

2021

Florida Shelter Retrofit Report



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Executive Summary

The Florida 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 using State funds for use as public hurricane evacuation shelters.

Retrofitting is the modification of an existing structure to make it more resilient. For example, installing hurricane shutters on an existing building protects doors and windows from wind-borne debris. Such measures bring buildings up to at least minimum hurricane safety criteria and increase the availability of public hurricane evacuation shelter spaces.

Significant success has been made toward reducing the deficit of safe public hurricane evacuation space. In this report, “safe” is defined as meeting the intent of American Red Cross (ARC) *Hurricane Evacuation Shelter Selection Standards* (June 2018), formerly the ARC *Standards for Hurricane Evacuation Shelter Selection* (January 2002). The combination of existing building surveys, retrofit projects and the availability of retrofit and mitigation-related funds for the recommended projects, as well as application of enhanced hurricane resistance design and construction standards, has increased available hurricane evacuation shelter spaces (20 sq. ft./person) to a total of 1,077,544. Another 48,999 spaces are expected to be available through retrofitting of recommended facilities now under contract for a total of 1,126,543 spaces.

The *2021 Shelter Retrofit Report* provides a list of specific retrofit projects and cost estimates submitted by county emergency management agencies and their partners. The report recommends 262 projects at an estimated cost of \$31,181,782. Initial data submitted by the counties indicates that 100,350 new hurricane evacuation shelter spaces could be added to the State’s shelter inventory. If all recommended projects were completed and added to the completed total of spaces, the statewide cumulative total spaces could increase to 1,226,893 spaces.

Since 1999, the Governor and the Legislature have committed to fund the State’s retrofit program on a recurring basis through fiscal year ending June 30, 2021. Per section 215.559(1)(b), Florida Statutes, the Division is provided \$3 million each fiscal year to retrofit buildings and create hurricane evacuation shelter spaces, as prioritized in the annual *Shelter Retrofit Report*. The funds are allocated within the Hurricane Loss Mitigation Program (HLMP) in 215.555(7)(c), Florida Statutes, from the Florida Hurricane Catastrophe Fund. The statute contained an automatic repeal dated June 30, 2021. Beginning July 1, 2021, one additional year of funding was allocated to the Division by extending the repeal to June 30, 2022. At the time of this report, no future funding source has been identified for this program. A bill has been filed this year for further shelter retrofit funding.

The Division’s public hurricane evacuation shelter deficit reduction strategy focuses on five major components:

- Developing and implementing the model hurricane evacuation shelter survey guidelines
- Implementing the hurricane evacuation shelter survey program

- Retrofitting appropriate facilities to meet public shelter guidelines
- Incorporating hurricane evacuation shelter design criteria into new public building construction projects
- Improve studies utilized to determine shelter demand

A significant component of the strategy to increase the availability of public hurricane evacuation shelter space is construction of new school facilities to the Public Shelter Design Criteria of the Florida Building Code, also known as Enhanced Hurricane Protection Area (EHPA) code provisions. School districts within the geographical boundaries of each Regional Planning Council (RPC) region with a deficit of safe spaces are required to build new facilities to accommodate hurricane evacuees. Appendix B illustrates a net gain of 461,715 hurricane evacuation shelter spaces after adoption of the EHPA provisions. The code also specifies that as the regional deficits are eliminated, the requirement to design and construct schools to the EHPA provisions is eliminated as well. When new EHPA schools are completed, the Division surveys the facilities to determine if they may be added to the inventory or if retrofitting can create additional spaces.

The State has made significant progress toward improving the safety and availability of public hurricane evacuation shelter space. On a statewide cumulative basis, the current capacity of hurricane evacuation shelter spaces is about 20 percent greater than the overall estimated demand. The metrics are evidence that the comprehensive strategy above is an effective means to eliminate deficits. In 2020, RPC regions Tampa Bay, Central Florida, and Southwest Florida had deficits region-wide per data from the *2020 Statewide Emergency Shelter Plan* (SESP). With the new demand study in 2021, only two regions have deficits: Southwest Florida and South Florida. Currently, 31 counties have a space deficit for Persons with Special Needs. Persons with Special Needs shelters designated by the county emergency managers require additional space for medical equipment, electrical support and care-giver assistance during evacuations. Consequently, three (3) regions, Apalachee, Central Florida and Southwest Florida, continue to have deficits for Persons with Special Needs. Because the space per Persons with Special Needs client is already at the recommended level for a Public Health Emergency, the same three (3) RPC regions will have a deficit during a Public Health Emergency for their Persons with Special Needs clients.

Changes in FEMA flood maps and National Weather Service (NWS) storm surge inundation maps have reduced the previously recognized quantity of hurricane evacuation shelter space in some regions. The inventory of hurricane evacuation shelters has also decreased with the aging of the current stock of public facilities, or the approaching end of the useful life of products in older 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 evacuation space capacities meet both current and future needs.

The cost to retrofit each space has increased over the life of the program but the annual allocation has not increased. Since the inception of the Shelter Retrofit program, the cost to retrofit each space has increased by approximately \$222 per 20 square feet (Sq. Ft.). However, the annual allocation for funding has never increased, resulting in the decreasing number of shelter spaces created each year. The State retrofit program is the only reliable source of needed retrofit funds. For

example, in RPC regions where the deficit of hurricane evacuation shelter space has been eliminated, no additional EHPA are required to be built. This may leave individual counties with deficits of space and no other options than retrofitting existing facilities. The shift to larger space allocations for medical special and functional needs by shelter planners has also increased costs per hurricane evacuation space across the State. **To keep pace with increasing retrofit construction costs and demand for larger space allocations, the Division recommends an increase in funding for the HLMP shelter retrofit program from \$3 million in 2021-2022 to \$7 million in 2022-2023.**

Provisions of State and national building codes, standards and guidelines for hurricane evacuation shelters use 20 Sq. Ft. per General Population client space. [SB 2006](#) was passed following the Public Health Emergency response, charging the Division with tracking the amount of available shelter space for any public health emergency. The Public Health Emergency caused the space requirement for all evacuees to be increased for General Population clients, resulting in deficient evacuation shelter space throughout the State. As the number of Floridians in areas vulnerable to hurricanes continues to grow, it is important to continue the construction of hurricane evacuation spaces and the retrofitting of existing public buildings. Full implementation of the Division's shelter deficit reduction strategy can create a greater level of preparedness, a more efficient capability for responding to impacts and an increased ability to meet the needs of disaster survivors.

I. Introduction

Purpose

Hurricane Andrew made landfall in Miami-Dade County in 1992 as a Category 5 and at the time was the most destructive tropical cyclone to hit the United States. The impact spurred Florida to review hurricane preparedness, especially for those living in coastal zones, inland flood or wind damage prone homes, or other vulnerabilities. In 1993, chapter 252, Florida Statutes (F.S.) added, “It is the intent of the Legislature that this State not have a deficit of safe public hurricane evacuation shelter space ...”. (Sec.252.385 (1), Florida Statutes). By the late 1990’s, the State’s deficit of safe public hurricane evacuation spaces exceeded one million. The concern for an adequate amount of space to accommodate the expected evacuating populations led to a statewide program of surveying and inventorying facilities that could house evacuees when hurricanes threaten. By direction of the legislation, the Division annually issues the *Shelter Retrofit Report* (report), providing a list of facilities recommended to be retrofitted using State funds. The objective of retrofitting is to improve relative safety and reduce the State’s hurricane evacuation space deficit.

Based on the biennial *Statewide Emergency Shelter Plan* (SESP), the assessments of available spaces in this report reflect only those listed in the SESP that meet the State’s minimum hurricane safety guidelines, which include protection from high winds, coastal storm surge and inland flood waters. Florida recognizes the square footage space recommendations for General Populations set by the American Red Cross (ARC) in the ARC sheltering program in order to standardize the need and evaluate adequacy of spaces (20 Sq. Ft. per space). Persons with Special Needs spaces, which by practice in Florida are increased to accommodate equipment and caregiving needs, are three times the single client space at 60 Sq. Ft. per space. Additionally, beginning this year, the Legislature has instructed the Division to track space availability in case of any potential Public Health Emergency. In this case for all clients, the minimum is 60 Sq. Ft. per space. The report tracks safe and available hurricane evacuation shelter spaces for Florida and provides an update of State funds used. The report is provided to the President of the Senate, the Speaker of the House of Representatives and Governor, and recommends and prioritizes retrofit projects based on each Regional Planning Council (RPC) public hurricane evacuation space status.

Current Situation

In Florida, every county is at risk for hurricanes and hurricane-related hazards, including flooding, storm surge, high winds and power outages. These hazards place specific physical, geographical, and infrastructure limitations on what is recognized as a suitable and safe hurricane evacuation space. Of the State’s 67 counties, 35 are along 8,436 miles of coastline, tidal inlets, bays, and other waterways. Nearly 80 percent of Florida’s population live in coastal counties, and 40 percent of the population is in a storm surge evacuation 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 tidal surges, storm-related flooding and damage.

Statewide evacuations are not solely a coastal phenomenon. In 2018, Hurricane Michael made landfall as a Category 5 storm and exited the State through Jackson County as a Category 3. Thus, the impacts of the storm extended well inland to non-coastal counties in Florida and Georgia. Most Florida hurricane evacuation shelters are buildings which serve another public purpose during day to day operations, such as schools and publicly owned civic or recreation centers. Cumulatively, the State has sufficient space available for the general population during evacuations, but deficits remain in both individual counties, RPC regions and when the Public Health Emergency metric is applied.

In 2020, the Legislature also passed [HB 705](#), which requires one General Population shelter per county that can accept pets. 20 counties do not have facilities adequate to accommodate pets. Retrofitting of additional space is needed for people who would not otherwise evacuate an unsafe area during a storm without bringing their pet with them.

For the past two decades, the deficit in hurricane evacuation shelter space demand by evacuees has decreased statewide. This has been due to more public-school buildings meeting the EHPA code provisions, additional buildings identified with as-is space, and others retrofitted when needed. To accomplish the retrofits, a dedicated State funding source was specified by the Governor and Legislature within the HLMP in 215.555(7)(c), F.S., from part of the Florida Hurricane Catastrophe Fund. At this writing, the last allocation of State funds was renewed for one year in general revenue for fiscal year 2021-2022. The future safety of all our vulnerable citizens will require additions to the statewide public hurricane evacuation space inventory.

II. Strategy for Public Shelter Deficit Reduction

The Division is responsible for developing a strategy to eliminate the deficit of “safe” public hurricane evacuation shelter space in Florida Statutes; See Secs. 252.385(1) and (3), and in part, 252.35(2)(a)2, Florida Statutes. To accomplish this task, the Division created a multifaceted approach to reduce the deficit of hurricane evacuation shelter spaces. The approach is as follows:

1) Develop and Implement the Model Hurricane Evacuation Shelter Survey 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. Survey criteria include coastal, riverine and lake storm surge, rainfall flooding and high wind hazards, and a basic Least-Risk Decision Making (LRDM) model and report format. The survey reports give preference to building qualities or features that performed well during Hurricane Andrew and avoids (or mitigates) those that performed poorly, and are updated to accommodate modern building codes, standards, guidelines and practices.

