffering.

Shelter Envelope: Vertical and horizontal materials and assemblies that enclose a shelter area and serve as protective barriers from hurricane wind and debris hazards. The shelter envelope includes roof coverings, roof assembly, roof top vent & equipment penetrations for assemblies, exterior walls, door and window assemblies, glazing, skylight assemblies, louvers and where applicable floor and interior wall assemblies that separate the shelter from unprotected areas of a host building.

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

Site: The spatial location of existing or planned facility(s), ancillary structures and utilities, improvements and surrounding environment. A space of ground occupied or to be occupied by a facility or program.

Softspot: Portion(s) of a building's exterior enclosure constructed of materials that are likely to perform poorly in high winds and cause an opening, or easily penetrated by common windborne debris.

Special/Medical Needs Shelter (SpNS): Location(s) that are, in whole or in part, designated under Chapter 252 and Section 381.0303, Florida Statutes, to provide shelter and services to persons with special needs who have no other option for sheltering. These shelters are designated to have back-up generator power. Special needs shelter services are to minimize deterioration of pre-event levels of

health. See Rule 64-3.010(10), Florida Administrative Code. Typically, these capacities are determined based on 60 square feet per person.

Special Needs Client(s): See Person(s) with Special Needs.

Standard: Reference, criterion or procedure that is accepted or acknowledged as being authoritative, and establishes a minimum quantitative or qualitative measure or attribute that can be required and enforceable by law.

Standby Electrical System: Electrical work designed, installed or constructed as part of a facility's emergency, locally required and optional circuits to a permanent back-up generator-set (genset) or expedite safe connection to other optional power source; includes electrical and standby emergency power systems consistent with Section 453.25.5 and subsections.

Storm Surge: An abnormal rise in sea level accompanying a hurricane or other intense storm, and whose height is the difference between the observed level of the sea surface and the level that would have occurred in the absence of the storm. Storm surge is usually estimated by subtracting the normal or astronomical high tide from the observed storm tide.

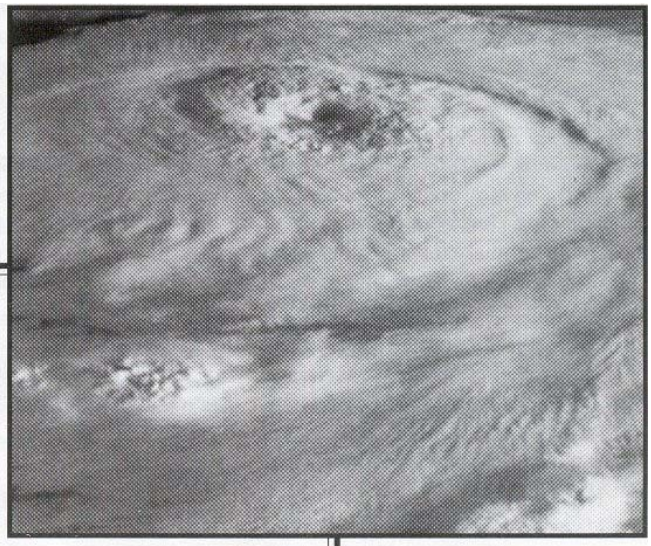
Survey: A gathering and assessment of provided or available information to be used as necessary to carry out the purposes of S. 252.35(2)(p) and 252.385(2)(a), Florida Statutes. Information may include data, facts, figures, opinions, reports, studies, maps, photographs, construction drawings, specifications and observation samplings.

Untenable: Unfit for occupancy; uninhabitable.

Windward: Facing into the direction of the oncoming wind flow; projected building surfaces that the wind encounters causing pushing loads or positive pressures.

Appendix C

American Red Cross
Standards for Hurricane Evacuation Shelter Selection (ARC 4496)



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.

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
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Appendix D

Methodology for Prioritizing Projects for Funding

METHODOLOGY FOR PRIORITIZING PROJECTS FOR FUNDING

The Division has developed a point based priority ranking methodology to prioritize recommended projects. The methodology is consistent with Section 252.385, F.S., and the Division's hurricane evacuation shelter survey guidelines. Factors that were considered in the retrofit proposal review process were regional and local hurricane shelter space deficit; facility design, construction and location considerations (American Red Cross standard ARC 4496); proposed hurricane evacuation shelter type (general population, special/medical needs, or pet-friendly); maximize use of state funds/cost-effectiveness; ownership and shelter use availability of the facility; etc. See Appendix H for an example of the 2018 Project Priority Worksheet. The factors considered for priority ranking this year are generally consistent with those used in previous Shelter Retrofit Reports (SRR). The exceptions being that additional emphasis has been placed on special/medical needs shelters (SpNS) and on retrofitting facilities designed and constructed to the most recent building codes and standards. Projects carried over from the 2017 SRR were reevaluated on changes in the shelter deficits (region and/or county, if any), and on additional information provided in updates from the counties.

The hurricane evacuation shelter space deficit information used for this report was published in the *2018 Statewide Emergency Shelter Plan* (SESP). The 2018 SESP determined that seven out of ten regions had no hurricane evacuation shelter space deficits; the exceptions being Central Florida (RPC 6), Tampa Bay (RPC 7), and Southwest Florida (RPC 8). However, even though there may be sufficient cumulative capacity within regions, many individual counties still have deficits. The 2018 SESP determined that all but two regions of the state, West Florida (RPC 1) and South Florida (RPC 10), have SpNS space deficits. Therefore, scoring items were added for both regional and county SpNS deficits. The combined maximum score of all four shelter space deficit-based items is 175 of a total maximum of 700 points.

In prioritizing projects, the Division based its ranking scores on the criteria described 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 the facility excluded 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 uncertified long span roof, unreinforced masonry walls or storm surge flooding. The following is a listing of the specific criteria used by Division staff to rank each project based upon information provided with each project proposal.

1. Proposed project is located within an RPC Region with a deficit of General Population Hurricane Evacuation Risk Shelter Space. (Maximum of 75 points)

Section 252.385(3), F.S., directs that priority be given to regions of the state where shelter deficits are greatest. Regional hurricane evacuation shelter space deficit data was provided by the 2018 SESP. A maximum of 75 points was given for those facilities that are located in regions with the most severe

shelter space deficits (< 10 sf of floor space per evacuee). Lesser points were given to retrofit projects in regions with less severe deficits.

2. Proposed project is located within a County with a deficit of General Population Hurricane Evacuation Risk Shelter Space. (Maximum of 50 points)

Though regions are the highest priority in ranking, evacuations are generally local with emergency managers recommending that evacuees travel tens of miles instead of hundreds. County hurricane evacuation shelter space deficit data was provided by the 2018 SESP. A maximum of 50 points was given for those facilities that are located in a county with a severe shelter space deficit (< 10 sf of floor space per evacuee). Lesser points were given to retrofit projects in counties with less severe deficits.

3. Proposed project is located within an RPC Region with a deficit of Special/ Medical Needs Hurricane Evacuation Risk Shelter Space. (Maximum of 30 points)

The 2018 SESP identified that even when there may be sufficient general population shelter space, there may still be a deficit in SpNS. Therefore, this new item has been added to place priority on this type of retrofit project. Regional hurricane evacuation shelter space deficit data was provided by the 2018 SESP. A maximum of 30 points was given for those facilities that are located in regions with the most severe shelter space deficits (< 30 sf of floor space per person with special needs (PSN) evacuee). Lesser points were given to retrofit projects in regions with less severe deficits.

4. Proposed project is located within a County with a deficit of Special/Medical Needs Hurricane Evacuation Risk Shelter Space. (Maximum of 20 points)

Though regions are the highest priority in ranking, evacuations are generally local with emergency managers recommending that evacuees travel tens of miles instead of hundreds. The 2018 SESP identified that even when there may be sufficient general population shelter space, there may still be a deficit in SpNS. Therefore, this new item has been added to place priority on this type of retrofit project. County hurricane evacuation SpNS space deficit data was provided by the 2018 SESP. A maximum of 20 points was given for those facilities that are located in a county with a severe SpNS space deficit (< 30 sf of floor space per PSN evacuee). Lesser points were given to retrofit projects in counties with less severe deficits.

5. Recognized Multi-County or Regional Hurricane Evacuation Risk Shelter Destination. (Maximum of 50 points)

Points were allocated for counties that are recognized to serve as a risk shelter destination for other counties with very limited or no Category 4/5 hurricane evacuation risk sheltering options. The maximum points were allocated to those with 300+ SpNS spaces, and lesser points were given to those with fewer SpNS or general population-only spaces. Recognition as a risk shelter destination county is based on acknowledgement by the applicable destination county's emergency management director, one or more evacuation county emergency management directors, the Division and other applicable state and local agencies.

6. Project Building is a Designated Special/Medical Needs Hurricane Evacuation Risk Shelter. (Maximum of 25 points) YES or No

If yes, then the project was allocated 25 pts. If no or not known, then zero points were allocated.

7. Project Building is a Designated Pet-Friendly Hurricane Evacuation Risk Shelter. (Maximum of 25 points) YES or No

If yes, then the project was allocated 25 pts. If no or not known, then zero points were allocated.

8. Facility Ownership and Availability for use as a Public Hurricane Evacuation Risk Shelter. (Maximum of 50 points)

A maximum of 50 points was allocated, depending on ownership and availability status. Lesser points were given to retrofit projects that may have limitations on their public shelter availability during a disaster.

Public facilities receive the highest priority based on their availability. Public facilities are generally those that are subject to inclusion in the Division's public hurricane evacuation shelter survey program. Private facilities, such as religious, civic or fraternal organizations' multi-purpose buildings, private schools, arenas, stadiums, convention or conference centers were recommended for retrofit based upon local need for public shelter space, previous history as a public shelter and/or existing written agreements and endorsement by the local emergency management director. Full availability means that, during a declared local state of emergency and upon request by local emergency management, the public shelter function will take priority over all other activities. Limited availability is all other conditions.

9. Flood Hazard and Building Design and Construction Criteria. (Maximum of 125 points)

The Division recommends that all hurricane shelters be reviewed for consistency with the American Red Cross's *Standards 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, etc.), year built to determine design wind code requirements, presence of interior core area or storm room, and other construction factors must be included in the decision to utilize the building as a hurricane evacuation 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 hurricane performance. Storm surge and rainfall are also important factors when reviewing and prioritizing a building as a potential hurricane evacuation shelter.

A maximum of 125 points was allocated based on how well the given facility is demonstrated to conform to ARC 4496 guidelines after completion of the proposed retrofit. These criteria are used to maximize the hurricane safety provided by a specific retrofit project.

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 project from recommendation. The point system used for this item is generally consistent with Section 1013.372(1), 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 25 points was allocated based on the National Flood Insurance Program (NFIP) Flood Insurance Rate Map (FIRM) flood zone (as established in the most recently published FIRM). If this information was not provided, no points were allocated. Generally, buildings in FIRM zones with an "A" designation received very limited or no points. Recommendations for projects in A zones may require 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 uncertified 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 50 points was allocated for based on the building's wind design code. Building's designed and constructed to the Florida Building Code (2003-present) are

expected to perform better than those designed and constructed to older less-modern codes. Lesser points were given to retrofit projects designed and constructed to modern wind codes and standards of the 1990's and early 2000's. If the building's wind code is unknown or from an edition prior to 1989 then zero points were allocated.

10. Numerical increase in Public Hurricane Evacuation Risk Shelter space due to this proposed retrofit project. (Maximum of 75 points)

A maximum of 75 points was allocated based on numerical increase in shelter hurricane evacuation risk shelter space capacity. No points were allocated for shelter spaces already in the inventory. This item serves to maximize use of state funds.

11. Structural Envelope & Essential Equipment Protection. (Maximum of 50 points)

A maximum of 50 points was allocated if the retrofit project included only minor building envelope protection-type projects (i.e., windows, doors, louver/vent openings, skylights or other fenestration or wall soft spot protection) to meet ARC 4496. Lesser points were allocated when additional engineering services or building equipment protection enclosures were required. This item serves to maximize use of state funds for hurricane safety improvements. No points were allocated if major structural work was required.

12. Cost-effectiveness considerations. (Maximum of 50 points)

A maximum of 50 points was allocated depending on the average cost per space of the proposed project; i.e., cost-effectiveness. This was based on the total proposed cost divided by the total quantity of hurricane evacuation risk shelter spaces gained. If the number of spaces, or costs, could not be determined, no points were allocated. This item serves to maximize use of state funds.

13. Project specified in Local Mitigation Strategy. (Maximum of 50 points)

A maximum of 50 points was allocated if the specific project building was referenced in a county's Local Mitigation Strategy (LMS). Lesser points were given to retrofit projects with less specificity in the LMS. If no or not known then zero points were allocated.

14. Project Engineering and/or Construction Timeline/Duration. (Maximum of 25 points)

If the project was proposed to be completed within a fiscal year then it was awarded the maximum of 25 pts. Lesser points were given to retrofit projects with a proposed construction timeline of between 1 and 2 years. If no timeline was provided then zero points were allocated.

