

# State of Florida 2019 Shelter Retrofit Report

December 31, 2019



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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, annually publishes a *Shelter Retrofit Report*. 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 *Hurricane Evacuation Shelter Selection Standards* (June, 2018) or the former *Standards for Hurricane Evacuation Shelter Selection* (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 1,077,491. Another 53,870 spaces (meeting ARC 4496 safety standards) are expected to be available to the public by August 2020 for a total of 1,131,361 spaces.

In preparation of the *2019 Shelter Retrofit Report*, the Division reviewed all 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 347 projects for retrofitting. These projects alone will create an additional 141,400 risk recognized hurricane shelter spaces statewide at an estimated cost of \$30,874,820.

A significant increase in public hurricane shelter capacity has been achieved over the past 19 years. This is largely due to the availability of retrofit and mitigation-related funds to accomplish the recommended projects. Prior to 1999, the State lacked a dedicated funding source to meet the demands for public hurricane evacuation shelter space. However, since 1999 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 evacuation 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 \$45 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 as Enhanced Hurricane Protection Area (EHPA) provisions. 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. As new EHPA buildings and or schools are completed, the Division surveys the facilities to determine if they may be added to the inventory as is or if they need additional protections.

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 12 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 inundation maps reduced the previously recognized quantity of hurricane evacuation shelter space in some regions. The hurricane shelter space figures also 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, replacement facilities, such as new construction or retrofit of recently constructed facilities, will be needed to ensure that state shelter capacities meet both current and future needs. In addition, recent population and demographic trends reflected in evacuation studies caused an increase in shelter space demand for 2016 and beyond. Specifically, forecasting for the five-year period indicates higher demand for special needs shelters. These changes and their consequent impacts indicate a continuing need for additional hurricane evacuation shelter space.

In summary, as the number of Floridians in areas vulnerable to hurricanes continue 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

To continue to reduce the State’s public hurricane shelter deficit, the Division of Emergency Management (Division) annually issues a *Shelter Retrofit Report* (report), which provides a list of facilities recommended to be retrofitted using state funds. *See* Sec.252.385 (3), Florida Statutes. The annual report is provided to the President of the Senate, the Speaker of the House of Representatives and the Governor. The report recommends and prioritizes facilities to be retrofitted based on each Regional Planning Council (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.

All funding recommendations and assessments of available shelter spaces in this report reflect only those of state-recognized shelters. State-recognized shelters are those facilities that meet the state’s hurricane shelter guidelines; to include protection from high winds and storm surge. Facilities in storm-surge zones are not included in this assessment when determining sufficient hurricane shelter space and are not eligible for retrofitting investment by the state. Other assessments that are not specific to state-recognized hurricane shelters may have figures that conflict with this report.

### The Need for Shelter Retrofitting

Every county in Florida is at risk of hurricane and hurricane-related hazards, including flooding, storm surge, high winds, and power outages. These hazards place specific physical, geographical, and infrastructural limitations on what is a suitable and safe hurricane shelter for evacuees. Due to Florida’s unique statewide risk for hurricanes and the unique requirements for suitable shelters, the Division is tasked with preparing a *Statewide Emergency Shelter Plan* that assess the current and projected shelter space sufficiency and deficit. The table below summarizes the findings of the studies conducted since 2012.

<b>Statewide Shelter Spaces Sufficiency / Deficit</b>		
<b>Year</b>	<b>General Population</b>	<b>Special Needs</b>
2012	125,205	<b>-20,829</b>
2014	88,601 <b>(-29%)</b>	<b>-14,218</b> (+32%)
2016	74,567 <b>(-16%)</b>	<b>-23,431</b> <b>(-65%)</b>
2018	100,027 (+34%)	<b>-19,958</b> (+15%)
2023 <i>(Projected)</i>	91,751 <b>(-8%)</b>	<b>-20,700</b> <b>(-4%)</b>

Despite the showing of a sufficiency for Statewide General Population Space, there are two (2) findings that are of concern. First, there continues to be a general downward trend for the general population sufficiency. Two, there are three (3) planning council regions that have overall general population shelter deficits; Central Florida, Tampa Bay, and Southwest Florida. These regions also have some of the highest evacuation clearance times in the state,

which means that the internal capability of the region is critical for providing residents safe sheltering options. The below table shows how the gap in these three (3) regions continues to grow, despite an overall sufficiency.

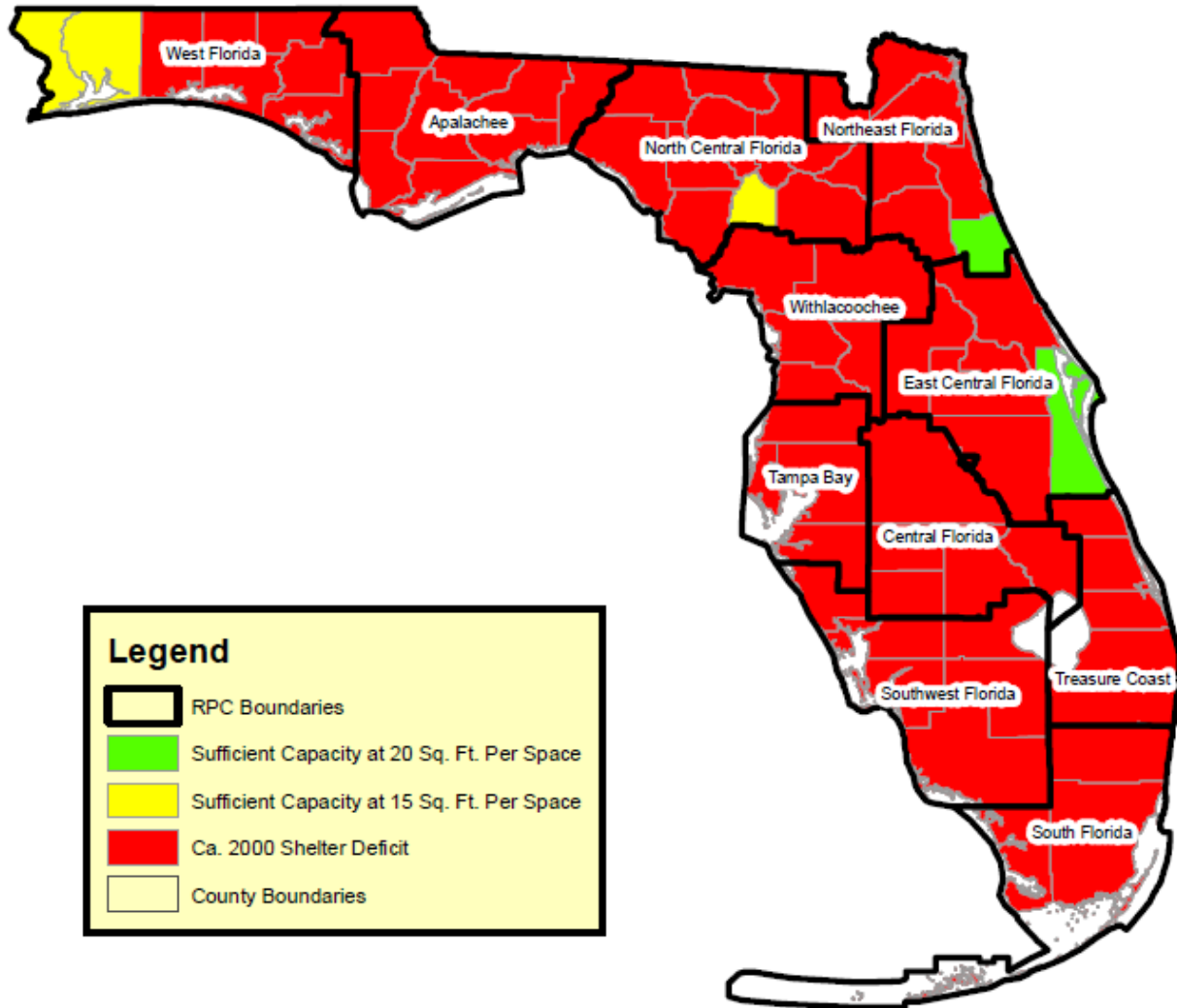
<b>Shelter Spaces Sufficiency / Deficit in Select Regions</b>			
<b>Year</b>	<b>2012</b>	<b>Forecasted 2023</b>	<b>Change</b>
Central Florida	10,276	<b>-15,581</b>	<b>-252%</b>
Tampa Bay	50,750	<b>-17,678</b>	<b>-135%</b>
Southwest Florida	<b>-80,115</b>	<b>-123,767</b>	<b>-54%</b>

As the population of Florida continues to grow and development continues in risk-prone areas, the dependence on suitable hurricane shelters will continue to grow. While new construction is an ideal solution, the reality is the sufficiency of general population shelter space is shrinking, and the gap for special needs shelter space is growing. Retrofitting projects augment the gaps and allows the state to more rapidly meet its capability goals.

The maps below highlight the value this program has brought to the State of Florida. The first shows which Florida counties had deficits in 2000. The second map shows the current deficits based on the latest available data from 2018.