2) Implement Hurricane Evacuation Shelter Survey Program

The Division completed development and implementation of the LRDM survey and report procedures by 1997 and completed the first statewide baseline survey in 2005. The survey program continues as new facilities are constructed and older existing facilities require resurveying and updating. The Hurricane Evacuation Shelter Survey Program continues 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 2020, more than 6,456 buildings were surveyed utilizing Division surveyors and, from 1999 to 2008, private-sector consultants. The survey program has identified spaces useable as-is in their built, existing condition and, directly or indirectly, led to the creation of retrofitted spaces in the inventory, together totaling more than 615,829 spaces to date. These totals combined with EHPA spaces results in a total capacity of 1,077,544 spaces. This capacity calculation uses space standards established prior to the Public Health Emergency. The total number of General Population spaces in the State’s inventory, when Public Health Emergency parameters are applied, is reduced by approximately two-thirds to 344,216.

3) Retrofit Appropriate Facilities to Meet Public Shelter Guidelines

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

For Fiscal Year 2021-2022, the State Legislature appropriated \$3 million to structurally enhance or retrofit public hurricane evacuation shelters, which will create an estimated 6,250

additional General Population spaces at current construction rates. The useful lifespan of retrofit products is expected to be about 15 years. Even with regular maintenance, products subject to harsh conditions will deteriorate over that span of time. Fiscal Year 2021-2022 may be the final year of committed funds for retrofitting shelter spaces from the program, as the future of the funding has not been determined yet by the state legislature.

4) Incorporate hurricane evacuation shelter design criteria into new public building construction projects

The 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 boards, 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 the public for emergency management purposes. The final criterion recommended by the committee was consistent with the current safety criteria expressed in the LRDM surveys used by the Division.

Schools are funded primarily by State and local capital outlay funds, and school districts are reporting that the EHPA construction cost premium is about three to nine percent. Since 1997, EHPA construction has created 461,715 spaces which accounts for about 42 percent of the statewide risk recognized space inventory.

5) Improve studies utilized to determine shelter demand

Hurricane evacuation studies have historically indicated that at least 25 percent of a vulnerable population would seek public shelter during an evacuation event. However, a 2021 evacuation and demand study indicated that less than 10 percent will seek public shelter. This is consistent with the findings of recent post-storm assessments that indicate less than 10 percent of vulnerable populations sought public shelter. Although the percentage reduction in shelter use changes the demand formula, the growth of the population in the State offsets some of the reduction in space needs. As of this writing, percentage demand is stable but increasing proportionally with vulnerable population numbers despite the observed behavioral change. Consequently, inventories of evacuation spaces will need to keep pace.

Also, changes in FEMA flood maps and NWS storm surge maps, coupled with recent population and demographic trends reflected in evacuation studies, created a significant increase in space demand beginning in 2016, which continues to impact demand currently. Forecasting for the five-year period indicates higher demand for special needs shelters, specifically. These demand figures do not account for the aging of the current stock of public shelters nor the approaching end of the useful life of the original retrofit products. The *2021 Statewide Regional Evacuation Studies* (SRES) resulted in changes in the demand for sheltering by county. Florida's aggregate statewide hurricane evacuation shelter space demand found in Table B-1 (see Appendix B) is 861,460 spaces for 2021.

III. Statewide Progress in Shelter Deficit Reduction

Since 1995, Florida has made significant progress toward improving the safety and availability of public hurricane evacuation shelter space. The combination of comprehensive strategy of surveys, retrofitting of existing buildings, new construction, evacuation studies and educating the public on the criteria to consider when retrofitting an existing building as a shelter or designing a new shelter 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 of the inventory of available spaces since 2012. From these actions, the Division prepares the biennial SESP to assess the current and projected shelter space sufficiency and deficit. The chart below compares the findings of the studies conducted in the previous five publications of the SESP.

Table 3-1.

Statewide Shelter Space Sufficient / Deficit in Evacuee Spaces			
Year	General Population	Special Needs	Public Health Emergency
2012	125,205	-20,829	n/a
2014	88,601	-14,218	n/a
2016	74,567	-23,431	n/a
2018	100,027	-19,956	n/a
2020 ^a	113,989	-9,139	37,996

For a more in-depth look at the spaces created through retrofitting of existing facilities using state funds, and spaces created through design and construction of new public-school facilities to EHPA code provisions while showing the estimated shelter demand for 2021, please review *Hurricane Evacuation Space Deficit Reduction Progress 1995-2021* in Appendix B.

In Fiscal Year 2020-2021, the statewide evacuation study was updated. It employed anonymous, smart location based services data for analysis of evacuations trends. Behavior observed from recent storms since 2016, including Hurricanes Matthew, Irma and Michael, continue to show an overall reduction in potential shelter demand. The continuing success of retrofitting existing buildings, a robust economy that has driven the building of newer schools, changes in the building code requiring impact resistance, the ongoing shelter survey program at the Division, as well as the new scientific data continues to reduce demand on public facilities at the regional level.

However, there is still more work to be done regarding reduction of the evacuation space deficit. In the [2020 SESP](#), there were three main areas of concern. First, capacity for the general population statewide continues to increase, due to retrofitted spaces completed or under construction after 2012 in this program. (See Appendix B, Table B-1.) Without the retrofitted spaces, the overall statewide sufficiency would revert to deficit levels. Second, spaces for special populations, such as people with pets that need shelter or persons who are medically or electrically dependent, are still in deficit in almost half the counties (33 of 67) despite retrofit additions over the same period. Third, in the 2020 Shelter Retrofit Report, three (3) RPC regions had General Population space deficits: Central Florida, Tampa Bay, and Southwest Florida. These regions also

^a FY 2020-2021 statewide evacuation study identified reduction in shelter demand from 25% to 10%

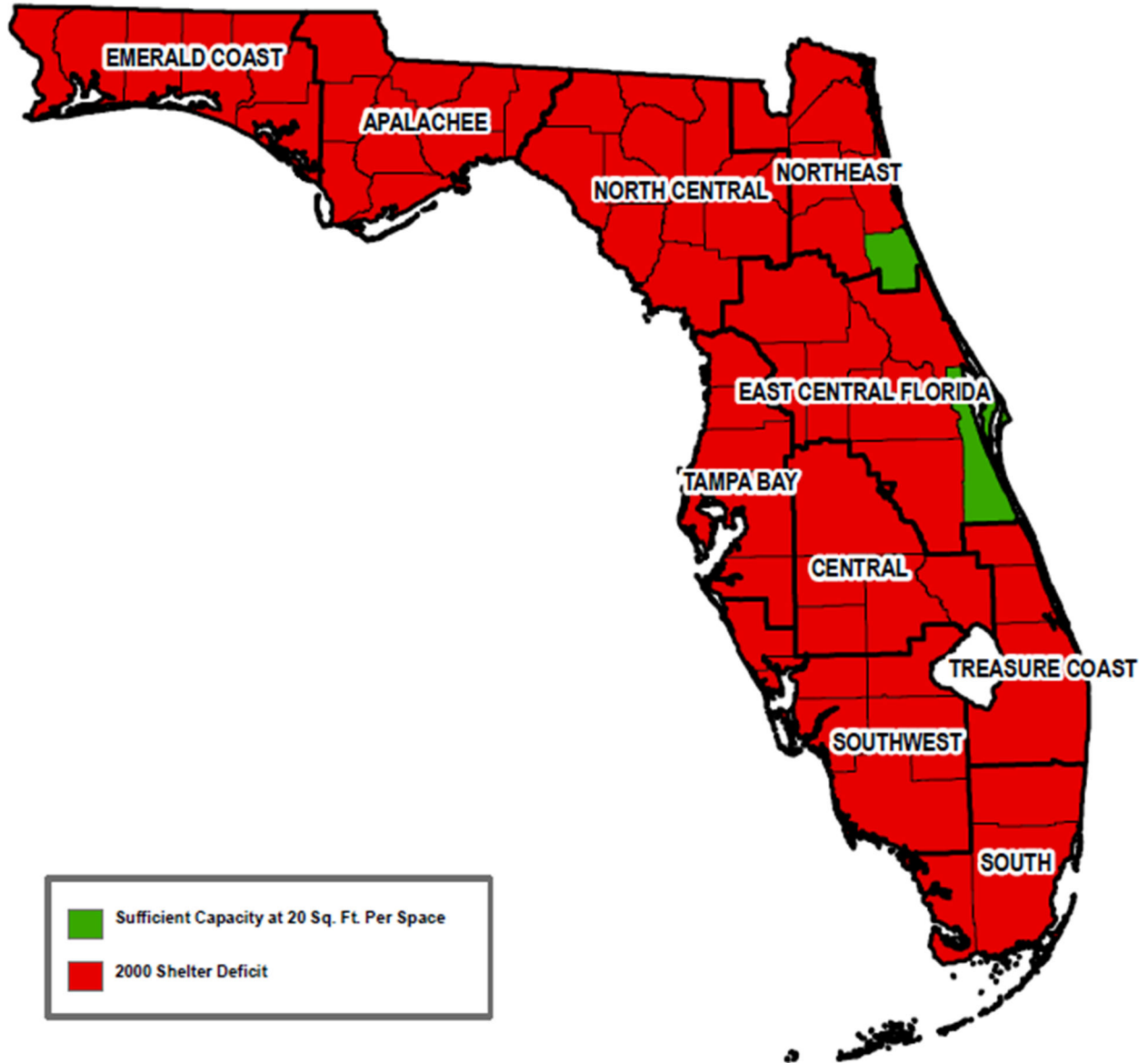
have some of the highest evacuation clearance times in the State. Further, the populations have increased significantly over time. Because it takes longer than previously to travel outside the region to find safe shelter, the internal space capacity of the regions was critical for providing safe options. However, a change occurred with the new demand data analysis in 2021. Tampa Bay and Central Florida have received the benefit of large numbers of retrofit spaces as well as a drop in demand from the current study so that they are no longer in deficit. Now, only two (2) regions have General Population demand deficits: Southwest Florida and South Florida. Southwest Florida remains the region with the largest deficit in spaces. Although there are on-going retrofit projects in the region, factors such as geographically large storm surge areas and few opportunities to retrofit buildings, have prevented the region from attaining more space. A different region with a new deficit, South Florida, was added by the current study. The statewide sufficiency itself does not reflect the need in these regions of concern.

As the population of Florida continues to grow and development continues in risk-prone areas, the need for suitable hurricane evacuation facilities will continue to increase. New construction is an ideal solution, but does not keep pace with the increased need for General Population spaces. On the contrary, as buildings age (e.g., obsolescence or unserviceable conditions, building code changes, cladding and retrofit product deterioration) or are decommissioned due to incompatibility in ordinary use during “blue skies” mass care, the available spaces during “gray skies” shrinks. In 2021, the State has three (3) regions with deficits in buildings and spaces equipped to evacuate Persons with Special Needs. The five-year projection of deficits shows an increase in General Population and Persons with Special Needs evacuation spaces over and above the numerical deficit now. When the Public Health Emergency minimum 60 Sq. Ft per client is applied, the deficit spans all 67 counties. Retrofit projects augment the gaps and allow the State to more rapidly meet its needs.

The maps presented in Figures 3-1 and 3-2 underscore the value of this program for the State of Florida. The map in Figure 3-1 shows which Florida counties had deficits in 2000. Figure 3-2 indicates the current deficits based on the latest available data from 2021.