Appendix E

E 1 Prioritized List of Recommended Projects
E 2 Projects Offered or Contracted

E-1 Prioritized List of Recommended Construction-Related Projects

RPC	County	Site Name/Bldg ID	Year Built	Spaces Added	Project Description	SRR Project Estimate	Cost per Space	Origin SRR Year	Rank
1	Bay	Everitt MS Caf 5	1999	214	Fenestration Protection	$107,000	$500	2018	466
1	Bay	Everitt MS Caf 5	1999	135	Fenestration Protection	$30,375	$225	2018	466
1	Bay	Everitt MS Caf 6	1999	145	Fenestration Protection	$32,625	$225	2018	466
2	Calhoun	Altha ES CR 200	2015	129	Fenestration Protection/GenSet	$64,500	$500	2018	455
2	Calhoun	Altha ES CR 500	2015	129	Fenestration Protection/GenSet	$64,500	$500	2018	455
2	Calhoun	Bountstown HS	1999	129	Fenestration Protection/GenSet	$64,500	$500	2018	355
2	Gadsden	East Gadsden HS 200	2001	525	Fenestration Protection	$118,125	$225	2018	480
2	Gadsden	East Gadsden HS 300	2001	525	Fenestration Protection	$118,125	$225	2018	480
2	Gadsden	Greensboro ES (AKA HS) Classroom	1994	454	Fenestration Protection	$68,061	$150	2015	242
2	Gadsden	Greensboro ES (AKA HS) Dining	1994	187	Fenestration Protection	$45,952	$246	2015	237
2	Gadsden	Havana MS Classroom	1992	162	Fenestration Protection	$164,560	$1,016	2015	242
2	Gadsden	West Gadsden MS 600	2005	104	Fenestration Protection	$23,400	$225	2018	455
2	Jefferson	Jefferson Central HS Gym	2016	435	Fenestration Protection	$27,265	$63	2017	419
2	Jefferson	Jefferson County K-12 Art/Music 7	2003	317	Fenestration Protection	$71,325	$225	2018	450
2	Jefferson	Jefferson County K-12 CR 2	2003	233	Fenestration Protection	$52,425	$225	2018	450
2	Jefferson	Jefferson County K-12 CR 3	2003	203	Fenestration Protection	$45,675	$225	2018	450
2	Jefferson	Jefferson County K-12 CR 5	2003	226	Fenestration Protection	$50,850	$225	2018	450

E-1 Prioritized List of Recommended Construction-Related Projects

RPC	County	Site Name/Bldg ID	Year Built	Spaces Added	Project Description	SRR Project Estimate	Cost per Space	Origin SRR Year	Rank
2	Jefferson	Jefferson County K-12 CR 6	2003	268	Fenestration Protection	$60,300	$225	2018	450
2	Jefferson	Jefferson County K-12 CR 9	2003	242	Fenestration Protection	$54,450	$225	2018	450
2	Jefferson	Jefferson County K-12 Library 4	2003	40	Fenestration Protection	$9,000	$225	2018	450
2	Leon	FAMU DRS School 200 Admin/Media	2007	40	Fenestration Protection	$16,600	$415	2012	411
2	Leon	FAMU DRS School 300 Clsrm	2007	672	Fenestration Protection	$183,975	$274	2012	411
2	Leon	FAMU DRS School 500 Clsrm	2007	532	Fenestration Protection	$119,700	$225	2012	411
2	Leon	FAMU DRS School 600 Clsrm	2007	557	Fenestration Protection	$40,500	$73	2012	411
2	Leon	Lawton Chiles HS 14	2007	180	Fenestration Protection	$40,500	$225	2018	435
2	Leon	Lawton Chiles HS 3	1997	327	Fenestration Protection	$73,575	$225	2018	435
2	Leon	Lawton Chiles HS 5	1998	605	Fenestration Protection	$136,125	$225	2018	435
2	Leon	Lawton Chiles HS 6	1998	618	Fenestration Protection	$139,050	$225	2018	435
2	Leon	Lawton Chiles HS 7	1998	307	Fenestration Protection	$69,075	$225	2018	435
2	Leon	Lawton Chiles HS 8	1998	227	Fenestration Protection	$51,075	$225	2018	435
2	Leon	Lawton Chiles HS 9	2004	179	Fenestration Protection	$40,275	$225	2018	435
2	Leon	Woodville ES CR 7	2005	132	Fenestration Protection	$29,700	$225	2018	390
2	Wakulla	Crawfordville ES 2	2000	330	Fenestration Protection	$74,250	$225	2018	457
2	Wakulla	Crawfordville ES 3	2000	243	Fenestration Protection	$54,675	$225	2018	455
2	Wakulla	Crawfordville ES 4	2000	27	Fenestration Protection	$6,075	$225	2018	455
2	Wakulla	Crawfordville ES 5	2000	255	Fenestration Protection	$57,375	$225	2018	455
2	Wakulla	Crawfordville ES 6	2000	294	Fenestration Protection	$66,150	$225	2018	455
2	Wakulla	Crawfordville ES 7	2000	270	Fenestration Protection	$60,750	$225	2018	455

E-1 Prioritized List of Recommended Construction-Related Projects

RPC	County	Site Name/Bldg ID	Year Built	Spaces Added	Project Description	SRR Project Estimate	Cost per Space	Origin SRR Year	Rank
2	Wakulla	Riversink ES 200	2007	435	Fenestration Protection	$97,875	$225	2018	455
2	Wakulla	Riversink ES 300	2007	312	Fenestration Protection	$70,200	$225	2018	455
2	Wakulla	Riversink ES 400	2007	27	Fenestration Protection	$6,075	$225	2018	455
2	Wakulla	Riversink ES 500	2007	446	Fenestration Protection	$100,350	$225	2018	455
2	Wakulla	Riversink ES 600	2007	398	Fenestration Protection	$89,550	$225	2018	455
2	Wakulla	Riversprings MS 1a	1999	223	Fenestration Protection	$50,175	$225	2018	355
2	Wakulla	Riversprings MS 1b	1999	227	Fenestration Protection	$51,075	$225	2018	355
2	Wakulla	Riversprings MS 1c	1999	268	Fenestration Protection	$60,300	$225	2018	355
2	Wakulla	Riversprings MS 1d	1999	24	Fenestration Protection	$5,400	$225	2018	355
2	Wakulla	Shadeville ES 1a	1989	473	Fenestration Protection	$106,425	$225	2018	355
2	Wakulla	Shadeville ES 1b	1989	249	Fenestration Protection	$56,025	$225	2018	355
2	Wakulla	Shadeville ES 1c	1989	249	Fenestration Protection	$56,025	$225	2018	355
2	Wakulla	Shadeville ES 3A	2002	78	Fenestration Protection	$17,550	$225	2018	355
2	Wakulla	Shadeville ES 3B	2007	77	Fenestration Protection	$17,325	$225	2018	355
2	Wakulla	Shadeville ES 4	1992	312	Fenestration Protection	$70,200	$225	2018	355
3	Alachua	Grace Marketplace Center Dorm 11	2011	252	Fenestration Protection	$55,440	$220	2017	510
3	Alachua	C.W. Duval ES 4 Cafetrm	1997	225	Fenestration Protection	$23,250	$103	2015	217
3	Alachua	H. Bishop MS Clsrm	2004	186	Fenestration Protection	$32,550	$175	2016	372
3	Alachua	J. Williams ES 6 Clsrm	1998	230	Fenestration Protection	$62,100	$270	2014	162
3	Alachua	J. Williams ES 7 Cafetorium	1998	210	Genset protect enclosure	$62,100	$296	2014	162

E-1 Prioritized List of Recommended Construction-Related Projects

RPC	County	Site Name/Bldg ID	Year Built	Spaces Added	Project Description	SRR Project Estimate	Cost per Space	Origin SRR Year	Rank
3	Alachua	Lofton HS 24 Café/Clsrm	2007	670	Fenestration Protection	$300,000	$448	2016	565
3	Alachua	Oakview MS 6c Music	1993	447	Engineering & Fenestration	$23,200	$52	2014	245
3	Alachua	Rawlings ES 4 Cafetrm	2006	207	Fenestration Protection	$28,200	$136	2014	540
3	Alachua	Santa Fe HS 34 Clsrm (west)	2008	414	Fenestration Protection	$206,850	$500	2014	265
3	Alachua	W. Talbot ES 3 Cafetorium	1984	172	Engineering & genset	$0	$0	2014	480
3	Alachua	W. Talbot ES 4 Clsrm	2005	379	Fenestration Protection	$50,400	$133	2014	480
3	Alachua	W.W. Irby ES 3 Cafetrm	1991	262	Fenestration Protection	$16,650	$64	2014	477
3	Columbia	Fort White HS 5 Clsrm	1999	510	Fenestration Protection	$136,082	$267	2007	277
3	Columbia	Fort White HS 9 Café	1999	367	Fenestration Protection	$71,932	$196	2007	277
3	Columbia	Fort White MS 26 Clsrm	2007	108	Fenestration Protection	$122,808	$1,137	2016	282
3	Columbia	Fort White MS 27 M-Purpose	2007	162	Fenestration Protection	$87,000	$537	2016	282
3	Columbia	Fort White MS 28 Clsrm	2007	186	Fenestration Protection	$72,000	$387	2016	282
3	Columbia	Fort White MS 29 Clsrm	2010	229	Fenestration Protection	$90,000	$393	2016	282
3	Hamilton	Hamilton Co ES Caf 3	2015	2250	Fenestration Protection	$506,250	$225	2018	505
3	Hamilton	Hamilton Co HS Caf 2	2002/3	746	Fenestration Protection	$167,850	$225	2018	390
3	Lafayette	Lafayette County HS CR 3	1991	257	Fenestration Protection/ Generator Protection/ SES	$57,825	$225	2018	325
3	Lafayette	Lafayette County HS Gym 32 / Café 2	1996	603	Fenestration Protection/ Generator Protection/ SES	$135,675	$225	2018	325

E-1 Prioritized List of Recommended Construction-Related Projects

RPC	County	Site Name/Bldg ID	Year Built	Spaces Added	Project Description	SRR Project Estimate	Cost per Space	Origin SRR Year	Rank
3	Taylor	Taylor ES CR 3	2002	672	Fenestration Protection	$147,840	$220	2017	492
3	Taylor	Taylor ES CR 4	2002	292	Fenestration Protection	$64,240	$220	2017	492
3	Taylor	Taylor ES CR 5	2002	341	Fenestration Protection	$75,020	$220	2017	492
3	Taylor	Taylor ES CR 6	2002	571	Fenestration Protection	$125,620	$220	2017	492
4	Clay	Argyle ES 3 Clsrm	2003	285	Fenestration Protection	$160,000	$561	2016	385
4	Duval	Bartram Springs ES 1A CR	2009	374	Fenestration Protection	$30,150	$225	2018	356
4	Duval	Bartram Springs ES 1B CR	2009	455	Fenestration Protection	$101,025	$225	2018	356
4	Duval	DASA Auditorium	2010	400	Fenestration Protection	$100,000	$250	2016	467
4	Duval	DASA cafeteria	2015	434	Fenestration Protection	$100,000	$230	2016	467
4	Duval	Don Brewer ES 1D CR	2002	801	Fenestration Protection	$76,950	$225	2018	330
4	Duval	Kernan Trails ES 1D CR	2002	839	Fenestration Protection	$80,700	$225	2018	330
4	Duval	Oceanway ES 1D CR	2002	827	Fenestration Protection	$180,225	$225	2018	330
4	Duval	Waterleaf ES 1B CR	2011	449	Fenestration Protection	$79,875	$225	2018	360
4	Flagler	Belle Terre ES 3	2005	464	Fenestration Protection	$104,400	$225	2018	340
4	Flagler	Belle Terre ES 4	2005	298	Fenestration Protection	$67,050	$225	2018	340
4	Flagler	Belle Terre ES 6	2005	438	Fenestration Protection	$98,550	$225	2018	340
4	Flagler	Belle Terre ES 7	2005	201	Fenestration Protection	$45,225	$225	2018	340
4	Flagler	Matanzas High School 1CR	2004	558	Fenestration Protection	$133,100	$239	2,017	179
4	Flagler	Matanzas High School 2 Aud	2004	436	Fenestration Protection	$122,760	$282	2,017	179
4	Flagler	Matanzas High School 5CR	2004	1059	Fenestration Protection	$95,920	$91	2,017	179
4	Flagler	Matanzas High School 9CR	2005	748	Fenestration Protection	$232,980	$311	2,017	179
4	Flagler	Wadsworth ES CR 6 Caf	2007	1464	Fenestration Protection	$133,100	$91	2017	512

E-1 Prioritized List of Recommended Construction-Related Projects

RPC	County	Site Name/Bldg ID	Year Built	Spaces Added	Project Description	SRR Project Estimate	Cost per Space	Origin SRR Year	Rank
4	Nassau	Bryceville ES 2 Clsrm	2005	177	Fenestration Protection	$36,000	$203	2017	177
4	Nassau	Bryceville ES 7 Clsrm	2007	167	Fenestration Protection	$36,000	$216	2017	187
4	Nassau	Callahan IS 1 Cafetrm (1993 Addition)	1993	266	Fenestration Protection	$43,200	$162	2017	177
4	Nassau	Callahan IS 3 Clsrm	1999	215	Fenestration Protection	$45,450	$211	2017	177
4	Nassau	Callahan IS 4 Clsrm	1999	265	Fenestration Protection	$43,200	$163	2017	177
4	Nassau	Callahan IS 5 Clsrm	1999	263	Fenestration Protection	$43,200	$164	2017	177
4	Nassau	Callahan IS 6 Clsrm	1999	194	Fenestration Protection	$43,200	$223	2017	177
4	Nassau	Callahan IS 7 Clsrm	2009	190	Fenestration Protection	$32,400	$171	2017	190
4	Nassau	Callahan MS 3 Clsrm	2003	376	Fenestration Protection	$54,600	$145	2017	177
4	Nassau	Wildlight ES 3	2017	386	Fenestration Protection	$86,850	$225	2018	427
4	Nassau	Wildlight ES 4	2017	351	Fenestration Protection	$78,975	$225	2018	427
4	Nassau	Wildlight ES 5	2017	393	Fenestration Protection	$88,425	$225	2018	427
4	Nassau	Wildlight ES 6	2017	359	Fenestration Protection	$80,775	$225	2018	427
4	Nassau	Yulee HS 4 Gym	2005	350	Fenestration Protection	$77,000	$220	2017	195
4	Nassau	Yulee HS 6 Café	2005	350	Fenestration Protection	$77,000	$220	2017	195
4	Nassau	Yulee PS 10 Clsrm	2009	190	Fenestration Protection	$43,200	$227	2017	195
4	Nassau	Yulee PS 7 Cafetrm	1986	170	Fenestration Protection	$19,500	$115	2017	85
4	Putnam	St. Johns River SC- V Cafeteria/Commons	1964	260	Engineering & Fenestration	$57,980	$223	2016	50
5	Lake	Eastridge HS Caf triplex	1996	328	Fenestration Protection		$0	2018	385
5	Lake	Eastridge MS Caf	2001	328	Fenestration Protection	$204,800	$624	2017	485

E-1 Prioritized List of Recommended Construction-Related Projects

RPC	County	Site Name/Bldg ID	Year Built	Spaces Added	Project Description	SRR Project Estimate	Cost per Space	Origin SRR Year	Rank
5	Lake	Astatula ES/Caf	1999	231	Fenestration Protection and Genset	$51,975	$225	2018	307
5	Lake	Eastridge HS Gym triplex	1996	600	Fenestration Protection	$132,000	$220	2018	385
5	Lake	Eastridge HS Aud triplex	1996	320	Fenestration Protection	$0	$0	2018	385
5	Lake	Eastridge MS Gym	2001	600	Fenestration Protection	$132,000	$220	2017	485
5	Lake	Eastridge MS Music	2007	120	Fenestration Protection	$56,250	$469	2017	485
5	Lake	Pine Ridge ES/Caf	2002	213	Fenestration Protection and Genset	$47,925	$225	2018	415
5	Lake	Round Lake Charter School/Caf	2000	210	Fenestration Protection and Genset	$47,250	$225	2018	415
5	Lake	Southlake SHS Cafeteria	2004	400	Genset	$167,850	$420	2017	485
5	Lake	The Villages ES Caf	1998	230	Fenestration Protection	$178,836	$778	2017	312
5	Orange	Avalon MS 2 Clsrm	2006	335	Fenestration Protection	$47,464	$142	2009	177
5	Orange	Avalon MS 6 Clsrm	2006	425	Fenestration Protection	$60,595	$143	2009	177
5	Orange	Avalon MS 7 Clsrm	2006	491	Fenestration Protection	$60,922	$124	2009	177
5	Orange	Avalon MS 8 Clsrm	2006	433	Fenestration Protection	$60,868	$141	2009	177
5	Orange	Barnett Park Rec Center Gym	2009	562	Fenestration Protection / Genset	$205,000	$292	2018	300
5	Orange	Bithlo Park Rec Center	1996	400	Eng Study, Fenestration Protection / Genset	$205,000	$512	2018	400
5	Orange	Discovery MS 2 Clsrm	1995	726	Fenestration Protection	$138,460	$191	2009	159
5	Orange	Discovery MS 3 Clsrm	1995	764	Fenestration Protection	$138,631	$181	2009	159
5	Orange	Discovery MS 6 Clsrm	1995	274	Fenestration Protection	$41,633	$152	2009	159