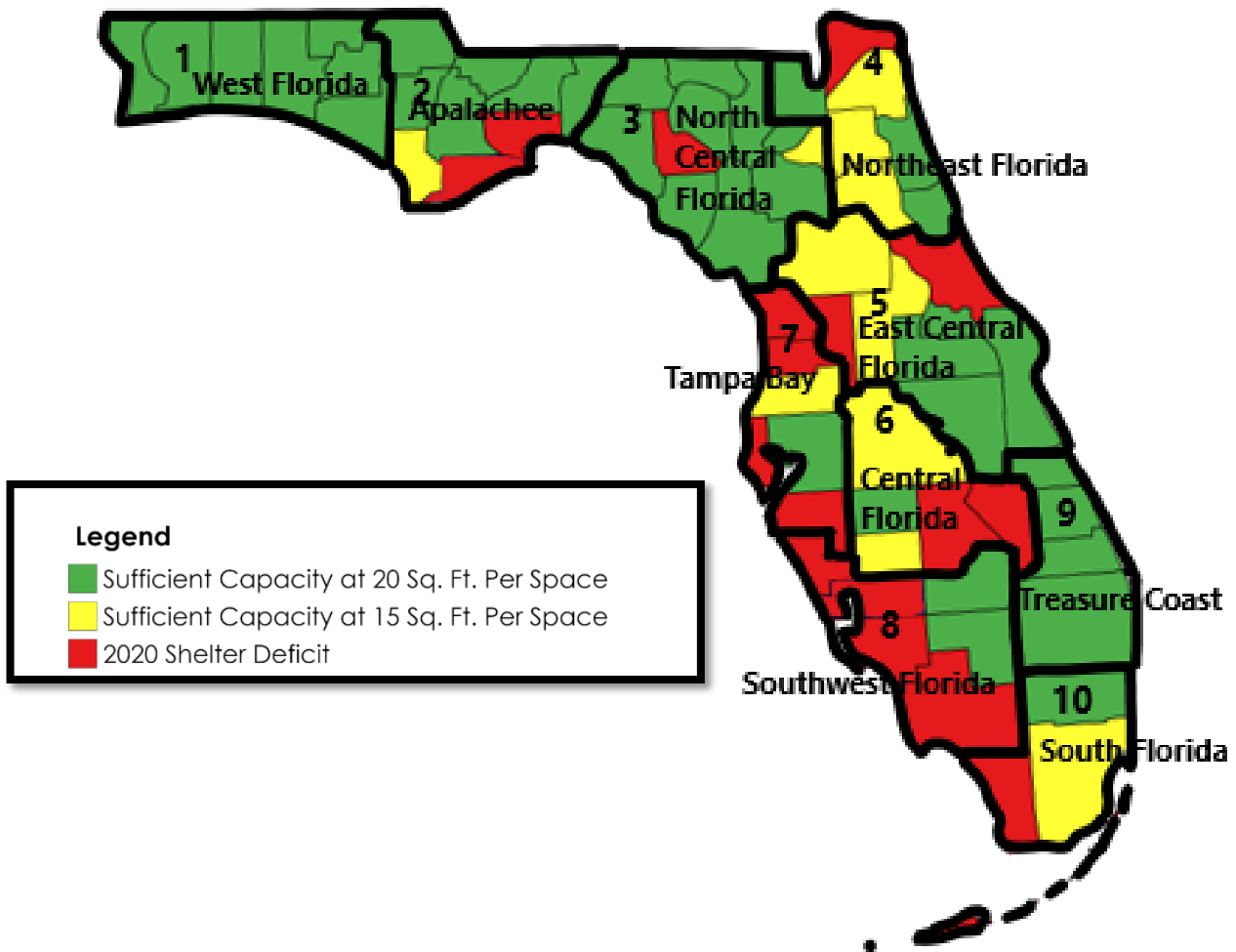
The full report in this document presents the Division's procedures and courses of action for meeting these concerns. Table 3-1 shows the Division's recommendations on projects that will add 141,400 additional shelter spaces, including 81,603 spaces to the three planning regions with growing gaps (Central Florida, Tampa Bay, and Southwest Florida). Meeting the sheltering needs in Florida requires multiple tactics among state and local partners. While retrofitting is only one part, it is a relatively cost-effective method of increasing the usability of existing structures during hurricanes and other disasters in the state.

**Figure 1-1. 2000 County Hurricane Evacuation Shelter Space Deficit / Sufficiency Status of General Population Shelters**





**Figure 1-2. 2019 County Hurricane Evacuation Shelter Space Deficit / Sufficiency Status of General Population Shelters**



## 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 *2019 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 report, the Division provided general guidance for the development of proposals in a questionnaire-type format that the counties could use for project submittal.

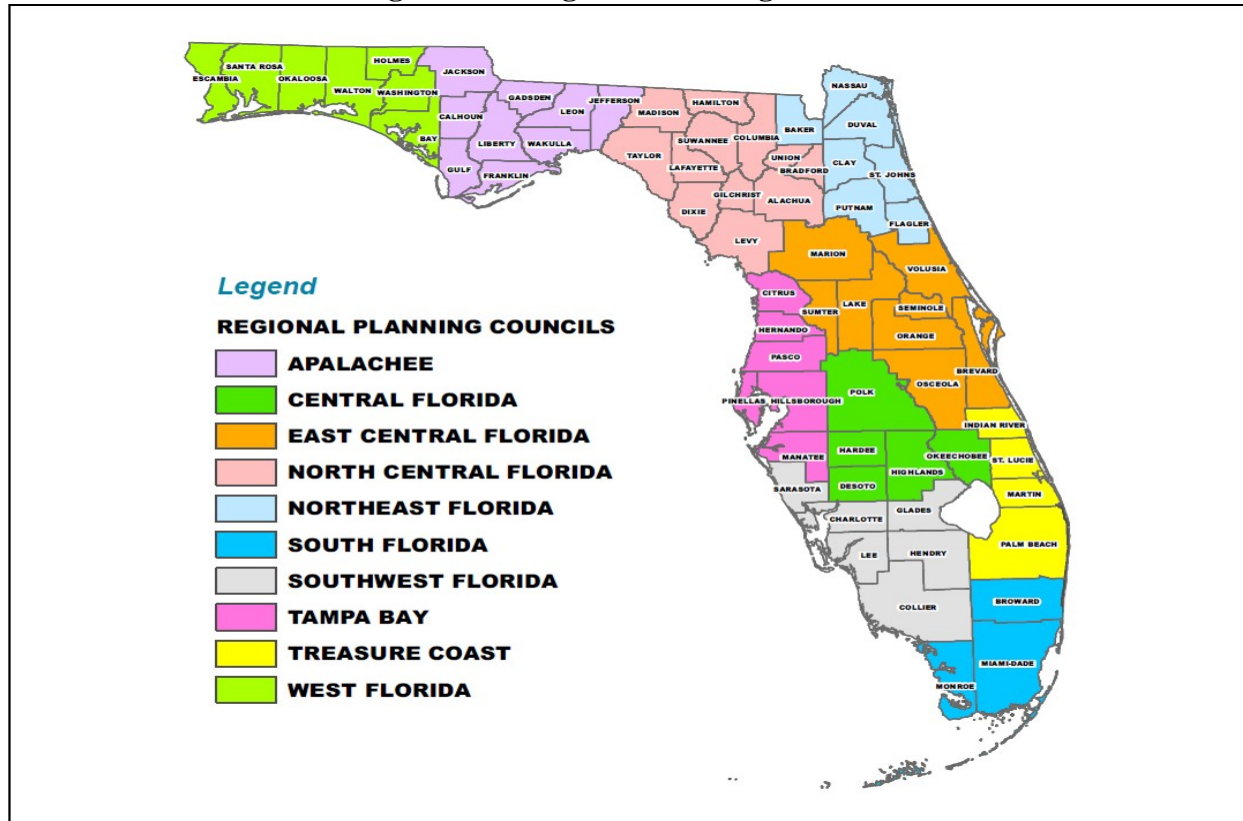
The questionnaire was prepared to include sufficient information to determine if the facility could meet the Division's Least Risk Decision Making (or LRDM) hurricane hazard safety guidelines, clearly define project scope(s) to be undertaken and their impact upon hurricane evacuation shelter space capacity and safety, and explain the interrelationship of the proposed project(s) and local and regional shelter strategies. The cost estimates were generally provided by local agencies, commercial contractor "rough orders of magnitude," or, in some cases, past experience in the retrofit program. Division staff reviewed the projects and assigned priority point values as illustrated in Appendix E.

This Report includes projects originally submitted in previous 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 1-3 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 1-3. Regional Planning Councils**



The retrofit projects recommended in this report will, if funded, substantially improve state and local hurricane evacuation preparedness. As Table 1-1 illustrates, the State Legislature and Governor have demonstrated a sustained commitment to reduce the deficit of safe public hurricane evacuation shelter space. From 1999 to 2013, approximately \$80 million in federal and state funds have been committed towards retrofitting suitable facilities, funding an estimated 486,232 hurricane shelter spaces. From 2014 to 2019, an additional \$18 million in state funding is committed to adding approximately 80,000 new or replacement 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 Gained	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	<sup>a</sup> \$6,607,263	<sup>b</sup> 25,645	419,693
2008	\$13,432,213	85,997	\$0	<sup>c</sup> 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	<sup>d</sup> 14,427	442,040
2011	\$20,337,203	109,308	\$2,250,000	14,974	457,014
2012	\$14,707,717	110,394	\$3,000,000	14,408	471,422
2013	\$12,745,072	87,150	\$3,000,000	14,810	486,232
2014	\$13,994,180	107,236	\$3,000,000	<sup>e</sup> 13,333	499,565
2015	\$15,188,945	117,609	\$3,000,000	<sup>e</sup> 13,333	512,898
2016	\$13,465,342	69,541	\$3,000,000	<sup>e</sup> 13,333	526,231
2017	\$13,794,763	65,303	\$3,000,000	<sup>e</sup> 13,333	539,564
2018	\$23,189,218	108,104	\$3,000,000	<sup>e</sup> 13,333	552,897
2019	\$30,874,820	141,400	\$3,000,000	<sup>e</sup> 13,333	566,230
<b>TOTAL</b>	<b>N/A</b>	<b>N/A</b>	<b>\$98,122,243</b>	<b><sup>f</sup> 566,230</b>	<b>N/A</b>

<sup>a</sup> – \$6,607,263 was based on federal funds plus state match for FY 2007/2008 HB7121 and non-federal matched projects from Special Appropriation 1621X

<sup>b</sup> – 25,645 spaces were gained from HB 7121 & 1621X shelter retrofit projects

<sup>c</sup> – For Fiscal Year 08-09, no funds were appropriated for the Shelter Retrofit Report

<sup>d</sup> – 7,929 reflects gain from FY 2010/2011 Specific Appropriation 1617 @ \$1,750,000

<sup>e</sup> – 13,333 spaces is preliminary estimate gained based upon \$225 per space from annual \$3,000,000 Specific Appropriation in fiscal years where funding is obligated or under contract.

<sup>f</sup> – 566,230 reflects all gains, to include current projects under contract and estimates from Specific Appropriations

## II. CURRENT SITUATION

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, tidal inlets, bays, and other waterways. Nearly 80% of Florida's population live in coastal counties, and 40% of the population is in a storm surge zone.

The proximity of population concentrations along the Gulf of Mexico and the Atlantic Ocean, coupled with 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 hundreds of thousands of safe public hurricane shelter spaces.

Statewide sheltering is not solely a coastal phenomenon. In 2018 Hurricane Michael made landfall as a Category 5 storm (on the Saffir-Simpson Hurricane Wind Intensity Scale) and exited the state as a Category 3. Thus, the impacts of the storm extended well inland to non-coastal counties in Florida and Georgia. The future safety of all our vulnerable citizens will require additions to the statewide public hurricane shelter inventory. Improved methodology in evacuation studies and registration for persons with special needs created an increase in demand for hurricane evacuation "risk" shelters.

The Division has a multifaceted approach to reduce the deficit of hurricane evacuation "risk" shelter spaces. The approach includes: 1) annually surveying about five percent of public facilities statewide to identify additional spaces; 2) surveying facilities not currently in inventories to identify unused capacity; 3) offering funding for cost-effective retrofit 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 need for evacuation.

### **Statewide Progress in Retrofitting and Enhanced Hurricane Protection Area Construction**

Table 2-1 shows spaces created through retrofitting of existing facilities using state funds, and spaces created through design and construction of new public school facilities to Enhanced Hurricane Protection Area (EHPA) building code provisions. Additionally, Table 2-1 shows the estimated shelter demand for 2019-2020 (provided via the Division's hurricane evacuation studies and the 2018 Statewide Emergency Shelter Plan), the hurricane evacuation 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 projects in the queue and the significant progress demonstrated.

General Population hurricane evacuation shelter space capacities are calculated based on the recommended 20 square feet (sq.ft.) per evacuee, and for Persons with Special Needs (PSN) the capacity is based on the recommended 60 sq.ft. per client.