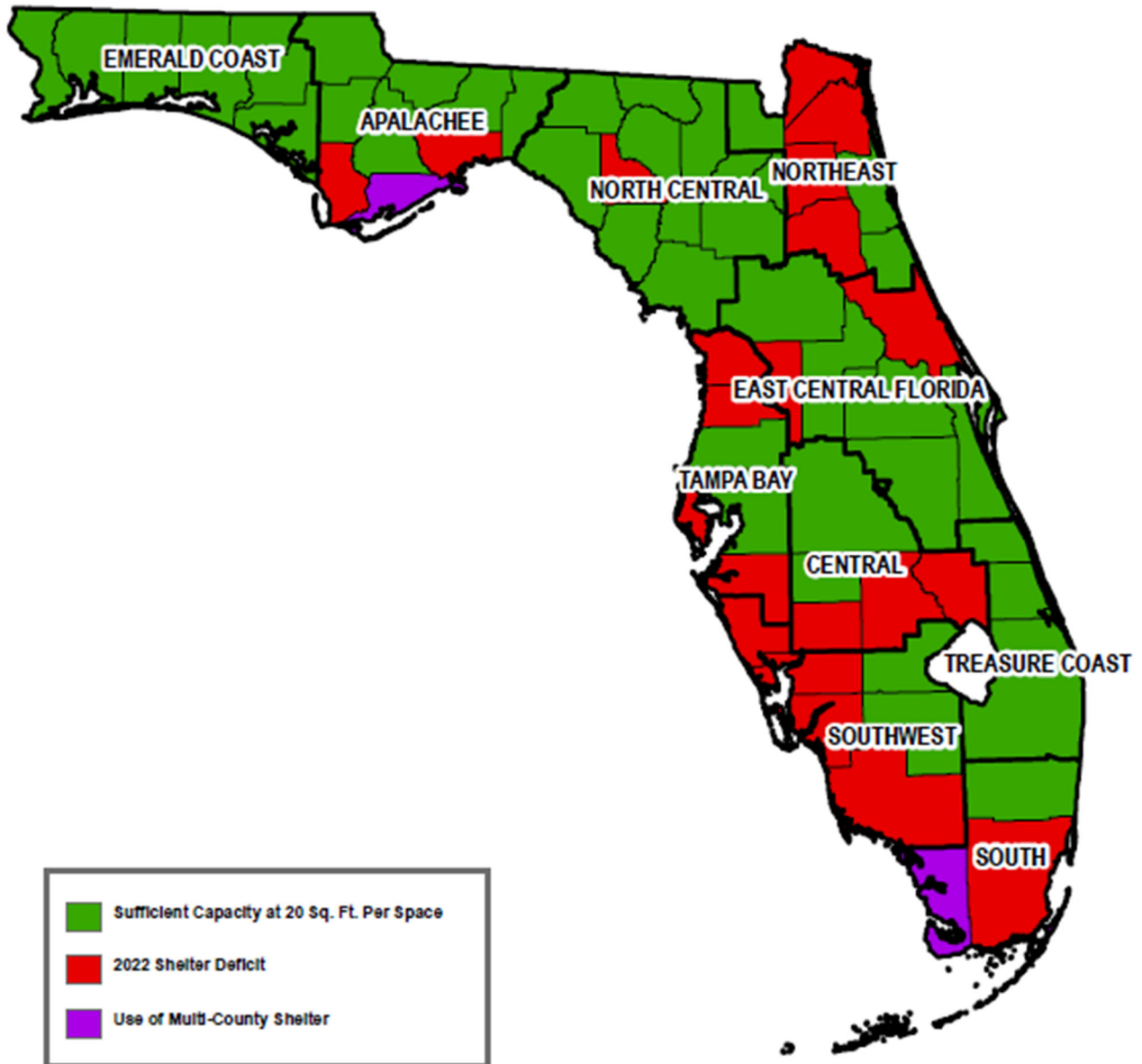
2000 County Hurricane Evacuation Shelter Space Deficit & Sufficiency Status of General Population Shelters

Figure 3-1.



2020 County Hurricane Evacuation Shelter Space Deficit & Sufficiency Status of General Population Shelters

Figure 3-2.



Impacts of Public Health Emergencies

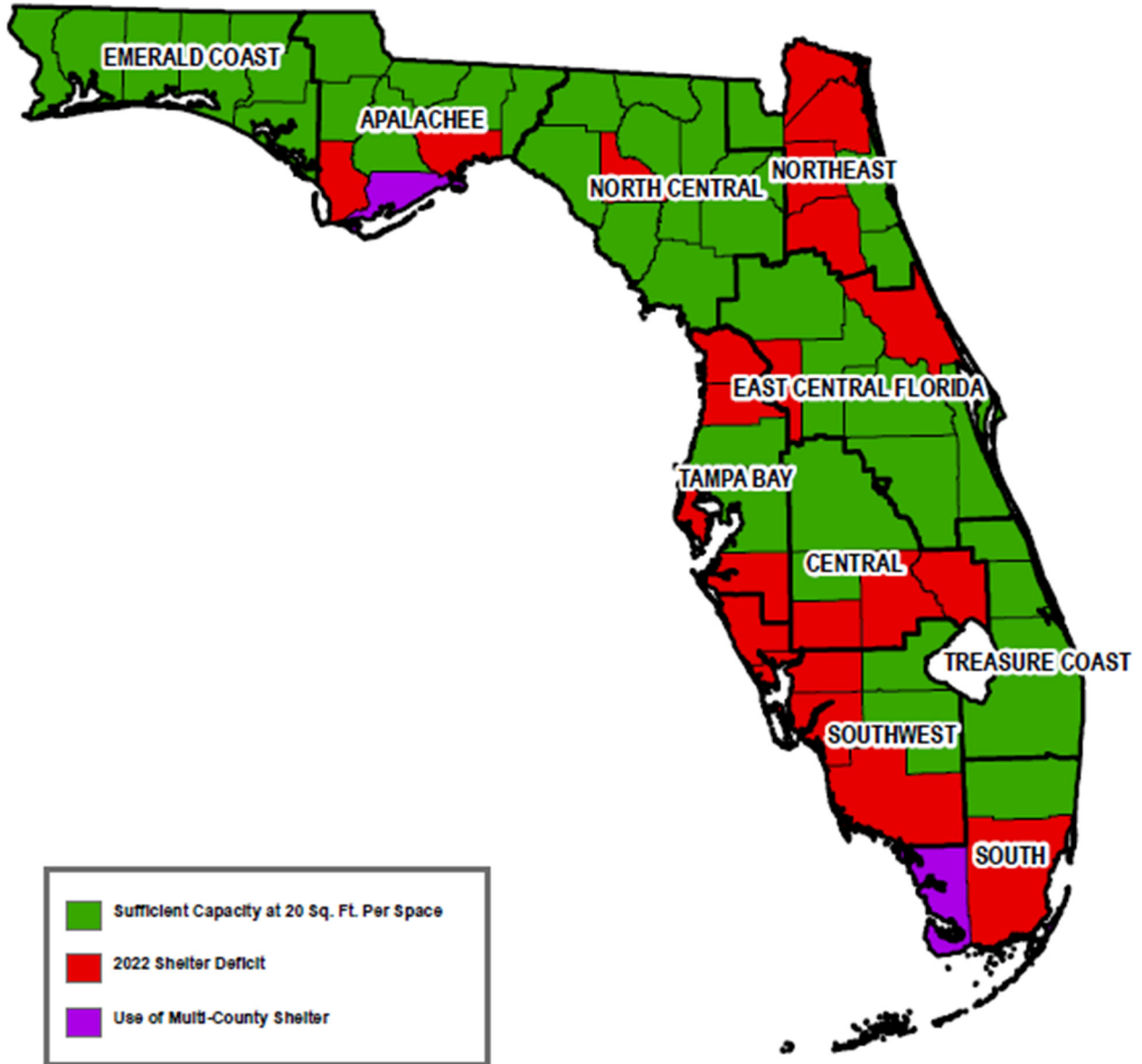
In 2020, in response to the Public Health Emergency, evacuation shelter space recommendations were updated. As a result, available space capacity was reduced. All hurricane evacuation shelters required 60 Sq. Ft. per evacuee. Normally, General Population hurricane evacuation space capacities are calculated at the code minimum of 20 Sq. Ft. per evacuee. For Persons with Special Needs the capacity remains at 60 Sq. Ft. per space. The required square footage increase for General Populations is three times the minimum square footage standard. Evacuees included in the general population group are the vast majority of those served during a hurricane activation.

SB 2006, passed in the 2021 Florida Legislative session, mandated the Division to track a Public Health Emergency evacuation shelter capacity. The social distancing requirements during a Public Health Emergency places a strain on available space. The capacity of each General Population hurricane evacuation shelter becomes one-third of what it was prior to the Public Health Emergency. As a result, none of the 67 counties in the State of Florida have enough capacity to accommodate their general population based upon the Public Health Emergency space criteria. The Public Health Emergency underscored the need for retrofitting and for ongoing funding of the program. Thus, inclusion of a Public Health Emergency calculation prepares the state for unexpected complications in evacuation space requirements, while underscoring the need for continued retrofit spaces.

The maps presented in Figures 3-3 and 3-4 underscore the impact for the State of Florida under Public Health Emergency shelter space criteria. The map in Figure 3-3 indicates the current space status based on the latest available data from 2021, for reference. The map in Figure 3-4 illustrates which Florida counties have shelter space deficits as a result of reconfiguring spaces in response to the Public Health Emergency statutory requirement.