E-1 Prioritized List of Recommended Construction-Related Projects

RPC	County	Site Name/Bldg ID	Year Built	Spaces Added	Project Description	SRR Project Estimate	Cost per Space	Origin SRR Year	Rank
5	Orange	Discovery MS 7 Gym	1995	618	Fenestration Protection	$60,871	$98	2009	159
5	Orange	Discovery MS 8 Café	1995	382	Fenestration Protection	$50,996	$133	2009	159
5	Orange	Gotha MS 2 Clsrm	1994	597	Fenestration Protection	$143,588	$241	2009	165
5	Orange	Gotha MS 6 Clsrm	1994	257	Fenestration Protection	$41,965	$163	2009	165
5	Orange	Gotha MS 7 Gym	1994	686	Fenestration Protection	$61,084	$89	2009	165
5	Orange	Gotha MS 8 Café	1994	382	Fenestration Protection	$44,050	$115	2009	165
5	Orange	Hunters Creek MS 3 Clsrm	1995	681	Fenestration Protection	$138,651	$204	2009	175
5	Orange	Hunters Creek MS 6 Clsrm	1995	234	Fenestration Protection	$40,889	$175	2009	175
5	Orange	Hunters Creek MS 7 Gym	1995	641	Fenestration Protection	$61,851	$96	2009	175
5	Orange	Hunters Creek MS 8 Cafe	1995	289	Fenestration Protection	$45,151	$156	2009	175
5	Orange	Legacy MS 2 Clsrm	2006	345	Fenestration Protection	$47,481	$138	2009	160
5	Orange	Legacy MS 6 Clsrm	2006	466	Fenestration Protection	$60,681	$130	2009	160
5	Orange	Legacy MS 7 Clsrm	2006	489	Fenestration Protection	$60,921	$125	2009	160
5	Orange	Legacy MS 8 Clsrm	2006	430	Fenestration Protection	$60,598	$141	2009	160
5	Orange	Meadow Wood MS 2 Clsrm	1997	726	Fenestration Protection	$164,989	$227	2009	172
5	Orange	Meadow Wood MS 6 Clsrm	1997	237	Fenestration Protection	$41,487	$175	2009	172
5	Orange	Meadow Wood MS 7 Gym	1997	501	Fenestration Protection	$61,142	$122	2009	172
5	Orange	Meadow Wood MS 8 Café	1997	307	Fenestration Protection	$46,674	$152	2009	172
5	Orange	Meadowbrook MS 6 Clsrm	2006	532	Fenestration Protection	$61,576	$116	2009	165
5	Orange	Meadowbrook MS 7 Clsrm	2006	528	Fenestration Protection	$61,534	$117	2009	165
5	Orange	Meadowbrook MS 8 Clsrm	2006	470	Fenestration Protection	$60,681	$129	2009	165

E-1 Prioritized List of Recommended Construction-Related Projects

RPC	County	Site Name/Bldg ID	Year Built	Spaces Added	Project Description	SRR Project Estimate	Cost per Space	Origin SRR Year	Rank
5	Orange	Orange/Rec Magic Gyms Goldenrod	2008	1,123	Fenestration Protection / Genset	$320,375	$285	2018	450
5	Orange	Orange/Rec Magic Gyms Meadow Woods	2008	1,123	Fenestration Protection / Genset	$320,375	$285	2018	450
5	Orange	Orange/Rec Magic Gyms S. Econ	2008	1,123	Fenestration Protection / Genset	$320,375	$285	2018	500
5	Orange	Orange/Rec Magic Gyms Silver Star	2008	1,123	Fenestration Protection / Genset	$320,375	$285	2018	477
5	Orange	Orange/Rec Magic Gyms W. Orange	2008	1,123	Fenestration Protection / Genset	$320,375	$285	2018	500
5	Orange	Wekiva HS 4 Clsrm	2007	807	Fenestration Protection	$178,836	$222	2009	157
5	Orange	Wekiva HS 8 Audtrm/Clsrm	2007	776	Fenestration Protection	$108,121	$139	2009	157
5	Orange	West Orange HS 4 Clsrm	2008	710	Fenestration Protection	$176,229	$248	2009	172
5	Orange	West Orange HS 5 Clsrm	2008	1,628	Fenestration Protection	$247,726	$152	2009	172
5	Orange	West Orange HS 6 Clsrm	2008	792	Fenestration Protection	$170,537	$215	2009	172
5	Orange	West Orange HS 8 Audtrm/Clsrm	2008	777	Fenestration Protection	$127,198	$164	2009	172
5	Osceola	Chestnut ES Caf	2005	322	Fenestration Protection	$72,450	$225	2018	365
5	Seminole	Oviedo HS Gym	2007	799	Fenestration Protection	$175,780	$220	2015	242
5	Sumter	Lake Panasoffkee ES	1998	231	Fenestration Protection	$72,900	$316	2013	167
5	Sumter	South Sumter HS	2001	352	Fenestration Protection	$66,150	$188	2013	242
5	Sumter	South Sumter MS	2000	332	Fenestration Protection	$68,850	$208	2013	227
5	Sumter	South Sumter MS	2000	332	Fenestration Protection	$68,850	$208	2013	202
5	Sumter	Wildwood MS	2001	318	Fenestration Protection	$68,850	$217	2013	150

E-1 Prioritized List of Recommended Construction-Related Projects

RPC	County	Site Name/Bldg ID	Year Built	Spaces Added	Project Description	SRR Project Estimate	Cost per Space	Origin SRR Year	Rank
5	Volusia	Daytona Beach CC-Deland CR 8	2002	130	Fenestration Protection	$29,250	$225	2018	475
5	Volusia	Deland HS Aud 1	2003	639	Fenestration Protection	$143,775	$225	2018	475
5	Volusia	Deland HS Café 5	2003	391	Fenestration Protection	$87,975	$225	2018	475
5	Volusia	Deland HS CR 14	2003	585	Fenestration Protection	$131,625	$225	2018	475
5	Volusia	Deland HS CR 15	2003	592	Fenestration Protection	$133,200	$225	2018	475
5	Volusia	Deland HS CR 17	1999	614	Fenestration Protection	$138,150	$225	2018	325
5	Volusia	Deland HS Gym 2	1999	773	Fenestration Protection	$173,925	$225	2018	325
5	Volusia	Mainland HS Classroom 5	2004	128	Fenestration Protection	$28,900	$226	2014	157
5	Volusia	Mainland HS CR 2A	2006	0	Fenestration Protection	$0	$225	2018	475
5	Volusia	Mainland HS CR 2B	2006	1,341	Fenestration Protection	$301,725	$225	2018	475
5	Volusia	Mainland HS CR 3	2006	244	Fenestration Protection	$54,900	$225	2018	475
5	Volusia	Mainland HS CR 5	2006	129	Fenestration Protection	$29,025	$225	2018	475
5	Volusia	Southwestern MS Gym 5A	2004	385	Fenestration Protection	$86,625	$225	2018	475
6	DeSoto	DeSoto HS Café	1977/ 2005	510	Fenestration Protection	$114,750	$225	2018	425
6	DeSoto	Memorial MS CR 15	1999	105	Fenestration Protection	$23,625	$225	2018	325
6	Hardee	Hardee JHS Media	2002	450	Fenestration Protection	$54,900	$225	2018	355
6	Hardee	Hardee JHS Music	2002	450	Fenestration Protection	$54,900	$225	2018	355
6	Hardee	South Florida State College	2007	322	Fenestration Protection	$72,450	225	2018	410
6	Hardee	Wauchula ES 5 ESE Clsrm	1998	111	Fenestration & MEP/genset	$54,900	$495	2015	106

E-1 Prioritized List of Recommended Construction-Related Projects

RPC	County	Site Name/Bldg ID	Year Built	Spaces Added	Project Description	SRR Project Estimate	Cost per Space	Origin SRR Year	Rank
6	Hardee	Wauchula ES 6 Media	1998	109	Fenestration & MEP/genset	$160,000	$1,468	2015	106
6	Hardee	Zolfo Springs ES 10 Clsrm (3rd Grade)	2002	0	Engineering	$20,000	$225	2014	105
6	Hardee	Zolfo Springs ES 9 Media	1994	0	Engineering	$20,000	1	2014	105
6	Highlands	MLK Jr Memorial Field Gym	2002	415	Engineering Study	$15,000	$1	2018	430
6	Highlands	Reflections on Silver Lake Com. Cent.	2005	75	Fenestration Protection	$16,875	$225	2018	455
6	Polk	Eloise Community Center	1998	1,246	Fenestration Protection	$274,120	$220	2007	160
6	Polk	Stuart Center	1995	1,000	Engineering	$50,000	$50	2007	50
7	Citrus	Central Ridge ES 1 East Wing/CR	2006	733	Fenestration Protection	$115,768	$158	2016	350
7	Citrus	Central Ridge ES 1 Main/Admin & Media	2006	125	Fenestration Protection	$44,232	$354	2016	350
7	Hernando	Chacahatti ES 3 Cafetrm	1994	220	Engineering & Fenestration	$39,700	$180	2013	222
7	Hernando	Chacahatti ES 4 Clsrm	1994	206	Engineering & Fenestration	$132,750	$644	2013	222
7	Manatee	Annie L Williams ES 1 CR/Clinic - 2nd Floor	2007	934	Fenestration Protection	$80,700	$86	2007	347
7	Manatee	Gullett ES 1 CR/Clinic -2nd Floor	2007	934	Fenestration Protection	$80,700	$86	2007	337
7	Manatee	Lakewood Ranch HS 200-A Band/Music	1996	306	Engineering & Fenestration	$117,358	$384	2000	165

E-1 Prioritized List of Recommended Construction-Related Projects

RPC	County	Site Name/Bldg ID	Year Built	Spaces Added	Project Description	SRR Project Estimate	Cost per Space	Origin SRR Year	Rank
7	Manatee	Lakewood Ranch HS 200-B Auditorium	1996	543	Engineering & Fenestration	$3,500	$6	2000	165
7	Manatee	Lakewood Ranch HS 300 Cafeteria	1996	466	Eng & Fenestration & genset	$134,676	$289	2000	165
7	Manatee	Lee MS 1-G Clsrm	2000	391	Fenestration & genset	$12,629	$32	2015	175
7	Pasco	Connerton ES CR 1	2009	125	Fenestration Protection	$28,125	$225	2018	390
7	Pasco	Connerton ES CR2	2009	125	Fenestration Protection	$28,125	$225	2018	390
7	Pasco	Double Branch ES Admin 1	2007	125	Fenestration Protection	$28,125	$225	2018	400
7	Pasco	Double Branch ES Caf/Multi purpose 3	2007	125	Fenestration Protection	$28,125	$225	2018	400
7	Pasco	Double Branch ES CR 2	2007	125	Fenestration Protection	$28,125	$225	2018	400
7	Pasco	Double Branch ES CR 4	2007	125	Fenestration Protection	$28,125	$225	2018	400
7	Pasco	Wesley Chapel HS caf	1998	350	Harden exterior doors	$10,000	$29	2017	455
7	Pasco	Wiregrass HS caf	1998	350	Harden exterior doors	$10,000	$29	2017	455
8	Glades	Glades Co Health Dept	2011	235	Fenestration Protection	$52,875	$225	2018	455
8	Lee	East Lee SHS Multipurpose PE	2005	250	Fenestration Protection	$58,240	$233	2017	297
8	Lee	East Lee SHS Aud	2005	200	Fenestration Protection	$44,000	$220	2017	297
8	Lee	East Lee SHS CR5	2005	200	Fenestration Protection	$0	$0	2017	297
8	Lee	East Lee SHS Dining	2005	200	Fenestration Protection	$44,000	$220	2017	297
8	Lee	Lehigh Senior HS	1994	154	Fenestration Protection	$34,650	$225	2018	415
8	Lee	Mirror Lakes ES 1	1997	122	Fenestration Protection/Genset	$27,450	$225	2018	340

E-1 Prioritized List of Recommended Construction-Related Projects

RPC	County	Site Name/Bldg ID	Year Built	Spaces Added	Project Description	SRR Project Estimate	Cost per Space	Origin SRR Year	Rank
8	Lee	Mirror Lakes ES 2	1997	315	Fenestration Protection/Genset	$70,875	$225	2018	340
8	Lee	Mirror Lakes ES 3	1997	689	Fenestration Protection/Genset	$155,025	$225	2018	340
8	Lee	Mirror Lakes ES 5	1997	342	Fenestration Protection/Genset	$76,950	$225	2018	340
8	Lee	Mirror Lakes ES 6	1997	415	Fenestration Protection/Genset	$93,375	$225	2018	340
8	Lee	Mirror Lakes ES 7	1997	342	Fenestration Protection/Genset	$76,950	$225	2018	340
8	Lee	Sunshine ES 5	94/06	212	Fenestration Protection	$47,700	$225	2018	515
8	Lee	Tortuga Preserve ES 1	2012	0	Engineering/Genset	$0	$225	2018	500
8	Lee	Tortuga Preserve ES 2	2012	0	Engineering/Genset	$0	$225	2018	500
8	Lee	Varsity Lakes MS 2	2003	200	Fenestration Protection	$45,000	$225	2018	500
8	Lee	Varsity Lakes MS 3	2003	1,500	Fenestration Protection	$337,500	$225	2018	500
8	Lee	Varsity Lakes MS 4	2003	1,300	Fenestration Protection	$292,500	$225	2018	500
8	Lee	Veteran's Park Academy 3	2004	880	Fenestration Protection	$198,000	$225	2018	500
8	Lee	Veteran's Park Academy 4	2004	500	Fenestration Protection	$112,500	$225	2018	500
8	Lee	Veteran's Park Academy 6	2004	380	Fenestration Protection	$85,500	$225	2018	500
8	Lee	Veteran's Park Academy 9	2004	990	Fenestration Protection	$222,750	$225	2018	500
8	Sarasota	Booker HS	1995	355	Fenestration Protection	$79,875	$225	2018	365
8	Sarasota	Booker School Cr	1998	250	Fenestration Protection	$56,250	$225	2018	410