<b>Table 2-1.</b>								
<b>Hurricane Evacuation Shelter Deficit Reduction Progress Success Stories</b>								
<b>Regional Planning Council, (RPC)</b>	<b>RPC Region Deficit?</b>	<b>County</b>	<b>Current Retrofit &amp; As-Is Capacity</b>	<b>Current EHPA Capacity</b>	<b>Retrofit Shelter Capacity Under Contract</b>	<b>Total Hurricane Shelter Capacity</b>	<b>GenPop + SpNS Demand</b>	<b>Capacity Sufficient Estimate</b>
3	No	Alachua	11,187	1,600	2,795	12,787	13,077	-290
4	No	Baker	1,675	1,612	0	3,287	2,699	588
1	No	Bay	14,944	956	2,422	15,900	8,177	7,723
3	No	Bradford	1,695	0	0	1,695	1,457	238
5	No	Brevard	30,381	12,063	0	42,444	33,579	8,865
10	No	Broward	500	60,005	0	60,505	29,587	30,918
2	No	Calhoun	2,239	172	0	2,411	1,112	1,299
8	Yes	Charlotte	0	0	0	0	13,386	-13,386
7	Yes	Citrus	3,647	208	0	3,855	13,386	-9,531
4	No	Clay	4,613	2,985	2,566	7,598	11,540	-3,942
8	Yes	Collier	5,784	0	0	5,784	32,010	-26,226
3	No	Columbia	4,949	4,105	0	9,054	5,111	3,943
6	Yes	Desoto	2,602	151	0	2,753	3,296	-543
3	No	Dixie	2,562	1,256	0	3,818	1,978	1,840
4	No	Duval	35,630	15,343	103	50,973	45,127	5,846
1	No	Escambia	25,510	1,803	0	27,313	11,211	16,102
4	No	Flagler	24,608	3,034	2,086	27,642	6,575	21,067
2	No	Franklin	0	0	0	0	535	-535
2	No	Gadsden	2,000	5,732	0	7,732	3,925	3,807
3	No	Gilchrist	3,129	0	0	3,129	1,200	1,929
8	Yes	Glades	650	388	0	1,038	1,613	-575
2	No	Gulf	232	228	0	460	742	-282
3	No	Hamilton	1,835	1,196	0	3,031	1,116	1,915
6	Yes	Hardee	139	4,623	0	4,762	2,211	2,551
8	Yes	Hendry	5,263	1,000	0	6,263	3,494	2,769
7	Yes	Hernando	1,416	8,051	0	9,467	11,617	-2,150
6	Yes	Highlands	2,550	6,137	0	8,687	11,854	-3,167
7	Yes	Hillsborough	27,004	65,699	1,400	92,703	55,285	37,418
1	No	Holmes	2,220	4,133	135	6,353	1,115	5,238
9	No	Indian River	10,507	0	300	10,507	6,337	4,170
2	No	Jackson	499	3,365	0	3,864	1,774	2,090
2	No	Jefferson	0	809	0	809	948	-139
3	No	Lafayette	1,136	0	1,166	1,136	622	514
5	No	Lake	3,414	24,546	7,507	27,960	26,453	1,507
8	Yes	Lee	500	0	9,307	500	74,751	-74,251
2	No	Leon	21,307	1,245	0	22,552	4,590	17,962
3	No	Levy	5,057	354	0	5,411	4,206	1,205
2	No	Liberty	836	822	0	1,658	751	907
3	No	Madison	4,236	0	0	4,236	1,327	2,909
7	Yes	Manatee	9,735	21,702	0	31,437	25,176	6,261
<b>Page 1 Totals:</b>			<b>276,191</b>	<b>255,323</b>	<b>29,787</b>	<b>531,514</b>	<b>474,950</b>	<b>56,564</b>

<b>Table 2-1.</b>								
<b>Hurricane Evacuation Shelter Deficit Reduction Progress Success Stories</b>								
<b>Regional Planning Council, (RPC)</b>	<b>RPC Region Deficit?</b>	<b>County</b>	<b>Current Retrofit &amp; As-Is Capacity</b>	<b>Current EHPA Capacity</b>	<b>Retrofit Shelter Capacity Under Contract</b>	<b>Total Hurricane Shelter Capacity</b>	<b>GenPop + SpNS Demand</b>	<b>Capacity Sufficient Estimate</b>
3	No	Marion	7,930	10,257	0	18,187	19,185	-998
9	No	Martin	11,383	10,047	1,035	21,430	5,756	15,674
10	No	Miami-Dade	77,529	26,454	0	103,983	100,632	3,351
10	No	Monroe	723	0	0	723	3,051	-2,328
4	No	Nassau	1,822	4,554	0	6,376	5,529	847
1	No	Okaloosa	11,574	2,025	0	13,599	6,027	7,556
6	Yes	Okeechobee	1,891	1,175	300	3,066	8,671	-5,605
5	No	Orange	2,530	28,678	5,650	31,208	31,804	-596
5	No	Osceola	18,001	7,982	0	25,983	10,821	15,162
9	No	Palm Beach	22,793	48,355	0	71,148	32,351	38,797
7	Yes	Pasco	10,199	17,556	0	27,755	32,316	-4,561
7	Yes	Pinellas	24,250	10,150	0	34,400	46,275	-11,875
6	Yes	Polk	2,423	33,157	0	35,580	45,621	-10,041
4	No	Putnam	3,495	1,196	31	4,691	4,848	-157
4	No	Saint Johns	12,937	7,198	5,274	20,135	11,847	8,288
9	No	Saint Lucie	12,997	4,388	0	17,385	10,737	6,648
1	No	Santa Rosa	7,536	5,471	0	13,007	6,041	6,966
8	Yes	Sarasota	4,597	9,296	7,748	13,893	31,781	-17,888
5	No	Seminole	30,220	1,206	4,045	31,426	12,199	19,227
5	No	Sumter	725	200	0	925	9,824	-8,899
3	No	Suwannee	50	3,484	0	3,534	3,966	-432
3	No	Taylor	2,582	2,424	0	5,006	1,777	3,229
3	No	Union	1,371	345	0	1,716	752	964
5	No	Volusia	15,291	8,879	0	24,170	39,650	-15,480
2	No	Wakulla	0	400	0	400	953	-553
1	No	Walton	4,028	5,269	0	9,297	1,962	7,335
1	No	Washington	5,737	1,217	0	6,954	1,700	5,254
<b>Page 1 Totals:</b>			<b>276,191</b>	<b>255,323</b>	<b>29,787</b>	<b>531,514</b>	<b>474,950</b>	<b>56,564</b>
<b>Page 2 Totals:</b>			<b>294,614</b>	<b>251,363</b>	<b>24,083</b>	<b>545,977</b>	<b>486,092</b>	<b>59,885</b>
<b>Subtotals:</b>			<b>570,805</b>	<b>506,686</b>				
<b>Totals:</b>			<b>1,077,491</b>		<b>53,870</b>	<b>1,077,491</b>	<b>961,042</b>	<b>116,449</b>
<b>Grand Total:</b>			<b>1,131,361</b>					

### III. SUMMARY OF PROJECT RECOMMENDATIONS

In fiscal year 2018-2019, the Division requested county emergency managers to submit new hurricane evacuation shelter retrofit projects and confirm or delete any projects on the current Shelter Retrofit Report lists. Each proposed retrofit project is required to fall within the preferred or less preferred/marginal ranking on the respective Least Risk Decision Making survey report upon completion. The Division identified 347 projects that could meet the standard after retrofitting. All projects were ranked using such factors as: local and regional hurricane evacuation shelter space deficit; greatest provision of space; cost efficiency per space; and vulnerability to high winds and storm surge. *See Appendix E for a list of recommended projects.*

Table 3-1 provides a summary of the proposed shelter retrofit projects, the RPC and county served, the construction-related costs of the proposed projects, and the total hurricane evacuation shelter space capacity that will be created upon completion. *See Figure 1-3 for a map of the State's RPC regions.*

<b>Table 3-1.</b>			
<b>2019 Shelter Retrofit Report County and Regional Recommended Project Totals</b>			
<b>31-Jul-2019</b>			
<b>Region</b>	<b>County</b>	<b>Construction-related Costs, \$</b>	<b>Hurricane Shelter Capacity Gained, Spaces</b>
1	Bay	\$614,100	2,422
1	Walton	\$126,000	1,310
	<b>Region 1 Totals:</b>	<b>\$740,100</b>	<b>3,732</b>
2	Calhoun	\$193,500	1,000
2	Gadsden	\$538,223	1,957
2	Jefferson	\$344,025	1,529
2	Leon	\$1,101,025	4,652
2	Wakulla	\$1,173,825	5,217
	<b>Region 2 Totals:</b>	<b>\$3,350,598</b>	<b>14,355</b>
3	Alachua	\$1,398,475	5,489
3	Columbia	\$579,822	1,562
3	Hamilton	\$674,100	2,996
3	Lafayette	\$193,500	860
3	Taylor	\$412,720	1,876



	<b>Region 3 Totals:</b>	<b>\$3,258,617</b>	<b>12,783</b>
4	Clay	\$160,000	285
4	Duval	\$548,925	3,745
4	Flagler	\$528,325	2,965
4	Nassau	\$928,975	4,662
4	Putnam	\$57,980	260
	<b>Region 4 Totals:</b>	<b>\$2,224,205</b>	<b>11,917</b>
5	Lake	\$2,313,150	8,840
5	Marion	\$742,000	1,428
5	Orange	\$4,098,393	20,814
5	Osceola	\$1,272,450	1,522
5	Seminole	\$1,165,780	4,660
5	Sumter	\$345,600	1,565
5	Volusia	\$1,310,175	5,823
	<b>Region 5 Totals:</b>	<b>\$11,247,548</b>	<b>44,652</b>
6	Desoto	\$376,075	1,348
6	Hardee	\$294,900	323
6	Highlands	\$261,875	905
6	Okeechobee	\$190,000	1,160
6	Polk	\$1,302,575	6,567
	<b>Region 6 Totals:</b>	<b>\$2,425,425</b>	<b>10,303</b>
7	Citrus	\$160,000	858
7	Hernando	\$453,892	1,976
7	Manatee	\$429,563	3,574
7	Pasco	\$1,099,775	5,499
7	Pinellas	\$210,000	420
	<b>Region 7 Totals:</b>	<b>\$2,343,230</b>	<b>11,977</b>
8	Charlotte	\$261,250	1,050
8	Glades	\$52,875	235
8	Lee	\$2,398,617	15,235
8	Sarasota	\$1,162,080	8,454
	<b>Region 8 Totals:</b>	<b>\$3,874,822</b>	<b>24,974</b>
9	Indian River	\$40,800	184
9	Martin	\$439,475	3,031
9	Palm Beach	\$111,500	500
9	St. Lucie	\$230,000	882
	<b>Region 9 Totals:</b>	<b>\$821,775</b>	<b>4,597</b>
10	Broward	\$385,000	900
10	Miami-Dade	\$193,500	860
	<b>Region 10 Totals:</b>	<b>\$578,500</b>	<b>1,760</b>
	<b>Summary Total:</b>	<b>\$30,874,820</b>	<b>141,400</b>

If funded, the projects listed in this report will provide an estimated increase of 141,400 hurricane evacuation shelter spaces at a cost of \$30,874,820 (construction-related costs). Projects that include a standby electric power source add to the overall functionality and sustainability of a shelter, but do not 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. The Division is also responsible for annually providing a list of facilities that are recommended to be retrofitted using state funds. The Division established survey criteria that include storm surge, rainfall flooding and high wind hazards, plus a basic least-risk decision making model and report format. The performance assessments give preference to building qualities, or features 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**

The Division completed the first statewide baseline survey, and initiated a second baseline survey to continue to improve accuracy and capture changes in the statewide inventory of hurricane evacuation shelters. The results of the surveys are used by state and local agencies to prepare and implement strategies to reduce and eliminate the deficit of recognized hurricane evacuation shelter space. Between 1999 and 2019, more than 6,257 buildings were surveyed utilizing in house surveyors and private-sector consultants. The survey program has identified about 114,225 “as-is” spaces and, directly or indirectly, led to creation of more than 456,580 retrofitted shelter spaces. These totals combined with the EHPA construction of 506,686 spaces results in a total capacity of 1,077,491 spaces.