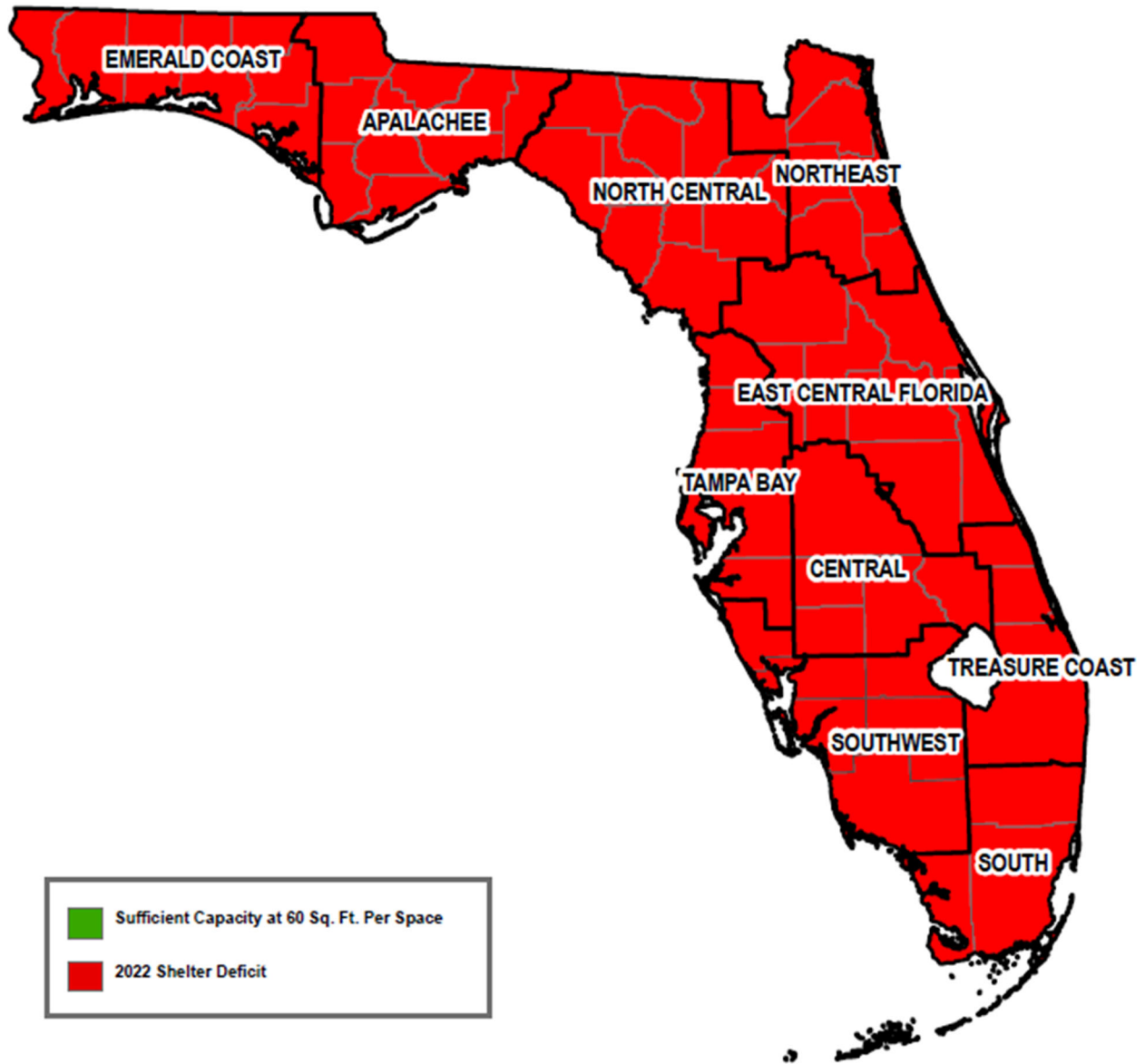
County Hurricane Evacuation Shelter Space Deficit & Sufficiency Status of General Population Shelters

Figure 3-3.



County Hurricane Evacuation Space Deficit & Sufficiency Status of General Population Shelters, Post Public Health Emergency

Figure 3-4.



Impacts of Funding Cessation

The projects recommended within this report, if funded, will continue the substantial improvement of Florida's hurricane evacuation preparedness at both the State and local levels. The State Legislature and the Governor have demonstrated commitment to reducing the deficit of safe public hurricane evacuation shelter space and ensuring vulnerable Floridians are protected from the worst impacts of devastating storms. However, currently, the funding for Fiscal Year 2021 – 2022 is the last year of committed funds for retrofitting shelter spaces through the program.

The State retrofit program is the only reliable source of needed retrofit funds. As an example, in RPC regions where the deficit of hurricane evacuation shelter space has been eliminated, by statute and code, additional EHPA are not required to be built. This may leave individual counties with space deficits, with no other options for retrofitting existing facilities. Also, the preference for larger rooms with more square footage (e.g. a gymnasium as compared to a classroom) and the need for standby electrical system support for Persons with Special Needs and functional needs clients has increased costs per hurricane evacuation shelter space. The cost to retrofit each space has increased incrementally during the life of the program, and exponentially in the last two years, but the annual allocation has not increased. The previous running average was about \$165 per 20 Sq. Ft. space prior to 2008. Since improvement in the economy after 2009, and subsequent increases in construction related costs, the average is now closer to \$387 per 20 Sq. Ft. space. Accordingly, retrofit shelters for Persons with Special Needs clients and others with functional needs require three times the average cost of a General Population space.

Per the IRS Information Letter referencing Index No. 61.00-00, dated November 21, 1994, obligations under contract cannot exceed the moneys in the Florida Hurricane Catastrophe Fund, which obligates \$3 million of HLMP funding to the Shelter Retrofit Program. To keep pace with increasing retrofit construction costs and demand for larger space allocations, the HLMP shelter retrofit program should be increased from current annual funding to \$7 million.

As illustrated in Table 3-2, from 1999 to 2013 about \$80 million in federal and State funds were committed toward retrofitting suitable facilities, which funded about 486,000 hurricane evacuation shelter spaces. It is noted that the federal funding was allowed through a separate program in years 1999-2002. Subsequent changes in the federal guidelines and definitions of the term "shelter" has meant that federal funding for hurricane evacuation shelter retrofitting is no longer available. Beginning in 2003, State funds allocated from the HLMP alone have been used for retrofitting. At this writing, with currently allocated funds through 2022, an estimated 547,588 general population spaces will have been added to the inventory of safe shelter space for Florida's residents and visitors. With the continued growth of Florida's population, the need for shelter space will continue. If the funding is not renewed, the preparedness of Florida's hurricane response will be severely diminished at both the State and local levels.

Table 3-2					
Historical Summary of Florida's Hurricane Shelter Retrofit Program					
Report year	Annual Recommended Projects	Potential Spaces if Funded	Federal and State Funded Completed Projects	Spaces Gained	Total 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	\$6,607,263 ^b	25,645 ^a	419,693
2008	\$13,432,213	85,997	\$0	0 ^c	419,693
2009	\$11,777,884	69,465	\$3,000,000	14,427	434,120
2010	\$15,634,282	120,447	\$1,750,000	7,920 ^d	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	12,691 ^e	498,923
2015	\$15,188,945	117,609	\$3,000,000	11,165 ^e	510,088
2016	\$13,465,342	69,541	\$3,000,000	6,250 ^e	516,338
2017	\$13,794,763	65,303	\$3,000,000	6,250 ^e	522,588
2018	\$23,189,218	108,104	\$3,000,000	6,250 ^e	528,838
2019	\$30,864,820	141,050	\$3,000,000	6,250 ^e	535,088
2020	\$27,068,133	114,226	\$3,000,000	6,250 ^e	541,338
2021	\$31,181,782	100,350	\$3,000,000	6,250 ^e	547,588
TOTAL	N/A	N/A	\$104,122,243	NA	N/A

^a – \$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

^b – 25,645 spaces were gained from HB 7121 & 1621X shelter retrofit projects

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

^d – 7,920 reflects gain from FY 2010/2011 Specific Appropriation 1617 at \$1,750,000

^e – FY 14-15 through FY 21-22 funding partially allocated (funding is obligated or under contract). Total spaces gained are estimated to be 50,000 (\$3 million annually / \$480 per space)

IV. Recommendations

Shelter Retrofit Project Identification Procedure

While the Division's hurricane evacuation shelter survey work product acts as the basis for data used to compile the report, the Division recognizes local professionals are aware of public spaces and are positioned to make the best recommendations to serve their communities. The *2021 Shelter Retrofit Report* is a collaborative effort between the local school boards, public and private agencies, and county emergency managers. County emergency managers report changes or updates annually to their local shelter planning department and to the Division as a contribution to the report's data. Other information is provided by Florida's Department of Management Services and FDOE, whose buildings are the primary cohort of public evacuation shelter space.

All the data is compiled into a potential project list to determine if a facility could meet the Division's LRDM safe shelter guidelines once completed. Costs are estimates as determined by local agencies, commercial contractors, professional opinions as to probable cost to build or, in some cases, experience in the retrofit program. Division staff review the potential projects, from the current and previous years, and prioritize projects according to statute to address the need for additional shelter space in the RPC regions and counties with deficits.

The State's criteria consist of the following:

- Regional and Local Shelter Space Deficits
- Structural and Hazard Vulnerability Review, Including Flood and Storm Surge
- Shelter Capacity Increase, Building Ownership and Availability, and Cost-Effectiveness Considerations
- Other Considerations / Demonstration of Impact upon the State and Regional Shelter Deficit Situation and Special Populations (e.g., medical needs, electrically dependent and pet-friendly availability).

For more details on each criterion, please review *Methodology for Prioritizing Projects for Funding* in Appendix C.

FY 2021 – 2022 Projects

In Fiscal Year 2020 – 2021, the Division requested county emergency managers 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 rank as either "preferred" or "less preferred/marginal" for all survey criteria on the respective LRDM report when the project is complete. The Division identified 262 projects able to meet the standard after retrofitting. All projects were evaluated using factors such as: regional and local (county) hurricane evacuation shelter space deficit; greatest provision of space; cost efficiency per space; and vulnerability to high winds and storm surge. For the complete list of recommended projects see Appendix A.

Table 4-1 provides a summary of the proposed shelter retrofit projects, the RPC and county served, the construction-related estimated costs of the proposed projects, and the total hurricane evacuation shelter space capacity that will be created upon completion.

Table 4-1			
2021 Shelter Retrofit Report County and Regional Recommended Projects			
31-Aug-21			
(RPC)	County	SRR Project Estimate	Spaces Added
Emerald Coast			
Emerald Coast	Bay	\$991,740.00	1,837
Emerald Coast	Walton	\$1,181,112	2,871
Emerald Coast Totals:		\$2,172,852	4,708
Apalachee			
Apalachee	Calhoun	\$500,000	1,000
Apalachee	Gadsden	\$900,613	2,795
Apalachee	Jackson	\$225,000	100
Apalachee	Jefferson	\$225,000	509
Apalachee	Leon	\$1,071,325	4,343
Apalachee	Liberty	\$361,000	937
Apalachee	Suwannee	\$175,000	0
Apalachee	Wakulla	\$1,695,525	5,217
Apalachee Totals:		\$5,153,463	14,901
North Central Florida			
North Central Florida	Alachua	\$913,852	2,521
North Central Florida	Columbia	\$417,822	1,147
North Central Florida	Hamilton	\$973,700	2,996
North Central Florida	Taylor	\$879,700	2,385
North Central Florida Totals:		\$3,185,074	9,049
Northeast Florida			
Northeast Florida	Clay	\$160,000	285
Northeast Florida	Duval	\$1,217,125	3,745
Northeast Florida	Flagler	\$650,800	1,464
Northeast Florida	Nassau	\$811,602	3,850
Northeast Florida Totals:		\$2,839,527	9,344
East Central Florida			
East Central Florida	Lake	\$389,265	1,355
East Central Florida	Marion	\$16,000	295
East Central Florida	Orange	\$1,651,968	10,434

East Central Florida	Osceola	\$2,280,250	3,961
East Central Florida	Seminole	\$175,780	799
East Central Florida	Sumter	\$345,600	1,565
East Central Florida	Volusia	\$2,193,805	7,833
East Central Florida Totals:		\$7,052,668	26,242
Central Florida			
Central Florida	DeSoto	\$490,825	1,859
Central Florida	Hardee	\$234,900	220
Central Florida	Highlands	\$721,875	1,735
Central Florida	Okeechobee	\$190,000	1,160
Central Florida	Polk	\$603,675	1,259
Central Florida Totals:		\$2,241,275	6,233
Tampa Bay			
Tampa Bay	Citrus	\$452,130	1,479
Tampa Bay	Hernando	\$377,579	1,510
Tampa Bay	Manatee	\$93,329	1,325
Tampa Bay	Pasco	\$3,357,875	9,383
Tampa Bay	Pinellas	\$624,970	2,063
Tampa Bay Totals:		\$4,905,883	15,760
Southwest Florida			
Southwest Florida	Charlotte	\$561,250	1,050
Southwest Florida	Glades	\$52,875	235
Southwest Florida	Lee	\$850,290	5,015
Southwest Florida	Sarasota	\$215,100	706
Southwest Florida Totals:		\$1,679,515	7,006
Treasure Coast			
Treasure Coast	Indian River	\$40,800	184
Treasure Coast	Martin	\$605,725	2,881
Treasure Coast	Palm Beach	\$111,500	500
Treasure Coast	St. Lucie	\$230,000	882
Treasure Coast Totals:		\$988,025	4,447
South Florida			
South Florida	Broward	\$770,000	1,800
South Florida	Miami-Dade	\$193,500	860
South Florida Totals:		\$963,500	2,660

If funded, the projects listed in this report will provide an estimated increase of 100,350 hurricane evacuation shelter spaces at a cost of \$31,181,782 (estimated construction-related costs). Projects that include a standby electrical system power source add to the overall functionality and sustainability of a shelter, but do not increase shelter space capacity. Stand by electrical system projects will decrease the special needs space deficits in counties and regions where sufficient general population shelters are already in place.