E-1 Prioritized List of Recommended Construction-Related Projects

RPC	County	Site Name/Bldg ID	Year Built	Spaces Added	Project Description	SRR Project Estimate	Cost per Space	Origin SRR Year	Rank
8	Sarasota	Booker School Cr	1998	250	Fenestration Protection	$56,250	$225	2018	410
8	Sarasota	Community Haven (Adult A)	1995	50	Fenestration Protection	$11,250	$225	2018	330
8	Sarasota	Community Haven (Adult B)	1995	50	Fenestration Protection	$11,250	$225	2018	330
8	Sarasota	Community Haven (Adult C)	1995	50	Fenestration Protection	$11,250	$225	2018	330
8	Sarasota	Community Haven (Adult D)	1995	50	Fenestration Protection	$11,250	$225	2018	330
8	Sarasota	Community Haven (Childcare)	1995	110	Fenestration Protection	$24,750	$225	2018	400
8	Sarasota	Community Haven (Workshop)	1995	110	Fenestration Protection	$24,750	$225	2018	400
8	Sarasota	Emma Booker ES	1996	112	Fenestration Protection	$25,200	$225	2018	365
8	Sarasota	Gulf Gate ES (2nd Floor)	2007	134	Fenestration Protection	$30,150	$225	2018	365
8	Sarasota	Lamarque ES	2005	236	Fenestration Protection	$53,100	$225	2018	365
8	Sarasota	Palmer Ranch	2001	245	Fenestration Protection	$55,125	$225	2018	365
8	Sarasota	State College Florida	2011	450	Fenestration Protection	$157,500	$350	2018	535
8	Sarasota	Taylor Ranch	2001	435	Fenestration Protection	$97,875	$225	2018	400
8	Sarasota	Woodland MS	2007	256	Fenestration Protection	$57,600	$225	2018	365
9	Indian River	Pelican Island ES Music Room	2003	31	Fenestration Protection	$32,958	$1,063	2017	423
9	Indian River	Liberty Magnet Main	2005	184	Fenestration Protection	$40,800	$222	2017	423
9	Indian River	Pelican Island ES Classrooms / Corridors	2004	501	Fenestration Protection	$110,273	$220	2017	423
9	Indian River	Pelican Island ES Dining Area / Stage	2003	102	Fenestration Protection	$32,958	$323	2017	423

E-1 Prioritized List of Recommended Construction-Related Projects

RPC	County	Site Name/Bldg ID	Year Built	Spaces Added	Project Description	SRR Project Estimate	Cost per Space	Origin SRR Year	Rank
9	Martin	Cassidy Rec Center	2003	150	Fenestration Protection	$33,750	$225	2018	410
9	Martin	Hidden Oaks MS 2	1991	0	Fenestration and Common Space Protection	$0	$0	2018	240
9	Martin	Hidden Oaks MS 3	1991	0	Fenestration and Common Space Protection	$131,625	$0	2018	242
9	Martin	Indiantown MS Caf 4	1970	600	GenSet	$80,000	$133	2017	50
9	Martin	Indiantown MS CR2	1970	600	GenSet	$80,000	$133	2017	50
9	Martin	Jensen Rec Center	2007	150	Fenestration Protection	$33,750	$225	2018	410
9	Martin	Port Salerno ES Main	1974	1,300	GenSet	$160,000	$123	2017	50
9	Martin	Warfield ES 8	1996	231	Common Space Protection	$51,975	$225	2018	265
9	Palm Beach	Florida Atlantic University - Business	2004	500	Fenestration Protection	$111,500	$223	2007	185
10	Broward	Floranada ES	2001	900	Fenestration Protection	$385,000	$427	2016	200
10	Miami-Dade	Kinloch MS	89/16	0	Engineering Study	$15,000	$0	2018	455
10	Miami-Dade	Marjory Stoneman Douglas ES 3	1990	171	Fenestration Protection	$38,475	$225	2018	330
10	Miami-Dade	Marjory Stoneman Douglas ES 4	1990	49	Fenestration Protection	$11,025	$225	2018	330
10	Miami-Dade	Marjory Stoneman Douglas ES 1/2/9	1990	51	Fenestration Protection	$11,475	$225	2018	330

E-1 Prioritized List of Recommended Construction-Related Projects

RPC	County	Site Name/Bldg ID	Year Built	Spaces Added	Project Description	SRR Project Estimate	Cost per Space	Origin SRR Year	Rank
10	Miami-Dade	Marjory Stoneman Douglas ES 10	1990	324	Fenestration Protection	$72,900	$225	2018	330
10	Miami-Dade	Marjory Stoneman Douglas ES 7/8	1990	101	Fenestration Protection	$22,725	$225	2018	330
10	Miami-Dade	Marjory Stoneman Douglas ES 8	1990	28	Fenestration Protection	$6,300	$225	2018	330
10	Miami-Dade	Marjory Stoneman Douglas ES 9	1990	136	Fenestration Protection	$30,600	$225	2018	330
Total Projects:		278	Total Spaces:		108,104	Total Cost:		$23,189,218	

E-2 List of Projects Offered or Contracted for Specific Appropriations

RPC	County	Site Name	Building Name or Number	Fiscal Year of Offer OR Fund Number of Contract	Spaces Gained	Cost per Space Gained	Project Cost
3	Alachua	Community Support Services	CHD Audtrm & Commons	2593 Contracted	282	$372	$105,000
3	Alachua	Sydney Lanier Center	11 ESE Classroom	2593 Contracted	552	$349	$192,666
3	Alachua	Sydney Lanier Center	12 Gym & Cafeteria	2593 Contracted	408	$472	$192,667
3	Alachua	MLK Center	Gym/Multi-purpose	2593 Contracted	400	$500	$200,000
1	Bay	Everitt MS	10 Clsrm	2593 Contracted	103	$582	$60,000
1	Bay	Tommy E Smith ES	1, 2, 3, & 4 Clsrms	2593 Contracted	464	$668	$310,000
5	Brevard	Oak Park ES	2, 5, 6, 7, & 8 (300 PSN @ 40 sf)	1617 Contracted	600	$350	$210,000
10	Broward	Floranada ES	1 Main Bldg/Commons	2593 Offered	900	$427	$385,000
4	Clay	Keystone Heights HS	9-Gym	2581 Contracted	0	$0	$104,000
4	Clay	Asbury Lake Junior HS	1-Cafeteria (SpNS 100)	2581 Contracted	300	$333	$100,000
4	Clay	Fleming Island HS	1F-Gym	2581 Contracted	546	$13	$7,500
4	Clay	Oak Leaf HS	4-Gym & 5-Cafeteria	2581 Contracted	888	$180	$160,000
4	Clay	Orange Park HS	10-Cafeteria	2581 Contracted	932	$31	$29,000
4	Clay	St. Johns River Community College	Thrasher Bldg P	2581 Contracted	300	$533	$160,000
4	Flagler	Bunnell ES	9 Clsrm & 10 Clsrm	1515A Contracted	1200	$192	$231,000
4	Flagler	Bunnell ES	9 Clsrm & 13 Clsrm	1515A Contracted	1200	$192	$231,000
6	Glades	W Glades ES	400 Clsrm, 600 Clsrm, & 700 Gym	2571 Contracted	1378	$132	$183,200
6	Glades	Ortona Community Center	Ortona Community Center -Main	1617 Contracted	83	$349	$29,000
6	Hardee	Wauchula ES	5 ESE Clsrm & 6 Media	2593 Contracted	146	$98	$14,365
7	Hernando	Chacahatti ES	3 Cafetrm	2571 Contracted	222	$598	$132,750
7	Hernando	Chacahatti ES	4 Clsrm	2571 Contracted	206	$643	$132,750

E-2 List of Projects Offered or Contracted for Specific Appropriations

RPC	County	Site Name	Building Name or Number	Fiscal Year of Offer OR Fund Number of Contract	Spaces Gained	Cost per Space Gained	Project Cost
7	Hernando	Deltona ES	10 Clsrm	2571 Contracted	197	$334	$65,875
7	Hernando	Deltona ES	400 Clsrm	2571 Contracted	312	$138	$43,200
7	Hernando	Chacahatti ES	6 Clsrm	2571 Contracted	220	$180	$39,700
7	Hernando	Chacahatti ES	8 Clsrm	2571 Contracted	265	$175	$46,525
7	Hillsborough	Erwin Technical Center	Erwin Technical Center (SpNS 1000)	2571 Contracted	3000	$184	$552,015
7	Hillsborough	McLane MS	9 Gym	2571 Contracted	400	$130	$52,015
1	Holmes	Bonifay K-8	All	Contracted	270	$467	$126,000
3	Lafayette	Lafayette HS	4 Clsrm	2571 Contracted	213	$212	$45,161
6	Lake	Umatilla HS	28 Gym (Non-EHPA area)	2593 Contracted	300	$50	$15,000
6	Lake	Multiple Schools for generator transfer switches	Multiple Schools	2593 Contracted	7340	$5	$40,000
6	Lake	Eustis HS	3-Gym	2593 Contracted	478	$317	$95,100
6	Lake	East Ridge HS	Gym/Dining/Aud/Connectors	2018 Offered	1729	$68	$116,875
2	Leon	FAMU Developmental Research School	100 Gym	2593 Contracted	40	$2,018	$80,332
4	Levy	Bronson MS/HS	300 ESE Clsrm, 400 Clsrm, 500 Gym, & 700 Vo-Tech	1515A Contracted	2708	$155	$421,946
9	Martin	David L. Anderson MS	1 Admin/Cafetrm & 5 Gym (EHPA)	2593 Contracted	0	$0	$15,000
9	Martin	David L. Anderson MS	CR-2,3,4	2597 Contracted	375	$600	$225,000
9	Martin	Jensen Beach HS	CR-3,4,5	2597 Contracted	0	$0	$225,000
1	Okaloosa	Davidson MS	1 Main Bldg	1617 Contracted	0	$0	$93,800
6	Okeechobee	Achievement Academy Main Bldg	2011	2017 Offered	1,011	$173	$175,000

E-2 List of Projects Offered or Contracted for Specific Appropriations							
RPC	County	Site Name	Building Name or Number	Fiscal Year of Offer OR Fund Number of Contract	Spaces Gained	Cost per Space Gained	Project Cost
6	Okeechobee	Indian River State College	Building C	2018 Offered	309	$545	$168,500
6	Okeechobee	Okeechobee Health Dept	Civic - Multipurpose	Contracted	0	$0	$15,000
6	Osceola	Harmony HS	4, 5, & 6 Audtrm/Music/Café/Clsrm	2571 Contracted	3159	$219	$692,000
6	Osceola	Westside K-8	1 Main (Whole Bldg, 1st & 2nd Floors)	2581 Contracted	2439	$90	$220,000
7	Pinellas	The Arc of Tampa Bay		Contracted	600	$267	$160,000
4	Putnam	Browning-Pearce ES	1 Admin, 2 Clsrm, 3 Clsrm, 4 Cafetrm & Music Clsrm, 5 Clsrm, 6 Clsrm, & 12 Clsrm	1515A Contracted	80	$474	$37,949
4	Putnam	Community Health Dept	M-Multipurpose Room	2593 Contracted	300	$220	$66,000
4	Putnam	Community Health Dept	Dental Clinic	2018 Offered	90	$167	$15,000
4	Putnam	Community Health Dept	Main and North Annex	2018 offered	0	$0	$15,000
4	Putnam	Community Health Dept	South Annex	2018 offered	93	$269	$25,000
4	Putnam	Middleton Burney ES	15 CR	2018 Offered	300	$425	$127,500
4	Putnam	Ochwilla ES	6 CR	2018 Offered	127	$453	$57,500
4	Putnam	Price Martin Comm Center	Main	2018 Offered	0	$0	$15,000
4	Putnam	QI Roberts MS	Classrooms	2597 Contracted	164	$277	$45,428
4	Putnam	QI Roberts MS	Cafetorium	2018 Offered	163	$230	$37,500
6	Seminole	Layer ES	1 Clsrm/Multipurose (2-story)	2624 Contracted	1112	$179	$200,000
6	Seminole	Bentley ES	1 Main/Cafetrm-Pet (1st Floor) & 3 Clsrm-SpNS	2624 Contracted	1019	$196	$200,000
6	Seminole	Lawton Chiles MS	1 Media/Dining/Multi	2018 Offered	703	$484	$340,000
6	Seminole	Lyman HS	7A Aud/Café	2018 Offered	441	$567	$250,000

E-2 List of Projects Offered or Contracted for Specific Appropriations

RPC	County	Site Name	Building Name or Number	Fiscal Year of Offer OR Fund Number of Contract	Spaces Gained	Cost per Space Gained	Project Cost
6	Seminole	Teague MS	4 Café & 5 Gym	2018 Offered	770	$324	$250,000
6	Seminole	Winter Springs HS	CR Corridors	2018 Offered	0	$0	$120,000
4	St. Johns	Bartram Trail HS	6-Dining/Multipurpose	Contracted	1223	$220	$269,000
4	St. Johns	Creekside HS	1 Admin/Clsrm/Cafeteria	2593 Contracted	2500	$272	$680,600
4	St. Johns	Paccetti Bay MS	1 Main/Cafeteria & Commons (SpNS 133)	2624 Contracted	459	$246	$113,082
4	St. Johns	Switzerland Point MS	1A Gym, 1B Cafeteria/Dining, 1C Admin, Audtrm/M-purpose, 1D Clsrm, & 1E Clsrm	2624 Contracted	3261	$100	$326,182
2	Union	Lake Butler MS	10 Clsrm (SpNS 77)	2571 Contracted	885	$64	$57,050
2	Union	Union HS	20, 21, 22, & 23 Clsrm Quad & 24 PE Training/Clsrm	2571 Contracted	163	$2,230	$363,650
1	Washington	Vernon MS	1 CR	2593 Contracted	36	$1,629	$58,889
Total Projects:		68	Total Spaces:	50,364	Total Cost:		$10,569,272

Appendix F:

List of Recommended Projects – Generators

Appendix F: Prioritized List of Recommended Generator Projects (2018)