### **Component 3 – Retrofit appropriate facilities to meet Guidelines**

Since 1999, the State Legislature has provided recurring funds for retrofit projects listed in annual *Shelter Retrofit Reports*. The retrofit projects identified through the survey program, are recommended only when the retrofit can create spaces that meet the safety criteria upon completion in the project.

For Fiscal Year 2019-2020, 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 current safety criteria used in the LRDM surveys.

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 2019 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 beginning in 2016, which continues to impact shelter demand currently. 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 *2019 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 2019 is 961,042 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 decommissioned school buildings plus changes in planned local school room 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. The usable life of buildings and the aging of the retrofits provided previously is a factor impacting the availability of safe hurricane evacuation shelter space. For example, the useful life of storm screen window protection retrofits is about 15 – 20 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 general population public hurricane shelter space is available in 41 counties. RPC regions 6, 7 and 8, when standing alone, have a deficit in shelter space, even though the statewide aggregate availability of space is sufficient.

## 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 *2019 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 *2019 Shelter Retrofit Report* of available retrofit space totals 1,077,491 shelter spaces.

In 2015, an additional provision, Sec. 252.355 Florida Statutes, established new requirements for special needs registries under county emergency managers, which is now handled by the Florida Department of Health. Although shelters for persons with special needs have been available, the additional statutory provision increased demand because medical professionals 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 floor area space and other accommodations per client compared to general population shelters. They are more expensive to retrofit, as the spaces generated per dollar invested are fewer. As a result, 25 of Florida's 67 counties have a special needs deficit in 2019.

An additional 141,400 spaces could be created if the projects in this report are funded, resulting in 1,272,761 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. Combined shelter demand for fiscal year 2019-2020 is 961,042 spaces.

In 2019 three (3) regions of the state still report a deficit of hurricane evacuation shelter space in general and or special needs categories. Regions that have an adequate number of hurricane evacuation shelter spaces currently will need to maintain their inventory. Since 2017, more than 65,000 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 due to changes such as these as well as changes in use. Thus, even though the aggregate statewide deficit is reduced in the *2019 Shelter Retrofit Report*, a "maintenance level" of shelter space production will be necessary to avoid falling back into an overall deficit situation.

## **Appendix A**

### **List of Abbreviations**

**List of Abbreviations**

ANSI:	American National Standards Institute
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



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FY:	Fiscal Year
GP:	General Population
HB:	House Bill
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
RPC:	Regional Planning Council
SES:	Standby Electrical System
SESP:	Statewide Emergency Shelter Plan

SLOSH: Sea, Lake and Overland 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**

### **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; 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 D for an example of the 2019 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 2018 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 400 of a total maximum of 715 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 100 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 100 points was given for those facilities that are located in regions with the most severe

shelter space deficits (< 14.9 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 100 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 100 points was given for those facilities that are located in a county with a severe shelter space deficit (< 14.9 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 Shelter (SpNS) Hurricane Evacuation Risk Shelter Space. (Maximum of 100 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 100 points was given for those facilities that are located in regions with the most severe shelter space deficits (< 44.9 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 100 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 100 points was given for those facilities that are located in a county with a severe SpNS space deficit (< 44.9 sf of floor space per PSN evacuee). Lesser points were given to retrofit projects in counties with less severe deficits.

**5. Building 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.

**6. Numerical increase in shelter capacity due to 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. The maximum amount of points were given to projects creating >500 spaces. Lesser points were given to projects creating less additional spaces. No points were allocated for shelter spaces already in the inventory. This item serves to maximize use of state funds.

**7. Cost-effectiveness of Project(s) (Maximum 50 Points):**

A maximum of 50 points was allocated if the average total cost per shelter space was <\$350. If not, then zero points were allocated. 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.

**8. Age of Building (Maximum of 50 Points):**

A maximum of 50 points were allocated if the building was built after the year 2000. If the building was built before the year 2000, then zero points were allocated.

**9. Flood Hazard and Building Design and Construction Criteria. (Maximum of 90 points)**

The Division recommends that all hurricane shelters be reviewed for consistency. 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 90 points were allocated based on how well the given facility is demonstrated to conform to 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 30 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 30 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 30 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. Typically unreinforced masonry walls, flat lightweight roofs over uncertified long spans, pre-engineered metal buildings, lack of load-path connectors, etc will disqualify a building for consideration. The points are also allocated 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.

**Appendix D**

**2019 Shelter Retrofit Project Submittal Form  
EMPA Base Grant Task 8.A  
Ref: Section 252.385(3), Florida Statutes**

**2019 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 the following web addresses below before beginning the project identification process.

<https://www.floridadisaster.org/dem/response/infrastructure/shelter-retrofit-report/>

<https://portal.floridadisaster.org/shelters/External/Archives/ARC4496-Prescriptive-Summary-Table.pdf>

Note all construction deficiencies for individual buildings.

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 soft spot, 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 rewiring, 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 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.



**2019 SHELTER RETROFIT PROJECT SUBMITTAL FORM  
INSTRUCTIONS, Cont'd**

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 2019

9. 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 \$350,000 total per facility, excluding Standby Electrical System (SES) work; and,

SES work may be considered separately from hurricane wind and flood retrofit construction. SES is limited to \$350,000 total per facility campus/site. (Thus potentially a limit of \$350,000 in SES work, plus \$350,000 in other construction/structural mitigation work, for a combined total limit of up to \$700,000.)

**2019 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 \_\_\_\_\_

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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?

\_\_\_\_\_

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

Private Facility/Full Availability

**HURRICANE HAZARD INFORMATION**

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 \_\_\_\_\_

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**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  NoAre construction drawings (architectural & structural) and specifications available?  Yes  NoStructural wind load code or standard used in the design and construction of this facility, check only one response:

- |  |   |
|--|---|
| <input type="checkbox"/> SBC or MBMA, Edition 19   | <input type="checkbox"/> ANSI A58.1-1982                  |
| <input type="checkbox"/> SFBC, Edition 19          | <input type="checkbox"/> ASCE 7, year _____               |
| <input type="checkbox"/> IBC or FBC, Edition _____ | <input type="checkbox"/> Other: _____ Edition, year _____ |

General Construction Classification, check only one response:

- |  |  |
|--|--|
| <input type="checkbox"/> Light Steel Frame*                  | <input type="checkbox"/> Heavy Steel Frame (I or W section)  |
| <input type="checkbox"/> Reinforced Concrete Frame           | <input type="checkbox"/> Reinforced Concrete or Tilt-up Wall |
| <input type="checkbox"/> Reinforced Masonry/PRM wall-bearing |  |

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

If not included in above choices, stop here.If multistory, what is the number of concrete floors elevated above grade? \_\_\_\_\_

Facility Name: \_\_\_\_\_

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**FACILITY DESCRIPTION, (cont'd):**

Exterior Wall Construction, check only one response as appropriate:

- |  |  |
|--|--|
| <input type="checkbox"/> Reinforced Masonry<br>(Rebar @ 4 ft. o.c. or closer)                          | <input type="checkbox"/> Light Wood or Metal Stud<br>w/ 1/2"+ wood structural panels |
| <input type="checkbox"/> Partially Reinforced Masonry<br>(Reference Instructions 6)<br>(includes EIFS) | <input type="checkbox"/> Light Wood or Metal Stud<br>w/ light non-plywood            |
| <input type="checkbox"/> Unreinforced Masonry<br>(or rebar spacing unknown)                            | <input type="checkbox"/> Glazed Panel or Block                                       |
| <input type="checkbox"/> Poured-in-place or Precast<br>Reinforced Concrete (2" min. thick)             | <input type="checkbox"/> Metal Sheets or panels<br>Light Architectural Panel         |

Roof Construction, check only one response as appropriate:

- |   |   |
|---|---|
| <input type="checkbox"/> Cast-in-place Reinforced Concrete<br>(standard wgt concrete, 3 inch min.)                                | <input type="checkbox"/> Plywood on wood or metal<br>joist or truss                               |
| <input type="checkbox"/> Precast Concrete Panels<br>("T"s, "Double T"s", Planks, etc.)  | <input type="checkbox"/> Wood boards or T & G deck<br>on wood joist or truss                      |
| <input type="checkbox"/> Metal Decking w/ standard wgt<br>concrete (2" min. thick) on<br>steel joist, truss or beam               | <input type="checkbox"/> Precast Cement-fiber (eg, tectum)<br>panels on wood or metal joist/truss |
| <input type="checkbox"/> Other Metal Decking Systems<br>(insulating concrete and/or rigid<br>insulation or other light coverings) | <input type="checkbox"/> Poured Gypsum on Formboard<br>Decking on wood or metal joist or<br>truss |

Facility Name \_\_\_\_\_

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**FACILITY DESCRIPTION, (cont'd):**

What is the roof geometry type, check appropriate response:

- Flat or low slope (< 1:12)
- Gable-end
- Hip System
- Other \_\_\_\_\_

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 \_\_\_\_\_

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**FACILITY DESCRIPTION, (cont'd):**

Describe General Condition of the Building:

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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:

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

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Facility Name \_\_\_\_\_

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**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 Clsm
- 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)?

Toilets  Yes  No

Showers  Yes  No

Potable Water  Yes  No

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 \_\_\_\_\_

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**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.