V. Conclusion

The Division recognizes the necessity of providing safe hurricane evacuation shelter space for Floridians. Through funding of the recommended projects in the *2021 Shelter Retrofit Report*, Florida will continue to see improvements in shelter space capacity.

Since 1995, hurricane evacuation shelter spaces have been identified, or created through retrofitting of existing facilities or by new construction to public shelter design standards and code provisions. Recently, some hurricane evacuation shelters have been decommissioned due to new obsolescence or unserviceable conditions, remodeling or reuse that is incompatible with mass care shelter operations, deterioration or removal of protection products, or other causes. Changes in storm hazard maps (e.g., SLOSH, national flood insurance, etc.) also affect a site's ability to be risk recognized. Therefore, the *2021 Shelter Retrofit Report* of available hurricane evacuation shelter space totals 1,126,543 shelter spaces.

In 2015, an additional provision, section. 252.355, Florida Statutes, established new requirements for special needs client registries. The additional statutory provision increased demand. In 2016 and following years, changes in evacuation studies, demographics and public awareness increased the demand for Persons with Special Needs spaces. Special Needs spaces are more expensive to retrofit, so the spaces generated per dollar invested are fewer. As a result, 31 of Florida's 67 counties have a Persons with Special Needs client space deficit in 2021. In 2021, the Florida Legislature required the Division to track available shelter space in case of a Public Health Emergency. No Florida county or region has adequate shelter space in a worst case scenario when the space requirements during a Public Health Emergency are applied. The General Population and Persons with Special Needs combined shelter demand in Fiscal Year 2021-2022 is 853,325 spaces.

An additional 100,350 spaces at 20 Sq. Ft. per person could be created if the projects in this report are funded. Some projects could receive greater funding for special needs retrofitting, which are designated at the county level. The increased funding requirement would reduce overall spaces but is necessary to provide a haven for Florida's most vulnerable population.

In 2021, two (2) regions of the State still report a deficit of hurricane evacuation shelter space overall. Regions that have an adequate number of hurricane evacuation shelter spaces currently will need to maintain their inventory, but may still have county deficits in special needs space. Since 2017, more than 65,000 spaces previously risk recognized were removed from inventory due to changes in hazard maps. The recently released maps will continue to affect more facilities' recognition of meeting hurricane safety criteria. Over time, other hurricane evacuation shelters will be decommissioned due to aging or changes in use. Thus, even though the aggregate statewide deficit is reduced in the *2021 Shelter Retrofit Report*, a maintenance level of shelter space production will be necessary to avoid falling back into an overall deficit situation.

Meeting the sheltering needs in Florida requires multiple tactics among State and local partners. The *Shelter Retrofit Report* presents the Division's procedures and courses of action for addressing capacity concerns. Retrofitting existing buildings that are used for more than one purpose on a day to day basis is a cost-effective and necessary method of increasing the space capacity for evacuees during hurricanes and other disasters in the State.

Appendix A

2021 Shelter Retrofit Report County and Regional Recommended Projects

Appendix A						
2021 Shelter Retrofit Report County and Regional Recommended Projects						
RPC	County	Site Name/Bldg ID	Year Built	Spaces Added	Project Description	SRR Project Estimate
Emerald Coast						
Emerald Coast	Bay	Jinks MS Music CR 6	2003	125	Fenestration Protection	\$63,125
Emerald Coast	Bay	Jinks MS Band CR 10	2000	125	Fenestration Protection	\$63,125
Emerald Coast	Bay	Moseley HS Media	2004	736	Fenestration Protection	\$261,280
Emerald Coast	Bay	Mowat MS Gym	2009	851	Fenestration Protection	\$302,105
Emerald Coast	Bay	Mowat MS 11 CR	2009	851	Fenestration Protection	\$302,105
Emerald Coast	Walton	Mossy Head D CR	2006	307	Fenestration Protection	\$162,450
Emerald Coast	Walton	Mossy Head E Caf	2006	336	Fenestration Protection	\$175,650
Emerald Coast	Walton	Walton MS AB CR	2012	194	Fenestration Protection	\$145,875
Emerald Coast	Walton	Walton MS C CR	2012	194	Fenestration Protection	\$88,950
Emerald Coast	Walton	Walton MS DE Gym	2012	744	Fenestration Protection	\$203,112
Emerald Coast	Walton	Walton MS FG CR	2012	157	Fenestration Protection	\$96,300
Emerald Coast	Walton	Walton MS FHJ Media	2012	266	Fenestration Protection	\$89,700
Emerald Coast	Walton	Walton MS MQ CR	2012	236	Fenestration Protection	\$56,400
Emerald Coast	Walton	Walton MS NP CR	2012	159	Fenestration Protection	\$46,800
Emerald Coast	Walton	Walton MS R CR	2012	90	Fenestration Protection	\$25,650
Emerald Coast	Walton	Walton MS S Admin	2012	107	Fenestration Protection	\$58,275
Emerald Coast	Walton	Walton MS T CR	2012	81	Fenestration Protection	\$31,950
Apalachee						
Apalachee	Calhoun	Altha ES 2 CR	2015	422	Fenestration Protection/GenSet	\$211,000
Apalachee	Calhoun	Altha ES 5 CR	2015	449	Fenestration Protection/GenSet	\$224,500
Apalachee	Calhoun	Blountstown HS	2011	129	Fenestration Protection/GenSet	\$64,500
Apalachee	Gadsden	Gadsden County HS 2 Media	2001	525	Fenestration Protection	\$210,000
Apalachee	Gadsden	Gadsden County HS 3 CR	2001	525	Fenestration Protection	\$210,000
Apalachee	Gadsden	West Gadsden MS 6 Music	2005	104	Fenestration Protection	\$41,600
Apalachee	Gadsden	Greensboro ES (aka HS) 2 CR	1994	454	Fenestration Protection	\$68,061
Apalachee	Gadsden	Greensboro ES (aka HS) 3 Caf	1994	187	Fenestration Protection	\$45,952
Apalachee	Gadsden	Gadsden Community Hospital	tbd	1000	Need LRDM	\$325,000
Apalachee	Jackson	Graceville HS	tbd	100	Need LRDM	\$225,000
Apalachee	Jefferson	Howard Academy Regional host shelter	1987	509	Need LRDM	\$225,000
Apalachee	Leon	FAMU DRS 3 CR	2007	672	Fenestration Protection	\$183,975
Apalachee	Leon	FAMU DRS 5 CR	2007	532	Fenestration Protection	\$119,700
Apalachee	Leon	FAMU DRS 6 CR	2007	557	Fenestration Protection	\$40,500
Apalachee	Leon	Lawton Chiles HS 9 CR	2004	344	Fenestration Protection	\$40,275
Apalachee	Leon	Augusta RAA MS 4 CR	2004	227	Fenestration Protection	\$51,075
Apalachee	Leon	Augusta RAA MS 6 CR	2007	186	Fenestration Protection	\$41,850
Apalachee	Leon	Lawton Chiles HS 14 CR	2007	180	Fenestration Protection	\$40,500
Apalachee	Leon	Lawton Chiles HS 6 Gym	1998	618	Engineering / Fenestration Protection	\$139,050
Apalachee	Leon	Woodville ES 8 Cafeteria	2015	154	Fenestration Protection	\$34,650
Apalachee	Leon	Augusta RAA MS 18 Cafeteria	2004	148	Fenestration Protection	\$33,300
Apalachee	Leon	Lawton Chiles HS 7 CR	1998	307	Fenestration Protection	\$69,075
Apalachee	Leon	Lawton Chiles HS 8 CR	1998	227	Fenestration Protection	\$51,075
Apalachee	Leon	Lawton Chiles HS 5 Aud	1998	105	Engineering/ Fenestration Protection	\$136,125
Apalachee	Leon	Lawton Chiles HS 3 Cafeteria	1997	46	Engineering/ Fenestration Protection	\$73,575
Apalachee	Leon	FAMU DRS 2 Admin/Media	2007	40	Fenestration Protection	\$16,600
Apalachee	Liberty	New HS 1 CR	2020	395	Fenestration Protection	\$158,000
Apalachee	Liberty	New HS 2 Admin & Art	2020	147	Fenestration Protection	\$45,000
Apalachee	Liberty	New HS 3 CR	2020	395	Fenestration Protection	\$158,000
Apalachee	Suwanee	Suwanee ES - for pets	2008	0	Fenestration Protection	\$175,000
Apalachee	Wakulla	Crawfordville ES 2 CR	2002	330	Fenestration Protection	\$107,250
Apalachee	Wakulla	Crawfordville ES 3 CR	2002	243	Fenestration Protection	\$78,975
Apalachee	Wakulla	Crawfordville ES 5 CR	2002	255	Fenestration Protection	\$82,875
Apalachee	Wakulla	Crawfordville ES 6 CR	2002	294	Fenestration Protection	\$95,550
Apalachee	Wakulla	Crawfordville ES 7 CR	2002	270	Fenestration Protection	\$87,750
Apalachee	Wakulla	Riversink ES 2 CR	2007	435	Fenestration Protection	\$141,375
Apalachee	Wakulla	Riversink ES 3 Cafeteria	2007	312	Fenestration Protection	\$101,400
Apalachee	Wakulla	Riversink ES 5 CR	2007	446	Fenestration Protection	\$144,950
Apalachee	Wakulla	Riversink ES 6 CR	2007	398	Fenestration Protection	\$129,350
Apalachee	Wakulla	Shadeville ES 3A CR	2002	78	Fenestration Protection	\$25,350
Apalachee	Wakulla	Shadeville ES 3B CR	2002	77	Fenestration Protection	\$25,025
Apalachee	Wakulla	Crawfordville ES 4 CR	2002	27	Fenestration Protection	\$8,775
Apalachee	Wakulla	Riversink ES 4	2007	27	Fenestration Protection	\$8,775
Apalachee	Wakulla	Shadeville ES 1A	1989	473	Fenestration Protection	\$153,725
Apalachee	Wakulla	Shadeville ES 8 CR	1992	312	Fenestration Protection	\$101,400
Apalachee	Wakulla	Riversprings MS 1A	1999	223	Fenestration Protection	\$72,475
Apalachee	Wakulla	Riversprings MS 1B	1999	227	Fenestration Protection	\$73,775
Apalachee	Wakulla	Riversprings MS 1C	1999	268	Fenestration Protection	\$87,100
Apalachee	Wakulla	Shadeville ES 1B	1989	249	Fenestration Protection	\$80,925
Apalachee	Wakulla	Shadeville ES 1C	1989	249	Fenestration Protection	\$80,925
Apalachee	Wakulla	Riversprings MS 1D	1999	24	Fenestration Protection	\$7,800
North Central Florida						
North Central Florida	Alachua	W.S. Talbot ES 4 CR	2005	379	Fenestration Protection	\$127,344
North Central Florida	Alachua	H. Bishop MS 31 CR	2004	186	Fenestration Protection	\$62,496