RPC	County	Site Name	Bldg # / type	Year	Description of Work	Proposed Costs $	Risk Capacity Gained (Spaces)	$/space gained	Rank Score (2013)	Source of information	Tech Revw Recomm ?
5	Brevard	Anderson ES, Rockledge	2, 3, 4, 5	1990	Generator	$195,000	0	$0	42	1999	Yes
5	Brevard	Apollo ES	2, 3, 4	1990	Generator	$215,000	0	$0	249	1999	Yes
5	Brevard	Brevard CC - Cocoa Allied Health Bldg	20	1975	Generator (230KW) Freezer & oven/range	$215,000	0	$0	195	2001	Yes
5	Brevard	Brevard CC- Cocoa Life Long Learning Center	Life Long Learning Centr	1978	Generator (230kw)	$185,000	0	$0	25	2001	Yes
5	Brevard	Central Jr. High, West Melbourne		1995	Generator	$195,000	0	$0	274	1999	Yes
5	Brevard	Central Reference Library	1	1998	Generator	$200,000	0	$0	27	2000	Yes
5	Brevard	Imperial Estates ES	5, 6, 7, 8	1994	Generator	$225,000	0	$0	27	1999	Yes
5	Brevard	Longleadf ES / Melbourne		1998	Generator	$195,000	0	$0	27	1999	Yes
5	Brevard	Melbourne HS	1,8	1996	Generator	$205,000	0	$0	238	1999	Yes
5	Brevard	Oak Park ES	2, 5, 6, 7, 8	1989	Generator - 400kw installation/purchase	$771,377	0	$2,204	100	2010	No
5	Brevard	Oak Park ES	2, 5, 6, 7, 8	1989	Generator Prewire	$55,000	0	$157	105	2010	Yes
5	Brevard	Pinewood ES	4	1998	Generator	$195,000	0	$0	229	1999	Yes
5	Brevard	Port St. John Community Center	Center	1999	Generator	$185,000	0	$0	197	2000	Yes
5	Brevard	Rockledge HS		1990	Generator	$185,000	0	$0	27	2001	Yes
5	Brevard	South Mainland Community Center	Gymnasium	2001	Generator	$185,000	0	$0	27	2000	Yes
5	Brevard	Space Coast MS / JrHS		1994	Generator	$195,000	0	$0	182	1999	Yes
5	Brevard	Westside ES Palm Bay		1997	Generator	$195,000	0	$0	29	1999	Yes
8	Charlotte	Kingsway ES	1 Two-story	1998	Generator/enclosure	$101,000	0	$0	77	2005	Yes
8	Collier	Big Corkscrew Island Fire Stn #12			generator	$25,000	0	$0	75	2001	No
8	Collier	Pine Ridge MS	290		Generator Pre-wire	$10,000	0	$0	75	1999	Yes
8	Collier	Village Oaks ES			Generator Pre-wire	$10,000	0	$0	75	1999	Yes
6	DeSoto	DeSoto MS	E Gym	2001	Generator (100kw)	$40,000	0	$0	17	2002	Yes
3	Dixie	Ruth Rains MS	whole school	1993	Generator (500kw) ($150,000) Gen. Prewire	$150,000	0	$0	32	2005	Yes
4	Duval	Lincoln Villa Comm Center		0	Gen Prewire	$4,250	0	$0	0	1999	Yes
1	Escambia	Lipscomb ES	1	1991	Generator and Pre-wire (400kw generator)	$149,110	0	$0	232	2005	Yes
1	Escambia	Olive Baptist Church North Wing and Rec Outreach Center	ROC	1985 1997	Generator	$225,000	0	$0	0	2003	No
1	Escambia	Pensacola Civic Center			Generator	$579,658	0	$0	230	2004	No

Appendix F: Prioritized List of Recommended Generator Projects (2018)

RPC	County	Site Name	Bldg # / type	Year	Description of Work	Proposed Costs $	Risk Capacity Gained (Spaces)	$/space gained	Rank Score (2013)	Source of information	Tech Revw Recomm ?
1	Escambia	Univ of West Fla	54 Gym		Generator Prewire	$50,000	0	$0	0	2001	No
1	Escambia	Univ of West Fla	13	1997	Generator (500kw) /Prewire	$90,000	0	$0	167	2001	Yes
1	Escambia	West Florida HS	9 Gymnasium / Cafeteria	2002	Generators (450kw & 350kw) and Gen Prewire	$186,260	0	$0	0	2005	Yes
4	Flagler	Bunnell ES	10-Classroom	2007	Standby Electric System Improvement	$100,000	0	$0	295	2017	Yes
4	Flagler	Rymfire ES	4-Multi-P & 6-Classroom	2005	Standby Electric System Improvement	$80,000	0	$0	320	2017	Yes
6	Hardee	Bowling Green ES	18	2001	Generator (30kw)-purchase and install	$24,028	0	$0	19	2005	Yes
6	Hardee	Old Hardee Junior HS	1200 Media / 15 (?)	2001	Generator (30kw) and install.	$24,028	0	$0	2	2005	Yes
6	Hardee	North Wauchula ES	3 (5th grade)	2001	Generator (30kw) purchase & install	$24,028	0	$0	4	2005	Yes
6	Hardee	Wauchula ES	5	1998	Generator (30kw) Purchase & install	$24,028	0	$0	237	2005	Yes
6	Hardee	Wauchula ES	6	1998	Generator (30kw) install	$24,028	0	$0	262	2005	Yes
6	Hardee	Zolfo Springs Elementary School	10 Classroom	2001	Generator (30kw) install	$24,028	0	$0	2	2005	Yes
1	Holmes	East Pittman Evacuation Shelter			generator	$20,000	0	$0	65	2001	Yes
2	Jackson	Graceville HS	2 Classroom / Multipurpose	2001	Generator: 60kw	$36,159	0	$0	17	2002	Yes
2	Jackson	Malone SHS	14	2001	Generator: 60kw	$36,159	0	$0	237	2002	Yes
6	Lake	Seminole Springs ES	1 & 4	1988	Generator and switch (500kw generator ($148,500) and switch-$45,200)	$193,700	0	$0	262	2006	Yes
9	Martin	Hidden Oaks MS	2, 3 ,8	1991	Generator- (300kw) fixed with fencing-slab. Includes panels and conduit wiring.	$267,912	0	$0	52	2005	Yes
9	Martin	Jensen Beach HS	1, 4, 5	2004	Generator- prewire- install panel and local conduit	$32,431	0	$0	242	2005	Yes
9	Martin	Warfield ES	15, 21	1979 2001	Generator (300kw)- fixed with fencing and slab. Install panel and conduit	$267,912	0	$0	248	2005	Yes
9	Martin	Port Salerno ES	Main	2004	Generator	$160,000	0	$0	50	2005	Yes
4	Nassau	New Yulee MS	"BB" café	2001	Generator 300kw generator/ wiring/ switch	$155,000	0	$0	42	2002	Yes
4	Nassau	West Nassau County HS	CFI 114	2000-01	Generator 500kw generator/ enclosure	$250,000	0	$0	189	2002	Yes
1	Okaloosa	Antioch ES		1997	Generator Add Emergency Generator	$50,000	0	$0	17	2000	Yes

Appendix F: Prioritized List of Recommended Generator Projects (2018)											
RPC	**County**	**Site Name**	**Bldg # / type**	**Year**	**Description of Work**	**Proposed Costs $**	**Risk Capacity Gained (Spaces)**	**$/space gained**	**Rank Score (2013)**	**Source of information**	**Tech Revw Recomm ?**
6	Okeechobee	County Health Department SpNs		1992	Generator 150KW	$25,650	0	$0	2	2001	Yes
5	Osceola	Celebration HS	2	2003	Generator	$135,000	0	$0	29	2004	Yes
5	Osceola	Discovery Intermediate School	2	1999	Generator	$108,000	0	$0	0	2004	Yes
5	Osceola	Florida Christian College Chapman Center	Gym	1985	Generator, transfer switch wi/associated wiring	$146,000	0	$0	312	2004	Yes
5	Osceola	Harmony HS	2	2004	Generator	$137,950	0	$0	228	2004	Yes
5	Osceola	Kissimmee ES	4	2002	Generator	$177,000	0	$0	27	2004	Yes
5	Osceola	Narcoossee Community School	2	1998	Generator	$134,000	0	$0	206	2004	Yes
5	Osceola	Poinciana ES	4	2003	Generator	$88,900	0	$0	27	2004	Yes
5	Osceola	Reedy Creek ES	2 ?	2004	Generator and pre-wire	$77,900	0	$0	0	2006	Yes
9	Palm Beach	Bear Lakes MS		1986	Generator Prewire	$10,000	0	$0	110	1999	No
9	Palm Beach	Lake Worth MS		1988	Generator : Replace generator/tank New automatic transfer switch New panels/feeders New central controls for ventilitation	$450,000	0	$0	110	2002	No
9	Palm Beach	Lake Worth MS		1988	Generator Prewire	$10,000	0	$0	0	1999	No
9	Palm Beach	Omni MS		1989	Generator - Replace generator fuel tank with new tank New automatic transfer switch New panels/feeders central controls for ventilation systems	$350,000	0	$0	110	2002	No
9	Palm Beach	Omni MS		1989	Generator Prewire	$10,000	0	$0	0	1999	No
9	Palm Beach	Watson B. Duncan Community School		1989	Generator : Replace generator/tank New automatic transfer switch New panels/feeders New central controls for ventilitation	$450,000	0	$0	110	2002	No
9	Palm Beach	Watson B. Duncan Community School		1989	Generator Prewire	$10,000	0	$0	0	1999	No
7	Pasco	Lacoochee ES	11, 12,13	1971 1987	Generator 350KW ($144,762) Gen Housing: ($136,498)	$281,260	0	$0	129	2005	Yes
7	Pasco	Long Leaf ES	4	2004	Generator: 155KW ($92,954) Gen Housing: ($136,498)	$229,092	0	$0	129	2005	Yes
7	Pasco	R.B. Stewart MS	Cafeteria	2005	Generator ($47,810) Generator Bldg: ($158,285)	$206,095	0	$0	127	2005	Yes
7	Pasco	Schrader ES	9 - 2 Story Classroom Add	2003	Generator ($105,303) Generator Bldg: ($136,498)	$241,801	0	$0	129	2005	Yes

Appendix F: Prioritized List of Recommended Generator Projects (2018)											
RPC	**County**	**Site Name**	**Bldg # / type**	**Year**	**Description of Work**	**Proposed Costs $**	**Risk Capacity Gained (Spaces)**	**$/space gained**	**Rank Score (2013)**	**Source of information**	**Tech Revw Recomm ?**
7	Pasco	Seven Oaks ES	4	2004	Generator ($92,594) Generator Bldg: ($136,498)	$229,092	0	$0	129	2005	Yes
7	Pasco	Zephyrhills HS	1	1973	Generator ($176,232) (400kw) Gen Bldg: ($171,599)	$347,831	0	$0	0	2005	No
6	Polk	Lakeland, City of Tigertown complex	050-08 & 050-01	1971	Generators (2)	$124,000	0	0	0	2001	No
9	Saint Lucie	Bayshore ES	1	1987	Generator Protective enclosure for Generator Generator Prewire	$15,600	0	0	305	1999	Yes
9	Saint Lucie	F.K. Sweet ES	8 Cafeteria	1987	Generator- 200 KW portable generator with 3-day fuel tank on trailer to power 100Amp main panel	$212,601	0	0	50	1999	Yes
9	Saint Lucie	Fairlawn ES	3	1987	Generator- 200 KW portable generator with 3-day fuel tank on trailer to power 100Amp main panel	$212,601	0	0	65	2005	Yes
9	Saint Lucie	Floresta ES	1	1982	Generator Protective enclosure for Generator Generator Prewire Storage	$18,800	0	0	65	1999	Yes
9	Saint Lucie	Lakewood Park ES		1981	Generator Protective enclosure for Generator Generator Prewire Storage	$18,800	0	0	65	1999	Yes
9	Saint Lucie	Morningside ES		1979	Generator Protective enclosure for Generator Generator Prewire Storage	$18,800	0	0	65	1999	Yes
9	Saint Lucie	Parkway ES		1988	Generator Protective enclosure for Generator Generator Prewire Storage	$18,800	0	0	65	1999	Yes
9	Saint Lucie	Port St. Lucie ES	17 Café	1987	Generator- 200 KW portable generator with 3-day fuel tank on trailer to power 100Amp main panel	$212,601	0	0	65	2005	Yes
9	Saint Lucie	Village Green ES		1985	Generator Protective enclosure for generator Prewire	$15,600	0	0	65	1999	Yes
9	Saint Lucie	White City ES	2 Cafeteria	1987	Generator- 200 KW portable generator with 3-day fuel tank on trailer to power 100Amp main panel	$212,601	0	0	65	2005	Yes
9	Saint Lucie	Windmill Pointe ES		1985	Generator Protective enclosure for Generator Generator Prewire	$15,600	0	0	65	1999	Yes
5	Sumter	North Sumter IS	18 Café	2000	Generator	$133,972	0	0	217	2002	Yes
5	Sumter	North Sumter PS	18 Cafeteria	1997	Generator	$153,545	0	0	244	2002	Yes
5	Volusia	Daytona Beach Comm Col	5	1988	Generator Pre-wire G	$20,000	0	0	40	2000	Yes
5	Volusia	Daytona Beach Comm. Col.	16	1970	Generator / Prewire	$20,000	0	0	200	2000	Yes
Totals:	**Number of Projects: 87**				**Total Cost: $12,489,588**		**Capacity gained: 0**				

Appendix G:

(1) Retrofit Projects Not Yet Recommended

(2) Generator Projects Not Yet Recommended

Appendix G(1) - Retrofit Projects Not Yet Recommended (2018)

Regional Planning Council (RPC) #	County	Site Name	Bldg # / type	Buildingg Construction Year	Description of Work	Proposed Costs $	Risk Capacity Gained (spaces)	$/space gained	Rank Score (2013)	Source of information	Tech Revw Recomm ?	Technical Review Recommended Notes:
7	Hillsborough	Edison ES	6	2000	Fenestration Protection (450 SF) Cover Porticos (137 SF)	$22,305	226	$99	152	2003	Yes	not done in 1467-2004
7	Hillsborough	Edison ES	5	1999	Fenestration Protection (827 SF) Cover Porticos (171 SF)	$39,780	412	$97	152	2003	Yes	not done int 1467-2004
7	Hillsborough	Mort ES	4 Classrooms	1999	Shutters (544 SF) Cover Porticos (267 SF)	$28,485	355	$80	152	2003	yes	not done in 1467-2004
8	Lee	Lehigh Senior HS	Bldg 4	1993	Shuttes/drawbolts	$100,000	155	$645	152	2005	0	
8	Lee	Sunshine ES	Bldg 1	1985, 1994	Shutters, anchor, brace, gen prewire, laydown, drawbolts	$350,000	256	$1,368	152	2003	No	No >$300k No >$200/sp In Cat 4/5 storm surge zone (landfalling) but no surge expected in bldg.
7	Manatee	Southeast HS	5	1997	Fenestration Protection	$47,771	530	$90	152	2007	Yes	
6	Polk	Dundee Ridge MS	8	1999	Window protection. Generator. Prewiring. ($5000)	$33,996	167	$204	102	2001	yes	
6	Polk	Eloise Community Center	Main	1998	hardening	$94,358	371	$254	102	2007	0	HMGP HB7121 - SR
6	Polk	Lake Region HS	1	1994	Fenestration Protection	$78,296	357	$219	102	2000	No	
6	Polk	Ridgeview Global Studies Academy (Ridgeview ES)	5 Classroom	1999	Fenestration Protection & Generator Prewiring	$60,000	237	$253	258	2001	No	
6	Polk	Ridgeview Global Studies Academy (Ridgeview ES)	3 Classroom	1999	Fenestration Protection & Generator Prewiring	$50,000	199	$251	383	2002	Yes	
6	Polk	Sandhill Elem School	5 Classroom	1999	Fenestration Protection	$61,845	212	$292	362	2000	no	
6	Polk	Sandhill Elem School	3 Classroom	1999	Fenestration Protection	$60,000	211	$284	362	2002	no	
5	Seminole	Highlands ES	1 Classroom (2nd Floor)	1995	Engineer review / Fenestration Protection (Calculate soft-spot Openings)	$10,000	373	$27	152	2010	yes	SpNS Shelter. Need estimate on fenestration opening for $ calculation
7	Hillsborough	Eisenhower MS	5	2004	Fenestration Protection	$37,372	252	$148	142	2004	Yes	not done 1508-2005 06-SR-4P-08-38-03-177
7	Hillsborough	Freedom HS	3 Art & band	2000	Fenestration Protection	$42,075	321	$131	428	2003	Yes	Cancelled in 1467-2004, Cannot locate LRDM
7	Hillsborough	Freedom HS	6 Auditorium	2002	Fenestration Protection	$37,500	348	$108	428	2003	Yes	Cancelled in 1467-2004, Cannot locate LRDM
7	Hillsborough	Tampa Bay Blvd ES	4 Media & Classrooms	1990	Shutter (1,063 SF) Cover Porticos (171 SF)	$50,400	412	$122	142	2003	Yes	not done in 1467-2004
7	Hillsborough	W.J. Bryan ES	18	2002	Fenestration Protection	$53,320	413	$129	142	2004	Yes	
5	Sumter	North Sumter PS	17 Classrooms	1997	Fenestration Protection	$29,160	504	$58	362	2002	Yes	
7	Hernando	Deltona ES	300 Classroom	1989	Fenestration Protection (576 SqFt)	$43,200	312	$138	155	2013	Yes	
1	Escambia	Bailey MS	sec 9 gym	1993	Eng review- open span	$8,421	1,051	$8	127	2004	0	
7	Hillsborough	Eisenhower MS	2	2004	Fenestration Protection	$119,000	482	$247	127	2004	Yes	not done 1508-2005 06-SR-4P-08-38-03-177
7	Manatee	Braden River MS	3	1990	Door & Window protection pre-wire	$126,548	620	$204	127	2000	No	100' Roof Span
3	Marion	Saddlewood ES	3 Classroom Wing	1998	Relocate Microwave tower from the bldg (laydown hazard)	$23,000	307	$75	117	2000	Yes	
7	Pasco	J.W. Mitchell HS	1 Admin	1997	Fenestration Protection	$52,741	115	$459	127	2000	0	
7	Pasco	River Ridge MS / HS	7	1990	Fenestration Protection	$0	73	$0	127	2000	0	
6	Polk	Wilfred Smith Community Center	Main	1998	hardening	$9,658	126	$77	77	2007	0	State Match for HB7121