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Project Type	Impact (safety/capacity)	Cost estimate, \$
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____

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

Estimated project design and/or construction timeline duration?                      \_\_\_\_\_ Months

Facility Name \_\_\_\_\_

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Attachment A

2019 Shelter Retrofit Report Preliminary Budget Worksheet

<b>Project #1</b>		
<b>Descriptive Title:</b> _____		
<b>Line</b>	<b>Item Description</b>	<b>Cost Estimate</b>
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	<b>SUB-TOTAL</b>	\$
K	Admin Expenses (5% maximum)	\$
L	<b>TOTAL ESTIMATED PROJECT COST</b>	\$

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

<b>Project #2</b>		
<b>Descriptive Title:</b> _____		
<b>Line</b>	<b>Item Description</b>	<b>Cost Estimate</b>
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	<b>SUB-TOTAL</b>	\$
K	Admin Expenses (5% maximum)	\$
L	<b>TOTAL ESTIMATED PROJECT COST</b>	\$

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

Facility Name \_\_\_\_\_

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Attachment A

2019 Shelter Retrofit Report Preliminary Budget Worksheet

<b>Project #1</b>		
<b>Descriptive Title: _____</b>		
<b>Line</b>	<b>Item Description</b>	<b>Cost Estimate</b>
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	<b>SUB-TOTAL</b>	\$
K	Admin Expenses (5% maximum)	\$
L	<b>TOTAL ESTIMATED PROJECT COST</b>	\$

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

<b>Project #2</b>		
<b>Descriptive Title: _____</b>		
<b>Line</b>	<b>Item Description</b>	<b>Cost Estimate</b>
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	<b>SUB-TOTAL</b>	\$
K	Admin Expenses (5% maximum)	\$
L	<b>TOTAL ESTIMATED PROJECT COST</b>	\$

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

Facility Name \_\_\_\_\_

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## **Appendix E**

### **E 1 Prioritized List of Recommended Projects**

Regional Planning Council (RPC) #									
County	Site Name/Bldg ID	Year Built	Spaces Added	Project Description	SRR Project Estimate	Cost per SRR Space	Origin Year	Rank	
<b>Region 1 - West Florida</b>									
1	Bay	Deer Point ES 1A Cafeteria	2009	421	Fenestration Protection	\$126,300	\$300	2019	440
1	Bay	Deer Point ES 1B CR	2009	421	Fenestration Protection	\$110,400	\$262	2019	440
1	Bay	Bozeman Learning Center 1 Admin	2000	363	Fenestration Protection	\$74,433	\$205	2019	430
1	Bay	Bozeman Learning Center 8 Gym	2000	363	Fenestration Protection	\$74,433	\$205	2019	430
1	Bay	Bozeman Learning Center 9 Cafeteria	2000	364	Fenestration Protection	\$74,434	\$204	2019	430
1	Bay	Deer Point ES 1C CR	2009	234	Fenestration Protection	\$62,300	\$266	2019	415
1	Bay	Deer Point ES 1D CR	2009	256	Fenestration Protection	\$91,800	\$359	2019	365
1	Walton	Freeport SHS 1 Main	2001	1,310	GenSet Protect	\$126,000	\$96	2019	465
<b>Region 2 - Apalachee</b>									
2	Calhoun	Altha ES 2 CR	2015	422	Fenestration	\$64,500	\$500	2019	440
2	Calhoun	Altha ES 5 CR	2015	449	Fenestration Protection/GenSet	\$64,500	\$500	2019	440
2	Calhoun	Blountstown HS	2011	129	Fenestration Protection/GenSet	\$64,500	\$500	2018	400
2	Gadsden	Gadsden County HS 2 Media	2001	525	Fenestration Protection	\$118,125	\$225	2018	515
2	Gadsden	Gadsden County HS 3	2001	525	Fenestration Protection	\$118,125	\$225	2018	515
2	Gadsden	West Gadsden MS 6 Music	2005	104	Fenestration Protection	\$23,400	\$225	2018	450
2	Gadsden	Greensboro ES (aka HS) 2 CR	1994	454	Fenestration Protection	\$68,061	\$150	2015	440
2	Gadsden	Greensboro ES (aka HS) 3 Cafeteria	1994	187	Fenestration Protection	\$45,952	\$246	2015	415
2	Gadsden	Havana MS CR	1992	162	Fenestration Protection	\$164,560	\$1,016	2015	355
2	Jefferson	Jefferson County MS/SHS 7 Art/Music	2003	317	Fenestration Protection	\$71,325	\$225	2018	490

Regional Planning Council (RPC) #	County	Site Name/Bldg ID	Year Built	Spaces Added	Project Description	SRR	Origin		Rank
						Project Estimate	Cost per Space	SRR Year	
2	Jefferson	Jefferson County MS/SHS 2 CR	2006	233	Fenestration Protection	\$52,425	\$225	2018	465
2	Jefferson	Jefferson County MS/SHS 3 CR	2003	203	Fenestration Protection	\$45,675	\$225	2018	465
2	Jefferson	Jefferson County MS/SHS 5 CR	2003	226	Fenestration Protection	\$50,850	\$225	2018	465
2	Jefferson	Jefferson County MS/SHS 6 CR	2003	268	Fenestration Protection	\$60,300	\$225	2018	465
2	Jefferson	Jefferson County MS/SHS 9 CR	2003	242	Fenestration Protection	\$54,450	\$225	2018	465
2	Jefferson	Jefferson County MS/SHS 4 Library	2003	40	Fenestration Protection	\$9,000	\$225	2018	445
2	Leon	FAMU DRS 3 CR	2007	672	Fenestration Protection	\$183,975	\$274	2012	405
2	Leon	FAMU DRS 5 CR	2007	532	Fenestration Protection	\$119,700	\$225	2012	405
2	Leon	FAMU DRS 6 CR	2007	557	Fenestration Protection	\$40,500	\$73	2012	405
2	Leon	Lawton Chiles HS 9 CR	2004	344	Fenestration Protection	\$40,275	\$225	2019	390
2	Leon	Augusta RAA MS 4 CR	2004	227	Fenestration Protection	\$51,075	\$225	2019	365
2	Leon	Augusta RAA MS 6 CR	2007	186	Fenestration Protection	\$41,850	\$225	2019	365
2	Leon	Lawton Chiles HS 14	2007	180	Fenestration Protection	\$40,500	\$225	2019	365
2	Leon	Lawton Chiles HS 6 Gym	1998	618	Engineering Fenestration Protection	\$139,050	\$225	2018	365
2	Leon	Woodville ES 8	2015	154	Fenestration Protection	\$34,650	\$225	2019	365
2	Leon	Augusta RAA MS 18 Cafeteria	2004	148	Fenestration Protection	\$33,300	\$225	2019	350
2	Leon	Lawton Chiles HS 7 CR	1998	307	Fenestration Protection	\$69,075	\$225	2018	340
2	Leon	Woodville ES 7 CR	1991	309	Fenestration Protection	\$29,700	\$225	2019	340
2	Leon	Lawton Chiles HS 8 CR	1998	227	Fenestration Protection	\$51,075	\$225	2018	315
2	Leon	Lawton Chiles HS 5 Aud	1998	105	Engineering/ Fenestration Protection	\$136,125	\$225	2019	300

<b>Regional Planning Council (RPC) #</b>									
<b>County</b>	<b>Site Name/Bldg ID</b>	<b>Year Built</b>	<b>Spaces Added</b>	<b>Project Description</b>	<b>SRR Project Estimate</b>	<b>Origin Cost per SRR Space</b>		<b>Year</b>	<b>Rank</b>
2	Leon	Lawton Chiles HS 3 Cafeteria	1997	46	Engineering/ Fenestration Protection	\$73,575	\$225	2019	295
2	Leon	FAMU DRS 2 Admin/Media	2007	40	Fenestration Protection	\$16,600	\$415	2012	285
2	Wakulla	Crawfordville ES 2 CR	2002	330	Fenestration Protection	\$74,250	\$225	2018	540
2	Wakulla	Riversink ES 2 CR	2007	435	Fenestration Protection	\$97,875	\$225	2018	540
2	Wakulla	Riversink ES 3 Cafeteria	2007	312	Fenestration Protection	\$70,200	\$225	2018	540
2	Wakulla	Riversink ES 5 CR	2007	446	Fenestration Protection	\$100,350	\$225	2018	540
2	Wakulla	Riversink ES 6 CR	2007	398	Fenestration Protection	\$89,550	\$225	2018	540
2	Wakulla	Crawfordville ES 3 CR	2002	243	Fenestration Protection	\$54,675	\$225	2018	515
2	Wakulla	Crawfordville ES 5 CR	2002	255	Fenestration Protection	\$57,375	\$225	2018	515
2	Wakulla	Crawfordville ES 6 CR	2002	294	Fenestration Protection	\$66,150	\$225	2018	515
2	Wakulla	Crawfordville ES 7 CR	2002	270	Fenestration Protection	\$60,750	\$225	2018	515
2	Wakulla	Shadeville ES 3A CR	2002	78	Fenestration Protection	\$17,550	\$225	2018	500
2	Wakulla	Shadeville ES 3B CR	2002	77	Fenestration Protection	\$17,325	\$225	2018	500
2	Wakulla	Crawfordville ES 4 CR	2002	27	Fenestration Protection	\$6,075	\$225	2018	495
2	Wakulla	Riversink ES 4	2007	27	Fenestration Protection	\$6,075	\$225	2018	495
2	Wakulla	Shadeville ES 1A	1989	473	Fenestration Protection	\$106,425	\$225	2018	490
2	Wakulla	Shadeville ES 8 CR	1992	312	Fenestration Protection	\$70,200	\$225	2018	480
2	Wakulla	Riversprings MS 1A	1999	223	Fenestration Protection	\$50,175	\$225	2018	465
2	Wakulla	Riversprings MS 1B	1999	227	Fenestration Protection	\$51,075	\$225	2018	465
2	Wakulla	Riversprings MS 1C	1999	268	Fenestration Protection	\$60,300	\$225	2018	465
2	Wakulla	Shadeville ES 1B	1989	249	Fenestration Protection	\$56,025	\$225	2018	465
2	Wakulla	Shadeville ES 1C	1989	249	Fenestration Protection	\$56,025	\$225	2018	465
2	Wakulla	Riversprings MS 1D	1999	24	Fenestration Protection	\$5,400	\$225	2018	445
<b>Region 3 - North Central Florida</b>									
3	Alachua	Southwest Rec Center	97/01/1	1,835	Fenestration Protection	\$334,035	\$182	2019	465
3	Alachua	W.S. Talbot ES 4 CR	2005	379	Fenestration Protection	\$50,400	\$133	2014	440



Regional Planning Council (RPC) #									
County	Site Name/Bldg ID	Year Built	Spaces Added	Project Description	SRR Project Estimate	Cost per Space	Origin SRR Year	Rank	
3	Alachua	Grace Marketplace Center 11 Dorm	2011	252	Fenestration Protection	\$55,440	\$220	2017	415
3	Alachua	H. Bishop MS 31 CR	2004	186	Fenestration Protection	\$32,550	\$175	2016	415
3	Alachua	W.T. Loften SHS 24 Cafeteria / CR	2007	670	Fenestration Protection	\$300,000	\$448	2016	415
3	Alachua	M.K. Rawlings ES 4	2006	207	Fenestration Protection	\$28,200	\$136	2014	415
3	Alachua	Oak View MS 6 Cafeteria / Music	1993	447	Engineering & Fenestration	\$23,200	\$52	2014	390
3	Alachua	Santa Fe SHS 34 CR (west)	2008	414	Fenestration Protection	\$206,850	\$500	2014	390
3	Alachua	Duval Early Learning Academy 4 Cafeteria	1997	225	Fenestration Protection	\$23,250	\$103	2015	365
3	Alachua	J. Williams ES 6 CR	1997	230	Fenestration Protection	\$62,100	\$270	2014	365
3	Alachua	J. Williams ES 7	1999	210	Genset Protect	\$62,100	\$296	2014	365
3	Alachua	W.S. Talbot ES 3 Cafeteria	1984	172	Engineering & genset	\$38700	\$225	2014	365
3	Alachua	W.W. Irby ES 3	1991	262	Fenestration Protection	\$16,650	\$64	2014	365
3	Alachua	Straughn Center UF	1997	0	Genset	\$165,000		2019	345
3	Columbia	Fort White HS 5 Gym	1999	510	Fenestration Protection	\$136,082	\$267	2007	315
3	Columbia	Fort White HS 9	1999	367	Fenestration Protection	\$71,932	\$196	2007	290
3	Columbia	Fort White MS 27 Multipurpose	2007	162	Fenestration Protection	\$87,000	\$537	2016	265
3	Columbia	Fort White MS 26 CR	2007	108	Fenestration Protection	\$122,808	\$1,137	2016	250
3	Columbia	Fort White MS 28 CR	1991	186	Fenestration Protection	\$72,000	\$387	2016	215
3	Columbia	Fort White MS 29 CR	1992	229	Fenestration Protection	\$90,000	\$393	2016	215
3	Hamilton	Hamilton County ES 28 Cafeteria	2015	2,250	Fenestration Protection	\$506,250	\$225	2018	365
3	Hamilton	Hamilton County HS 8 Cafeteria	2003	746	Fenestration Protection	\$167,850	\$225	2018	365