North Central Florida	Alachua	W.T. Loften SHS 24 Cafeteria / CR	2007	670	Fenestration Protection	\$300,160
North Central Florida	Alachua	M.K. Rawlings ES 4 Cafeteria	2006	207	Fenestration Protection	\$69,552
North Central Florida	Alachua	Santa Fe SHS 34 CR (west)	2008	414	Fenestration Protection	\$206,850
North Central Florida	Alachua	Duval Academy 4 Cafeteria	1997	225	Fenestration Protection	\$23,250
North Central Florida	Alachua	J. Williams ES 6 CR	1997	230	Fenestration Protection	\$62,100
North Central Florida	Alachua	J. Williams ES 7 Cafeteria	1999	210	Genset Protect Enclosure	\$62,100
North Central Florida	Columbia	Fort White HS 5 Gym	1999	510	Fenestration Protection	\$136,082
North Central Florida	Columbia	Fort White HS 9 Cafeteria	1999	367	Fenestration Protection	\$71,932
North Central Florida	Columbia	Fort White MS 27 Multipurpose	2007	162	Fenestration Protection	\$87,000
North Central Florida	Columbia	Fort White MS 26 CR	2007	108	Fenestration Protection	\$122,808
North Central Florida	Hamilton	Hamilton County ES 28 Cafeteria	2015	2250	Fenestration Protection	\$731,250
North Central Florida	Hamilton	Hamilton County HS 8 Cafeteria	2003	746	Fenestration Protection	\$242,450
North Central Florida	Taylor	Steinhatchee School 5 CR	1996	509	Fen. Protection& Genset	\$270,000
North Central Florida	Taylor	Taylor County ES 3 CR	2002	672	Fenestration Protection	\$218,400
North Central Florida	Taylor	Taylor County ES 6 CR	2002	571	Fenestration Protection	\$185,575
North Central Florida	Taylor	Taylor County ES 5 CR	2002	341	Fenestration Protection	\$110,825
North Central Florida	Taylor	Taylor County ES 4 CR	2002	292	Fenestration Protection	\$94,900
Northeast Florida						
Northeast Florida	Clay	Argyle ES 3 CR	2003	285	Fenestration Protection	\$160,000
Northeast Florida	Duval	Don Brewer ES 1D CR	2001	801	Fenestration Protection	\$260,325
Northeast Florida	Duval	Kernan Trail ES 1D CR	2002	839	Fenestration Protection	\$272,675
Northeast Florida	Duval	Oceanway ES 1D CR	2001	827	Fenestration Protection	\$268,775
Northeast Florida	Duval	Bartram Springs ES 1A CR	2009	374	Fenestration Protection	\$121,550
Northeast Florida	Duval	Bartram Springs ES 1B CR	2009	455	Fenestration Protection	\$147,875
Northeast Florida	Duval	Waterleaf ES 1B CR	2011	449	Fenestration Protection	\$145,925
Northeast Florida	Flagler	Belle Terre ES 3 CR	2004	464	Fenestration Protection	\$150,800
Northeast Florida	Flagler	Matanzas HS	2004	1000	Genset	\$500,000
Northeast Florida	Nassau	Wildlight ES 3	2016	386	Fenestration Protection	\$86,850
Northeast Florida	Nassau	Wildlight ES 4	2016	351	Fenestration Protection	\$78,975
Northeast Florida	Nassau	Wildlight ES 5	2016	393	Fenestration Protection	\$88,425
Northeast Florida	Nassau	Wildlight ES 6	2016	359	Fenestration Protection	\$80,775
Northeast Florida	Nassau	Yulee HS 4 Gym	2005	350	Fenestration Protection	\$77,000
Northeast Florida	Nassau	Yulee HS 6 Cafeteria	2005	350	Fenestration Protection	\$77,000
Northeast Florida	Nassau	Callahan IS 7 CR	2009	190	Fenestration Protection	\$32,490
Northeast Florida	Nassau	Yulee PS 10 CR	2009	190	Fenestration Protection	\$43,130
Northeast Florida	Nassau	Bryceville ES 2 CR	2005	177	Fenestration Protection	\$35,931
Northeast Florida	Nassau	Bryceville ES 7 CR	2007	167	Fenestration Protection	\$36,072
Northeast Florida	Nassau	Callahan IS 3 CR	1999	215	Fenestration Protection	\$45,365
Northeast Florida	Nassau	Callahan IS 4 CR	1999	265	Fenestration Protection	\$43,195
Northeast Florida	Nassau	Callahan IS 5 CR	1999	263	Fenestration Protection	\$43,132
East Central Florida						
East Central Florida	Lake	Pine Ridge ES 4 Cafeteria	2002	213	Fenestration Protection and Genset	\$47,925
East Central Florida	Lake	Lake Minneola HS Caf	2010	327	Fenestration Protection	\$80,115
East Central Florida	Lake	Lake Minneola HS Gym	2010	415	Fenestration Protection	\$93,375
East Central Florida	Lake	South Lake SHS 15 Cafeteria	2004	400	Genset	\$167,850
East Central Florida	Marion	Saddlewood ES 4 CR	2010	295	Fenestration Protection	\$16,000
East Central Florida	Orange	Meadowbrook MS 6 CR	2005	532	Fenestration Protection	\$43,262
East Central Florida	Orange	Meadowbrook MS 7 CR	2005	528	Fenestration Protection	\$61,534
East Central Florida	Orange	Wekiva HS 4 CR	2007	807	Fenestration Protection	\$178,836
East Central Florida	Orange	Wekiva HS 8 Aud/CR	2007	776	Fenestration Protection	\$108,121
East Central Florida	Orange	West Orange HS 4 CR	2008	710	Fenestration Protection	\$176,229
East Central Florida	Orange	West Orange HS 5 CR	2008	1,628	Fenestration Protection	\$247,726
East Central Florida	Orange	West Orange HS 6 CR	2008	792	Fenestration Protection	\$170,537
East Central Florida	Orange	West Orange HS 8 Aud/CR	2008	777	Fenestration Protection	\$127,198
East Central Florida	Orange	Avalon MS 2 CR	2006	335	Fenestration Protection	\$47,464
East Central Florida	Orange	Avalon MS 6 CR	2006	425	Fenestration Protection	\$60,595
East Central Florida	Orange	Avalon MS 7 CR	2006	491	Fenestration Protection	\$60,922
East Central Florida	Orange	Avalon MS 8 CR	2006	433	Fenestration Protection	\$60,868
East Central Florida	Orange	Legacy MS 2 CR	2005	345	Fenestration Protection	\$47,481
East Central Florida	Orange	Legacy MS 6 CR	2005	466	Fenestration Protection	\$60,681
East Central Florida	Orange	Legacy MS 7 CR	2005	489	Fenestration Protection	\$60,921
East Central Florida	Orange	Legacy MS 8 CR	2005	430	Fenestration Protection	\$60,598
East Central Florida	Orange	Meadowbrook MS 8 CR	2005	470	Fenestration Protection	\$60,681
East Central Florida	Osceola	Chestnut ES 1 Cafeteria	2005	322	Fenestration Protection	\$104,650
East Central Florida	Osceola	Kenansville Community Center	TBD	100	Fenestration Protection	\$100,000
East Central Florida	Osceola	Holopaw Community Center	TBD	100	Fenestration Protection	\$100,000
East Central Florida	Osceola	Marydia Community Center	TBD	100	Fenestration Protection	\$100,000
East Central Florida	Osceola	Robert Guevara Community Center	TBD	100	Fenestration Protection	\$100,000
East Central Florida	Osceola	Buena Ventura Lakes Library	TBD	100	Fenestration Protection	\$100,000
East Central Florida	Osceola	Hart Memorial Library	TBD	100	Fenestration Protection	\$100,000
East Central Florida	Osceola	Kenansville Library	TBD	100	Fenestration Protection	\$100,000
East Central Florida	Osceola	Poinciana Library	TBD	100	Fenestration Protection	\$100,000
East Central Florida	Osceola	St. Cloud Library	TBD	100	Fenestration Protection	\$100,000
East Central Florida	Osceola	West Osceola Library	TBD	100	Fenestration Protection	\$100,000
East Central Florida	Osceola	Westside K-8 School -1 main		2439	Fenestration Protection	\$975,600
East Central Florida	Osceola	Kissimmee Civic Center	TBD	100	Fenestration Protection	\$100,000
East Central Florida	Osceola	Osceola Heritage Park Event Center	TBD	100	Fenestration Protection	\$100,000
East Central Florida	Seminole	Oviedo SHS 7 Gym	2007	799	Fenestration Protection	\$175,780
East Central Florida	Sumter	South Sumter SHS 38 CR	2002	352	Fenestration Protection	\$66,150