Appendix G(1) - Retrofit Projects Not Yet Recommended (2018)

Regional Planning Council (RPC) #	County	Site Name	Bldg # / type	Buildingg Construction Year	Description of Work	Proposed Costs $	Risk Capacity Gained (spaces)	$/space gained	Rank Score (2013)	Source of information	Tech Revw Recomm ?	Technical Review Recommended Notes:
5	Sumter	Wildwood HS	4 Classroom	2000	Fenestration Protection	$75,600	368	$205	421	2000	no	Yes Not done in1588-2006 school turned down ASCE7 130mph SREF1997. County Declined 3/5/14 Has 620 SqFt of Interior Safe Space
5	Sumter	Wildwood MS	15 Classroom	1999	Fenestration Protection	$68,850	318	$217	94	2000	no	Yes Not done in1588-2006 school turned down ASCE7 130mph SREF1997. County Declined 3/5/14
4	Clay	Lakeside ES	8	2004	Fenestration Protection	$46,391	379	$122	107	2007	Yes	possible laydowns, no plans. Dropped per county
7	Manatee	Kinnan ES	1	2000	Door & Window protection pre-wire	$57,427	296	$194	107	2004	Yes	
5	Orange	Jones HS	7	2003	Fenestration Protection	$67,482	313	$216	132	2007	Yes	<$200/sp
3	Columbia	Columbia City ES	2 Classroom	1993	Fenestration Protection	$67,128	340	$197	97	2004	Yes	Yes
6	DeSoto	Trinity United Meth. Church	2	0	Shutter Pre-wire Brace gable ends	$13,400	140	$96	40	1999	0	Dropped per county HMGP#1306-119 (Denied)
4	Duval	Landmark MS	Main 2nd floor?	1989	Fenestration Protection	$146,480	0	$0	90	2014	yes	HMGP 1561-235. Prior 2014 Shown as Contracted. SESP doesn't show any Shelter spaces
4	Duval	UNF (1 UNF Drive)	1	0	Shutters / Fenestration Protection	$0	0	$0	90	2010	No	Need more information
7	Hernando	Central HS	4	1989	Eng eval of roof only - $10,000 also needs shutter protection- (304sf)($60/sf)= $18,240	$41,419	170	$244	115	2000	No	No-questions on roof/walls.
10	Miami-Dade	Van Blanton ES	1 - Project 9	0	Reinforced A/C installation Deadbolts	$153,000	1,440	$106	90	2000	0	HMGP#1306-026 ($153,000) withdrawn
5	Orange	Freedom MS	6-Classrooms	2006	Fenestration Protection	$61,433	425	$145	94	2009	Yes	
5	Orange	Freedom MS	7 -Classrooms	2006	Fenestration Protection	$61,342	483	$127	94	2009	Yes	
5	Seminole	Walker ES	2-story	2004	Shutter: entry and window protetion	$40,825	400	$102	94	2005	0	
5	Volusia	Pathways ES	4 Classrooms	1995	Fenestration Protection	$67,172	264	$254	94	2007	Yes	Yes, shutters only->$200/sp but <$300k/site
2	Gadsden	Havana MS	8-F Classroom	1992	Engineering Study Fenestration Protection	$60,311	270	$223	139	2003	Yes	partially reinf walls noted in Less Preffered. LRDM recommends Engineering cetification. Site >$200
2	Jackson	Family Services Center	Whole Center	1996	Fenestration Protection	$32,298	179	$180	59	2000	Yes	Re-newed by County EM on 11 Oct 04. Dropped by schoolboard HMGP#1306-257 ($32,298) contract mailed
5	Orange	Meadow Woods MS	4-Media	1997	Fenestration Protection	$44,264	47	$937	84	2009	No	>$200/sp and >$300k per site
5	Orange	Meadow Woods MS	5- Classrooms	1997	Fenestration Protection	$34,806	19	$1,876	84	2009	No	>$200/sp and >$300k per site
2	Liberty	Woodmen of the World Camp	2 & 3 Dorms	1994	Engineer Certification ($10,000) Fenestration Protection (550 SqFt)	$51,250	257	$199	57	2002	Yes	Yes, (Bldgs 2 & 3 need to certify roof and address laydowns)
Totals	**# Projects**	**48**			**Project Cost:**	**$2,860,109**	**Capacity gained:**			**15,505**		

Appendix G(2) - Generator Projects Not Yet Recommended (2018))

Regional Planning Council (RPC) #	County	Site Name	Bldg # / type	Building Construction Year	Description of Work	Proposed Costs $	Risk Capacity Gained (spaces)	$ / space gained	Rank Score (2013)	Source of information	Tech Review Recomm ?	Technical Review Recommended Notes:
5	Brevard	Meadowlane Intermediate (2700 Wingate Blvd, West Melbourned FL 32904)	main	2007	generator (new) install w/transfrer switch	$345,000	0	$0	52	2010	Yes	Ehpa built 2007- currently has 400kw that power all but A/C-special needs shelter
3	Dixie	Anderson ES Whole campus	Campus Gen	1968	Generator (300kw) ($80,000) Gen. Prewire: ($15,000)	$95,000	0	$0	30	2005	No	No, large overhangs, unreinforced masonry walls, unverified loadpaths, unprotected windows.
6	Hardee	Zolfo Springs ES	1	1967	Generator (30kw)	$24,028	0	$0	260	2005	No	No unreinforced masonry walls, open spans. 1967
6	Hardee	Zolfo Springs ES	2 Classroom	1967	Generator (30kw)	$24,028	0	$0	262	2005	No	No, unreinforced walls, 62 ft open span, 1967 const.
9	Martin	Bessey Creek ES	1,2,3,4,5,6	1995	Generator- install generator (300kw) to include panel and local conduit. Power for emergency lighting in all classrooms, restrooms, kitchen, café and admin area.	$370,141	0	$0	77	2005	No	No, > $300,000 per site ARC 4496 Questionnaire- No lrdm. CafeSBC-1988, 74 long span. Has shutters. 9'-8" overhang.
9	Martin	Crystal Lake ES	3,4,7,8,9	1989	Generator- install portable generator (250kw) to include panel and local conduit. Power for emergency lighting in all classrooms, restrooms, kitchen, café and admin area.	$316,559	0	$0	236	2005	No	No, >$300,000 per site ARC 4496 questionnaie- No lrdm SBC1988, 67ft span over Café. 9'-4" overhang shutters
9	Martin	Felix A. Williams ES	2,4,5,6	1993	Generator- (330KW) portable and installation of panels and local conduits	$370,141	0	$0	52	2005	No	No, >$300,000 per site ARC 4496 Questionnaire- No lrdm. CafeSBC-1988, 74 long span. Has shutters. 9'-8" overhang.
9	Martin	Indiantown MS	1, 2, 3, 4	1969 1980 1999	Generator (50kw)- portable and installation of panel/local conduit	$102,934	0	$0	321	2005	No	No, large overhang, open span Not addressed Arc 4496 questionnaire SBC-1988, Café-66'-8" span, 9'-4" overhang. Shutters. .
9	Martin	Jensen Beach ES	2, 3, 8	1970 1980 1987 1993	Generator (200kw)- fixed with fence and slab. Install panel and conduit.	$365,206	0	$0	319	2005	No	No, >$300,000 per site Arc 4496 questionnaire, ANSI A58.1-1982, shutters, Café- 60' span,
9	Martin	Pinewood ES	3, 4,7,8,9	1988	Generator- (250KW) portable, plus installation of panel and conduit	$316,559	0	$0	317	2005	No	No, >$300,000 per site SBC-1988, shutters, Café- 66'-8" Span, 9'4" overhang
9	Martin	Seawind ES	2,3,4,5,6	1993	Generator (330KW) -portable- install panel and conduit.	$370,141	0	$0	52	2005	Yes	Yes SBC-1988,Cafe-74 span, 9'-8" overhangs, shutters.
5	Osceola	Holopaw Community Center	Center	2005	generator	$126,000	0	$0	287	2004	No	No +40mph wind design - EHPA
7	Pasco	Pasco HS	A, B, & C - Clinic	1986	Generator ($176,232) Generator bldg: ($166,757)	$342,989	0	$0	125	2005	No	No, >$300k per site ANSI A58.1-1982 Shutters
7	Pasco	T. Weightman MS	2, 4, 7, 8	1990	Generator ($125,048) (230kw) Bldg: ($184,745)	$310,793	0	$0	129	2005	Yes	Yes ANSI A58.1-1982 shutters bldg 2 is SpNS shelter
4	Saint Johns	Saint Johns County Agricultural Center	1	1986	Generator - Install new 200-KW generator	$36,891	0	0	255	2003	No	No
5	Seminole	Lake Mary HS	1 (1st floor)	1979 19831988	Generator Prewiring	$16,800	0	0	27	2001	No	No
5	Sumter	Webster ES	14 Café	1995	Generator	$83,500	0	0	294	2000	No	No, question on roof span 68', not addressed.
5	Volusia	Debary ES - Daytona Beach	4 Cafeteria	1995	Generator: Emerg. Prewiring	$50,000	0	0	279	2001	No	Soft spots, roof overhangs (7'10") and roof open span (80'). Requires ASCE 7 review. LRDM attached
Totals	**# Projects**	**18**			**Project Cost:**	**$3,666,710**	**Capacity gained:**			**0**		

Appendix H:
Project Submittal Form and Priority Worksheet

1. **2018 Shelter Retrofit Proposal Submittal Form**
2. **2018 Project Priority Worksheet**

2018 SHELTER RETROFIT PROJECT SUBMITTAL FORM
EMPA Base Grant Task 8.A
Ref: Section 252.385(3), Florida Statutes

INSTRUCTIONS

1. The Division's hurricane shelter retrofit program is generally limited to high wind and flood hurricane-resistance improvements (e.g., ASCE 7 engineering assessments, window and door protection, masonry wall reinforcement, etc.)

2. Please review ARC 4496 (found in Appendix C, *2016 Shelter Retrofit Report*) before beginning the project identification process. The *2017 Shelter Retrofit Report*, Appendix C can be found at the following web address:

http://www.floridadisaster.org/Response/engineers/documents/2016SRR/Appd%20C%202016.pdf

The Division's interpretation of the ARC 4496 hurricane safety criteria can be found at the following web address:

http://www.floridadisaster.org/Response/engineers/HES/Manual/ARC4496-Prescriptve-Summary-Table.pdf

Note all construction deficiencies with respect to ARC 4496 for individual buildings, and address each deficiency with a corrective action.

3. 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.

4. 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 cannot be described with a single entry, provide a description (and sketches) of the building. Assume the weakest materials will be a softspot, and therefore the limiting factor with respect to wind performance.

5. Multiple projects can be submitted for each individual building (e.g., window shuttering, door hardware improvements, gable-end 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 cost estimate for each individual project.

6. The definitions of reinforced and partially reinforced masonry, as needed for both General and Wall Construction Type description, are provided below:

Partially Reinforced Masonry (PRM) - 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 are located 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

2018 SHELTER RETROFIT PROJECT SUBMITTAL FORM
INSTRUCTIONS, Cont'd

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 cannot 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.

7. 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.

8. These additional budget limitations apply to 2018 Shelter Retrofit Report projects:

a) No more than $500 per general population hurricane evacuation shelter space gained per individual building, or for campuses/sites with multiple buildings, a campus-wide average of no more than about $350 per space; or

b) A maximum of $300,000 total per facility, excluding Standby Electrical System (SES) work; and,

c) SES work may be considered separately from hurricane wind and flood retrofit construction. SES is limited to $300,000 total per facility campus/site. (Thus potentially a limit of $300,000 in SES work, plus $300,000 in other construction/structural mitigation work, for a combined total limit of up to $600,000.)

2018 SHELTER RETROFIT PROJECT SUBMITTAL

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? _____

_____

HURRICANE EVACUATION SHELTER TYPE AND CAPACITY

Is the building proposed to be designated by local Emergency Management (EM) to serve as person(s) with special needs (PSN) public hurricane evacuation risk shelter (SpNS)?

☐ Yes ☐ No

If yes, what is the estimated PSN client space capacity at 60 sq.ft./usable space? _____

Is the building proposed to be designated by local EM to serve as a general population hurricane evacuation risk shelter?

☐ Yes ☐ No

If yes, what is the estimated client space capacity at 20 sq.ft./usable space? _____

Is the building designated by local EM to serve as a pet-friendly hurricane evacuation risk shelter?

☐ Yes ☐ No

Facility Name _____ Page 1 of _____

Is the proposed facility located in a county recognized to be a multi-county hurricane evacuation risk shelter destination for counties with very limited or no Category 4/5 sheltering options?

☐ Yes ☐ No

If yes, what is the estimated out-of-county SpNS client space capacity at 60 sq.ft./usable space?

_____

Also, if yes, what is the estimated out-of-county general population space capacity at 20 sq.ft./usable space?

_____

Building ownership and availability for use as a public shelter, check only one response as appropriate:

☐ Public Facility/Full Availability

☐ Public Facility/Limited Availability

☐ Private Facility/Full Availability

☐ Private Facility/Limited Availability

HURRICANE HAZARD INFORMATION (ARC 4496 Survey)

If proposed facility has been surveyed by division staff, consultants, or locally acquired architectural/engineering (A/E) or building inspection services, please attach applicable survey report(s) and proceed to Page 9, **SHELTER RETROFIT/MITIGATION PROJECT PROPOSAL**; please check appropriate response.