Regional Planning Council (RPC) #									
County	Site Name/Bldg ID	Year Built	Spaces Added	Project Description	SRR Project Estimate	Origin Cost per SRR Space		Year	Rank
Lafayette	Lafayette SHS 32 Gym / 2 Cafeteria	1996 / 1991	603	Fenestration Protection/ Generator Protection/ SES	\$135,675	\$225		2018	315
Lafayette	Lafayette SHS 3 CR	1991	257	Fenestration Protection/ Generator Protection/ SES	\$57,825	\$225		2018	265
Taylor	Taylor County ES 3 CR	2002	672	Fenestration Protection	\$147,840	\$220		2017	465
Taylor	Taylor County ES 6 CR	2002	571	Fenestration Protection	\$125,620	\$220		2017	465
Taylor	Taylor County ES 5 CR	2002	341	Fenestration Protection	\$75,020	\$220		2017	440
Taylor	Taylor County ES 4 CR	2002	292	Fenestration Protection	\$64,240	\$220		2017	415
<b>Region 4 - Northeast Florida</b>									
Clay	Argyle ES 3 CR	2003	285	Fenestration Protection	\$160,000	\$561		2016	315
Duval	Don Brewer ES 1D CR	2001	801	Fenestration Protection	\$76,950	\$225		2018	465
Duval	Kernan Trail ES 1D CR	2002	839	Fenestration Protection	\$80,700	\$225		2018	465
Duval	Oceanway ES 1D CR	2001	827	Fenestration Protection	\$180,225	\$225		2018	455
Duval	Bartram Springs ES 1A CR	2009	374	Fenestration Protection	\$30,150	\$225		2018	440
Duval	Bartram Springs ES 1B CR	2009	455	Fenestration Protection	\$101,025	\$225		2018	440
Duval	Waterleaf ES 1B CR	2011	449	Fenestration Protection	\$79,875	\$225		2018	440
Flagler	L.E.Wadsworth ES 6 CR / Cafeteria	2007	1,464	Fenestration Protection	\$133,100	\$91		2017	365
Flagler	Belle Terre ES 3 CR	2004	464	Fenestration Protection	\$104,400	\$225		2018	340
Flagler	Belle Terre ES 6 CR	2004	438	Fenestration Protection	\$98,550	\$225		2018	340
Flagler	Belle Terre ES 4 CR	2004	298	Fenestration Protection	\$67,050	\$225		2018	315
Flagler	Belle Terre ES 7 CR	2004	201	Fenestration Protection	\$45,225	\$225		2018	315
Flagler	Flagler Humane Society		100	Fenestration Protection	\$80,000	\$800		2019	
Nassau	Wildlight ES 3	2016	386	Fenestration Protection	\$86,850	\$225		2018	390
Nassau	Wildlight ES 4	2016	351	Fenestration Protection	\$78,975	\$225		2018	390

<b>Regional Planning Council (RPC) #</b>									
<b>County</b>	<b>Site Name/Bldg ID</b>	<b>Year Built</b>	<b>Spaces Added</b>	<b>Project Description</b>	<b>SRR Project Estimate</b>	<b>Origin Cost per SRR Space</b>			
						<b>Year</b>	<b>Rank</b>		
Nassau	Wildlight ES 5	2016	393	Fenestration Protection	\$88,425	2018	390	\$225	
Nassau	Wildlight ES 6	2016	359	Fenestration Protection	\$80,775	2018	390	\$225	
Nassau	Yulee HS 4 Gym	2005	350	Fenestration Protection	\$77,000	2017	390	\$220	
Nassau	Yulee HS 6 Cafeteria	2005	350	Fenestration Protection	\$77,000	2017	390	\$220	
Nassau	Callahan IS 7 CR	2009	190	Fenestration Protection	\$32,400	2017	365	\$171	
Nassau	Yulee PS 10 CR	2009	190	Fenestration Protection	\$43,200	2017	365	\$227	
Nassau	Bryceville ES 2 CR	2005	177	Fenestration Protection	\$36,000	2017	355	\$203	
Nassau	Bryceville ES 7 CR	2007	167	Fenestration Protection	\$36,000	2017	355	\$216	
Nassau	Callahan MS 3 CR	1982	376	Fenestration Protection	\$54,600	2017	340	\$145	
Nassau	Callahan IS 1 Cafeteria (1993 Addition)	1993	266	Fenestration Protection	\$43,200	2017	315	\$162	
Nassau	Callahan IS 3 CR	1999	215	Fenestration Protection	\$45,450	2017	315	\$211	
Nassau	Callahan IS 4 CR	1999	265	Fenestration Protection	\$43,200	2017	315	\$163	
Nassau	Callahan IS 5 CR	1999	263	Fenestration Protection	\$43,200	2017	315	\$164	
Nassau	Callahan IS 6 CR	1999	194	Fenestration Protection	\$43,200	2017	315	\$223	
Nassau	Yulee PS 7 Cafeteria	1986	170	Fenestration Protection	\$19,500	2017	315	\$115	
Putnam	St. Johns River State College V Cafeteria/Commons	1964	260	Engineering & Fenestration	\$57,980	2016	315	\$223	
<b>Region 5 - East Central Florida</b>									
Lake	East Ridge MS 6 Gym	2007	600	Fenestration Protection and Genset	\$132,000	2017	465	\$220	
Lake	East Ridge SHS 9 Gym triplex	2001	600	Fenestration Protection	\$132,000	2018	465	\$220	
Lake	Eutis SHS 3 Gym	2003	510	Fenestration Protection	\$68,100	2019	465	\$134	
Lake	Leesburg SHS 15 Gym	2003	510	Fenestration Protection	\$112,200	2019	465	\$220	
Lake	Tavares HS 7 Gym	2003	510	Fenestration Protection	\$112,200	2019	465	\$220	
Lake	Tavares MS 5 ESE	2003	599	Fenestration Protection	\$45,000	2019	465	\$75	
Lake	East Ridge SHS 7 Aud triplex	2001	320	Fenestration Protection	\$72,000	2018	440	\$225	
Lake	Lake Minneloa HS	2012	428	Fenestration Protection	\$96,300	2019	440	\$225	
Lake	Mount Dora SHS 7	2004	428	Fenestration Protection	\$96,300	2019	440	\$225	
Lake	Umatilla SHS 24 CR	2003	400	Fenestration Protection	\$92,500	2019	440	\$231	

Regional Planning Council (RPC) #									
County	Site Name/Bldg ID	Year Built	Spaces Added	Project Description	SRR Project Estimate	Cost per Space	SRR Origin Year	Rank	
Lake	Umatilla SHS 25 Culinary Arts	2003	400	Fenestration Protection	\$92,500	\$231	2019	440	
Lake	Pine Ridge ES 4 Cafeteria	2002	213	Fenestration Protection and Genset	\$47,925	\$225	2018	415	
Lake	Round Lake Charter ES 4 Cafeteria	2000	210	Fenestration Protection and Genset	\$47,250	\$225	2018	415	
Lake	Carver MS 2 Clsrm	2005	0	Fenestration Protection	\$41,666		2019	395	
Lake	Carver MS 3 Clsrm	2005	0	Fenestration Protection	\$41,667		2019	395	
Lake	Carver MS 4 Clsrm	2005	0	Fenestration Protection	\$41,667		2019	395	
Lake	Leesburg ES Café	2003	0	Genset	\$10,000		2019	395	
Lake	Umatilla ES Café	2000	0	Genset	\$10,000		2019	395	
Lake	Umatilla SHS 3 Cafeteria	2003	0	Engineering & Fenestration	\$15,000		2019	395	
Lake	East Ridge MS 4 Cafeteria	2007	328	Fenestration Protection and Genset	\$204,800	\$624	2017	390	
Lake	Eutis MS 2 Cafeteria	1996	432	Fenestration Protection	\$126,000	\$292	2019	390	
Lake	Lost Lake ES 3 Café	1999	400	Fenestration Protection and Genset	\$102,500	\$256	2019	390	
Lake	Lost Lake ES 8 Clsrm	1999	400	Fenestration Protection	\$92,500	\$231		390	
Lake	South Lake SHS 15 Cafeteria	2004	400	Genset	\$167,850	\$420	2017	390	
Lake	Astatula ES 3 Cafeteria	1999	231	Fenestration Protection and Genset	\$51,975	\$225	2018	365	
Lake	Villages ES 1 Admin	1999	267	Fenestration Protection	\$61,667	\$231	2019	365	
Lake	Villages ES 2 Clsrm	1999	267	Fenestration Protection	\$61,667	\$231	2019	365	
Lake	East Ridge MS 5 Music	2007	120	Fenestration Protection and Genset	\$56,250	\$469	2017	350	
Lake	Spring Creek Charter ES Café	1992	0	Genset	\$10,000		2019	345	