East Central Florida	Sumter	South Sumter MS	2000	332	Fenestration Protection	\$68,850
East Central Florida	Sumter	South Sumter MS 24 CR	1999	332	Fenestration Protection	\$68,850
East Central Florida	Sumter	Wildwood MS/HS 29 CR	1999	318	Fenestration Protection	\$68,850
East Central Florida	Sumter	Lake Panasoffkee ES 11 CR	1999	231	Fenestration Protection	\$72,900
East Central Florida	Volusia	Creekside MS 2 Cafeteria	2003	309	Fenestration Protection	\$119,583
East Central Florida	Volusia	Deland SHS 1 Aud	2003	639	Fenestration Protection	\$143,775
East Central Florida	Volusia	Deland HS 14 CR	2003	585	Fenestration Protection	\$131,625
East Central Florida	Volusia	Deland HS 15 CR	2003	592	Fenestration Protection	\$133,200
East Central Florida	Volusia	Mainland SHS 2B CR	2006	1,341	Fenestration Protection	\$301,725
East Central Florida	Volusia	Deland HS 5 Cafeteria	2003	391	Fenestration Protection	\$87,975
East Central Florida	Volusia	Southwestern MS 5A Gym	2006	385	Fenestration Protection	\$86,625
East Central Florida	Volusia	Deland HS 17 CR	1999	614	Fenestration Protection	\$138,150
East Central Florida	Volusia	Deland HS 2 Gym	1999	773	Fenestration Protection	\$173,925
East Central Florida	Volusia	Heritage MS CR	2003	353	Fenestration Protection	\$136,611
East Central Florida	Volusia	Mainland SHS 3 Gym	2006	244	Fenestration Protection	\$54,900
East Central Florida	Volusia	Daytona Beach CC-Deland 8 CR	2002	130	Fenestration Protection	\$29,250
East Central Florida	Volusia	Mainland SHS 5 CR	2006	129	Fenestration Protection	\$29,025
East Central Florida	Volusia	Pride ES b1	2007	903	Fenestration Protection	\$349,461
East Central Florida	Volusia	Pride ES	2007	445	Fenestration Protection	\$104,575
East Central Florida	Volusia	Mainland SHS 2A Cafeteria	2006	tbd	Fenestration Protection	\$173,400
Central Florida						
Central Florida	DeSoto	DeSoto SHS 1C Cafeteria	1977/2010 2005	511	Fenestration Protection	\$114,750
Central Florida	DeSoto	DeSoto SHS 1F Gym	1977/2010 2005	511	Fenestration Protection	\$114,750
Central Florida	DeSoto	Nocatee ES 8 CR	2008	148	Fenestration Protection	\$33,300
Central Florida	DeSoto	West ES 8 CR	2008	148	Fenestration Protection	\$33,300
Central Florida	DeSoto	South Florida State College 3 CR	2003	41	Fenestration Protection	\$9,225
Central Florida	DeSoto	Nocatee ES 4 CR	1999	275	Fenestration Protection	\$61,875
Central Florida	DeSoto	DeSoto County Library	1997/2008	120	Fenestration Protection	\$100,000
Central Florida	DeSoto	Memorial ES 15 CR	1999	105	Fenestration Protection	\$23,625
Central Florida	Hardee	Zolfo ES 10 CR (3rd Grade)	2001	0	Engineering	\$20,000
Central Florida	Hardee	Wauchula ES 5 ESE CR	1998	111	Fenestration & MEP/Genset	\$54,900
Central Florida	Hardee	Wauchula ES 6 Media	1998	109	Fenestration & MEP/Genset	\$160,000
Central Florida	Highlands	MLK Jr Memorial Field Gym	2002	415	Engineering Study	\$15,000
Central Florida	Highlands	Reflections on Silver Lake Comm Center	2005	75	Fenestration Protection	\$16,875
Central Florida	Highlands	Avon Park ES CR3	2002	415	Fenestration Protection	\$230,000
Central Florida	Highlands	Avon Park ES CR5	2002	415	Fenestration Protection	\$230,000
Central Florida	Highlands	Avon Park Rec Center	2002	415	Fenestration Protection	\$230,000
Central Florida	Okeechobee	Osceola MS 7 Gym	1995	1160	Fenestration Protection	\$190,000
Central Florida	Polk	Mobile Home Activity Center Main	1999	133	Fenestration Protection	\$29,925
Central Florida	Polk	Frostproof Middle School 7,8,9	1998	300	Fenestration Protection	\$42,975
Central Florida	Polk	Fort Meade MS / HS 19 CR	1998	160	Fenestration Protection	\$36,000
Central Florida	Polk	McKeel Academy 14 Gym SPN	1999	200	Fenestration Protection	\$189,925
Central Florida	Polk	Fort Meade MS /HS 17A CR	1998	191	Fenestration Protection	\$42,975
Central Florida	Polk	Ridge Community SPN	1998	160	Electrical for SpN	\$236,000
Central Florida	Polk	Fort Meade MS / HS 17B CR	1998	115	Fenestration Protection	\$25,875
Tampa Bay						
Tampa Bay	Citrus	Central Ridge ES 1 East Wing/CR	2006	733	Fenestration Protection	\$115,768
Tampa Bay	Citrus	Crest School 2 Main	1999	621	Fenestration Protection	\$292,130
Tampa Bay	Citrus	Central Ridge ES 1 Main/Admin & Media	2006	125	Fenestration Protection	\$44,232
Tampa Bay	Hernando	Suncoast ES 8 CR	2010	552	Engineering & Fenestration	\$115,476
Tampa Bay	Hernando	Nature Coast Tech HS 2 CR	2001	261	Engineering & Fenestration	\$72,540
Tampa Bay	Hernando	Chocachatti ES 6 CR	2005	241	Engineering & Fenestration	\$33,113
Tampa Bay	Hernando	Hernando SHS 30 CR	2008	230	Engineering & Fenestration	\$113,250
Tampa Bay	Hernando	West Hernando MS 6 Cafeteria	1993	226	Engineering & Fenestration	\$43,200
Tampa Bay	Manatee	Gullett ES 1 CR/Clinic 2nd Floor	2007	934	Fenestration Protection	\$80,700
Tampa Bay	Manatee	Lee MS 1G CR	2000	391	Fenestration & genset	\$12,629
Tampa Bay	Pasco	Wiregrass Ranch SHS 7 Cafeteria	2006	350	Harden exterior doors	\$10,000
Tampa Bay	Pasco	Wesley Chapel SHS 7 Gym	1998	865	Fenestration Protection	\$194,625
Tampa Bay	Pasco	Wesley Chapel SHS 8 Aud	1998	3184	Fenestration Protection	\$716,400
Tampa Bay	Pasco	Connerton ES 1 Admin / Media	2010	125	Fenestration Protection	\$28,125
Tampa Bay	Pasco	Connerton ES 2 CR	2010	125	Fenestration Protection	\$28,125
Tampa Bay	Pasco	Double Branch ES 1 Admin	2007	125	Fenestration Protection	\$28,125
Tampa Bay	Pasco	Double Branch ES 3 Cafeteria/Multipurpose	2007	125	Fenestration Protection	\$28,125
Tampa Bay	Pasco	Double Branch ES 2 CR	2007	125	Fenestration Protection	\$28,125
Tampa Bay	Pasco	Double Branch ES 4 CR	2007	125	Fenestration Protection	\$28,125
Tampa Bay	Pasco	Wesley Chapel SHS 5 Cafeteria	1998	350	Harden exterior doors	\$10,000
Tampa Bay	Pasco	Cypress M/HS 1 - Admin	2017	294	Fenestration Protection	\$151,275
Tampa Bay	Pasco	Cypress M/HS2 - Gym	2017	679	Fenestration Protection	\$151,275
Tampa Bay	Pasco	Cypress M/HS5 - Cafeteria & Art and Music	2017	547	Fenestration Protection	\$151,275
Tampa Bay	Pasco	Longleaf ES 1-Library & Classrooms	2005	289	Fenestration Protection	\$150,375
Tampa Bay	Pasco	Longleaf ES 2 - Admin & ESE	2005	119	Fenestration Protection	\$150,375
Tampa Bay	Pasco	Longleaf ES 3- Multipurpose Dining & Stage	2005	185	Fenestration Protection	\$150,375
Tampa Bay	Pasco	New River ES 1 - CR	2007	110	Fenestration Protection	\$150,525
Tampa Bay	Pasco	New River ES 2-Media Room & CR	2007	367	Fenestration Protection	\$150,525
Tampa Bay	Pasco	New River ES 3-Dining & Multipurpose	2007	184	Fenestration Protection	\$150,525
Tampa Bay	Pasco	Oakslead ES 1 -ESE CR	2006	295	Fenestration Protection	\$150,450
Tampa Bay	Pasco	Oakslead ES 2-Admin & Classrooms	2006	111	Fenestration Protection	\$150,450

Tampa Bay	Pasco	Oakslead ES 3 - Multipurpose	2006	184	Fenestration Protection	\$150,450
Tampa Bay	Pasco	Trinity Oaks ES 1 CR	2001	201	Fenestration Protection	\$150,075
Tampa Bay	Pasco	Trinity Oaks ES 2 Admin &art	2001	122	Fenestration Protection	\$150,075
Tampa Bay	Pasco	Trinity Oaks ES 3 CR	2001	197	Fenestration Protection	\$150,075
Tampa Bay	Pinellas	McMullen Boothe ES 4 CR	1996	455	Fenestration Protection	\$106,925
Tampa Bay	Pinellas	McMullen Boothe ES 45CR	1996	455	Fenestration Protection	\$106,925
Tampa Bay	Pinellas	Fairmount ES 6 CR	2001	476	Fenestration Protection	\$111,860
Tampa Bay	Pinellas	Palm Harbor Senior Center	1999	257	Fenestration Protection	\$89,260
Tampa Bay	Pinellas	UPARC Long Center	1988	420	Fenestration Protection	\$210,000
Southwest Florida						
Southwest Florida	Charlotte	Charlotte County Airport Baggage Claims	TBD	800	Fenestration Protection	\$180,000
Southwest Florida	Charlotte	Charlotte Preparatory School	TBD	250	Fenestration Protection and Genset	\$381,250
Southwest Florida	Glades	Glades County Health Dept 1 Main	2011	235	Fenestration Protection	\$52,875
Southwest Florida	Lee	Veteran's Park Academy 3 Caf	2003	2763	Genset Protection	\$265,000
Southwest Florida	Lee	Veteran's Park Academy 9 Cafeteria	2003	990	Fenestration Protection	\$222,750
Southwest Florida	Lee	East Lee County HS 1 Multipurpose / PE	2005	250	Fenestration Protection	\$58,240
Southwest Florida	Lee	East Lee County HS 1 Aud	2005	200	Fenestration Protection	\$44,000
Southwest Florida	Lee	East Lee County HS 1 CR	2005	200	Fenestration Protection	\$0
Southwest Florida	Lee	East Lee County HS 1 Cafeteria	2005	200	Fenestration Protection	\$44,000
Southwest Florida	Lee	Sunshine ES 5 CR	2006	212	Fenestration Protection	\$111,300
Southwest Florida	Lee	Varsity Lakes MS 2 Cafeteria / Art	2003	200	Fenestration Protection	\$105,000
Southwest Florida	Sarasota	State College of Florida - Lakewood Ranch	2011	450	Fenestration Protection	\$157,500
Southwest Florida	Sarasota	Woodland MS	2007	256	Fenestration Protection	\$57,600
Treasure Coast						
Treasure Coast	Indian River	Liberty Magnet 1 Main	2005	184	Fenestration Protection	\$40,800
Treasure Coast	Martin	Indiantown MS 5 Cafeteria	2010	600	GenSet	\$80,000
Treasure Coast	Martin	Port Salerno ES 1 Main	2002	1,300	GenSet	\$160,000
Treasure Coast	Martin	Willoughby Learning Center	1998	600	GenSet	\$280,000
Treasure Coast	Martin	Warfield ES 8 Cafeteria	2006	231	Common Space Protection	\$51,975
Treasure Coast	Martin	Cassidy Rec Center	2003	150	Fenestration Protection	\$33,750
Treasure Coast	Palm Beach	Florida Atlantic University - Business	2004	500	Fenestration Protection	\$111,500
Treasure Coast	St. Lucie	Dannn McCarty MS 20 CR	2001	882	Fenestration Protection	\$230,000
South Florida						
South Florida	Broward	Floranada ES a	1999	900	Fenestration Protection	\$385,000
South Florida	Broward	Floranada ES b	1999	900	Fenestration Protection	\$385,000
South Florida	Miami-Dade	Marjory Stoneman Douglas ES 10 CR / Media	1990	324	Fenestration Protection	\$72,900
South Florida	Miami- Dade	Marjory Stoneman Douglas ES 3 CR	1990	171	Fenestration Protection	\$38,475
South Florida	Miami- Dade	Marjory Stoneman Douglas ES 1/2 Admin / CR	1990	51	Fenestration Protection	\$11,475
South Florida	Miami-Dade	Marjory Stoneman Douglas ES 7/8 ESE	1990	101	Fenestration Protection	\$22,725
South Florida	Miami-Dade	Marjory Stoneman Douglas ES 9 CR	1990	136	Fenestration Protection	\$30,600
South Florida	Miami- Dade	Marjory Stoneman Douglas ES 4 CR	1990	49	Fenestration Protection	\$11,025
South Florida	Miami-Dade	Marjory Stoneman Douglas ES 8 ESE	1990	28	Fenestration Protection	\$6,300