☐ FLDEM Least-Risk Decision Making (LRDM) report attached

☐ Other A/E survey report or LRDM attached

☐ No LRDM available, please complete **FACILITY DESCRIPTION** below

Facility Name _____ Page 2 of _____

FACILITY DESCRIPTION:

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

What is the finished floor elevation (FFE) of the 1st floor of the bldg (above mean sea level)?

FFE _____feet

Facility is located in a storm surge inundation zone for landfalling or paralleling scenarios, check appropriate response:

☐ 1/A ☐ 2/B ☐ 3/C ☐ 4/D ☐ 5/E ☐ None

If applicable, is the Facility/Shelter FFE above SLOSH Category 4 landfalling flood inundation? ☐ Yes ☐ No

Facility is located in a storm surge inundation zone for exiting scenarios (if applicable), check appropriate response:

☐ 1/A ☐ 2/B ☐ 3/C ☐ 4/D ☐ 5/E ☐ None

If applicable, is the Facility/Shelter floor elevation above SLOSH Category 4 Paralleling or Exiting inundation elevation? ☐ Yes ☐ No

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

☐ A_____ ☐ B/X-shaded ☐ C/X-unshaded ☐ D ☐ V

If applicable, is the Facility/Shelter floor elevation above Base Flood Elevation (BFE) flood inundation elevation? ☐ Yes ☐ No

Additional comments concerning flooding issues (e.g., exiting storm surge inundation zone):

_____

_____

Facility Name _____ Page 3 of _____

FACILITY DESCRIPTION, (cont'd):

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

Has building been surveyed by structural engineer, architect, construction technician, or other building design & construction specialist? ☐ Yes ☐ No

Are construction drawings (architectural & structural) and specifications available? ☐ Yes ☐ No

Structural wind load code or standard used in the design and construction of this facility, check only one response:

☐ SBC or MBMA, Edition 19____ ☐ ANSI A58.1-1982

☐ SFBC, Edition 19_____ ☐ ASCE 7, year _____

☐ IBC or FBC, Edition _____ ☐ Other, _____
Edition, year _____

Wind Design Criteria, if available: wind speed *V*, _____ mph *I* = _____

K_d = _____ Exposure = _____ Enclosure Class, GC_{pi} = _____

General Construction Classification, check only one response:

☐ Light Steel Frame* ☐ Heavy Steel Frame (I or W section)

☐ Reinforced Concrete Frame ☐ Reinforced Concrete or Tilt-up Wall

☐ Reinforced Masonry/PRM wall-bearing ☐ Unreinforced Masonry wall-bearing

☐ Heavy Timber or Glulam Frame ☐ Light Metal or Wood Stud wall-bearing

*includes Pre-engineered Metal Building (PEMB) Frames.

If multistory, what is the number of concrete floors elevated above grade? _____

Facility Name _____ Page 4 of _____

FACILITY DESCRIPTION, (cont'd):

Exterior Wall Construction, check only one response as appropriate:

- ☐ Reinforced Masonry (Rebar @ 4 ft. o.c. or closer)
- ☐ Partially Reinforced Masonry (Reference Instructions 6)
- ☐ Unreinforced Masonry (or rebar spacing unknown)
- ☐ Poured-in-place or Precast Reinforced Concrete (2" min. thick)
- ☐ Light Wood or Metal Stud w/ ½"+ wood structural panels
- ☐ Light Wood or Metal Stud w/ light non-plywood sheathing (includes EIFS)
- ☐ Glazed Panel or Block System
- ☐ Metal Sheets or panels other Light Architectural Panel Systems

Percent of exterior wall area comprised of unprotected fenestrations (e.g., windows, doors):

_____ %

Roof Construction, check only one response as appropriate:

- ☐ Cast-in-place Reinforced Concrete (standard wgt concrete, 3 inch min.)
- ☐ Precast Concrete Panels ("T's", "Double T's", Planks, etc.)
- ☐ Metal Decking w/ standard wgt concrete (2" min. thick) on steel joist, truss or beam
- ☐ Other Metal Decking Systems (insulating concrete and/or rigid insulation or other light coverings)
- ☐ Plywood on wood or metal joist or truss
- ☐ Wood boards or T & G deck on wood joist or truss
- ☐ Precast Cement-fiber (eg, tectum) panels on wood or metal joist/truss
- ☐ Poured Gypsum on Formboard Decking on wood or metal joist or truss

Facility Name _____ Page 5 of _____

FACILITY DESCRIPTION, (cont'd):

What is the roof geometry type, check appropriate response:

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

☐ Other _____

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

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

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 wood-frame construction)
☐ Yes ☐ No

If Parapet(s) are present and roof ponding is a hazard, are emergency overflow scuppers 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 Name _____ Page 6 of _____

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: IF available, please attach completed ARC 6564 or other mass care survey form and proceed to SHELTER RETROFIT/MITIGATION PROJECT PROPOSAL.

Which of the following descriptions best describes the food preparation capabilities of this facility, check appropriate response?

☐ Full Kitchen ☐ Warming Kitchen ☐ Home Ec Clsrm ☐ None

Which of the following descriptions best describes the food serving capabilities of this facility, check appropriate response?

☐ Restaurant ☐ Cafeteria ☐ Other _____ ☐ None

Seating Capacity, if known? _____ persons

Are sanitary facilities directly accessible from shelter area(s)?

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

Which of the following best describes the potable water source of this facility), check appropriate response?

☐ Public Utility ☐ Onsite Well ☐ Other _____

Which of the following best describes the sanitation utility of this facility), check appropriate response?

☐ Public Utility ☐ Onsite Septic ☐ Other _____

Facility Name _____ Page 8 of _____

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 Type	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_____?

Estimated project design and/or construction timeline duration? _____ Months

Facility Name _____ Page 9 of _____

Attachment A

2018 Shelter Retrofit Report
Preliminary Budget Worksheet

Project # ____

Descriptive Title: _____

Line	Item Description	Cost Estimate
A	Salary & Benefits	$
B	Other Personal/Contractual Services (e.g., Vendor)	$
C	A/E Service Fees	$
D	Expenses	$
E	Operating Capital Outlay	$
F	Fixed Capital Outlay	$
G		$
H		$
I	Contingency (10% maximum*)	$
J	**SUB-TOTAL**	$
K	Admin Expenses (5% maximum)	$
L	**TOTAL ESTIMATED PROJECT COST**	$

*-Contingency is limited to 10% unless detailed justification provided.

Project # ____

Descriptive Title: _____

Line	Item Description	Cost Estimate
A	Salary & Benefits	$
B	Other Personal/Contractual Services (e.g., Vendor)	$
C	A/E Service Fees	$
D	Expenses	$
E	Operating Capital Outlay	$
F	Fixed Capital Outlay	$
G		$
H		$
I	Contingency (10% maximum*)	$
J	**SUB-TOTAL**	$
K	Admin Expenses (5% maximum)	$
L	**TOTAL ESTIMATED PROJECT COST**	$

*-Contingency is limited to 10% unless detailed justification provided.

Facility Name _____ Page_____of _____

Attachment A

2018 Shelter Retrofit Report
Preliminary Budget Worksheet

Project # ____

Descriptive Title: _____

Line	Item Description	Cost Estimate
A	Salary & Benefits	$
B	Other Personal/Contractual Services (e.g., Vendor)	$
C	A/E Service Fees	$
D	Expenses	$
E	Operating Capital Outlay	$
F	Fixed Capital Outlay	$
G		$
H		$
I	Contingency (10% maximum*)	$
J	**SUB-TOTAL**	$
K	Admin Expenses (5% maximum)	$
L	**TOTAL ESTIMATED PROJECT COST**	$

*-Contingency is limited to 10% unless detailed justification provided.

Project # ____

Descriptive Title: _____

Line	Item Description	Cost Estimate
A	Salary & Benefits	$
B	Other Personal/Contractual Services (e.g., Vendor)	$
C	A/E Service Fees	$
D	Expenses	$
E	Operating Capital Outlay	$
F	Fixed Capital Outlay	$
G		$
H		$
I	Contingency (10% maximum*)	$
J	**SUB-TOTAL**	$
K	Admin Expenses (5% maximum)	$
L	**TOTAL ESTIMATED PROJECT COST**	$

*-Contingency is limited to 10% unless detailed justification provided.

Facility Name _____ Page_____of _____

2018 Shelter Retrofit List Report
Project Priority Worksheet

County: _____

Building Name/ID: _____

Address, City, Zip: _____

	ITEM	MAX POINT	SCORE
1.	Regional General Population Shelter Deficit	(75)	_____
2.	County General Population Shelter Deficit	(50)	_____
3.	Regional Special/Medical Needs Shelter Deficit	(30)	_____
4.	County Special/Medical Needs Shelter Deficit	(20)	_____
5.	Recognized Multi-County Risk Shelter Destination	(50)	_____
6.	The Building is a Designated Risk Special/Medical Needs Shelter	(25)	_____
7.	The Building is a Designated Risk Pet-Friendly Shelter	(25)	_____
8.	Building Ownership and Availability	(50)	_____
9.	Flood & Building Design and Construction Criteria	(125)	_____
10.	Numerical Increase in Risk Shelter Capacity	(75)	_____
11.	Structural Envelope & Essential Equipment Protection	(50)	_____
12.	Cost-Effectiveness Considerations	(50)	_____
13.	Project Specified in Local Mitigation Strategy	(50)	_____
14.	Project Engineering and/or Construction Timeline/Duration	(25)	_____
	TOTAL POINTS	(700)	_____

1. Proposed project is located within a region with a General Population hurricane evacuation risk shelter space deficit (Maximum: 75 points):

Regional shelter capacity is less than 10 sf per space	(75)	_____
Regional shelter capacity 10 – 14.9 sf per space	(60)	_____
Regional shelter capacity 15 – 19.9 sf per space	(40)	_____
Regional shelter capacity 20 – 30 sf per space	(15)	_____
Regional shelter capacity is more than 30 sf per space	(0)	_____

2. Proposed project is located within a county with a General Population hurricane evacuation risk shelter space deficit (Maximum 50 Points[1]):

County shelter capacity is less than 10 sf per space	(50)	_____
County shelter capacity 10 – 14.9 sf per space	(40)	_____
County shelter capacity 15 – 19.9 sf per space	(25)	_____
County shelter capacity 20 – 30 sf per space	(10)	_____
County shelter capacity is more than 30 sf per space	(0)	_____

[1] – Fiscally-constrained counties may receive a 5-point preference in score, but not exceed total of 50 points

3. Proposed project is located within a region with a Special/Medical Needs Shelter (SpNS) hurricane evacuation risk shelter space deficit (Maximum: 30 points):

Regional shelter capacity is less than 30 sf per space	(30)	_____
Regional shelter capacity 30 – 39.9 sf per space	(25)	_____
Regional shelter capacity 40 – 59.9 sf per space	(15)	_____
Regional shelter capacity 60 – 80 sf per space	(10)	_____
Regional shelter capacity is more than 80 sf per space	(0)	_____

4. Proposed project is located within a county with a SpNS hurricane evacuation risk shelter space deficit (Maximum: 20 points[2]):

County shelter capacity is less than 30 sf per space	(20)	_____
County shelter capacity 30 – 39.9 sf per space	(15)	_____
County shelter capacity 40 – 59.9 sf per space	(10)	_____
County shelter capacity 60 – 80 sf per space	(5)	_____
County shelter capacity is more than 80 sf per space	(0)	_____

[2] – Fiscally-constrained counties may receive a 5-point preference in score, but not exceed total of 20 points

5. Proposed retrofit project's building is located in a county that is recognized to be a multi-county hurricane evacuation risk shelter destination for counties with very limited or no Category 4/5 sheltering options (Maximum 50 Points):

Destination county with 301+ dedicated multi-county SpNS spaces	(50)	_____
Destination county with 51 – 300 dedicated multi-county SpNS spaces	(35)	_____
Destination county with dedicated multi-county General Population-only and/or limited multi-county SpNS spaces (< 51 dedicated SpNS spaces)	(25)	_____
Not a recognized multi-county shelter destination	(0)	_____

6. Is the building designated by local EM to serve as a hurricane evacuation risk SpNS? (Maximum 25 Points):

Yes	(25)	_____
No	(0)	_____

7. Is the building designated by local EM to serve as a hurricane evacuation risk Pet-Friendly Shelter? (Maximum 25 Points):

Yes	(25)	_____
No	(0)	_____

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

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

9. Existing facility is demonstrated to address ARC 4496 hurricane-associated criteria (Maximum 125 Points):

A. <u>Surge Inundation/SLOSH Considerations</u>

Outside landfalling Cat 5 storm surge zone	(25)	_____
Inside landfalling Cat 4/5 storm surge zone, and floor **above** Cat 5 maximum inundation elevation	(15)	_____
Inside landfalling Cat 3 or lower storm surge zone, and floor **above** Cat 5 maximum inundation elevation	(5)	_____
Inside landfalling Cat 3 or lower storm surge zone, and/or floor **below** Cat 5 maximum inundation elevation	(0)	_____

B. <u>Rainfall Flooding/NFIP FIRM Review Considerations</u>

FIRM Zones C, D or unshaded-X	(25)	_____
FIRM Zone B, BE or shaded-X	(15)	_____
FIRM Zone A, AE, AH or A##	(5)	_____
FIRM Zone V, VE, Coastal A or SFHA	(0)	_____

C. High Winds/Type of Construction

High Wind Resistant/Heavy Construction (preferred)	(25)	_____
Moderate Hurricane Resistance (less preferred)	(15)	_____
Some Hurricane Resistance (marginal)	(5)	_____
Light Construction/Info not available	(0)	_____

D. Building's Structural Design, Wind Code Year

2003 – present	(50)	_____
1995 – 2002	(25)	_____
1989 – 1994	(10)	_____
Prior to 1989	(0)	_____

10. Numerical increase[3] in shelter capacity due to proposed retrofit project (Maximum 75 Points):

501 or greater additional spaces	(75)	_____
301 – 500 additional spaces	(50)	_____
151 – 300 additional spaces	(25)	_____
51 – 150 additional spaces	(10)	_____
1 – 50 additional spaces	(5)	_____
No increase in hurricane shelter capacity	(0)	_____

[3] – For SpNS to GP equivalence, multiply numerical capacity increase by a factor of three (3).

11. Structural Envelope & Essential Equipment Protection-ONLY Project(s) (Maximum 50 Points):

Fenestration protection-only (windows, doors, etc.) required	(50)	_____
Fenestration protection and engineer certifications-only required	(25)	_____
Genset/Standby Electric System/MEP protection enclosure-only	(10)	_____
More structural work than described above	(0)	_____

12. Cost-effectiveness[4] of project(s) (Maximum 50 Points):

$99 average total cost or less per shelter space	(50)	_____
$100 to $199 average total cost per shelter space	(40)	_____
$200 to $349 average total cost per shelter space	(25)	_____
$350 to $500 average total cost per shelter space	(10)	_____
In excess of $500 average total cost per shelter space	(0)	_____

[4] – For SpNS to GP equivalence, multiply numerical cost per space by a factor of three (3).