Regional Planning Council (RPC) #	County	Site Name/Bldg ID	Year Built	Spaces Added	Project Description	SRR	Origin		
						Project Estimate	Cost per Space	SRR Year	Rank
5	Lake	Villages ES 3 Café	1999	267	Fenestration Protection and Genset	\$71,666	\$401	2019	315
5	Marion	Saddlewood ES 4 CR	2010	295	Fenestration Protection	\$16,000	\$54	2019	415
5	Marion	Legacy ES 3 CR	2010	253	Fenestration Protection	\$126,500	\$500	2019	365
5	Marion	Westport HS	2001	200	Genset	\$230,000	\$1,150	2019	365
5	Marion	S Ocala ES 5 CR	1999	261	Fenestration Protection	\$126,500	\$485	2019	315
5	Marion	Saddlewood ES 6 Cafeteria	1999	233	Fenestration Protection	\$116,500	\$500	2019	315
5	Marion	Marion Oaks ES 8 CR	1999	186	Fenestration Protection	\$126,500	\$680	2019	315
5	Orange	Meadowbrook MS 6 CR	2005	532	Fenestration Protection	\$61,576	\$116	2009	465
5	Orange	Meadowbrook MS 7 CR	2005	528	Fenestration Protection	\$61,534	\$117	2009	465
5	Orange	Orange County Magic Gym / Rec	2010	4,000	Fenestration Protection and Genset	\$1,400,000	\$350	2019	465
5	Orange	Wekiva HS 4 CR	2007	807	Fenestration Protection	\$178,836	\$222	2009	465
5	Orange	Wekiva HS 8 Aud/CR	2007	776	Fenestration Protection	\$108,121	\$139	2009	465
5	Orange	West Orange HS 4 CR	2008	710	Fenestration Protection	\$176,229	\$248	2009	465
5	Orange	West Orange HS 5 CR	2008	1,628	Fenestration Protection	\$247,726	\$152	2009	465
5	Orange	West Orange HS 6 CR	2008	792	Fenestration Protection	\$170,537	\$215	2009	465
5	Orange	West Orange HS 8 Aud/CR	2008	777	Fenestration Protection	\$127,198	\$164	2009	465
5	Orange	Avalon MS 2 CR	2006	335	Fenestration Protection	\$47,464	\$142	2009	440
5	Orange	Avalon MS 6 CR	2006	425	Fenestration Protection	\$60,595	\$143	2009	440
5	Orange	Avalon MS 7 CR	2006	491	Fenestration Protection	\$60,922	\$124	2009	440
5	Orange	Avalon MS 8 CR	2006	433	Fenestration Protection	\$60,868	\$141	2009	440
5	Orange	Legacy MS 2 CR	2005	345	Fenestration Protection	\$47,481	\$138	2009	440
5	Orange	Legacy MS 6 CR	2005	466	Fenestration Protection	\$60,681	\$130	2009	440
5	Orange	Legacy MS 7 CR	2005	489	Fenestration Protection	\$60,921	\$125	2009	440
5	Orange	Legacy MS 8 CR	2005	430	Fenestration Protection	\$60,598	\$141	2009	440
5	Orange	Meadowbrook MS 8 CR	2005	470	Fenestration Protection	\$60,681	\$129	2009	440

Regional Planning Council (RPC) #									
County	Site Name/Bldg ID	Year Built	Spaces Added	Project Description	SRR Project Estimate	Cost per Space	Origin Year	Rank	
5	Orange	Discovery MS 2 CR	1996	726	Fenestration Protection	\$138,460	\$191	2009	415
5	Orange	Discovery MS 3 CR	1996	764	Fenestration Protection	\$138,631	\$181	2009	415
5	Orange	Discovery MS 7 Gym	1996	618	Fenestration Protection	\$60,871	\$98	2009	415
5	Orange	Hunters Creek MS 3 CR	1993	681	Fenestration Protection	\$138,651	\$204	2009	415
5	Orange	Hunters Creek MS 7	1993	641	Fenestration Protection	\$61,851	\$96	2009	415
5	Orange	Meadow Woods MS 2	1997	726	Fenestration Protection	\$164,989	\$227	2009	415
5	Orange	Meadow Woods MS 7 Gym	1997	501	Fenestration Protection	\$61,142	\$122	2009	415
5	Orange	Discovery MS 8	1996	382	Fenestration Protection	\$50,996	\$133	2009	390
5	Orange	Meadow Woods MS 8 Cafeteria	1997	307	Fenestration Protection	\$46,674	\$152	2009	390
5	Orange	Discovery MS 6 CR	1996	274	Fenestration Protection	\$41,633	\$152	2009	365
5	Orange	Hunters Creek MS 6 CR	1993	234	Fenestration Protection	\$40,889	\$175	2009	365
5	Orange	Hunters Creek MS 8 Cafeteria	1993	289	Fenestration Protection	\$45,151	\$156	2009	365
5	Orange	Meadow Woods MS 6	1997	237	Fenestration Protection	\$41,487	\$175	2009	365
5	Orange	Bithlo Park Community Center	1996	0	Engineering & Fenestration	\$15,000		2019	335
5	Osceola	Chestnut ES 1 Cafeteria	2005	322	Fenestration Protection	\$72,450	\$225	2018	340
5	Osceola	Kenansville Community Center	TBD	100	Fenestration Protection	\$100,000	\$1,000	2019	200
5	Osceola	Holopaw Communtiy Center	TBD	100	Fenestration Protection	\$100,000	\$1,000	2019	200
5	Osceola	Marydia Community Center	TBD	100	Fenestration Protection	\$100,000	\$1,000	2019	200
5	Osceola	Robert Guevara Community Center	TBD	100	Fenestration Protection	\$100,000	\$1,000	2019	200
5	Osceola	Buenaventura Lakes Library	TBD	100	Fenestration Protection	\$100,000	\$1,000	2019	200

Regional Planning									
Council	County	Site Name/Bldg ID	Year Built	Spaces Added	Project Description	SRR Project Estimate	Origin Cost per SRR Space		Rank
							Year		
5	Volusia	Daytona Beach CC-Deland 8 CR	2002	130	Fenestration Protection	\$29,250	\$225	2018	390
5	Volusia	Mainland SHS 5 CR	2006	129	Fenestration Protection	\$29,025	\$225	2018	390
5	Volusia	Mainland SHS 2A Cafeteria	2006	0	Fenestration Protection	\$0	\$225	2018	385
<b>Region 6 - Central Florida</b>									
6	DeSoto	DeSoto SHS 1C Cafeteria	1977/2005	511	Fenestration Protection	\$114,750	\$225	2019	505
6	DeSoto	Nocatee ES 8 CR	2008	148	Fenestration Protection	\$33,300	\$225	2019	450
6	DeSoto	West ES 8 CR	2008	148	Fenestration Protection	\$33,300	\$225	2019	450
6	DeSoto	South Florida State College 3 CR	2003	41	Fenestration Protection	\$9,225	\$225	2019	445
6	DeSoto	Nocatee ES 4 CR	1999	275	Fenestration Protection	\$61,875	\$225	2019	415
6	DeSoto	DeSoto County Library	1997/2008	120	Fenestration Protection	\$100,000	\$833	2019	400
6	DeSoto	Memorial ES 15 CR	1999	105	Fenestration Protection	\$23,625	\$225	2018	400
6	Hardee	Zolfo ES 10 CR (3rd Grade)	2001	0	Engineering	\$20,000	\$225	2014	395
6	Hardee	South Florida State College 1B CR	2003	103	Fenestration Protection	\$40,000	\$388	2019	350
6	Hardee	Zolfo ES 9 Media	1994	0	Engineering	\$20,000		2014	335
6	Hardee	Wauchula ES 5 ESE CR	1998	111	Fenestration & MEP/Genset	\$54,900	\$495	2015	300
6	Hardee	Wauchula ES 6 Media	1998	109	Fenestration & MEP/Genset	\$160,000	\$1,468	2015	300
6	Highlands	MLK Jr Memorial Field Gym	2002	415	Engineering Study	\$15,000		2018	640
6	Highlands	Reflections on Silver	2005	75	Fenestration Protection	\$16,875	\$225	2018	550
6	Highlands	Avon Park Rec Center	2002	415	Fenestration Protection	\$230,000	\$554	2019	340
6	Okeechobee	Osceola MS 7 Gym	1995	1,160	Fenestration Protection	\$190,000	\$164	2019	315
6	Polk	McKeel Academy of Technology 14 Gym	2004	598	Fenestration Protection	\$134,550	\$225	2019	615

Regional Planning Council (RPC) #									
County	Site Name/Bldg ID	Year Built	Spaces Added	Project Description	SRR Project Estimate	Cost per Space	Origin Year	Rank	
Polk	Berkley ES 4 CR	1999	525	Fenestration Protection	\$118,125	\$225	2019	565	
Polk	Stuart Center	1995	1,000	Engineering	\$50,000	\$50	2019	565	
Polk	Ben Hill Griffin ES 4	1992	465	Fenestration Protection	\$104,625	\$225	2019	540	
Polk	Ben Hill Griffin ES 6	1992	339	Fenestration Protection	\$76,275	\$225	2019	540	
Polk	Eloise Community	1997	333	Fenestration Protection	\$74,925	\$225	2019	530	
Polk	Ben Hill Griffin ES 1 Admin	1992	161	Fenestration Protection	\$36,225	\$225	2019	515	
Polk	Ben Hill Griffin ES 2 Cafeteria	1992	230	Fenestration Protection	\$51,750	\$225	2019	515	
Polk	Ben Hill Griffin ES 5	1992	284	Fenestration Protection	\$63,900	\$225	2019	515	
Polk	Berkley ES 2 Cafeteria	1999	279	Fenestration Protection	\$62,775	\$225	2019	515	
Polk	Berkley ES 3 CR	1999	191	Fenestration Protection	\$42,975	\$225	2019	515	
Polk	Berkley ES 5 CR	1999	263	Fenestration Protection	\$59,175	\$225	2019	515	
Polk	McKeel Academy of Technology 12 CR	1999	197	Fenestration Protection	\$44,325	\$225	2019	515	
Polk	Polk County School District Office 11	1993	173	Fenestration Protection	\$38,925	\$225	2019	515	
Polk	Polk County School District Office 12	1993	173	Fenestration Protection	\$38,925	\$225	2019	515	
Polk	McKeel Academy of Technology 13 CR	1999	104	Fenestration Protection	\$23,400	\$225	2019	500	
Polk	Mobile Home Activity Center Main	1999	133	Fenestration Protection	\$29,925	\$225	2019	500	
Polk	Fort Meade MS /HS 17A CR	1998	191	Fenestration Protection	\$42,975	\$225	2019	485	
Polk	Fort Meade MS / HS 19 CR	1998	160	Fenestration Protection	\$36,000	\$225	2019	485	
Polk	Frostproof MS / HS 7	1989	191	Fenestration Protection	\$42,975	\$225	2019	485	
Polk	Frostproof MS / HS 8	1989	160	Fenestration Protection	\$36,000	\$225	2019	485	
Polk	Frostproof MS / HS 9	1989	160	Fenestration Protection	\$36,000	\$225	2019	485	
Polk	Fort Meade MS / HS 17B CR	1998	115	Fenestration Protection	\$25,875	\$225	2019	470	