Appendix B

Hurricane Evacuation Shelter Deficit Reduction Progress

1995 - 2021

Appendix B							
Hurricane Evacuation Shelter Deficit Reduction Progress							
RPC	County	2021 New Maximum Shelter Demand In Spaces	2021 SESP Inventory spaces	Cumulative School EHPA Capacity	1995–8/2021 Retrofit & As-Is Spaces	Retrofit Shelter Capacity Under Contract	Is the Region in Deficit?
Emerald Coast	Bay	8,449	14,848	956	13892	1,093	
Emerald Coast	Escambia	10,976	28,023	1,656	26367	-	
Emerald Coast	Holmes	962	3,477	2,847	630	-	
Emerald Coast	Okaloosa	7,389	10,122	-	10122	-	
Emerald Coast	Santa Rosa	6,904	13,351	-	13351	-	
Emerald Coast	Walton	3,916	10,118	3,932	6186	-	
Emerald Coast	Washington	1,312	6,347	1,211	5136	-	
Emerald Coast Subtotals		39,908	86,286				No
Apalachee	Calhoun	660	3,377	1,194	2183	-	
Apalachee	Franklin	487	0	-	0	-	
Apalachee	Gadsden	2,296	4,856	3,672	1184	-	
Apalachee	Gulf	714	418	186	232	-	
Apalachee	Jackson	1,487	3,894	3,395	499	-	
Apalachee	Jefferson	903	689	689	0	-	
Apalachee	Leon	7,757	20,271	1,223	19048	-	
Apalachee	Liberty	422	2,579	1,490	1089	-	
Apalachee	Wakulla	1,883	423	-	423	-	
Apalachee Subtotals		16609	36,507				No
North Central Florida	Alachua	9,304	14,488	2,607	11881	352	
North Central Florida	Bradford	1,160	1,425	-	1425	-	
North Central Florida	Columbia	3,763	5,014	3,296	1718	-	
North Central Florida	Dixie	1,271	4,218	4,218	0	-	
North Central Florida	Gilchrist	873	3,050	-	3050	-	
North Central Florida	Hamilton	638	1,817	1,353	464	-	
North Central Florida	Lafayette	418	562	-	562	-	
North Central Florida	Levy	3,095	4,992	354	4638	-	
North Central Florida	Madison	160	3,990	-	3990	-	
North Central Florida	Suwannee	2,660	4,854	3,810	1044	-	
North Central Florida	Taylor	1,184	6,654	-	6654	-	
North Central Florida	Union	561	899	-	899	-	
North Central Florida Subtotals		25,087	51,963				No
Northeast Florida	Baker	1,737	3,391	1,829	1562	-	
Northeast Florida	Clay	10,238	10,308	4,813	5495	2,896	
Northeast Florida	Duval	40,441	36,253	12,069	24184	-	
Northeast Florida	Flagler	5,683	14,242	1,656	12586	-	
Northeast Florida	Nassau	4,745	4,829	4,179	650	-	
Northeast Florida	Putnam	4,003	3,907	791	3116	-	
Northeast Florida	St Johns	11,328	28,627	4,428	24199	-	
Northeast Florida Subtotals		78,175	101,557				No
East Central Florida	Brevard	26,492	53,008	11,668	41340	586	
East Central Florida	Lake	18,474	25,328	20,704	4624	6,018	

East Central Florida	Marion	999	12,518	8,116	4402	11,274	
East Central Florida	Orange	32,863	32,773	28,225	4548	4,520	
East Central Florida	Osceola	8,797	38,842	11,473	27369	-	
East Central Florida	Seminole	12,447	31,338	3,291	28047	-	
East Central Florida	Sumter	6,876	2,324	402	1922	-	
East Central Florida	Volusia	28,710	23,231	5,371	17860	-	
East Central Florida Subtotals		135,658	219,362				No
Southwest Florida	Charlotte	10,671	0	-	0	-	
Southwest Florida	Collier	25,423	5,453	-	5453	-	
Southwest Florida	Glades	1,099	2,195	332	1863	-	
Southwest Florida	Hendry	2,725	4,065	-	4065	-	
Southwest Florida	Lee	36,576	15,263	-	15263	9,307	
Southwest Florida	Sarasota	25,578	13,435	5,425	8010	7,262	
Southwest Florida Subtotals		102,072	40,411				Yes
Tampa Bay	Citrus	10,046	4,509	1,276	3233	-	
Tampa Bay	Hernando	9,783	4,237	3,044	1193	-	
Tampa Bay	Hillsborough	63,451	84,526	4,040	80486	-	
Tampa Bay	Manatee	20,378	25,274	9,105	16169	-	
Tampa Bay	Pasco	26,287	30,512	6,980	23532	-	
Tampa Bay	Pinellas	43,760	30,874	7,547	23327	-	
Tampa Bay Subtotals		173,705	179,932				No
Central Florida	Desoto	2,925	2,874	-	2874	1,061	
Central Florida	Hardee	1,680	3,784	3,310	474	-	
Central Florida	Highlands	8,477	7,618	4,040	3578	-	
Central Florida	Okeechobee	2,779	2,122	1,054	1068	-	
Central Florida	Polk	31,217	44,776	37,277	7499	4,630	
Central Florida Subtotals		47,078	61,174				No
Treasure Coast	Indian River	4,984	15,000	-	15000	-	
Treasure Coast	Martin	6,516	22,537	12,464	10073	-	
Treasure Coast	Palm Beach	42,840	82,458	82,458	0	-	
Treasure Coast	St. Lucie	9,566	27,383	-	27383	-	
Treasure Coast Subtotals		63,906	147,378				No
South Florida	Broward	23,687	69,898	69,898	0	-	
South Florida	Miami-Dade	129,672	82,474	14,732	67742	-	
South Florida	Monroe	3,512	602	-	602	-	
South Florida Subtotals		156,871	152,974				Yes

Appendix C

Methodology for Prioritizing Projects for Funding

Appendix C

Methodology for Prioritizing Projects for Funding

The hurricane evacuation shelter space deficit information used for this report was published in the 2020 SESP. The 2020 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 2020 SESP determined that only four regions of the State have adequate special needs spaces. The remaining six regions have deficits.

In prioritizing projects, the Division based its recommendations on the criteria found in statute and described below. All projects - at completion - must meet the minimum safety standards set by the Division in its Least Risk Decision Making reports. Projects are not recommended when a condition exists that would exclude the building as a shelter, such as the presence of uncertified long span roof, unreinforced masonry walls, flood prone sites or storm surge inundation. The following is a listing of the specific criteria used by Division staff to recommend each project based upon information provided with each project report.

Recommended project is located within an RPC Region with a deficit of General Population Hurricane Evacuation Risk Shelter Space

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 2020 SESP.

Recommended project is located within a County with a deficit of General Population Hurricane Evacuation Risk Shelter Space:

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 of miles. County hurricane evacuation shelter space deficit data was provided by the 2020 SESP.

Recommended project is located within an RPC Region with a deficit of Special/ Medical Needs Shelter (SpNS) Hurricane Evacuation Risk Shelter Space. :

The 2020 SESP identified that even when there may be sufficient general population shelter space, there may still be a deficit in PSN space.

Recommended project is located within a County with a deficit of Special/Medical Needs Hurricane Evacuation Risk Shelter Space:

Though regions are the highest priority in statute, evacuations are generally local with emergency managers recommending that evacuees travel tens of miles instead of hundreds. The 2020 SESP noted that even when there may be sufficient general population shelter space, there may still be a deficit in PSN space.

Recommended project is located within a County without a pet friendly Hurricane Evacuation Risk Shelter Space

In 2019 the Legislature required that each county have at least one shelter that accepts pets. Therefore, this new priority has been added to validate this type of retrofit project.

Recommended Project has other considerations:**Building Ownership and Availability for use as a Public Hurricane Evacuation Risk Shelter:**

Public buildings by statute may be activated for use as an emergency shelter. 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.

Numerical increase in shelter capacity and Cost-effectiveness of Project(s)

This item serves to maximize use of State funds.

Age of Building:

The life span and construction of a building is a consideration. The building's structural and envelope characteristics are very important. Structures are evaluated to shelter people during a severe windstorm 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 from consideration. Recommendations are based on the building's wind design code as well. 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. If the building was built before the year 2003, it also would be built to a less stringent wind design and building code. In some counties, where the availability of newer buildings is rare, this priority is waived.

Hazard and Building Design and Construction Criteria:

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.

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.

Recommendation for retrofit cannot be justified if the given facility is subject to these hazards that cannot be overcome through retrofitting.

- A. The facility is in a Sea, Lake and Overland Surges from Hurricanes (SLOSH) or Storm Surge evacuation zone. 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. The facility is in a flood zone according to the National Flood Insurance Program (NFIP) Flood Insurance Rate Map (FIRM) flood zone (as established in the most recently published FIRM). Exception is given on occasion to those counties (such as Miami-Dade and Collier) whose populations live in areas that are extremely flat and provide very limited natural drainage.

Appendix D

List of Acronyms and Abbreviations

Appendix D

List of Acronyms and Abbreviations

ARC: American Red Cross

ASCE: American Society of Civil Engineers

CMU: Concrete Masonry Unit

EHPA: Enhanced Hurricane Protection Area

FBC: Florida Building Code

FDOE: Florida Department of Education

FEMA: Federal Emergency Management Agency

FIRM: Flood Insurance Rate Map

FY: Fiscal Year

GP: General Population

HB: House Bill

HESSS: Hurricane Evacuation Shelter Selection Standards (American Red Cross, June 2018)

HMGP: Hazard Mitigation Grant Program (federal)

ICC: International Code Council

LRDM: Least-Risk Decision Making

NFIP: National Flood Insurance Program

NWS: National Weather Service

PHE: Public Health Emergency

PSN: Persons with Special Needs

RPC: Regional Planning Council

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 E

Glossary

Appendix E

Glossary

Approved: Acceptable to the authority having jurisdiction.

As-Is: Current or existing condition at the time of survey or review of 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 wastewater 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, *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, 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 high 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 in determining a course of action, but not necessarily required or enforceable by law. A framework that can assist in decision-making.

Hurricane Evacuation 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 listed 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.

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, *Florida Building Code—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.

Person(s) with Special Needs (PSN): 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.

Public Health Emergency: An occurrence or imminent credible threat of an illness or health condition, caused by bioterrorism, epidemic or pandemic disease, or novel and highly fatal infectious agent or biological toxin, that poses a substantial risk of a significant number of human fatalities or incidents of permanent or long-term disability. Such illness or health condition includes an illness or health condition resulting from a natural disaster.

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 *Hurricane Evacuation Shelter Selection Standards* (June 2018), or the former *ARC Standards for Hurricane Evacuation Shelter Selection* (June 1992 or January 2002). 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 windborne 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, *Florida Building Code—Building*.

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 observations.

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.