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

Specific Campus & Building(s) referenced in LMS	(50)	_____
Specific Campus/Complex-Only referenced in LMS	(35)	_____
General Reference to Reduction in Shelter Deficit or Hurricane Shelter Safety Improvements in LMS	(10)	_____
No Specific applicable references to project(s) in LMS	(0)	_____

14. Proposed retrofit project's design, engineering and/or construction timeline/duration (Maximum 25 Points):

Less than 12 months	(25)	_____
12 – 18 months	(15)	_____
19 – 24 months	(5)	_____
Greater than 24 months or Timeline Not Available	(0)	_____

Appendix G:

(1) Retrofit Projects Not Yet Recommended

(2) Generator Projects Not Yet Recommended

Appendix G(1) - Retrofit Projects Not Yet Recommended (2018)

Regional Planning Council (RPC) #	County	Site Name	Bldg # / type	Buildingg Construction Year	Description of Work	Proposed Costs $	Risk Capacity Gained (spaces)	$/space gained	Rank Score (2013)	Source of information	Tech Revw Recomm ?	Technical Review Recommended Notes:
7	Hillsborough	Edison ES	6	2000	Fenestration Protection (450 SF) Cover Porticos (137 SF)	$22,305	226	$99	152	2003	Yes	not done in 1467-2004
7	Hillsborough	Edison ES	5	1999	Fenestration Protection (827 SF) Cover Porticos (171 SF)	$39,780	412	$97	152	2003	Yes	not done int 1467-2004
7	Hillsborough	Mort ES	4 Classrooms	1999	Shutters (544 SF) Cover Porticos (267 SF)	$28,485	355	$80	152	2003	yes	not done in 1467-2004
8	Lee	Lehigh Senior HS	Bldg 4	1993	Shuttes/drawbolts	$100,000	155	$645	152	2005	0	
8	Lee	Sunshine ES	Bldg 1	1985, 1994	Shutters, anchor, brace, gen prewire, laydown, drawbolts	$350,000	256	$1,368	152	2003	No	No >$300k No >$200/sp In Cat 4/5 storm surge zone (landfalling) but no surge expected in bldg.
7	Manatee	Southeast HS	5	1997	Fenestration Protection	$47,771	530	$90	152	2007	Yes	
6	Polk	Dundee Ridge MS	8	1999	Window protection. Generator. Prewiring. ($5000)	$33,996	167	$204	102	2001	yes	
6	Polk	Eloise Community Center	Main	1998	hardening	$94,358	371	$254	102	2007	0	HMGP HB7121 - SR
6	Polk	Lake Region HS	1	1994	Fenestration Protection	$78,296	357	$219	102	2000	No	
6	Polk	Ridgeview Global Studies Academy (Ridgeview ES)	5 Classroom	1999	Fenestration Protection & Generator Prewiring	$60,000	237	$253	258	2001	No	
6	Polk	Ridgeview Global Studies Academy (Ridgeview ES)	3 Classroom	1999	Fenestration Protection & Generator Prewiring	$50,000	199	$251	383	2002	Yes	
6	Polk	Sandhill Elem School	5 Classroom	1999	Fenestration Protection	$61,845	212	$292	362	2000	no	
6	Polk	Sandhill Elem School	3 Classroom	1999	Fenestration Protection	$60,000	211	$284	362	2002	no	
5	Seminole	Highlands ES	1 Classroom (2nd Floor)	1995	Engineer review / Fenestration Protection (Calculate soft-spot Openings)	$10,000	373	$27	152	2010	yes	SpNS Shelter. Need estimate on fenestration opening for $ calculation
7	Hillsborough	Eisenhower MS	5	2004	Fenestration Protection	$37,372	252	$148	142	2004	Yes	not done 1508-2005 06-SR-4P-08-38-03-177
7	Hillsborough	Freedom HS	3 Art & band	2000	Fenestration Protection	$42,075	321	$131	428	2003	Yes	Cancelled in 1467-2004, Cannot locate LRDM
7	Hillsborough	Freedom HS	6 Auditorium	2002	Fenestration Protection	$37,500	348	$108	428	2003	Yes	Cancelled in 1467-2004, Cannot locate LRDM
7	Hillsborough	Tampa Bay Blvd ES	4 Media & Classrooms	1990	Shutter (1,063 SF) Cover Porticos (171 SF)	$50,400	412	$122	142	2003	Yes	not done in 1467-2004
7	Hillsborough	W.J. Bryan ES	18	2002	Fenestration Protection	$53,320	413	$129	142	2004	Yes	
5	Sumter	North Sumter PS	17 Classrooms	1997	Fenestration Protection	$29,160	504	$58	362	2002	Yes	
7	Hernando	Deltona ES	300 Classroom	1989	Fenestration Protection (576 SqFt)	$43,200	312	$138	155	2013	Yes	
1	Escambia	Bailey MS	sec 9 gym	1993	Eng review- open span	$8,421	1,051	$8	127	2004	0	
7	Hillsborough	Eisenhower MS	2	2004	Fenestration Protection	$119,000	482	$247	127	2004	Yes	not done 1508-2005 06-SR-4P-08-38-03-177
7	Manatee	Braden River MS	3	1990	Door & Window protection pre-wire	$126,548	620	$204	127	2000	No	100' Roof Span
3	Marion	Saddlewood ES	3 Classroom Wing	1998	Relocate Microwave tower from the bldg (laydown hazard)	$23,000	307	$75	117	2000	Yes	
7	Pasco	J.W. Mitchell HS	1 Admin	1997	Fenestration Protection	$52,741	115	$459	127	2000	0	
7	Pasco	River Ridge MS / HS	7	1990	Fenestration Protection	$0	73	$0	127	2000	0	
6	Polk	Wilfred Smith Community Center	Main	1998	hardening	$9,658	126	$77	77	2007	0	State Match for HB7121

Appendix G(1) - Retrofit Projects Not Yet Recommended (2018)

Regional Planning Council (RPC) #	County	Site Name	Bldg # / type	Buildingg Construction Year	Description of Work	Proposed Costs $	Risk Capacity Gained (spaces)	$/space gained	Rank Score (2013)	Source of information	Tech Revw Recomm ?	Technical Review Recommended Notes:
5	Sumter	Wildwood HS	4 Classroom	2000	Fenestration Protection	$75,600	368	$205	421	2000	no	Yes Not done in1588-2006 school turned down ASCE7 130mph SREF1997. County Declined 3/5/14 Has 620 SqFt of Interior Safe Space
5	Sumter	Wildwood MS	15 Classroom	1999	Fenestration Protection	$68,850	318	$217	94	2000	no	Yes Not done in1588-2006 school turned down ASCE7 130mph SREF1997. County Declined 3/5/14
4	Clay	Lakeside ES	8	2004	Fenestration Protection	$46,391	379	$122	107	2007	Yes	possible laydowns, no plans. Dropped per county
7	Manatee	Kinnan ES	1	2000	Door & Window protection pre-wire	$57,427	296	$194	107	2004	Yes	
5	Orange	Jones HS	7	2003	Fenestration Protection	$67,482	313	$216	132	2007	Yes	<$200/sp
3	Columbia	Columbia City ES	2 Classroom	1993	Fenestration Protection	$67,128	340	$197	97	2004	Yes	Yes
6	DeSoto	Trinity United Meth. Church	2	0	Shutter Pre-wire Brace gable ends	$13,400	140	$96	40	1999	0	Dropped per county HMGP#1306-119 (Denied)
4	Duval	Landmark MS	Main 2nd floor?	1989	Fenestration Protection	$146,480	0	$0	90	2014	yes	HMGP 1561-235. Prior 2014 Shown as Contracted. SESP doesn't show any Shelter spaces
4	Duval	UNF (1 UNF Drive)	1	0	Shutters / Fenestration Protection	$0	0	$0	90	2010	No	Need more information
7	Hernando	Central HS	4	1989	Eng eval of roof only - $10,000 also needs shutter protection- (304sf)($60/sf)= $18,240	$41,419	170	$244	115	2000	No	No-questions on roof/walls.
10	Miami-Dade	Van Blanton ES	1 - Project 9	0	Reinforced A/C installation Deadbolts	$153,000	1,440	$106	90	2000	0	HMGP#1306-026 ($153,000) withdrawn
5	Orange	Freedom MS	6-Classrooms	2006	Fenestration Protection	$61,433	425	$145	94	2009	Yes	
5	Orange	Freedom MS	7 -Classrooms	2006	Fenestration Protection	$61,342	483	$127	94	2009	Yes	
5	Seminole	Walker ES	2-story	2004	Shutter: entry and window protetion	$40,825	400	$102	94	2005	0	
5	Volusia	Pathways ES	4 Classrooms	1995	Fenestration Protection	$67,172	264	$254	94	2007	Yes	Yes, shutters only->$200/sp but <$300k/site
2	Gadsden	Havana MS	8-F Classroom	1992	Engineering Study Fenestration Protection	$60,311	270	$223	139	2003	Yes	partially reinf walls noted in Less Preffered. LRDM recommends Engineering cetification. Site >$200
2	Jackson	Family Services Center	Whole Center	1996	Fenestration Protection	$32,298	179	$180	59	2000	Yes	Re-newed by County EM on 11 Oct 04. Dropped by schoolboard HMGP#1306-257 ($32,298) contract mailed
5	Orange	Meadow Woods MS	4-Media	1997	Fenestration Protection	$44,264	47	$937	84	2009	No	>$200/sp and >$300k per site
5	Orange	Meadow Woods MS	5- Classrooms	1997	Fenestration Protection	$34,806	19	$1,876	84	2009	No	>$200/sp and >$300k per site
2	Liberty	Woodmen of the World Camp	2 & 3 Dorms	1994	Engineer Certification ($10,000) Fenestration Protection (550 SqFt)	$51,250	257	$199	57	2002	Yes	Yes, (Bldgs 2 & 3 need to certify roof and address laydowns)
Totals	**# Projects**	**48**			**Project Cost:**	**$2,860,109**	**Capacity gained:**			**15,505**		

Appendix G(2) - Generator Projects Not Yet Recommended (2018))

Regional Planning Council (RPC) #	County	Site Name	Bldg # / type	Building Construction Year	Description of Work	Proposed Costs $	Risk Capacity Gained (spaces)	$ / space gained	Rank Score (2013)	Source of information	Tech Review Recomm ?	Technical Review Recommended Notes:
5	Brevard	Meadowlane Intermediate (2700 Wingate Blvd, West Melbourned FL 32904)	main	2007	generator (new) install w/transfrer switch	$345,000	0	$0	52	2010	Yes	Ehpa built 2007- currently has 400kw that power all but A/C-special needs shelter
3	Dixie	Anderson ES Whole campus	Campus Gen	1968	Generator (300kw) ($80,000) Gen. Prewire: ($15,000)	$95,000	0	$0	30	2005	No	No, large overhangs, unreinforced masonry walls, unverified loadpaths, unprotected windows.
6	Hardee	Zolfo Springs ES	1	1967	Generator (30kw)	$24,028	0	$0	260	2005	No	No unreinforced masonry walls, open spans. 1967
6	Hardee	Zolfo Springs ES	2 Classroom	1967	Generator (30kw)	$24,028	0	$0	262	2005	No	No, unreinforced walls, 62 ft open span, 1967 const.
9	Martin	Bessey Creek ES	1,2,3,4,5,6	1995	Generator- install generator (300kw) to include panel and local conduit. Power for emergency lighting in all classrooms, restrooms, kitchen, café and admin area.	$370,141	0	$0	77	2005	No	No, > $300,000 per site ARC 4496 Questionnaire- No lrdm. CafeSBC-1988, 74 long span. Has shutters. 9'-8" overhang.
9	Martin	Crystal Lake ES	3,4,7,8,9	1989	Generator- install portable generator (250kw) to include panel and local conduit. Power for emergency lighting in all classrooms, restrooms, kitchen, café and admin area.	$316,559	0	$0	236	2005	No	No, >$300,000 per site ARC 4496 questionnaie- No lrdm SBC1988, 67ft span over Café. 9'-4" overhang shutters
9	Martin	Felix A. Williams ES	2,4,5,6	1993	Generator- (330KW) portable and installation of panels and local conduits	$370,141	0	$0	52	2005	No	No, >$300,000 per site ARC 4496 Questionnaire- No lrdm. CafeSBC-1988, 74 long span. Has shutters. 9'-8" overhang.
9	Martin	Indiantown MS	1, 2, 3, 4	1969 1980 1999	Generator (50kw)- portable and installation of panel/local conduit	$102,934	0	$0	321	2005	No	No, large overhang, open span Not addressed Arc 4496 questionnaire SBC-1988, Café-66'-8" span, 9'-4" overhang. Shutters. .
9	Martin	Jensen Beach ES	2, 3, 8	1970 1980 1987 1993	Generator (200kw)- fixed with fence and slab. Install panel and conduit.	$365,206	0	$0	319	2005	No	No, >$300,000 per site Arc 4496 questionnaire, ANSI A58.1-1982, shutters, Café- 60' span,
9	Martin	Pinewood ES	3, 4,7,8,9	1988	Generator- (250KW) portable, plus installation of panel and conduit	$316,559	0	$0	317	2005	No	No, >$300,000 per site SBC-1988, shutters, Café- 66'-8" Span, 9'4" overhang
9	Martin	Seawind ES	2,3,4,5,6	1993	Generator (330KW) -portable- install panel and conduit.	$370,141	0	$0	52	2005	Yes	Yes SBC-1988,Cafe-74 span, 9'-8" overhangs, shutters.
5	Osceola	Holopaw Community Center	Center	2005	generator	$126,000	0	$0	287	2004	No	No +40mph wind design - EHPA
7	Pasco	Pasco HS	A, B, & C - Clinic	1986	Generator ($176,232) Generator bldg: ($166,757)	$342,989	0	$0	125	2005	No	No, >$300k per site ANSI A58.1-1982 Shutters
7	Pasco	T. Weightman MS	2, 4, 7, 8	1990	Generator ($125,048) (230kw) Bldg: ($184,745)	$310,793	0	$0	129	2005	Yes	Yes ANSI A58.1-1982 shutters bldg 2 is SpNS shelter
4	Saint Johns	Saint Johns County Agricultural Center	1	1986	Generator - Install new 200-KW generator	$36,891	0	0	255	2003	No	No
5	Seminole	Lake Mary HS	1 (1st floor)	1979 19831988	Generator Prewiring	$16,800	0	0	27	2001	No	No
5	Sumter	Webster ES	14 Café	1995	Generator	$83,500	0	0	294	2000	No	No, question on roof span 68', not addressed.
5	Volusia	Debary ES - Daytona Beach	4 Cafeteria	1995	Generator: Emerg. Prewiring	$50,000	0	0	279	2001	No	Soft spots, roof overhangs (7'10") and roof open span (80'). Requires ASCE 7 review. LRDM attached
Totals	**# Projects**	**18**			**Project Cost:**	**$3,666,710**	**Capacity gained:**			**0**		