Regional Planning Council (RPC) #	County	Site Name/Bldg ID	Year Built	Spaces Added	Project Description	SRR Project Estimate	Origin Cost per SRR Space		Rank
							Year	Year	
6	Polk	McKeel Academy of Technology 4 CR	1971	142	Fenestration Protection	\$31,950	\$225	2019	470
<b>Region 7 - Tampa Bay</b>									
7	Citrus	Central Ridge ES 1 East Wing/CR	2006	733	Fenestration Protection	\$115,768	\$158	2016	505
7	Citrus	Central Ridge ES 1 Main/Admin & Media	2006	125	Fenestration Protection	\$44,232	\$354	2016	390
7	Charlotte	Charlotte Academy Multi Purpose B 1	2010	552	Engineering, Roof & Fenestration	\$115,476	\$209	2019	455
7	Hernando	Nature Coast Tech HS 2 CR	2001	261	Engineering & Fenestration	\$72,540	\$278	2019	415
7	Hernando	Chocachatti ES 6 CR	2005	241	Engineering & Fenestration	\$33,113	\$137	2019	405
7	Hernando	Hernando SHS 30 CR	2008	230	Engineering & Fenestration	\$113,250	\$492	2019	365
7	Hernando	Chocachatti ES 3 Cafeteria	1998	240	Engineering & Fenestration	\$33,113	\$138	2019	355
7	Hernando	Moton ES 3 CR	1989	226	Engineering & Fenestration	\$43,200	\$191	2019	355
7	Hernando	West Hernando MS 6 Cafeteria	1993	226	Engineering & Fenestration	\$43,200	\$191	2019	355
7	Manatee	Annie Williams ES 1 CR/Clinic 2nd Floor	2007	934	Fenestration Protection	\$80,700	\$86	2007	515
7	Manatee	Gullett ES 1 CR/Clinic 2nd Floor	2007	934	Fenestration Protection	\$80,700	\$86	2007	515
7	Manatee	Lee MS 1G CR	2000	391	Fenestration & genset	\$12,629	\$32	2015	480
7	Manatee	Lakewood Ranch SHS 2B Aud	1996	543	Engineering & Fenestration	\$3,500	\$6	2000	465
7	Manatee	Lakewood Ranch SHS 3 Cafeteria	1996	466	Eng & Fenestration & genset	\$134,676	\$289	2000	440
7	Manatee	Lakewood Ranch SHS 2A Band/Music	1996	306	Engineering & Fenestration	\$117,358	\$384	2000	390

<b>Regional Planning Council (RPC) #</b>									
<b>County</b>	<b>Site Name/Bldg ID</b>	<b>Year Built</b>	<b>Spaces Added</b>	<b>Project Description</b>	<b>SRR Project Estimate</b>	<b>Origin Cost per SRR Space</b>		<b>Year</b>	<b>Rank</b>
7 Pasco	Wiregrass Ranch SHS 7 Cafeteria	2006	350	Harden exterior doors	\$10,000	\$29		2017	490
7 Pasco	Wesley Chapel SHS 7 Gym	1998	865	Fenestration Protection	\$194,625	\$225		2019	465
7 Pasco	Wesley Chapel SHS 8 Aud	1998	3,184	Fenestration Protection	\$716,400	\$225		2019	465
7 Pasco	Connerton ES 1 Admin / Media	2010	125	Fenestration Protection	\$28,125	\$225		2018	450
7 Pasco	Connerton ES 2 CR	2010	125	Fenestration Protection	\$28,125	\$225		2018	450
7 Pasco	Double Branch ES 1 Admin	2007	125	Fenestration Protection	\$28,125	\$225		2018	450
7 Pasco	Double Branch ES 3 Cafeteria/Multi	2007	125	Fenestration Protection	\$28,125	\$225		2018	450
7 Pasco	Double Branch ES 2 CR	2007	125	Fenestration Protection	\$28,125	\$225		2018	450
7 Pasco	Double Branch ES 4 CR	2007	125	Fenestration Protection	\$28,125	\$225		2018	450
7 Pasco	Wesley Chapel SHS 5 Cafeteria	1998	350	Harden/Protection Exterior Doors	\$10,000	\$29		2017	440
7 Pinellas	UPARC Long Center	1988	420	Fenestration Protection	\$210,000	\$500		2019	440
<b>Region 8 - Southwest Florida</b>									
8 Charlotte	Charlotte County Airport Baggage Claim	TBD	800	Fenestration Protection	\$180,000	\$225		2019	665
8 Charlotte	Charlotte Preparatory School	TBD	250	Fenestration Protection	\$81,250	\$325		2019	565
8 Glades	Glades County Health Dept 1 Main	2011	235	Fenestration Protection	\$52,875	\$225		2018	465
8 Lee	Veteran's Park Academy 3 Cafeteria	2003	2,763	Genset Protection	\$265,000	\$96		2019	715
8 Lee	Veteran's Park Academy 9 Cafeteria	2003	990	Fenestration Protection	\$222,750	\$225		2018	715
8 Lee	Varsity Lakes MS 3 CR	2003	1,500	Fenestration Protection	\$337,500	\$225		2018	695
8 Lee	Varsity Lakes MS 4	2003	1,300	Fenestration Protection	\$292,500	\$225		2018	695
8 Lee	Lehigh ES 1 CR	2009	319	Fenestration Protection	\$31,250	\$98		2019	690
8 Lee	Lehigh ES 15 Cafeteria	2009	319	Fenestration Protection	\$31,250	\$98		2019	690

Regional Planning									
Council	County	Site Name/Bldg ID	Year Built	Spaces Added	Project Description	SRR Project Estimat	Cost per n Space	Orig SRR	Rank
8	Lee	Veteran's Park Academy 4 Music	2003	500	Fenestration Protection	\$112,500	\$225	2018	690
8	Lee	Veteran's Park Academy 6 Gvm	2003	380	Fenestration Protection	\$85,500	\$225	2018	690
8	Lee	Mirror Lakes ES 9 CR	2006	448	Fenestration Protection	\$45,163	\$101	2019	680
8	Lee	East Lee County HS 1 Multipurpose / PE	2005	250	Fenestration Protection	\$58,240	\$233	2017	655
8	Lee	East Lee County HS 1 Aud	2005	200	Fenestration Protection	\$44,000	\$220	2017	655
8	Lee	East Lee County HS 1	2005	200	Fenestration Protection	\$0	\$0	2017	655
8	Lee	East Lee County HS 1	2005	200	Fenestration Protection	\$44,000	\$220	2017	655
8	Lee	Lehigh SHS 7 Aud	1994	560	Fenestration Protection	\$117,541	\$210	2019	655
8	Lee	Lehigh SHS 8 Cafeteria Triplex	1994	560	Fenestration Protection	\$117,541	\$210	2019	655
8	Lee	Lehigh SHS 9 Gvm Triplex	1994	560	Fenestration Protection	\$117,541	\$210	2019	655
8	Lee	Sunshine ES 5 CR	2006	212	Fenestration Protection	\$47,700	\$225	2018	655
8	Lee	Varsity Lakes MS 2 Cafeteria / Art	2003	200	Fenestration Protection	\$45,000	\$225	2018	645
8	Lee	Lehigh ES 4 CR	1964	319	Fenestration Protection	\$31,250	\$98	2019	640
8	Lee	Lehigh ES 6 CR	1974	319	Fenestration Protection	\$31,250	\$98	2019	640
8	Lee	Harns Marsh ES 1 Art	2004	0	Fenestration Protection	\$5,000		2019	635
8	Lee	Mirror Lakes ES 1 CR	1996	448	Fenestration Protection	\$45,163	\$101	2019	630
8	Lee	Mirror Lakes ES 2 CR	1996	448	Fenestration Protection	\$45,163	\$101	2019	630
8	Lee	Mirror Lakes ES 3 CR	1996	448	Fenestration Protection	\$45,163	\$101	2019	630
8	Lee	Mirror Lakes ES 4 Cafeteria	1996	448	Fenestration Protection	\$45,163	\$101	2019	630
8	Lee	Mirror Lakes ES 5 CR	1996	448	Fenestration Protection	\$45,163	\$101	2019	630
8	Lee	Mirror Lakes ES 6 CR	1996	448	Fenestration Protection	\$45,163	\$101	2019	630
8	Lee	Mirror Lakes ES 7	1996	448	Fenestration Protection	\$45,163	\$101	2019	630
8	Sarasota	Gulf Gate ES	2007	2,926	Fenestration Protection	\$49,580	\$169	2019	705

Regional Planning Council (RPC) #									
County	Site Name/Bldg ID	Year Built	Spaces Added	Project Description	SRR Project Estimate	Origin Cost per SRR Space	Year	Rank	
8	Sarasota	State College of Florida - Lakewood Ranch	2011	450	Fenestration Protection	\$157,500	\$350	2019	690
8	Sarasota	North Port HS	1998	3,398	Fenestration Protection	\$410,000	\$121	2019	665
8	Sarasota	Woodland MS	2007	256	Fenestration Protection	\$57,600	\$225	2019	665
8	Sarasota	Fruitville ES 10 Clsrm	2015	144	Fenestration Protection	\$32,400	\$225	2019	640
8	Sarasota	Taylor Ranch ES 8 CR	1999	1,280	Fenestration Protection	\$455,000	\$356	2019	605
<b>Region 9 - Treasure Coast</b>									
9	Indian River	Liberty Magnet 1 Main	2005	184	Fenestration Protection	\$40,800	\$222	2017	365
9	Martin	Indiantown MS 5	2010	600	GenSet	\$80,000	\$133	2017	415
9	Martin	Port Salerno ES 1 Main	2002	1,300	GenSet	\$160,000	\$123	2017	415
9	Martin	Indiantown MS 2 CR	1999	600	GenSet	\$80,000	\$133	2017	365
9	Martin	Warfield ES 8 Cafeteria	2006	231	Common Space Protection	\$51,975	\$225	2018	355
9	Martin	Cassidy Rec Center	2003	150	Fenestration Protection	\$33,750	\$225	2018	350
9	Martin	Jensen Beach Community Center	2010	150	Fenestration Protection	\$33,750	\$225	2018	340
9	Palm Beach	Florida Atlantic University - Business	2004	500	Fenestration Protection	\$111,500	\$223	2007	490
9	St. Lucie	Dannn McCarty MS 20 CR	2001	882	Fenestration Protection	\$230,000	\$261	2019	515
<b>Region 10 - South Florida</b>									
10	Broward	Floranada ES	1999	900	Fenestration Protection	\$385,000	\$427	2016	205
10	Miami-Dade	Marjory Stoneman Dougl	1990	324	Fenestration Protection	\$72,900	\$225	2018	250
10	Miami- Dade	Marjory Stoneman Douglas ES 3 CR	1990	171	Fenestration Protection	\$38,475	\$225	2018	225
10	Miami- Dade	Marjory Stoneman Douglas ES 1/2 Admin / CR	1990	51	Fenestration Protection	\$11,475	\$225	2018	210
10	Miami-Dade	Marjory Stoneman Dougl	1990	101	Fenestration Protection	\$22,725	\$225	2018	210

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<b>(RPC) #</b>	<b>County</b>	<b>Site Name/Bldg ID</b>	<b>Year Built</b>	<b>Spaces Added</b>	<b>Project Description</b>	<b>SRR Project Estimate</b>	<b>Cost per SRR Space</b>	<b>Origin Year</b>	<b>Rank</b>
10	Miami-Dade	Marjory Stoneman Dougl	1990	136	Fenestration Protection	\$30,600	\$225	2018	210
10	Miami- Dade	Marjory Stoneman Douglas ES 4 CR	1990	49	Fenestration Protection	\$11,025	\$225	2018	205
10	Miami-Dade	Marjory Stoneman Dougl	1990	28	Fenestration Protection	\$6,300	\$225	2018	205
<b>Total Projects:</b>		<b>347</b>	<b>Total Spaces</b>		<b>141,400</b>	<b>Total Cost:</b>		<b>\$30,874,820</b>	